Engineers, Surveyors, Planners, Scientists

July 24, 2019

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

Subject: Oak Park Rezoning-Trip Generation Analysis

Dear Ms. Wawszkiewicz,

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 10th 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 and trip generation results summarized in **Table 1** below show total trips, internal and pass-by trips, and net new trips for each scenario.

Table 1-Trip Generation Comparison

Period	Land Use Scenario	Total			Internal Trips			Pass-By Trips			New Trips			Change from Initial Land Use					
														Total Trips			New Trips		
		Enter	Exit	Total	Enter	Exit	Total	Enter	Exit	Total	Enter	Exit	Total	Enter	Exit	Total	Enter	Exit	Total
Daily	Initial	2104	2104	4208	0	0	0	0	0	0	2104	2104	4208						
	2017 Zoning	2085	2085	4170	0	0	0	0	0	0	2085	2085	4170	-19	-19	-38	-19	-19	-38
	2019 Zoning	539	539	1078	0	0	0	0	0	0	539	539	1078	-1565	-1565	-3130	-1565	-1565	-3130
AM Peak	Initial	124	121	245	3	4	7	0	0	0	121	117	238						
	2017 Zoning	124	118	242	6	6	12	0	0	0	118	112	230	0	-3	-3	-3	-5	-8
	2019 Zoning	20	59	79	0	0	0	0	0	0	20	59	79	-104	-62	-166	-101	-58	-159
PM Peak	Initial	194	179	373	22	22	44	42	44	86	130	113	243						
	2017 Zoning	191	178	369	40	40	80	40	39	79	111	99	210	-3	-1	-4	-19	-14	-33
	2019 Zoning	66	39	105	0	0	0	0	0	0	66	39	105	-128	-140	-268	-64	-74	-138

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

PROJECT DETAILS

Project Name:	Oak Park- 2019 zoning	Type of Project:	
Project No:	20190713	City:	
Country:		Built-up Area(Sq.ft):	
Analyst Name:	Charles Wu	Clients Name:	
Date:	7/22/2019	ZIP/Postal Code:	
State/Province:		No. of Scenarios:	3
Analysis Region:			

SCENARIO SUMMARY

Scenarios	Name	No. of Land Uses	Phases of Development	Horizon Year	User Group	Estimated New Vehicle Trips		
						Entry	Exit	Total
Scenario - 1	Daily	1	1	2018		539	539	1078
Scenario - 2	AM Peak	1	1	2019		20	59	79
Scenario - 3	PM Peak	1	1	2019		66	39	105

Scenario - 1

Scenario Name: Daily
User Group:
Dev. phase: 1
Horizon Year: 2018
Analyst Note:
Warning:

VEHICLE TRIPS BEFORE REDUCTION

Land Use & Data Source	Location	IV	Size	Time Period	Method / Rate/Equation	Entry / Split%	Exit / Split%	Total
210 - Single-Family Detached Housing	General Urban/Suburban	Dwelling Units	104	Weekday	Best Fit (LOG)	539	539	1078
Data Source: Trip Generation Manual, 10th Ed					Ln(T) =0.92Ln(X) + 2.71	50%	50%	

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

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	

INTERNAL VEHICLE TRIP REDUCTION

LAND USE GROUP ASSIGNMENT:

Land Use	Land Use Group
210 - Single-Family Detached Housing	Residential

BALANCED PERSON TRIPS:

INTERNAL PERSON TRIPS:

210 - Single-Family Detached Housing

Internal Person Trips From	Entry	Exit	Total
Total Internal Person Trips	**0**	**0**	**0**

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	-
Total Vehicle Internal Trips	**0**	**0**	**0**
Total External Vehicle Trips	539	539	1078
Internal Vehicle Trip Capture	**0%**	**0%**	**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	539	539	0.00%	0.00%	0	0

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	539	539	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	539	539	0.00%	0.00%	0	0

NEW VEHICLE TRIPS

Land Use	New Vehicle Trips		
	Entry	Exit	Total
210 - Single-Family Detached Housing	539	539	1078

RESULTS

Site Totals	Entry	Exit	Total
Vehicle Trips Before Reduction	539	539	1078
Internal Vehicle Trips	0	0	0
External Vehicle Trips	539	539	1078
Internal Vehicle Trip Capture	0%	0%	0%
Pass-by Vehicle Trips	0	0	0
Diverted Vehicle Trips	0	0	0
Extra Reduced Vehicle Trips	0	0	0
New Vehicle Trips	539	539	1078

Scenario - 2

Scenario Name: AM Peak
User Group:
Dev. phase: 1
Horizon Year: 2019
Analyst Note:
Warning:

VEHICLE TRIPS BEFORE REDUCTION

Land Use & Data Source	Location	IV	Size	Time Period	Method / Rate/Equation	Entry Split%	Exit Split%	Total
210 - Single-Family Detached Housing	General Urban/Suburban	Dwelling Units	104	Weekday, Peak Hour of Adjacent Street Traffic,	Best Fit (LIN)	20	59	79
Data Source: Trip Generation Manual, 10th Ed					T = 0.71(X) + 4.80	25%	75%	

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	25	75

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	20	59	0	0	20	59
	79		0		79	

INTERNAL VEHICLE TRIP REDUCTION

LAND USE GROUP ASSIGNMENT:

Land Use	Land Use Group
210 - Single-Family Detached Housing	Residential

BALANCED PERSON TRIPS:

INTERNAL PERSON TRIPS:

210 - Single-Family Detached Housing

Internal Person Trips From	Entry	Exit	Total
Total Internal Person Trips	**0**	**0**	**0**

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	-
Total Vehicle Internal Trips	**0**	**0**	**0**
Total External Vehicle Trips	20	59	79
Internal Vehicle Trip Capture	**0%**	**0%**	**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	20	59	0.00%	0.00%	0	0

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	20	59	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	20	59	0.00%	0.00%	0	0

NEW VEHICLE TRIPS

Land Use	New Vehicle Trips		
	Entry	Exit	Total
210 - Single-Family Detached Housing	20	59	79

RESULTS

Site Totals	Entry	Exit	Total
Vehicle Trips Before Reduction	20	59	79
Internal Vehicle Trips	0	0	0
External Vehicle Trips	20	59	79
Internal Vehicle Trip Capture	0%	0%	0%
Pass-by Vehicle Trips	0	0	0
Diverted Vehicle Trips	0	0	0
Extra Reduced Vehicle Trips	0	0	0
New Vehicle Trips	20	59	79

Scenario - 3

Scenario Name: PM Peak
User Group:
Dev. phase: 1
Horizon Year: 2019
Analyst Note:
Warning:

VEHICLE TRIPS BEFORE REDUCTION

Land Use & Data Source	Location	IV	Size	Time Period	Method / Rate/Equation	Entry Split%	Exit Split%	Total
210 - Single-Family Detached Housing	General Urban/Suburban	Dwelling Units	104	Weekday, Peak Hour of Adjacent Street Traffic,	Best Fit (LOG)	66	39	105
Data Source: Trip Generation Manual, 10th Ed					Ln(T) =0.96Ln(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	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	66	39	0	0	66	39
	105		0		105	

INTERNAL VEHICLE TRIP REDUCTION

LAND USE GROUP ASSIGNMENT:

Land Use	Land Use Group
210 - Single-Family Detached Housing	Residential

BALANCED PERSON TRIPS:

INTERNAL PERSON TRIPS:

210 - Single-Family Detached Housing

Internal Person Trips From	Entry	Exit	Total
Total Internal Person Trips	**0**	**0**	**0**

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	-
Total Vehicle Internal Trips	**0**	**0**	**0**
Total External Vehicle Trips	66	39	105
Internal Vehicle Trip Capture	**0%**	**0%**	**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	66	39	0.00%	0.00%	0	0

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	66	39	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	66	39	0.00%	0.00%	0	0

NEW VEHICLE TRIPS

Land Use	New Vehicle Trips		
	Entry	Exit	Total
210 - Single-Family Detached Housing	66	39	105

RESULTS

Site Totals	Entry	Exit	Total
Vehicle Trips Before Reduction	66	39	105
Internal Vehicle Trips	0	0	0
External Vehicle Trips	66	39	105
Internal Vehicle Trip Capture	0%	0%	0%
Pass-by Vehicle Trips	0	0	0
Diverted Vehicle Trips	0	0	0
Extra Reduced Vehicle Trips	0	0	0
New Vehicle Trips	66	39	105

PROJECT DETAILS

Project Name:	Oak Park- 2017 zoning	Type of Project:	
Project No:	20190713	City:	
Country:		Built-up Area(Sq.ft):	
Analyst Name:	Charles Wu	Clients Name:	
Date:	7/21/2019	ZIP/Postal Code:	
State/Province:		No. of Scenarios:	3
Analysis Region:			

SCENARIO SUMMARY

Scenarios	Name	No. of Land Uses	Phases of Development	Horizon Year	User Group	Estimated New Vehicle Trips		
						Entry	Exit	Total
Scenario - 1	Daily	2	1	2018		2085	2085	4170
Scenario - 2	AM Peak	2	1	2019		118	112	230
Scenario - 3	PM Peak	2	1	2019		111	99	210

Scenario - 1

Scenario Name: Daily
Dev. phase: 1
Analyst Note:
Warning:

User Group:
Horizon Year: 2018

VEHICLE TRIPS BEFORE REDUCTION

Land Use & Data Source	Location	IV	Size	Time Period	Method / Rate/Equation	Entry Split%	Exit Split%	Total
210 - Single-Family Detached Housing	General Urban/Suburban	Dwelling Units	92	Weekday	Best Fit (LOG)	481	481	962
Data Source: Trip Generation Manual, 10th Ed					Ln(T) =0.92Ln(X) + 2.71	50%	50%	
820 - Shopping Center	General Urban/Suburban	1000 Sq. Ft. GLA	39.7	Weekday	Best Fit (LOG)	1604	1604	3208
Data Source: Trip Generation Manual, 10th Ed					Ln(T) =0.68Ln(X) + 5.57	50%	50%	

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
820 - Shopping Center	100	100	1	1	50	50

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	
820 - Shopping Center	1604	1604	0	0	1604	1604
	3208		0		3208	

INTERNAL VEHICLE TRIP REDUCTION

LAND USE GROUP ASSIGNMENT:

Land Use	Land Use Group
210 - Single-Family Detached Housing	Residential
820 - Shopping Center	Retail

BALANCED PERSON TRIPS:

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

INTERNAL PERSON TRIPS:
210 - Single-Family Detached Housing

Internal Person Trips From	Entry	Exit	Total
820 - Shopping Center	0	0	0
Total Internal Person Trips	**0**	**0**	**0**

820 - Shopping Center

Internal Person Trips From	Entry	Exit	Total
210 - Single-Family Detached Housing	0	0	0
Total Internal Person Trips	**0**	**0**	**0**

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	-
Total Vehicle Internal Trips	**0**	**0**	**0**
Total External Vehicle Trips	481	481	962
Internal Vehicle Trip Capture	**0%**	**0%**	**0%**

820 - Shopping Center

Total Internal Person Trips	0	0	0
Vehicle Mode Share	100%	100%	-
Vehicle Occupancy	1.00	1.00	-
Total Vehicle Internal Trips	**0**	**0**	**0**
Total External Vehicle Trips	1604	1604	3208
Internal Vehicle Trip Capture	**0%**	**0%**	**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
820 - Shopping Center	1604	1604	0.00%	0.00%	0	0

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
820 - Shopping Center	1604	1604	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
820 - Shopping Center	1604	1604	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

820 - Shopping Center	1604	1604	3208

RESULTS

Site Totals	Entry	Exit	Total
Vehicle Trips Before Reduction	2085	2085	4170
Internal Vehicle Trips	0	0	0
External Vehicle Trips	2085	2085	4170
Internal Vehicle Trip Capture	0%	0%	0%
Pass-by Vehicle Trips	0	0	0
Diverted Vehicle Trips	0	0	0
Extra Reduced Vehicle Trips	0	0	0
New Vehicle Trips	2085	2085	4170

Scenario - 2

Scenario Name: AM Peak
User Group:
Dev. phase: 1
Horizon Year: 2019
Analyst Note:
Warning:

VEHICLE TRIPS BEFORE REDUCTION

Land Use & Data Source	Location	IV	Size	Time Period	Method / Rate/Equation	Entry Split%	Exit Split%	Total
210 - Single-Family Detached Housing	General Urban/Suburban	Dwelling Units	92	Weekday, Peak Hour of Adjacent Street Traffic,	Best Fit (LIN)	18	53	71
Data Source: Trip Generation Manual, 10th Ed					T = 0.71(X) + 4.80	25%	75%	
820 - Shopping Center	General Urban/Suburban	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					T = 0.50(X) + 151.78	62%	38%	

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	25	75
820 - Shopping Center	100	100	1	1	62	38

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	18	53	0	0	18	53
	71		0		71	
820 - Shopping Center	106	65	0	0	106	65
	171		0		171	

INTERNAL VEHICLE TRIP REDUCTION

LAND USE GROUP ASSIGNMENT:

Land Use	Land Use Group
210 - Single-Family Detached Housing	Residential
820 - Shopping Center	Retail

BALANCED PERSON TRIPS:

210 - Single-Family Detached Housing								820 - Shopping Center
Persons Exit	PAF	UIPTC	Unconstrained Demand	==>>> BALANCED ==>>>	Unconstrained Demand	UIPTC	PAF	Persons Entry
53	1	12	6	**6**	18	17	1	106
Persons Entry	PAF	UIPTC	Unconstrained Demand	<<<== BALANCED <<<==	Unconstrained Demand	UIPTC	PAF	Persons Exit
18	1	2	0	**0**	9	14	1	65

INTERNAL PERSON TRIPS:
210 - Single-Family Detached Housing

Internal Person Trips From	Entry	Exit	Total
820 - Shopping Center	0	6	7
Total Internal Person Trips	**0**	**6**	**6**

820 - Shopping Center

Internal Person Trips From	Entry	Exit	Total
210 - Single-Family Detached Housing	6	0	7
Total Internal Person Trips	**6**	**0**	**6**

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

Total Internal Person Trips	0	6	6
Vehicle Mode Share	100%	100%	-
Vehicle Occupancy	1.00	1.00	-
Total Vehicle Internal Trips	**0**	**6**	**6**
Total External Vehicle Trips	18	47	65
Internal Vehicle Trip Capture	**0%**	**11%**	**0%**

820 - Shopping Center

Total Internal Person Trips	6	0	6
Vehicle Mode Share	100%	100%	-
Vehicle Occupancy	1.00	1.00	-
Total Vehicle Internal Trips	**6**	**0**	**6**
Total External Vehicle Trips	100	65	165
Internal Vehicle Trip Capture	**6%**	**0%**	**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	18	47	0.00%	0.00%	0	0
820 - Shopping Center	100	65	0.00%	0.00%	0	0

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	18	47	0.00%	0.00%	0	0
820 - Shopping Center	100	65	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	18	47	0.00%	0.00%	0	0
820 - Shopping Center	100	65	0.00%	0.00%	0	0

NEW VEHICLE TRIPS

Land Use	New Vehicle Trips		
	Entry	Exit	Total
210 - Single-Family Detached Housing	18	47	65

820 - Shopping Center	100	65	165

RESULTS

Site Totals	Entry	Exit	Total
Vehicle Trips Before Reduction	124	118	242
Internal Vehicle Trips	6	6	12
External Vehicle Trips	118	112	230
Internal Vehicle Trip Capture	5%	5%	5%
Pass-by Vehicle Trips	0	0	0
Diverted Vehicle Trips	0	0	0
Extra Reduced Vehicle Trips	0	0	0
New Vehicle Trips	118	112	230

Scenario - 3

Scenario Name: PM Peak
User Group:
Dev. phase: 1
Horizon Year: 2019
Analyst Note:
Warning:

VEHICLE TRIPS BEFORE REDUCTION

Land Use & Data Source	Location	IV	Size	Time Period	Method / Rate/Equation	Entry Split%	Exit Split%	Total
210 - Single-Family Detached Housing	General Urban/Suburban	Dwelling Units	92	Weekday, Peak Hour of Adjacent Street Traffic,	Best Fit (LOG)	59	35	94
Data Source: Trip Generation Manual, 10th Ed					Ln(T) =0.96Ln(X) + 0.20	63%	37%	
820 - Shopping Center	General Urban/Suburban	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					Ln(T) =0.74Ln(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	63	37
820 - 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	59	35	0	0	59	35
	94		0		94	
820 - 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
820 - Shopping Center	Retail

BALANCED PERSON TRIPS:

210 - Single-Family Detached Housing								820 - Shopping Center
Persons Exit	PAF	UIPTC	Unconstrained Demand	==>>> BALANCED ==>>>	Unconstrained Demand	UIPTC	PAF	Persons Entry
35	1	42	15	**13**	13	10	1	132
Persons Entry	PAF	UIPTC	Unconstrained Demand	<<<== BALANCED <<<==	Unconstrained Demand	UIPTC	PAF	Persons Exit
59	1	46	27	**27**	37	26	1	143

INTERNAL PERSON TRIPS:
210 - Single-Family Detached Housing

Internal Person Trips From	Entry	Exit	Total
820 - Shopping Center	27	13	40
Total Internal Person Trips	**27**	**13**	**40**

820 - Shopping Center

Internal Person Trips From	Entry	Exit	Total
210 - Single-Family Detached Housing	13	27	40
Total Internal Person Trips	**13**	**27**	**40**

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

Total Internal Person Trips	27	13	40
Vehicle Mode Share	100%	100%	-
Vehicle Occupancy	1.00	1.00	-
Total Vehicle Internal Trips	**27**	**13**	**40**
Total External Vehicle Trips	32	22	54
Internal Vehicle Trip Capture	**46%**	**37%**	**0%**

820 - Shopping Center

Total Internal Person Trips	13	27	40
Vehicle Mode Share	100%	100%	-
Vehicle Occupancy	1.00	1.00	-
Total Vehicle Internal Trips	**13**	**27**	**40**
Total External Vehicle Trips	119	116	235
Internal Vehicle Trip Capture	**10%**	**19%**	**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	32	22	0.00%	0.00%	0	0
820 - Shopping Center	119	116	34.00%	34.00%	40	39

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	32	22	0.00%	0.00%	0	0
820 - Shopping Center	119	116	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	32	22	0.00%	0.00%	0	0
820 - Shopping Center	79	77	0.00%	0.00%	0	0

NEW VEHICLE TRIPS

Land Use	New Vehicle Trips		
	Entry	Exit	Total
210 - Single-Family Detached Housing	32	22	54

820 - Shopping Center	79	77	156

RESULTS

Site Totals	Entry	Exit	Total
Vehicle Trips Before Reduction	191	178	369
Internal Vehicle Trips	40	40	80
External Vehicle Trips	151	138	289
Internal Vehicle Trip Capture	21%	22%	22%
Pass-by Vehicle Trips	40	39	79
Diverted Vehicle Trips	0	0	0
Extra Reduced Vehicle Trips	0	0	0
New Vehicle Trips	111	99	210

PROJECT DETAILS

Project Name:	Oak Park- Initial zoning	Type of Project:	
Project No:	20190713	City:	
Country:		Built-up Area(Sq.ft):	
Analyst Name:	Charles Wu	Clients Name:	
Date:	7/20/2019	ZIP/Postal Code:	
State/Province:		No. of Scenarios:	3
Analysis Region:			

SCENARIO SUMMARY

Scenarios	Name	No. of Land Uses	Phases of Development	Horizon Year	User Group	Estimated New Vehicle Trips		
						Entry	Exit	Total
Scenario - 1	Daily	3	1	2018		2104	2104	4208
Scenario - 2	AM Peak	3	1	2019		121	117	238
Scenario - 3	PM Peak	3	1	2019		130	113	243

Scenario - 1

Scenario Name: Daily
Dev. phase: 1
Analyst Note:
Warning:

User Group:
Horizon Year: 2018

VEHICLE TRIPS BEFORE REDUCTION

Land Use & Data Source	Location	IV	Size	Time Period	Method / Rate/Equation	Entry / Split%	Exit / Split%	Total
210 - Single-Family Detached Housing	General Urban/Suburban	Dwelling Units	72	Weekday	Best Fit (LOG)	384	384	768
Data Source: Trip Generation Manual, 10th Ed					Ln(T) =0.92Ln(X) + 2.71	50%	50%	
220 - Multifamily Housing (Low-Rise)	General Urban/Suburban	Dwelling Units	36	Weekday	Best Fit (LIN)	116	116	232
Data Source: Trip Generation Manual, 10th Ed					T = 7.56(X) + -40.86	50%	50%	
820 - Shopping Center	General Urban/Suburban	1000 Sq. Ft. GLA	39.7	Weekday	Best Fit (LOG)	1604	1604	3208
Data Source: Trip Generation Manual, 10th Ed					Ln(T) =0.68Ln(X) + 5.57	50%	50%	

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
220 - Multifamily Housing (Low-Rise)	100	100	1	1	50	50
820 - Shopping Center	100	100	1	1	50	50

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	
220 - Multifamily Housing (Low-Rise)	116	116	0	0	116	116
	232		0		232	
820 - Shopping Center	1604	1604	0	0	1604	1604
	3208		0		3208	

INTERNAL VEHICLE TRIP REDUCTION

LAND USE GROUP ASSIGNMENT:

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

BALANCED PERSON TRIPS:

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								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

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

INTERNAL PERSON TRIPS:

210 - Single-Family Detached Housing

Internal Person Trips From	Entry	Exit	Total
220 - Multifamily Housing (Low-Rise)	0	0	0
820 - Shopping Center	0	0	0
Total Internal Person Trips	**0**	**0**	**0**

220 - Multifamily Housing (Low-Rise)

Internal Person Trips From	Entry	Exit	Total
210 - Single-Family Detached Housing	0	0	0
820 - Shopping Center	0	0	0
Total Internal Person Trips	**0**	**0**	**0**

820 - Shopping Center

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

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	-
Total Vehicle Internal Trips	**0**	**0**	**0**
Total External Vehicle Trips	384	384	768
Internal Vehicle Trip Capture	**0%**	**0%**	**0%**

220 - Multifamily Housing (Low-Rise)

Total Internal Person Trips	0	0	0
Vehicle Mode Share	100%	100%	-
Vehicle Occupancy	1.00	1.00	-

Total Vehicle Internal Trips	**0**	**0**	**0**
Total External Vehicle Trips	116	116	232
Internal Vehicle Trip Capture	**0%**	**0%**	**0%**

820 - Shopping Center

Total Internal Person Trips	0	0	0
Vehicle Mode Share	100%	100%	-
Vehicle Occupancy	1.00	1.00	-
Total Vehicle Internal Trips	**0**	**0**	**0**
Total External Vehicle Trips	1604	1604	3208
Internal Vehicle Trip Capture	**0%**	**0%**	**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	384	384	0.00%	0.00%	0	0
220 - Multifamily Housing (Low-Rise)	116	116	0.00%	0.00%	0	0
820 - Shopping Center	1604	1604	0.00%	0.00%	0	0

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
220 - Multifamily Housing (Low-Rise)	116	116	0.00%	0.00%	0	0
820 - Shopping Center	1604	1604	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
220 - Multifamily Housing (Low-Rise)	116	116	0.00%	0.00%	0	0
820 - Shopping Center	1604	1604	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
220 - Multifamily Housing (Low-Rise)	116	116	232
820 - Shopping Center	1604	1604	3208

RESULTS

Site Totals	Entry	Exit	Total
Vehicle Trips Before Reduction	2104	2104	4208
Internal Vehicle Trips	0	0	0
External Vehicle Trips	2104	2104	4208
Internal Vehicle Trip Capture	0%	0%	0%
Pass-by Vehicle Trips	0	0	0
Diverted Vehicle Trips	0	0	0

Extra Reduced Vehicle Trips	0	0	0
New Vehicle Trips	2104	2104	4208

Scenario - 2

Scenario Name: AM Peak
User Group:
Dev. phase: 1
Horizon Year: 2019
Analyst Note:
Warning:

VEHICLE TRIPS BEFORE REDUCTION

Land Use & Data Source	Location	IV	Size	Time Period	Method / Rate/Equation	Entry Split%	Exit Split%	Total
210 - Single-Family Detached Housing	General Urban/Suburban	Dwelling Units	72	Weekday, Peak Hour of Adjacent Street Traffic,	Best Fit (LIN)	14	42	56
Data Source: Trip Generation Manual, 10th Ed					T = 0.71(X) + 4.80	25%	75%	
220 - Multifamily Housing (Low-Rise)	General Urban/Suburban	Dwelling Units	36	Weekday, Peak Hour of Adjacent Street Traffic,	Best Fit (LOG)	4	14	18
Data Source: Trip Generation Manual, 10th Ed					Ln(T) =0.95Ln(X) + -0.51	23%	77%	
820 - Shopping Center	General Urban/Suburban	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					T = 0.50(X) + 151.78	62%	38%	

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	25	75
220 - Multifamily Housing (Low-Rise)	100	100	1	1	23	77
820 - Shopping Center	100	100	1	1	62	38

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	14	42	0	0	14	42
	56		0		56	
220 - Multifamily Housing (Low-Rise)	4	14	0	0	4	14
	18		0		18	
820 - Shopping Center	106	65	0	0	106	65
	171		0		171	

INTERNAL VEHICLE TRIP REDUCTION

LAND USE GROUP ASSIGNMENT:

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

BALANCED PERSON TRIPS:

210 - 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	4

Persons Entry	PAF	UIPTC	Unconstrained Demand	<<<== BALANCED <<<==	Unconstrained Demand	UIPTC	PAF	Persons Exit
14	1	0	0	**0**	0	0	1	14

210 - Single-Family Detached Housing — 820 - Shopping Center

Persons Exit	PAF	UIPTC	Unconstrained Demand	==>>> BALANCED ==>>>	Unconstrained Demand	UIPTC	PAF	Persons Entry
42	1	6	3	**3**	9	8.5	1	106

Persons Entry	PAF	UIPTC	Unconstrained Demand	<<<== BALANCED <<<==	Unconstrained Demand	UIPTC	PAF	Persons Exit
14	1	1	0	**0**	5	7	1	65

220 - Multifamily Housing (Low-Rise) — 820 - Shopping Center

Persons Exit	PAF	UIPTC	Unconstrained Demand	==>>> BALANCED ==>>>	Unconstrained Demand	UIPTC	PAF	Persons Entry
14	1	6	1	**1**	9	8.5	1	106

Persons Entry	PAF	UIPTC	Unconstrained Demand	<<<== BALANCED <<<==	Unconstrained Demand	UIPTC	PAF	Persons Exit
4	1	1	0	**0**	5	7	1	65

INTERNAL PERSON TRIPS:

210 - Single-Family Detached Housing

Internal Person Trips From	Entry	Exit	Total
220 - Multifamily Housing (Low-Rise)	0	0	0
820 - Shopping Center	0	3	3
Total Internal Person Trips	**0**	**3**	**3**

220 - Multifamily Housing (Low-Rise)

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

820 - Shopping Center

Internal Person Trips From	Entry	Exit	Total
210 - Single-Family Detached Housing	3	0	3
220 - Multifamily Housing (Low-Rise)	1	0	1
Total Internal Person Trips	**4**	**0**	**4**

INTERNAL VEHICLE TRIPS AND CAPTURE:

210 - Single-Family Detached Housing

Total Internal Person Trips	0	3	3
Vehicle Mode Share	100%	100%	-
Vehicle Occupancy	1.00	1.00	-
Total Vehicle Internal Trips	**0**	**3**	**3**
Total External Vehicle Trips	14	39	53
Internal Vehicle Trip Capture	**0%**	**7%**	**0%**

220 - Multifamily Housing (Low-Rise)

Total Internal Person Trips	0	1	1
Vehicle Mode Share	100%	100%	-
Vehicle Occupancy	1.00	1.00	-

Total Vehicle Internal Trips	**0**	**1**	**1**
Total External Vehicle Trips	4	13	17
Internal Vehicle Trip Capture	**0%**	**7%**	**0%**

820 - Shopping Center

Total Internal Person Trips	4	0	4
Vehicle Mode Share	100%	100%	-
Vehicle Occupancy	1.00	1.00	-
Total Vehicle Internal Trips	**3**	**0**	**3**
Total External Vehicle Trips	103	65	168
Internal Vehicle Trip Capture	**3%**	**0%**	**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	14	39	0.00%	0.00%	0	0
220 - Multifamily Housing (Low-Rise)	4	13	0.00%	0.00%	0	0
820 - Shopping Center	103	65	0.00%	0.00%	0	0

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	14	39	0.00%	0.00%	0	0
220 - Multifamily Housing (Low-Rise)	4	13	0.00%	0.00%	0	0
820 - Shopping Center	103	65	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	14	39	0.00%	0.00%	0	0
220 - Multifamily Housing (Low-Rise)	4	13	0.00%	0.00%	0	0
820 - Shopping Center	103	65	0.00%	0.00%	0	0

NEW VEHICLE TRIPS

Land Use	New Vehicle Trips		
	Entry	Exit	Total
210 - Single-Family Detached Housing	14	39	53
220 - Multifamily Housing (Low-Rise)	4	13	17
820 - Shopping Center	103	65	168

RESULTS

Site Totals	Entry	Exit	Total
Vehicle Trips Before Reduction	124	121	245
Internal Vehicle Trips	3	4	7
External Vehicle Trips	121	117	238
Internal Vehicle Trip Capture	2%	3%	3%
Pass-by Vehicle Trips	0	0	0
Diverted Vehicle Trips	0	0	0

Extra Reduced Vehicle Trips	0	0	0
New Vehicle Trips	121	117	238

Scenario - 3

Scenario Name: PM Peak
User Group:
Dev. phase: 1
Horizon Year: 2019
Analyst Note:
Warning:

VEHICLE TRIPS BEFORE REDUCTION

Land Use & Data Source	Location	IV	Size	Time Period	Method / Rate/Equation	Entry Split%	Exit Split%	Total
210 - Single-Family Detached Housing	General Urban/Suburban	Dwelling Units	72	Weekday, Peak Hour of Adjacent Street Traffic,	Best Fit (LOG)	47	27	74
Data Source: Trip Generation Manual, 10th Ed					Ln(T) =0.96Ln(X) + 0.20	63%	37%	
220 - Multifamily Housing (Low-Rise)	General Urban/Suburban	Dwelling Units	36	Weekday, Peak Hour of Adjacent Street Traffic,	Best Fit (LOG)	15	9	24
Data Source: Trip Generation Manual, 10th Ed					Ln(T) =0.89Ln(X) + -0.02	63%	37%	
820 - Shopping Center	General Urban/Suburban	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					Ln(T) =0.74Ln(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	63	37
220 - Multifamily Housing (Low-Rise)	100	100	1	1	63	37
820 - 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	47	27	0	0	47	27
	74		0		74	
220 - Multifamily Housing (Low-Rise)	15	9	0	0	15	9
	24		0		24	
820 - 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
220 - Multifamily Housing (Low-Rise)	Residential
820 - Shopping Center	Retail

BALANCED PERSON TRIPS:

210 - 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	15

Persons Entry	PAF	UIPTC	Unconstrained Demand	<<<== BALANCED <<<==	Unconstrained Demand	UIPTC	PAF	Persons Exit
47	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
27	1	21	6	**6**	7	5	1	132
Persons Entry	PAF	UIPTC	Unconstrained Demand	<<<== BALANCED <<<==	Unconstrained Demand	UIPTC	PAF	Persons Exit
47	1	23	11	**11**	19	13	1	143

220 - Multifamily Housing (Low-Rise)								820 - Shopping Center
Persons Exit	PAF	UIPTC	Unconstrained Demand	==>>> BALANCED ==>>>	Unconstrained Demand	UIPTC	PAF	Persons Entry
9	1	21	2	**2**	7	5	1	132
Persons Entry	PAF	UIPTC	Unconstrained Demand	<<<== BALANCED <<<==	Unconstrained Demand	UIPTC	PAF	Persons Exit
15	1	23	3	**3**	19	13	1	143

INTERNAL PERSON TRIPS:

210 - Single-Family Detached Housing

Internal Person Trips From	Entry	Exit	Total
220 - Multifamily Housing (Low-Rise)	0	0	0
820 - Shopping Center	11	6	17
Total Internal Person Trips	**11**	**6**	**17**

220 - Multifamily Housing (Low-Rise)

Internal Person Trips From	Entry	Exit	Total
210 - Single-Family Detached Housing	0	0	0
820 - Shopping Center	3	2	5
Total Internal Person Trips	**3**	**2**	**5**

820 - Shopping Center

Internal Person Trips From	Entry	Exit	Total
210 - Single-Family Detached Housing	6	11	17
220 - Multifamily Housing (Low-Rise)	2	3	5
Total Internal Person Trips	**8**	**14**	**22**

INTERNAL VEHICLE TRIPS AND CAPTURE:

210 - Single-Family Detached Housing

Total Internal Person Trips	11	6	17
Vehicle Mode Share	100%	100%	-
Vehicle Occupancy	1.00	1.00	-
Total Vehicle Internal Trips	**11**	**6**	**17**
Total External Vehicle Trips	36	21	57
Internal Vehicle Trip Capture	**24%**	**22%**	**0%**

220 - Multifamily Housing (Low-Rise)

Total Internal Person Trips	3	2	5
Vehicle Mode Share	100%	100%	-
Vehicle Occupancy	1.00	1.00	-

Total Vehicle Internal Trips	**3**	**2**	**5**
Total External Vehicle Trips	12	7	19
Internal Vehicle Trip Capture	**20%**	**23%**	**0%**

820 - Shopping Center

Total Internal Person Trips	8	14	22
Vehicle Mode Share	100%	100%	-
Vehicle Occupancy	1.00	1.00	-
Total Vehicle Internal Trips	**8**	**14**	**22**
Total External Vehicle Trips	124	129	253
Internal Vehicle Trip Capture	**6%**	**10%**	**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	36	21	0.00%	0.00%	0	0
220 - Multifamily Housing (Low-Rise)	12	7	0.00%	0.00%	0	0
820 - Shopping Center	124	129	34.00%	34.00%	42	44

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	36	21	0.00%	0.00%	0	0
220 - Multifamily Housing (Low-Rise)	12	7	0.00%	0.00%	0	0
820 - Shopping Center	124	129	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	36	21	0.00%	0.00%	0	0
220 - Multifamily Housing (Low-Rise)	12	7	0.00%	0.00%	0	0
820 - Shopping Center	82	85	0.00%	0.00%	0	0

NEW VEHICLE TRIPS

Land Use	New Vehicle Trips		
	Entry	Exit	Total
210 - Single-Family Detached Housing	36	21	57
220 - Multifamily Housing (Low-Rise)	12	7	19
820 - Shopping Center	82	85	167

RESULTS

Site Totals	Entry	Exit	Total
Vehicle Trips Before Reduction	194	179	373
Internal Vehicle Trips	22	22	44
External Vehicle Trips	172	157	329
Internal Vehicle Trip Capture	11%	12%	12%
Pass-by Vehicle Trips	42	44	86
Diverted Vehicle Trips	0	0	0

Extra Reduced Vehicle Trips	0	0	0
New Vehicle Trips	130	113	243