



Engineers, Surveyors, Planners, Scientists

July 10, 2019

Tina Wawzkiewicz, P.E.  
Civil Engineer II  
City of Dublin  
6555 Shier Rings Road  
Dublin, Ohio 43016

Subject: Oak Park Rezoning-Trip Generation Analysis

Dear Ms. Wawzkiewicz,

This letter serves to document analysis of proposed zoning modifications for Oak Park, a residential development site located in the southwest quadrant of the Hyland-Croy Road/Mitchell-Dewitt Road intersection. Dublin first zoned the site over 10 years ago (referred to herein as the initial zoning). Dublin approved a zoning modification in 2017 and is currently considering another change. This submission documents the difference in vehicle trips generated by the two previously approved plans and the pending plan, and shows that the requested change generates less traffic than prior plans.

### Site Description

The two previously approved development plans and the currently pending rezoning request permit the following land uses:

Dublin approved the initial zoning with the following:

- 72 Single-family detached lots
- 36 Townhome lots
- Maximum of 39,700 sf of retail and/or office uses (see attached text)

A 2017 rezoning removed the townhome lots resulting in the following development plan:

- 92 Single-family detached lots
- Maximum of 39,700 sf of retail and/or office uses (see attached text)

The current rezoning request eliminates the commercial uses resulting in the following development plan:

- 104 Single-family detached lots

### Volume Development

This submission includes detailed trip generation calculations for the development program represented in each of the three plans. Vehicular trips were determined using the data and methodology contained in the Trip Generation Manual 10<sup>th</sup> edition (Institute of Transportation Engineers, 2017). Development plans with a commercial component generate pass-by trips and potentially share trips with residential portions of Oak Park. Attached calculations detail those components, showing a negligible impact on the result. Trip generation results summarized below represent the full volume of site trips including pass-by and internal, shared trips.

**Trip Generation Comparison**

	<u>Total Trip Generation</u>			<u>Change from Initial</u>		
	Enter	Exit	Total	Enter	Exit	Total
Daily (24-hours)						
Initial Zoning	2104	2104	4208			
2017 Zoning	2085	2085	4170	-19	-19	-38
2019 Zoning	539	539	1078	-1565	-1565	-3130
AM Peak						
Initial Zoning	124	121	245			
2017 Zoning	124	118	242	0	-3	-3
2019 Zoning	20	59	79	-104	-62	-166
PM Peak						
Initial Zoning	194	179	373			
2017 Zoning	191	178	369	-3	-1	-4
2019 Zoning	66	39	105	-128	-140	-268

On a daily basis, the currently proposed zoning reduces trip generation about 74% compared to the initial zoning. Attachments to this submission provide detailed calculations supporting the values summarized above. Based on the foregoing, the currently pending request to rezone Oak Park (the 2019 zoning) significantly reduces vehicle trips generated by the site compared to previously approved zonings.

Should questions or comments arise during your review of this analysis or if I may be of further assistance in this matter, please feel free to contact me at (614) 775-4640.

Sincerely,



Lawrence C. Creed, Esq., PE  
Principal  
Director of Traffic Engineering Services

Enclosures: Trip Generation Calculations, Zoning Text

**SUBAREA E: NEIGHBORHOOD COMMERCIAL**

I. Description:

Subarea E shall be located on the eastern portion of the site and shall allow for neighborhood-scale commercial uses. This subarea shall consist of approximately 8.3 acres.

II. Permitted Uses and Development Standards:

A. **Permitted Uses:** The following permitted uses shall be allowed in Subarea E, subject to the exclusions set forth in subsection II(B):

1. Those uses listed in City of Dublin Zoning Code Section 153.027(A), **Neighborhood Commercial District**, as that provision exists on the date that the Preliminary Development Plan is approved for this development.
2. Those uses listed in City of Dublin Zoning Code Section 153.028(A), **Community Commercial District**, as that provision exists on the date that the Preliminary Development Plan is approved for this development.
3. **Dry cleaning and related services; art galleries; wine and other specialty stores (not including liquor stores); convenience stores; and miscellaneous food stores.**

B. **Excluded Uses:** The following uses shall be excluded from the permitted uses in subsection II(A) above and shall not be permitted in Subarea E:

Motor vehicle dealers  
Tire, battery and accessory dealers  
Miscellaneous aircraft, marine and automotive dealers  
Lumber and other building materials dealers  
Heating and plumbing equipment dealers  
Electrical supply stores  
Farm hardware and equipment stores  
Hotels and motels  
Rooming and boarding houses  
Liquor stores  
Funeral service  
Sexually oriented business establishments

C. Conditional uses:

The following conditional uses shall be allowed in Subarea E, provided that they are approved in accordance with City of Dublin Code Section 153.236:

1. **Drive-thru services in association with any permitted use other than restaurant uses in Subarea E**
2. **Outdoor service facilities, including, without limitation, outdoor dining patios**
3. **Auto-oriented commercial facilities**

D. Unless otherwise specified in the submitted drawings or in this written text, the development standards of Chapter 153 of the City of Dublin Code shall apply to this subarea. Basic development standards are compiled regarding proposed density, site issues, traffic, circulation, landscaping, and architectural standards. These component standards ensure consistency and quality throughout the development.

III. Density:

A maximum of thirty-nine thousand seven hundred (39,700) square feet of retail and/or office floor area shall be permitted in the aggregate within Subarea E. Each single retail user within Subarea E shall have less than twenty-thousand (20,000) square feet of floor space. Outdoor dining patios and pedestrian areas shall be encouraged throughout Subarea E and shall be permitted in addition to the allowable aggregate building area in this subarea. The total square footage allowed for outdoor dining patios in Subarea E shall not exceed fifteen percent (15%) of the total allowable aggregate building area for structures in this subarea.

IV. Height:

The maximum height of all primary buildings in this subarea shall be forty (40) feet as measured per the City of Dublin Code. The towers and entry features that are parts of primary buildings, as indicated on the elevation in Exhibit N-2 attached to this text, shall have a maximum height of fifty-eight (58) feet.

V. Parking, Loading, and Stacking:

A. Unless otherwise stated herein or otherwise depicted on the Preliminary Development Plan, all parking and loading shall be regulated by Dublin Code Section 153.200 et seq.

B. Parking shall be provided in Subarea E at the minimum rate of four and one-half (4.5) parking spaces per one thousand (1,000) square feet of gross floor area. Regardless of parcel lines, phasing, and/or sequencing of building construction, Subarea E is intended to operate functionally as a single commercial area. Therefore, the parking ratio set forth herein shall apply in the aggregate to Subarea E and nothing herein shall prohibit any single phase of development or individual parcel from deviating from this requirement. All parking spaces shall be available for use by all buildings (via cross easements, if necessary) within the subarea. Parallel, head-in, and angled parking spaces shall be permitted in this subarea as indicated on the Final Development Plan. In order to promote the ideal of a pedestrian-friendly neighborhood, patrons of the users in Subarea E shall be encouraged to park along public streets in Subarea D. Parking spaces found in Subarea D shall not be used to calculate the required number of spaces in Subarea E.

C. Head-in parking spaces in this subarea shall have a minimum dimension of nine (9) feet by eighteen (18) feet. Parallel parking spaces shall have a minimum dimension of nine (9) feet by twenty-two (22) feet as shown on the detail in the Preliminary Development Plan.

D. Any drive thru that is approved in accordance with this text shall provide stacking at the following rates per drive thru lane: Pharmacy – 6; All Other – per Code.

E. Required loading spaces shall be provided to the rear of buildings in Subarea E. Additional spaces may be provided along Oak Park Boulevard and/or Village Drive North/South that serve the dual purpose of providing both patron parking and loading spaces, provided that the developer restricts the use of these spaces for loading purposes only during specified times. At the time of Final Development Plan, the developer shall provide details on these restrictions.

**Scenario - 1**

Scenario Name: Original Development Plan

User Group:

Dev. phase: 1

Horizon Year: 2019

Analyst Note:

Warning: The time periods among the land uses do not appear to match.

**VEHICLE TRIPS BEFORE REDUCTION**

Land Use & Data Source	Location	IV	Size	Time Period	Method	Entry	Exit	Total
					Rate/Equation	Split%	Split%	
210 - Single-Family Detached Housing	General	Dwelling Units	72	Weekday	Best Fit (LOG)	384	384	768
Data Source: Trip Generation Manual, 10th Ed	Urban/Suburban				$\ln(T) = 0.92\ln(X) + 2.71$	50%	50%	
210(1) - Single-Family Detached Housing	General	Dwelling Units	72	Weekday, Peak Hour of Adjacent Street Traffic,	Best Fit (LIN)	14	42	56
Data Source: Trip Generation Manual, 10th Ed	Urban/Suburban				$T = 0.71(X) + 4.80$	25%	75%	
210(2) - Single-Family Detached Housing	General	Dwelling Units	72	Weekday, Peak Hour of Adjacent Street Traffic,	Best Fit (LOG)	47	27	74
Data Source: Trip Generation Manual, 10th Ed	Urban/Suburban				$\ln(T) = 0.96\ln(X) + 0.20$	63%	37%	
220 - Multifamily Housing (Low-Rise)	General	Dwelling Units	36	Weekday	Best Fit (LIN)	116	116	232
Data Source: Trip Generation Manual, 10th Ed	Urban/Suburban				$T = 7.56(X) + -40.86$	50%	50%	
220(1) - Multifamily Housing (Low-Rise)	General	Dwelling Units	36	Weekday, Peak Hour of Adjacent Street	Best Fit (LOG)	4	14	18
Data Source: Trip Generation Manual, 10th Ed	Urban/Suburban				$\ln(T) = 0.95\ln(X) + -0.51$	23%	77%	
220(2) - Multifamily Housing (Low-Rise)	General	Dwelling Units	36	Weekday, Peak Hour of Adjacent Street Traffic,	Best Fit (LOG)	15	9	24
Data Source: Trip Generation Manual, 10th Ed	Urban/Suburban				$\ln(T) = 0.89\ln(X) + -0.02$	63%	37%	
820 - Shopping Center	General	1000 Sq. Ft. GLA	39.7	Weekday	Best Fit (LOG)	1604	1604	3208
Data Source: Trip Generation Manual, 10th Ed	Urban/Suburban				$\ln(T) = 0.68\ln(X) + 5.57$	50%	50%	
820(1) - Shopping Center	General	1000 Sq. Ft. GLA	39.7	Weekday, Peak Hour of Adjacent Street Traffic,	Best Fit (LIN)	106	65	171
Data Source: Trip Generation Manual, 10th Ed	Urban/Suburban				$T = 0.50(X) + 151.78$	62%	38%	
820(2) - Shopping Center	General	1000 Sq. Ft. GLA	39.7	Weekday, Peak Hour of Adjacent Street Traffic,	Best Fit (LOG)	132	143	275
Data Source: Trip Generation Manual, 10th Ed	Urban/Suburban				$\ln(T) = 0.74\ln(X) + 2.89$	48%	52%	

**VEHICLE TO PERSON TRIP CONVERSION****BASELINE SITE VEHICLE CHARACTERISTICS:**

Land Use	Baseline Site Vehicle Mode Share		Baseline Site Vehicle Occupancy		Baseline Site Vehicle Directional Split	
	Entry (%)	Exit (%)	Entry	Exit	Entry (%)	Exit (%)
210 - Single-Family Detached Housing	100	100	1	1	50	50
210(1) - Single-Family Detached Housing	100	100	1	1	25	75
210(2) - Single-Family Detached Housing	100	100	1	1	63	37
220 - Multifamily Housing (Low-Rise)	100	100	1	1	50	50
220(1) - Multifamily Housing (Low-Rise)	100	100	1	1	23	77
220(2) - Multifamily Housing (Low-Rise)	100	100	1	1	63	37
820 - Shopping Center	100	100	1	1	50	50
820(1) - Shopping Center	100	100	1	1	62	38
820(2) - Shopping Center	100	100	1	1	48	52

**ESTIMATED BASELINE SITE PERSON TRIPS:**

Land Use	Person Trips by Vehicle		Person Trips by Other Modes		Total Baseline Site Person Trips	
	Entry	Exit	Entry	Exit	Entry	Exit
210 - Single-Family Detached Housing	384	384	0	0	384	384
	768		0		768	
210(1) - Single-Family Detached Housing	14	42	0	0	14	42
	56		0		56	
210(2) - Single-Family Detached Housing	47	27	0	0	47	27
	74		0		74	



220 - Multifamily Housing (Low-Rise)	116	116	0	0	116	116
	232		0		232	
220(1) - Multifamily Housing (Low-Rise)	4	14	0	0	4	14
	18		0		18	
220(2) - Multifamily Housing (Low-Rise)	15	9	0	0	15	9
	24		0		24	
820 - Shopping Center	1604	1604	0	0	1604	1604
	3208		0		3208	
820(1) - Shopping Center	106	65	0	0	106	65
	171		0		171	
820(2) - Shopping Center	132	143	0	0	132	143
	275		0		275	

## INTERNAL VEHICLE TRIP REDUCTION

## LAND USE GROUP ASSIGNMENT:

Land Use	Land Use Group
210 - Single-Family Detached Housing	Residential
210(1) - Single-Family Detached Housing	Residential
210(2) - Single-Family Detached Housing	Residential
220 - Multifamily Housing (Low-Rise)	Residential
220(1) - Multifamily Housing (Low-Rise)	Residential
220(2) - Multifamily Housing (Low-Rise)	Residential
820 - Shopping Center	Retail
820(1) - Shopping Center	Retail
820(2) - Shopping Center	Retail

## BALANCED PERSON TRIPS:

210 - Single-Family Detached Housing					210(1) - Single-Family Detached Housing				
Persons Exit	PAF	UIPTC	Unconstrained Demand	====> BALANCED ==>==	Unconstrained Demand	UIPTC	PAF	Persons Entry	
384	1	0	0	0	0	0	1	14	
Persons Entry	PAF	UIPTC	Unconstrained Demand	<<<== BALANCED <<<==	Unconstrained Demand	UIPTC	PAF	Persons Exit	
384	1	0	0	0	0	0	1	42	
210 - Single-Family Detached Housing					210(2) - Single-Family Detached Housing				
Persons Exit	PAF	UIPTC	Unconstrained Demand	====> BALANCED ==>==	Unconstrained Demand	UIPTC	PAF	Persons Entry	
384	1	0	0	0	0	0	1	47	
Persons Entry	PAF	UIPTC	Unconstrained Demand	<<<== BALANCED <<<==	Unconstrained Demand	UIPTC	PAF	Persons Exit	
384	1	0	0	0	0	0	1	27	
210 - Single-Family Detached Housing					220 - Multifamily Housing (Low-Rise)				
Persons Exit	PAF	UIPTC	Unconstrained Demand	====> BALANCED ==>==	Unconstrained Demand	UIPTC	PAF	Persons Entry	
384	1	0	0	0	0	0	1	116	
Persons Entry	PAF	UIPTC	Unconstrained Demand	<<<== BALANCED <<<==	Unconstrained Demand	UIPTC	PAF	Persons Exit	
384	1	0	0	0	0	0	1	116	
210 - Single-Family Detached Housing					220(1) - Multifamily Housing (Low-Rise)				

Persons Exit	PAF	UIPTC	Unconstrained Demand	====> BALANCED ==>==	Unconstrained Demand	UIPTC	PAF	Persons Entry
384	1	0	0	0	0	0	1	4
Persons Entry	PAF	UIPTC	Unconstrained Demand	<<<== BALANCED <<<==	Unconstrained Demand	UIPTC	PAF	Persons Exit
384	1	0	0	0	0	0	1	14
210 - Single-Family Detached Housing					220(2) - Multifamily Housing (Low-Rise)			
Persons Exit	PAF	UIPTC	Unconstrained Demand	====> BALANCED ==>==	Unconstrained Demand	UIPTC	PAF	Persons Entry
384	1	0	0	0	0	0	1	15
Persons Entry	PAF	UIPTC	Unconstrained Demand	<<<== BALANCED <<<==	Unconstrained Demand	UIPTC	PAF	Persons Exit
384	1	0	0	0	0	0	1	9
210 - Single-Family Detached Housing					820 - Shopping Center			
Persons Exit	PAF	UIPTC	Unconstrained Demand	====> BALANCED ==>==	Unconstrained Demand	UIPTC	PAF	Persons Entry
384	1	0	0	0	0	0	1	1604
Persons Entry	PAF	UIPTC	Unconstrained Demand	<<<== BALANCED <<<==	Unconstrained Demand	UIPTC	PAF	Persons Exit
384	1	0	0	0	0	0	1	1604
210 - Single-Family Detached Housing					820(1) - Shopping Center			
Persons Exit	PAF	UIPTC	Unconstrained Demand	====> BALANCED ==>==	Unconstrained Demand	UIPTC	PAF	Persons Entry
384	1	0	0	0	0	0	1	106
Persons Entry	PAF	UIPTC	Unconstrained Demand	<<<== BALANCED <<<==	Unconstrained Demand	UIPTC	PAF	Persons Exit
384	1	0	0	0	0	0	1	65
210 - Single-Family Detached Housing					820(2) - Shopping Center			
Persons Exit	PAF	UIPTC	Unconstrained Demand	====> BALANCED ==>==	Unconstrained Demand	UIPTC	PAF	Persons Entry
384	1	0	0	0	0	0	1	132
Persons Entry	PAF	UIPTC	Unconstrained Demand	<<<== BALANCED <<<==	Unconstrained Demand	UIPTC	PAF	Persons Exit
384	1	0	0	0	0	0	1	143
210(1) - Single-Family Detached Housing					210(2) - Single-Family Detached Housing			
Persons Exit	PAF	UIPTC	Unconstrained Demand	====> BALANCED ==>==	Unconstrained Demand	UIPTC	PAF	Persons Entry
42	1	0	0	0	0	0	1	47
Persons Entry	PAF	UIPTC	Unconstrained Demand	<<<== BALANCED <<<==	Unconstrained Demand	UIPTC	PAF	Persons Exit
14	1	0	0	0	0	0	1	27
210(1) - Single-Family Detached Housing					220 - Multifamily Housing (Low-Rise)			
Persons Exit	PAF	UIPTC	Unconstrained Demand	====> BALANCED ==>==	Unconstrained Demand	UIPTC	PAF	Persons Entry
42	1	0	0	0	0	0	1	116
Persons Entry	PAF	UIPTC	Unconstrained Demand	<<<== BALANCED <<<==	Unconstrained Demand	UIPTC	PAF	Persons Exit
14	1	0	0	0	0	0	1	116
210(1) - Single-Family Detached Housing					220(1) - Multifamily Housing (Low-Rise)			

Persons Exit	PAF	UIPTC	Unconstrained Demand	====>> BALANCED ==>>====	Unconstrained Demand	UIPTC	PAF	Persons Entry
42	1	0	0	0	0	0	1	4
Persons Entry	PAF	UIPTC	Unconstrained Demand	<<<== BALANCED <<<==	Unconstrained Demand	UIPTC	PAF	Persons Exit
14	1	0	0	0	0	0	1	14
210(1) - Single-Family Detached Housing					220(2) - Multifamily Housing (Low-Rise)			
Persons Exit	PAF	UIPTC	Unconstrained Demand	====>> BALANCED ==>>====	Unconstrained Demand	UIPTC	PAF	Persons Entry
42	1	0	0	0	0	0	1	15
Persons Entry	PAF	UIPTC	Unconstrained Demand	<<<== BALANCED <<<==	Unconstrained Demand	UIPTC	PAF	Persons Exit
14	1	0	0	0	0	0	1	9
210(1) - Single-Family Detached Housing					820 - Shopping Center			
Persons Exit	PAF	UIPTC	Unconstrained Demand	====>> BALANCED ==>>====	Unconstrained Demand	UIPTC	PAF	Persons Entry
42	1	0	0	0	0	0	1	1604
Persons Entry	PAF	UIPTC	Unconstrained Demand	<<<== BALANCED <<<==	Unconstrained Demand	UIPTC	PAF	Persons Exit
14	1	0	0	0	0	0	1	1604
210(1) - Single-Family Detached Housing					820(1) - Shopping Center			
Persons Exit	PAF	UIPTC	Unconstrained Demand	====>> BALANCED ==>>====	Unconstrained Demand	UIPTC	PAF	Persons Entry
42	1	0.6666666666666666	0	0	1	0.9444444444444444	1	106
Persons Entry	PAF	UIPTC	Unconstrained Demand	<<<== BALANCED <<<==	Unconstrained Demand	UIPTC	PAF	Persons Exit
14	1	0.1111111111111111	0	0	1	0.7777777777777778	1	65
210(1) - Single-Family Detached Housing					820(2) - Shopping Center			
Persons Exit	PAF	UIPTC	Unconstrained Demand	====>> BALANCED ==>>====	Unconstrained Demand	UIPTC	PAF	Persons Entry
42	1	0	0	0	0	0	1	132
Persons Entry	PAF	UIPTC	Unconstrained Demand	<<<== BALANCED <<<==	Unconstrained Demand	UIPTC	PAF	Persons Exit
14	1	0	0	0	0	0	1	143
210(2) - Single-Family Detached Housing					220 - Multifamily Housing (Low-Rise)			
Persons Exit	PAF	UIPTC	Unconstrained Demand	====>> BALANCED ==>>====	Unconstrained Demand	UIPTC	PAF	Persons Entry
27	1	0	0	0	0	0	1	116
Persons Entry	PAF	UIPTC	Unconstrained Demand	<<<== BALANCED <<<==	Unconstrained Demand	UIPTC	PAF	Persons Exit
47	1	0	0	0	0	0	1	116
210(2) - Single-Family Detached Housing					220(1) - Multifamily Housing (Low-Rise)			
Persons Exit	PAF	UIPTC	Unconstrained Demand	====>> BALANCED ==>>====	Unconstrained Demand	UIPTC	PAF	Persons Entry
27	1	0	0	0	0	0	1	4
Persons Entry	PAF	UIPTC	Unconstrained Demand	<<<== BALANCED <<<==	Unconstrained Demand	UIPTC	PAF	Persons Exit
47	1	0	0	0	0	0	1	14
210(2) - Single-Family Detached Housing					220(2) - Multifamily Housing (Low-Rise)			



Persons Exit	PAF	UIPTC	Unconstrained Demand	====> BALANCED ==>>>	Unconstrained Demand	UIPTC	PAF	Persons Entry
27	1	0	0	0	0	0	1	15
Persons Entry	PAF	UIPTC	Unconstrained Demand	<<<== BALANCED <<<==	Unconstrained Demand	UIPTC	PAF	Persons Exit
47	1	0	0	0	0	0	1	9
210(2) - Single-Family Detached Housing					820 - Shopping Center			
Persons Exit	PAF	UIPTC	Unconstrained Demand	====> BALANCED ==>>>	Unconstrained Demand	UIPTC	PAF	Persons Entry
27	1	0	0	0	0	0	1	1604
Persons Entry	PAF	UIPTC	Unconstrained Demand	<<<== BALANCED <<<==	Unconstrained Demand	UIPTC	PAF	Persons Exit
47	1	0	0	0	0	0	1	1604
210(2) - Single-Family Detached Housing					820(1) - Shopping Center			
Persons Exit	PAF	UIPTC	Unconstrained Demand	====> BALANCED ==>>>	Unconstrained Demand	UIPTC	PAF	Persons Entry
27	1	0	0	0	0	0	1	106
Persons Entry	PAF	UIPTC	Unconstrained Demand	<<<== BALANCED <<<==	Unconstrained Demand	UIPTC	PAF	Persons Exit
47	1	0	0	0	0	0	1	65
210(2) - Single-Family Detached Housing					820(2) - Shopping Center			
Persons Exit	PAF	UIPTC	Unconstrained Demand	====> BALANCED ==>>>	Unconstrained Demand	UIPTC	PAF	Persons Entry
27	1	2.3333333333333335	1	1	1	0.5555555555555556	1	132
Persons Entry	PAF	UIPTC	Unconstrained Demand	<<<== BALANCED <<<==	Unconstrained Demand	UIPTC	PAF	Persons Exit
47	1	2.5555555555555553	1	1	2	1.4444444444444444	1	143
220 - Multifamily Housing (Low-Rise)					220(1) - Multifamily Housing (Low-Rise)			
Persons Exit	PAF	UIPTC	Unconstrained Demand	====> BALANCED ==>>>	Unconstrained Demand	UIPTC	PAF	Persons Entry
116	1	0	0	0	0	0	1	4
Persons Entry	PAF	UIPTC	Unconstrained Demand	<<<== BALANCED <<<==	Unconstrained Demand	UIPTC	PAF	Persons Exit
116	1	0	0	0	0	0	1	14
220 - Multifamily Housing (Low-Rise)					220(2) - Multifamily Housing (Low-Rise)			
Persons Exit	PAF	UIPTC	Unconstrained Demand	====> BALANCED ==>>>	Unconstrained Demand	UIPTC	PAF	Persons Entry
116	1	0	0	0	0	0	1	15
Persons Entry	PAF	UIPTC	Unconstrained Demand	<<<== BALANCED <<<==	Unconstrained Demand	UIPTC	PAF	Persons Exit
116	1	0	0	0	0	0	1	9
220 - Multifamily Housing (Low-Rise)					820 - Shopping Center			
Persons Exit	PAF	UIPTC	Unconstrained Demand	====> BALANCED ==>>>	Unconstrained Demand	UIPTC	PAF	Persons Entry
116	1	0	0	0	0	0	1	1604
Persons Entry	PAF	UIPTC	Unconstrained Demand	<<<== BALANCED <<<==	Unconstrained Demand	UIPTC	PAF	Persons Exit
116	1	0	0	0	0	0	1	1604
220 - Multifamily Housing (Low-Rise)					820(1) - Shopping Center			
Persons Exit	PAF	UIPTC	Unconstrained Demand	====> BALANCED ==>>>	Unconstrained Demand	UIPTC	PAF	Persons Entry
116	1	0	0	0	0	0	1	106

Persons Entry	PAF	UIPTC	Unconstrained Demand	<<<== BALANCED <<<==	Unconstrained Demand	UIPTC	PAF	Persons Exit
116	1	0	0	0	0	0	1	65
220 - Multifamily Housing (Low-Rise)							820(2) - Shopping Center	
Persons Exit	PAF	UIPTC	Unconstrained Demand	==>>> BALANCED ==>>>	Unconstrained Demand	UIPTC	PAF	Persons Entry
116	1	0	0	0	0	0	1	132
Persons Entry	PAF	UIPTC	Unconstrained Demand	<<<== BALANCED <<<==	Unconstrained Demand	UIPTC	PAF	Persons Exit
116	1	0	0	0	0	0	1	143
220(1) - Multifamily Housing (Low-Rise)							220(2) - Multifamily Housing (Low-Rise)	
Persons Exit	PAF	UIPTC	Unconstrained Demand	==>>> BALANCED ==>>>	Unconstrained Demand	UIPTC	PAF	Persons Entry
14	1	0	0	0	0	0	1	15
Persons Entry	PAF	UIPTC	Unconstrained Demand	<<<== BALANCED <<<==	Unconstrained Demand	UIPTC	PAF	Persons Exit
4	1	0	0	0	0	0	1	9
220(1) - Multifamily Housing (Low-Rise)							820 - Shopping Center	
Persons Exit	PAF	UIPTC	Unconstrained Demand	==>>> BALANCED ==>>>	Unconstrained Demand	UIPTC	PAF	Persons Entry
14	1	0	0	0	0	0	1	1604
Persons Entry	PAF	UIPTC	Unconstrained Demand	<<<== BALANCED <<<==	Unconstrained Demand	UIPTC	PAF	Persons Exit
4	1	0	0	0	0	0	1	1604
220(1) - Multifamily Housing (Low-Rise)							820(1) - Shopping Center	
Persons Exit	PAF	UIPTC	Unconstrained Demand	==>>> BALANCED ==>>>	Unconstrained Demand	UIPTC	PAF	Persons Entry
14	1	0.6666666666666666	0	0	1	0.9444444444444444	1	106
Persons Entry	PAF	UIPTC	Unconstrained Demand	<<<== BALANCED <<<==	Unconstrained Demand	UIPTC	PAF	Persons Exit
4	1	0.1111111111111111	0	0	1	0.7777777777777778	1	65
220(1) - Multifamily Housing (Low-Rise)							820(2) - Shopping Center	
Persons Exit	PAF	UIPTC	Unconstrained Demand	==>>> BALANCED ==>>>	Unconstrained Demand	UIPTC	PAF	Persons Entry
14	1	0	0	0	0	0	1	132
Persons Entry	PAF	UIPTC	Unconstrained Demand	<<<== BALANCED <<<==	Unconstrained Demand	UIPTC	PAF	Persons Exit
4	1	0	0	0	0	0	1	143
220(2) - Multifamily Housing (Low-Rise)							820 - Shopping Center	
Persons Exit	PAF	UIPTC	Unconstrained Demand	==>>> BALANCED ==>>>	Unconstrained Demand	UIPTC	PAF	Persons Entry
9	1	0	0	0	0	0	1	1604
Persons Entry	PAF	UIPTC	Unconstrained Demand	<<<== BALANCED <<<==	Unconstrained Demand	UIPTC	PAF	Persons Exit
15	1	0	0	0	0	0	1	1604
220(2) - Multifamily Housing (Low-Rise)							820(1) - Shopping Center	
Persons Exit	PAF	UIPTC	Unconstrained Demand	==>>> BALANCED ==>>>	Unconstrained Demand	UIPTC	PAF	Persons Entry
9	1	0	0	0	0	0	1	106

Persons Entry	PAF	UIPTC	Unconstrained Demand	<<<== BALANCED <<<==	Unconstrained Demand	UIPTC	PAF	Persons Exit
15	1	0	0	0	0	0	1	65
220(2) - Multifamily Housing (Low-Rise)					820(2) - Shopping Center			
Persons Exit	PAF	UIPTC	Unconstrained Demand	==>>> BALANCED ==>>>	Unconstrained Demand	UIPTC	PAF	Persons Entry
9	1	2.333333333333335	0	0	1	0.555555555555556	1	132
Persons Entry	PAF	UIPTC	Unconstrained Demand	<<<== BALANCED <<<==	Unconstrained Demand	UIPTC	PAF	Persons Exit
15	1	2.555555555555553	0	0	2	1.444444444444444	1	143
820 - Shopping Center					820(1) - Shopping Center			
Persons Exit	PAF	UIPTC	Unconstrained Demand	==>>> BALANCED ==>>>	Unconstrained Demand	UIPTC	PAF	Persons Entry
1604	1	0	0	0	0	0	1	106
Persons Entry	PAF	UIPTC	Unconstrained Demand	<<<== BALANCED <<<==	Unconstrained Demand	UIPTC	PAF	Persons Exit
1604	1	0	0	0	0	0	1	65
820 - Shopping Center					820(2) - Shopping Center			
Persons Exit	PAF	UIPTC	Unconstrained Demand	==>>> BALANCED ==>>>	Unconstrained Demand	UIPTC	PAF	Persons Entry
1604	1	0	0	0	0	0	1	132
Persons Entry	PAF	UIPTC	Unconstrained Demand	<<<== BALANCED <<<==	Unconstrained Demand	UIPTC	PAF	Persons Exit
1604	1	0	0	0	0	0	1	143
820(1) - Shopping Center					820(2) - Shopping Center			
Persons Exit	PAF	UIPTC	Unconstrained Demand	==>>> BALANCED ==>>>	Unconstrained Demand	UIPTC	PAF	Persons Entry
65	1	0	0	0	0	0	1	132
Persons Entry	PAF	UIPTC	Unconstrained Demand	<<<== BALANCED <<<==	Unconstrained Demand	UIPTC	PAF	Persons Exit
106	1	0	0	0	0	0	1	143

**INTERNAL PERSON TRIPS:****210 - Single-Family Detached Housing**

Internal Person Trips From	Entry	Exit	Total
210(1) - Single-Family Detached Housing	0	0	0
210(2) - Single-Family Detached Housing	0	0	0
220 - Multifamily Housing (Low-Rise)	0	0	0
220(1) - Multifamily Housing (Low-Rise)	0	0	0
220(2) - Multifamily Housing (Low-Rise)	0	0	0
820 - Shopping Center	0	0	0
820(1) - Shopping Center	0	0	0
820(2) - Shopping Center	0	0	0
<b>Total Internal Person Trips</b>	<b>0</b>	<b>0</b>	<b>0</b>

**210(1) - Single-Family Detached Housing**

Internal Person Trips From	Entry	Exit	Total
210 - Single-Family Detached Housing	0	0	0
210(2) - Single-Family Detached Housing	0	0	0
220 - Multifamily Housing (Low-Rise)	0	0	0
220(1) - Multifamily Housing (Low-Rise)	0	0	0

220(2) - Multifamily Housing (Low-Rise)	0	0	0
820 - Shopping Center	0	0	0
820(1) - Shopping Center	0	0	0
820(2) - Shopping Center	0	0	0
<b>Total Internal Person Trips</b>	<b>0</b>	<b>0</b>	<b>0</b>

**210(2) - Single-Family Detached Housing**

Internal Person Trips From	Entry	Exit	Total
210 - Single-Family Detached Housing	0	0	0
210(1) - Single-Family Detached Housing	0	0	0
220 - Multifamily Housing (Low-Rise)	0	0	0
220(1) - Multifamily Housing (Low-Rise)	0	0	0
220(2) - Multifamily Housing (Low-Rise)	0	0	0
820 - Shopping Center	0	0	0
820(1) - Shopping Center	0	0	0
820(2) - Shopping Center	1	1	2
<b>Total Internal Person Trips</b>	<b>1</b>	<b>1</b>	<b>2</b>

**220 - Multifamily Housing (Low-Rise)**

Internal Person Trips From	Entry	Exit	Total
210 - Single-Family Detached Housing	0	0	0
210(1) - Single-Family Detached Housing	0	0	0
210(2) - Single-Family Detached Housing	0	0	0
220(1) - Multifamily Housing (Low-Rise)	0	0	0
220(2) - Multifamily Housing (Low-Rise)	0	0	0
820 - Shopping Center	0	0	0
820(1) - Shopping Center	0	0	0
820(2) - Shopping Center	0	0	0
<b>Total Internal Person Trips</b>	<b>0</b>	<b>0</b>	<b>0</b>

**220(1) - Multifamily Housing (Low-Rise)**

Internal Person Trips From	Entry	Exit	Total
210 - Single-Family Detached Housing	0	0	0
210(1) - Single-Family Detached Housing	0	0	0
210(2) - Single-Family Detached Housing	0	0	0
220 - Multifamily Housing (Low-Rise)	0	0	0
220(2) - Multifamily Housing (Low-Rise)	0	0	0
820 - Shopping Center	0	0	0
820(1) - Shopping Center	0	0	0
820(2) - Shopping Center	0	0	0
<b>Total Internal Person Trips</b>	<b>0</b>	<b>0</b>	<b>0</b>

**220(2) - Multifamily Housing (Low-Rise)**

Internal Person Trips From	Entry	Exit	Total
210 - Single-Family Detached Housing	0	0	0
210(1) - Single-Family Detached Housing	0	0	0
210(2) - Single-Family Detached Housing	0	0	0
220 - Multifamily Housing (Low-Rise)	0	0	0
220(1) - Multifamily Housing (Low-Rise)	0	0	0
820 - Shopping Center	0	0	0
820(1) - Shopping Center	0	0	0
820(2) - Shopping Center	0	0	1
<b>Total Internal Person Trips</b>	<b>0</b>	<b>0</b>	<b>0</b>

**820 - Shopping Center**

Internal Person Trips From	Entry	Exit	Total
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210 - Single-Family Detached Housing	0	0	0
210(1) - Single-Family Detached Housing	0	0	0
210(2) - Single-Family Detached Housing	0	0	0
220 - Multifamily Housing (Low-Rise)	0	0	0
220(1) - Multifamily Housing (Low-Rise)	0	0	0
220(2) - Multifamily Housing (Low-Rise)	0	0	0
820(1) - Shopping Center	0	0	0
820(2) - Shopping Center	0	0	0
<b>Total Internal Person Trips</b>	<b>0</b>	<b>0</b>	<b>0</b>

**820(1) - Shopping Center**

Internal Person Trips From	Entry	Exit	Total
210 - Single-Family Detached Housing	0	0	0
210(1) - Single-Family Detached Housing	0	0	0
210(2) - Single-Family Detached Housing	0	0	0
220 - Multifamily Housing (Low-Rise)	0	0	0
220(1) - Multifamily Housing (Low-Rise)	0	0	0
220(2) - Multifamily Housing (Low-Rise)	0	0	0
820 - Shopping Center	0	0	0
820(2) - Shopping Center	0	0	0
<b>Total Internal Person Trips</b>	<b>0</b>	<b>0</b>	<b>0</b>

**820(2) - Shopping Center**

Internal Person Trips From	Entry	Exit	Total
210 - Single-Family Detached Housing	0	0	0
210(1) - Single-Family Detached Housing	0	0	0
210(2) - Single-Family Detached Housing	1	1	2
220 - Multifamily Housing (Low-Rise)	0	0	0
220(1) - Multifamily Housing (Low-Rise)	0	0	0
220(2) - Multifamily Housing (Low-Rise)	0	0	1
820 - Shopping Center	0	0	0
820(1) - Shopping Center	0	0	0
<b>Total Internal Person Trips</b>	<b>1</b>	<b>1</b>	<b>2</b>

**INTERNAL VEHICLE TRIPS AND CAPTURE:****210 - Single-Family Detached Housing**

Total Internal Person Trips	0	0	0
Vehicle Mode Share	100%	100%	-
Vehicle Occupancy	1.00	1.00	-
<b>Total Vehicle Internal Trips</b>	<b>0</b>	<b>0</b>	<b>0</b>
Total External Vehicle Trips	384	384	768
<b>Internal Vehicle Trip Capture</b>	<b>0%</b>	<b>0%</b>	<b>0%</b>

**210(1) - Single-Family Detached Housing**

Total Internal Person Trips	0	0	0
Vehicle Mode Share	100%	100%	-
Vehicle Occupancy	1.00	1.00	-
<b>Total Vehicle Internal Trips</b>	<b>0</b>	<b>0</b>	<b>0</b>
Total External Vehicle Trips	14	42	56
<b>Internal Vehicle Trip Capture</b>	<b>0%</b>	<b>0%</b>	<b>0%</b>

**210(2) - Single-Family Detached Housing**

Total Internal Person Trips	1	1	2
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Vehicle Mode Share	100%	100%	-
Vehicle Occupancy	1.00	1.00	-
<b>Total Vehicle Internal Trips</b>	<b>1</b>	<b>1</b>	<b>2</b>
Total External Vehicle Trips	46	26	72
<b>Internal Vehicle Trip Capture</b>	<b>2%</b>	<b>4%</b>	<b>0%</b>

**220 - Multifamily Housing (Low-Rise)**

Total Internal Person Trips	0	0	0
Vehicle Mode Share	100%	100%	-
Vehicle Occupancy	1.00	1.00	-
<b>Total Vehicle Internal Trips</b>	<b>0</b>	<b>0</b>	<b>0</b>
Total External Vehicle Trips	116	116	232
<b>Internal Vehicle Trip Capture</b>	<b>0%</b>	<b>0%</b>	<b>0%</b>

**220(1) - Multifamily Housing (Low-Rise)**

Total Internal Person Trips	0	0	0
Vehicle Mode Share	100%	100%	-
Vehicle Occupancy	1.00	1.00	-
<b>Total Vehicle Internal Trips</b>	<b>0</b>	<b>0</b>	<b>0</b>
Total External Vehicle Trips	4	14	18
<b>Internal Vehicle Trip Capture</b>	<b>0%</b>	<b>0%</b>	<b>0%</b>

**220(2) - Multifamily Housing (Low-Rise)**

Total Internal Person Trips	0	0	0
Vehicle Mode Share	100%	100%	-
Vehicle Occupancy	1.00	1.00	-
<b>Total Vehicle Internal Trips</b>	<b>0</b>	<b>0</b>	<b>0</b>
Total External Vehicle Trips	15	9	24
<b>Internal Vehicle Trip Capture</b>	<b>0%</b>	<b>0%</b>	<b>0%</b>

**820 - Shopping Center**

Total Internal Person Trips	0	0	0
Vehicle Mode Share	100%	100%	-
Vehicle Occupancy	1.00	1.00	-
<b>Total Vehicle Internal Trips</b>	<b>0</b>	<b>0</b>	<b>0</b>
Total External Vehicle Trips	1604	1604	3208
<b>Internal Vehicle Trip Capture</b>	<b>0%</b>	<b>0%</b>	<b>0%</b>

**820(1) - Shopping Center**

Total Internal Person Trips	0	0	0
Vehicle Mode Share	100%	100%	-
Vehicle Occupancy	1.00	1.00	-
<b>Total Vehicle Internal Trips</b>	<b>0</b>	<b>0</b>	<b>0</b>
Total External Vehicle Trips	106	65	171
<b>Internal Vehicle Trip Capture</b>	<b>0%</b>	<b>0%</b>	<b>0%</b>

**820(2) - Shopping Center**

Total Internal Person Trips	1	1	2
Vehicle Mode Share	100%	100%	-
Vehicle Occupancy	1.00	1.00	-

<b>Total Vehicle Internal Trips</b>	<b>1</b>	<b>2</b>	<b>3</b>
Total External Vehicle Trips	131	141	272
<b>Internal Vehicle Trip Capture</b>	<b>1%</b>	<b>1%</b>	<b>0%</b>

## PASS-BY VEHICLE TRIP REDUCTION

Land Use	External Vehicle Trips		Pass-by Vehicle Trip %		Pass-by Vehicle Trips	
	Entry	Exit	Entry (%)	Exit (%)	Entry	Exit
210 - Single-Family Detached Housing	384	384	0.00%	0.00%	0	0
210(1) - Single-Family Detached Housing	14	42	0.00%	0.00%	0	0
210(2) - Single-Family Detached Housing	46	26	0.00%	0.00%	0	0
220 - Multifamily Housing (Low-Rise)	116	116	0.00%	0.00%	0	0
220(1) - Multifamily Housing (Low-Rise)	4	14	0.00%	0.00%	0	0
220(2) - Multifamily Housing (Low-Rise)	15	9	0.00%	0.00%	0	0
820 - Shopping Center	1604	1604	0.00%	0.00%	0	0
820(1) - Shopping Center	106	65	0.00%	0.00%	0	0
820(2) - Shopping Center	131	141	34.00%	34.00%	45	48

## DIVERTED VEHICLE TRIP REDUCTION

Land Use	External Vehicle Trips		Diverted Vehicle Trip %		Diverted Vehicle Trips	
	Entry	Exit	Entry (%)	Exit (%)	Entry	Exit
210 - Single-Family Detached Housing	384	384	0.00%	0.00%	0	0
210(1) - Single-Family Detached Housing	14	42	0.00%	0.00%	0	0
210(2) - Single-Family Detached Housing	46	26	0.00%	0.00%	0	0
220 - Multifamily Housing (Low-Rise)	116	116	0.00%	0.00%	0	0
220(1) - Multifamily Housing (Low-Rise)	4	14	0.00%	0.00%	0	0
220(2) - Multifamily Housing (Low-Rise)	15	9	0.00%	0.00%	0	0
820 - Shopping Center	1604	1604	0.00%	0.00%	0	0
820(1) - Shopping Center	106	65	0.00%	0.00%	0	0
820(2) - Shopping Center	131	141	0.00%	0.00%	0	0

## EXTRA VEHICLE TRIP REDUCTION

Land Use	(External - (Pass-by + Diverted)) Vehicle Trips		Extra Vehicle Trip Reduction %		Extra Reduced Vehicle Trips	
	Entry	Exit	Entry (%)	Exit (%)	Entry	Exit
210 - Single-Family Detached Housing	384	384	0.00%	0.00%	0	0
210(1) - Single-Family Detached Housing	14	42	0.00%	0.00%	0	0
210(2) - Single-Family Detached Housing	46	26	0.00%	0.00%	0	0
220 - Multifamily Housing (Low-Rise)	116	116	0.00%	0.00%	0	0
220(1) - Multifamily Housing (Low-Rise)	4	14	0.00%	0.00%	0	0
220(2) - Multifamily Housing (Low-Rise)	15	9	0.00%	0.00%	0	0
820 - Shopping Center	1604	1604	0.00%	0.00%	0	0
820(1) - Shopping Center	106	65	0.00%	0.00%	0	0
820(2) - Shopping Center	86	93	0.00%	0.00%	0	0

## NEW VEHICLE TRIPS

Land Use	New Vehicle Trips		
	Entry	Exit	Total
210 - Single-Family Detached Housing	384	384	768
210(1) - Single-Family Detached Housing	14	42	56
210(2) - Single-Family Detached Housing	46	26	72
220 - Multifamily Housing (Low-Rise)	116	116	232
220(1) - Multifamily Housing (Low-Rise)	4	14	18



220(2) - Multifamily Housing (Low-Rise)	15	9	24
820 - Shopping Center	1604	1604	3208
820(1) - Shopping Center	106	65	171
820(2) - Shopping Center	86	93	179

## RESULTS

Site Totals	Entry	Exit	Total
Vehicle Trips Before Reduction	2422	2404	4826
Internal Vehicle Trips	2	3	5
External Vehicle Trips	2420	2401	4821
Internal Vehicle Trip Capture	0%	0%	0%
Pass-by Vehicle Trips	45	48	93
Diverted Vehicle Trips	0	0	0
Extra Reduced Vehicle Trips	0	0	0
New Vehicle Trips	2375	2353	4728

**Scenario - 2**

Scenario Name: 2017 Rezoning Plan

User Group:

Dev. phase: 1

Horizon Year: 2019

Analyst Note:

Warning: The time periods among the land uses do not appear to match.

**VEHICLE TRIPS BEFORE REDUCTION**

Land Use & Data Source	Location	IV	Size	Time Period	Method	Entry	Exit	Total
					Rate/Equation	Split%	Split%	
210 - Single-Family Detached Housing	General	Dwelling Units	92	Weekday	Best Fit (LOG)	481	481	962
Data Source: Trip Generation Manual, 10th Ed	Urban/Suburban				$\ln(T) = 0.92\ln(X) + 2.71$	50%	50%	
210(1) - Single-Family Detached Housing	General	Dwelling Units	92	Weekday, Peak Hour of Adjacent Street Traffic,	Best Fit (LIN)	18	53	71
Data Source: Trip Generation Manual, 10th Ed	Urban/Suburban				$T = 0.71(X) + 4.80$	25%	75%	
210(2) - Single-Family Detached Housing	General	Dwelling Units	92	Weekday, Peak Hour of Adjacent Street Traffic,	Best Fit (LOG)	59	35	94
Data Source: Trip Generation Manual, 10th Ed	Urban/Suburban				$\ln(T) = 0.96\ln(X) + 0.20$	63%	37%	
820 - Shopping Center	General	1000 Sq. Ft. GLA	39.7	Weekday	Best Fit (LOG)	1604	1604	3208
Data Source: Trip Generation Manual, 10th Ed	Urban/Suburban				$\ln(T) = 0.68\ln(X) + 5.57$	50%	50%	
820(1) - Shopping Center	General	1000 Sq. Ft. GLA	39.7	Weekday, Peak Hour of Adjacent Street	Best Fit (LIN)	106	65	171
Data Source: Trip Generation Manual, 10th Ed	Urban/Suburban				$T = 0.50(X) + 151.78$	62%	38%	
820(2) - Shopping Center	General	1000 Sq. Ft. GLA	39.7	Weekday, Peak Hour of Adjacent Street Traffic,	Best Fit (LOG)	132	143	275
Data Source: Trip Generation Manual, 10th Ed	Urban/Suburban				$\ln(T) = 0.74\ln(X) + 2.89$	48%	52%	

**VEHICLE TO PERSON TRIP CONVERSION****BASELINE SITE VEHICLE CHARACTERISTICS:**

Land Use	Baseline Site Vehicle Mode Share		Baseline Site Vehicle Occupancy		Baseline Site Vehicle Directional Split	
	Entry (%)	Exit (%)	Entry	Exit	Entry (%)	Exit (%)
210 - Single-Family Detached Housing	100	100	1	1	50	50
210(1) - Single-Family Detached Housing	100	100	1	1	25	75
210(2) - Single-Family Detached Housing	100	100	1	1	63	37
820 - Shopping Center	100	100	1	1	50	50
820(1) - Shopping Center	100	100	1	1	62	38
820(2) - Shopping Center	100	100	1	1	48	52

**ESTIMATED BASELINE SITE PERSON TRIPS:**

Land Use	Person Trips by Vehicle		Person Trips by Other Modes		Total Baseline Site Person Trips	
	Entry	Exit	Entry	Exit	Entry	Exit
210 - Single-Family Detached Housing	481	481	0	0	481	481
	962		0		962	
210(1) - Single-Family Detached Housing	18	53	0	0	18	53
	71		0		71	
210(2) - Single-Family Detached Housing	59	35	0	0	59	35
	94		0		94	
820 - Shopping Center	1604	1604	0	0	1604	1604
	3208		0		3208	
820(1) - Shopping Center	106	65	0	0	106	65
	171		0		171	
820(2) - Shopping Center	132	143	0	0	132	143
	275		0		275	

## INTERNAL VEHICLE TRIP REDUCTION

## LAND USE GROUP ASSIGNMENT:

Land Use	Land Use Group
210 - Single-Family Detached Housing	Residential
210(1) - Single-Family Detached Housing	Residential
210(2) - Single-Family Detached Housing	Residential
820 - Shopping Center	Retail
820(1) - Shopping Center	Retail
820(2) - Shopping Center	Retail

## BALANCED PERSON TRIPS:

210 - Single-Family Detached Housing					210(1) - Single-Family Detached Housing				
Persons Exit	PAF	UIPTC	Unconstrained Demand	====> BALANCED ==>==	Unconstrained Demand	UIPTC	PAF	Persons Entry	
482	1	0	0	0	0	0	1	18	
Persons Entry	PAF	UIPTC	Unconstrained Demand	<<<== BALANCED <<<==	Unconstrained Demand	UIPTC	PAF	Persons Exit	
482	1	0	0	0	0	0	1	53	
210 - Single-Family Detached Housing					210(2) - Single-Family Detached Housing				
Persons Exit	PAF	UIPTC	Unconstrained Demand	====> BALANCED ==>==	Unconstrained Demand	UIPTC	PAF	Persons Entry	
482	1	0	0	0	0	0	1	59	
Persons Entry	PAF	UIPTC	Unconstrained Demand	<<<== BALANCED <<<==	Unconstrained Demand	UIPTC	PAF	Persons Exit	
482	1	0	0	0	0	0	1	35	
210 - Single-Family Detached Housing					820 - Shopping Center				
Persons Exit	PAF	UIPTC	Unconstrained Demand	====> BALANCED ==>==	Unconstrained Demand	UIPTC	PAF	Persons Entry	
482	1	0	0	0	0	0	1	1604	
Persons Entry	PAF	UIPTC	Unconstrained Demand	<<<== BALANCED <<<==	Unconstrained Demand	UIPTC	PAF	Persons Exit	
482	1	0	0	0	0	0	1	1604	
210 - Single-Family Detached Housing					820(1) - Shopping Center				
Persons Exit	PAF	UIPTC	Unconstrained Demand	====> BALANCED ==>==	Unconstrained Demand	UIPTC	PAF	Persons Entry	
482	1	0	0	0	0	0	1	106	
Persons Entry	PAF	UIPTC	Unconstrained Demand	<<<== BALANCED <<<==	Unconstrained Demand	UIPTC	PAF	Persons Exit	
482	1	0	0	0	0	0	1	65	
210 - Single-Family Detached Housing					820(2) - Shopping Center				
Persons Exit	PAF	UIPTC	Unconstrained Demand	====> BALANCED ==>==	Unconstrained Demand	UIPTC	PAF	Persons Entry	
482	1	0	0	0	0	0	1	132	
Persons Entry	PAF	UIPTC	Unconstrained Demand	<<<== BALANCED <<<==	Unconstrained Demand	UIPTC	PAF	Persons Exit	
482	1	0	0	0	0	0	1	143	
210(1) - Single-Family Detached Housing					210(2) - Single-Family Detached Housing				
Persons Exit	PAF	UIPTC	Unconstrained Demand	====> BALANCED ==>==	Unconstrained Demand	UIPTC	PAF	Persons Entry	
53	1	0	0	0	0	0	1	59	

Persons Entry	PAF	UIPTC	Unconstrained Demand	<<<== BALANCED <<<==	Unconstrained Demand	UIPTC	PAF	Persons Exit
18	1	0	0	0	0	0	1	35
210(1) - Single-Family Detached Housing								820 - Shopping Center
Persons Exit	PAF	UIPTC	Unconstrained Demand	==>>> BALANCED ==>>>	Unconstrained Demand	UIPTC	PAF	Persons Entry
53	1	0	0	0	0	0	1	1604
Persons Entry	PAF	UIPTC	Unconstrained Demand	<<<== BALANCED <<<==	Unconstrained Demand	UIPTC	PAF	Persons Exit
18	1	0	0	0	0	0	1	1604
210(1) - Single-Family Detached Housing								820(1) - Shopping Center
Persons Exit	PAF	UIPTC	Unconstrained Demand	==>>> BALANCED ==>>>	Unconstrained Demand	UIPTC	PAF	Persons Entry
53	1	1.333333333333332	1	1	2	1.888888888888888	1	106
Persons Entry	PAF	UIPTC	Unconstrained Demand	<<<== BALANCED <<<==	Unconstrained Demand	UIPTC	PAF	Persons Exit
18	1	0.222222222222222	0	0	1	1.555555555555555	1	65
210(1) - Single-Family Detached Housing								820(2) - Shopping Center
Persons Exit	PAF	UIPTC	Unconstrained Demand	==>>> BALANCED ==>>>	Unconstrained Demand	UIPTC	PAF	Persons Entry
53	1	0	0	0	0	0	1	132
Persons Entry	PAF	UIPTC	Unconstrained Demand	<<<== BALANCED <<<==	Unconstrained Demand	UIPTC	PAF	Persons Exit
18	1	0	0	0	0	0	1	143
210(2) - Single-Family Detached Housing								820 - Shopping Center
Persons Exit	PAF	UIPTC	Unconstrained Demand	==>>> BALANCED ==>>>	Unconstrained Demand	UIPTC	PAF	Persons Entry
35	1	0	0	0	0	0	1	1604
Persons Entry	PAF	UIPTC	Unconstrained Demand	<<<== BALANCED <<<==	Unconstrained Demand	UIPTC	PAF	Persons Exit
59	1	0	0	0	0	0	1	1604
210(2) - Single-Family Detached Housing								820(1) - Shopping Center
Persons Exit	PAF	UIPTC	Unconstrained Demand	==>>> BALANCED ==>>>	Unconstrained Demand	UIPTC	PAF	Persons Entry
35	1	0	0	0	0	0	1	106
Persons Entry	PAF	UIPTC	Unconstrained Demand	<<<== BALANCED <<<==	Unconstrained Demand	UIPTC	PAF	Persons Exit
59	1	0	0	0	0	0	1	65
210(2) - Single-Family Detached Housing								820(2) - Shopping Center
Persons Exit	PAF	UIPTC	Unconstrained Demand	==>>> BALANCED ==>>>	Unconstrained Demand	UIPTC	PAF	Persons Entry
35	1	4.666666666666667	2	1	1	1.111111111111111	1	132
Persons Entry	PAF	UIPTC	Unconstrained Demand	<<<== BALANCED <<<==	Unconstrained Demand	UIPTC	PAF	Persons Exit
59	1	5.111111111111111	3	3	4	2.888888888888889	1	143
820 - Shopping Center								820(1) - Shopping Center
Persons Exit	PAF	UIPTC	Unconstrained Demand	==>>> BALANCED ==>>>	Unconstrained Demand	UIPTC	PAF	Persons Entry
1604	1	0	0	0	0	0	1	106

Persons Entry	PAF	UIPTC	Unconstrained Demand	<<<== BALANCED <<<==	Unconstrained Demand	UIPTC	PAF	Persons Exit
1604	1	0	0	0	0	0	1	65
820 - Shopping Center						820(2) - Shopping Center		
Persons Exit	PAF	UIPTC	Unconstrained Demand	==>> BALANCED ==>>	Unconstrained Demand	UIPTC	PAF	Persons Entry
1604	1	0	0	0	0	0	1	132
Persons Entry	PAF	UIPTC	Unconstrained Demand	<<<== BALANCED <<<==	Unconstrained Demand	UIPTC	PAF	Persons Exit
1604	1	0	0	0	0	0	1	143
820(1) - Shopping Center						820(2) - Shopping Center		
Persons Exit	PAF	UIPTC	Unconstrained Demand	==>> BALANCED ==>>	Unconstrained Demand	UIPTC	PAF	Persons Entry
65	1	0	0	0	0	0	1	132
Persons Entry	PAF	UIPTC	Unconstrained Demand	<<<== BALANCED <<<==	Unconstrained Demand	UIPTC	PAF	Persons Exit
106	1	0	0	0	0	0	1	143

**INTERNAL PERSON TRIPS:****210 - Single-Family Detached Housing**

Internal Person Trips From	Entry	Exit	Total
210(1) - Single-Family Detached Housing	0	0	0
210(2) - Single-Family Detached Housing	0	0	0
820 - Shopping Center	0	0	0
820(1) - Shopping Center	0	0	0
820(2) - Shopping Center	0	0	0
<b>Total Internal Person Trips</b>	<b>0</b>	<b>0</b>	<b>0</b>

**210(1) - Single-Family Detached Housing**

Internal Person Trips From	Entry	Exit	Total
210 - Single-Family Detached Housing	0	0	0
210(2) - Single-Family Detached Housing	0	0	0
820 - Shopping Center	0	0	0
820(1) - Shopping Center	0	1	1
820(2) - Shopping Center	0	0	0
<b>Total Internal Person Trips</b>	<b>0</b>	<b>1</b>	<b>1</b>

**210(2) - Single-Family Detached Housing**

Internal Person Trips From	Entry	Exit	Total
210 - Single-Family Detached Housing	0	0	0
210(1) - Single-Family Detached Housing	0	0	0
820 - Shopping Center	0	0	0
820(1) - Shopping Center	0	0	0
820(2) - Shopping Center	3	1	4
<b>Total Internal Person Trips</b>	<b>3</b>	<b>1</b>	<b>4</b>

**820 - Shopping Center**

Internal Person Trips From	Entry	Exit	Total
210 - Single-Family Detached Housing	0	0	0
210(1) - Single-Family Detached Housing	0	0	0
210(2) - Single-Family Detached Housing	0	0	0
820(1) - Shopping Center	0	0	0

820(2) - Shopping Center	0	0	0
<b>Total Internal Person Trips</b>	<b>0</b>	<b>0</b>	<b>0</b>

**820(1) - Shopping Center**

Internal Person Trips From	Entry	Exit	Total
210 - Single-Family Detached Housing	0	0	0
210(1) - Single-Family Detached Housing	1	0	1
210(2) - Single-Family Detached Housing	0	0	0
820 - Shopping Center	0	0	0
820(2) - Shopping Center	0	0	0
<b>Total Internal Person Trips</b>	<b>1</b>	<b>0</b>	<b>1</b>

**820(2) - Shopping Center**

Internal Person Trips From	Entry	Exit	Total
210 - Single-Family Detached Housing	0	0	0
210(1) - Single-Family Detached Housing	0	0	0
210(2) - Single-Family Detached Housing	1	3	4
820 - Shopping Center	0	0	0
820(1) - Shopping Center	0	0	0
<b>Total Internal Person Trips</b>	<b>1</b>	<b>3</b>	<b>4</b>

**INTERNAL VEHICLE TRIPS AND CAPTURE:****210 - Single-Family Detached Housing**

Total Internal Person Trips	0	0	0
Vehicle Mode Share	100%	100%	-
Vehicle Occupancy	1.00	1.00	-
<b>Total Vehicle Internal Trips</b>	<b>0</b>	<b>0</b>	<b>0</b>
Total External Vehicle Trips	481	481	962
<b>Internal Vehicle Trip Capture</b>	<b>0%</b>	<b>0%</b>	<b>0%</b>

**210(1) - Single-Family Detached Housing**

Total Internal Person Trips	0	1	1
Vehicle Mode Share	100%	100%	-
Vehicle Occupancy	1.00	1.00	-
<b>Total Vehicle Internal Trips</b>	<b>0</b>	<b>1</b>	<b>1</b>
Total External Vehicle Trips	18	52	70
<b>Internal Vehicle Trip Capture</b>	<b>0%</b>	<b>2%</b>	<b>0%</b>

**210(2) - Single-Family Detached Housing**

Total Internal Person Trips	3	1	4
Vehicle Mode Share	100%	100%	-
Vehicle Occupancy	1.00	1.00	-
<b>Total Vehicle Internal Trips</b>	<b>3</b>	<b>1</b>	<b>4</b>
Total External Vehicle Trips	56	34	90
<b>Internal Vehicle Trip Capture</b>	<b>5%</b>	<b>3%</b>	<b>0%</b>

**820 - Shopping Center**

Total Internal Person Trips	0	0	0
Vehicle Mode Share	100%	100%	-
Vehicle Occupancy	1.00	1.00	-
<b>Total Vehicle Internal Trips</b>	<b>0</b>	<b>0</b>	<b>0</b>

Total External Vehicle Trips	1604	1604	3208
Internal Vehicle Trip Capture	0%	0%	0%

**820(1) - Shopping Center**

Total Internal Person Trips	1	0	1
Vehicle Mode Share	100%	100%	-
Vehicle Occupancy	1.00	1.00	-
<b>Total Vehicle Internal Trips</b>	<b>1</b>	<b>0</b>	<b>1</b>
Total External Vehicle Trips	105	65	170
Internal Vehicle Trip Capture	1%	0%	0%

**820(2) - Shopping Center**

Total Internal Person Trips	1	3	4
Vehicle Mode Share	100%	100%	-
Vehicle Occupancy	1.00	1.00	-
<b>Total Vehicle Internal Trips</b>	<b>1</b>	<b>3</b>	<b>4</b>
Total External Vehicle Trips	131	140	271
Internal Vehicle Trip Capture	1%	2%	0%

**PASS-BY VEHICLE TRIP REDUCTION**

Land Use	External Vehicle Trips		Pass-by Vehicle Trip %		Pass-by Vehicle Trips	
	Entry	Exit	Entry (%)	Exit (%)	Entry	Exit
210 - Single-Family Detached Housing	481	481	0.00%	0.00%	0	0
210(1) - Single-Family Detached Housing	18	52	0.00%	0.00%	0	0
210(2) - Single-Family Detached Housing	56	34	0.00%	0.00%	0	0
820 - Shopping Center	1604	1604	0.00%	0.00%	0	0
820(1) - Shopping Center	105	65	0.00%	0.00%	0	0
820(2) - Shopping Center	131	140	34.00%	34.00%	45	48

**DIVERTED VEHICLE TRIP REDUCTION**

Land Use	External Vehicle Trips		Diverted Vehicle Trip %		Diverted Vehicle Trips	
	Entry	Exit	Entry (%)	Exit (%)	Entry	Exit
210 - Single-Family Detached Housing	481	481	0.00%	0.00%	0	0
210(1) - Single-Family Detached Housing	18	52	0.00%	0.00%	0	0
210(2) - Single-Family Detached Housing	56	34	0.00%	0.00%	0	0
820 - Shopping Center	1604	1604	0.00%	0.00%	0	0
820(1) - Shopping Center	105	65	0.00%	0.00%	0	0
820(2) - Shopping Center	131	140	0.00%	0.00%	0	0

**EXTRA VEHICLE TRIP REDUCTION**

Land Use	(External - (Pass-by + Diverted)) Vehicle Trips		Extra Vehicle Trip Reduction %		Extra Reduced Vehicle Trips	
	Entry	Exit	Entry (%)	Exit (%)	Entry	Exit
210 - Single-Family Detached Housing	481	481	0.00%	0.00%	0	0
210(1) - Single-Family Detached Housing	18	52	0.00%	0.00%	0	0
210(2) - Single-Family Detached Housing	56	34	0.00%	0.00%	0	0
820 - Shopping Center	1604	1604	0.00%	0.00%	0	0
820(1) - Shopping Center	105	65	0.00%	0.00%	0	0
820(2) - Shopping Center	86	92	0.00%	0.00%	0	0

**NEW VEHICLE TRIPS**



Land Use	New Vehicle Trips		
	Entry	Exit	Total
210 - Single-Family Detached Housing	481	481	962
210(1) - Single-Family Detached Housing	18	52	70
210(2) - Single-Family Detached Housing	56	34	90
820 - Shopping Center	1604	1604	3208
820(1) - Shopping Center	105	65	170
820(2) - Shopping Center	86	92	178

## RESULTS

Site Totals	Entry	Exit	Total
Vehicle Trips Before Reduction	2400	2381	4781
Internal Vehicle Trips	5	5	10
External Vehicle Trips	2395	2376	4771
Internal Vehicle Trip Capture	0%	0%	0%
Pass-by Vehicle Trips	45	48	93
Diverted Vehicle Trips	0	0	0
Extra Reduced Vehicle Trips	0	0	0
New Vehicle Trips	2350	2328	4678

**Scenario - 3**

Scenario Name: 2019 Rezoning

User Group:

Dev. phase: 1

Horizon Year: 2019

Analyst Note:

Warning: The time periods among the land uses do not appear to match.

**VEHICLE TRIPS BEFORE REDUCTION**

Land Use & Data Source	Location	IV	Size	Time Period	Method	Entry	Exit	Total
					Rate/Equation	Split%	Split%	
210 - Single-Family Detached Housing	General	Dwelling Units	104	Weekday	Best Fit (LOG)	539	539	1078
Data Source: Trip Generation Manual, 10th Ed	Urban/Suburban				$\ln(T) = 0.92\ln(X) + 2.71$	50%	50%	
210(1) - Single-Family Detached Housing	General				Best Fit (LIN)	20	59	
Data Source: Trip Generation Manual, 10th Ed	Urban/Suburban	Dwelling Units	104	Weekday, Peak Hour of Adjacent Street Traffic,	$T = 0.71(X) + 4.80$	25%	75%	79
210(2) - Single-Family Detached Housing	General				Best Fit (LOG)	66	39	
Data Source: Trip Generation Manual, 10th Ed	Urban/Suburban				$\ln(T) = 0.96\ln(X) + 0.20$	63%	37%	

**VEHICLE TO PERSON TRIP CONVERSION****BASELINE SITE VEHICLE CHARACTERISTICS:**

Land Use	Baseline Site Vehicle Mode Share		Baseline Site Vehicle Occupancy		Baseline Site Vehicle Directional Split	
	Entry (%)	Exit (%)	Entry	Exit	Entry (%)	Exit (%)
210 - Single-Family Detached Housing	100	100	1	1	50	50
210(1) - Single-Family Detached Housing	100	100	1	1	25	75
210(2) - Single-Family Detached Housing	100	100	1	1	63	37

**ESTIMATED BASELINE SITE PERSON TRIPS:**

Land Use	Person Trips by Vehicle		Person Trips by Other Modes		Total Baseline Site Person Trips	
	Entry	Exit	Entry	Exit	Entry	Exit
210 - Single-Family Detached Housing	539	539	0	0	539	539
	1078		0		1078	
210(1) - Single-Family Detached Housing	20	59	0	0	20	59
	79		0		79	
210(2) - Single-Family Detached Housing	66	39	0	0	66	39
	105		0		105	

**NEW VEHICLE TRIPS**

Land Use	New Vehicle Trips		
	Entry	Exit	Total
210 - Single-Family Detached Housing	539	539	1078
210(1) - Single-Family Detached Housing	20	59	79
210(2) - Single-Family Detached Housing	66	39	105

**RESULTS**

Site Totals	Entry	Exit	Total
Vehicle Trips Before Reduction	625	637	1262
External Vehicle Trips	625	637	1262
New Vehicle Trips	625	637	1262