321 SW 4th Ave., Suite 400
Portland, OR 97204
503.248.0313
lancastermobley.com

Memorandum

To: **Juliet Hyams, City of Wheeler**

Copy: **Ken Shonkwiler, ODOT**

From: **Daniel Stumpf**

Date: **January 21, 2020**

Subject: **Wheeler Mixed-Use Development**
Scoping Memorandum

Introduction

This memorandum details a proposed scope of work for a Traffic Impact Study (TIS) related to a proposed mixed-use development to be located near the northern edge of City limits in Wheeler, Oregon. Specifically, the proposed development will include the construction of 30 (cottages); a two-story commercial building consisting of 4,450 square feet of retail space and 2,457 square feet of restaurant space on the bottom floor, and 4 apartment units for employees on the upper floor; and a two-story hotel with 30 guest rooms.

The purpose of this memorandum is to confirm trip generation methodologies and the study area for preparation of a Transportation Impact Study (TIS). The trip generation analysis will examine the proposed development's trip generation for a typical morning peak hour, evening peak hour, and average weekday.

Project Site Description

The project site is located near the northern edge of City limits in Wheeler, Oregon, and includes several tax lots that are currently undeveloped. Access to/from the site is currently, and will be, provided via Marine Drive and along Oregon Coast Highway (US-101) at a location opposite of Hemlock Street.

A prior transportation study had been prepared for the site, proposing a higher traffic intensive use, on August 29th, 2007.

Figure 1 presents an aerial image of the nearby vicinity with the project site outlined in yellow.

Figure 1: Aerial Photo of Site Vicinity (Image from Google Earth)

Site Trips

Trip Generation

The proposed mixed-use development will include the construction of 30 (cottages); a two-story commercial building consisting of 4,450 square feet of retail space and 2,457 square feet of restaurant space on the bottom floor, and 4 apartment units for employees on the upper floor; and a two-story hotel with 30 guest rooms. To estimate the number of trips that will be generated by the proposed use, trip rates from the *Trip Generation Manual*[1] were used. Data from the following land use codes were referenced for each aspect of the proposed use:

- Cottages
    - ITE code 210, *Single-Family Detached Housing*, based on the number of proposed dwelling units.
- Commercial Building
    - ITE code 220, *Multifamily Housing (Low-Rise)*, based on the number of proposed dwelling units.
    - ITE code 820, *Shopping Center*, based on the square footage of the gross building floor area.

[1] Institute of Transportation Engineers (ITE), *Trip Generation Manual*, 10th Edition, 2017.

    - ITE code 932, *High-Turnover Restaurant*, based on the square footage of the gross building floor area.

- Hotel Building
    - ITE code, 310, *Hotel*, based on the number of guest bedrooms.

Internal Trips

Given a variety of land uses are proposed for development within the project site (including residential, hotel, retail, and restaurant uses), some trips generated will be shared or internally captured by the other land uses within the site and will not impact the nearby transportation system. Using the NCHRP Report 684, internal capture rates were calculated for each proposed land use during the morning and evening peak hours.

Pass-by & Diverted Trips

The retail and restaurant portions of the proposed development are expected to attract pass-by and diverted trips to the site. Pass-by trips are trips that leave the adjacent roadway to patronize a land use and then continue in their original direction of travel. Similar to pass-by trips, diverted trips are trips that divert from a nearby roadway not adjacent to the site to patronize a land use before continuing to their original destination. Pass-by trips do not add additional vehicles to the surrounding transportation system; however, they do add additional turning movements at site access intersections. Diverted trips may add turning movements at both site access and other nearby intersections.

Pass-by rates were determined using data provided within the *Trip Generation Handbook*[2]. Data from land use codes 820 and 932 were used to determine evening peak hour pass-by rates for the retail and restaurant portions of the proposed mixed-use development, respectively. It is assumed that the morning peak hour and weekday rates would approximately match the evening peak hours. For the purposes of this analysis, pass-by trips were drawn from US-101 while diverted trips were treated as primary trips.

Analysis Results

The trip generation calculations show that the proposed mixed-use development is projected to generate 48 net new morning peak hour trips, 44 net new evening peak hour trips, and 482 net new average weekday site trips. The trip generation estimates are summarized in Table 2 and detailed trip generation calculations are included as an attachment to this memorandum.

[2] Institute of Transportation Engineers (ITE), *Trip Generation Handbook*, 3rd Edition, 2014.

Table 1: Trip Generation Summary

	ITE Code	Size	Morning Peak Hour			Evening Peak Hour			Weekday Total
			Enter	Exit	Total	Enter	Exit	Total	
Cottages									
Single-Family Houses	210	30 units	6	16	22	19	11	30	284
Commercial Building									
Employee Housing	220	4 units	0	2	2	1	1	2	30
Retail Store	820	4,450 SF	2	2	4	8	9	17	168
Restaurant	932	2,457 SF	13	11	24	15	9	24	246
Hotel Building									
Hotel	310	30 rooms	8	6	14	9	9	18	250
Net Total			29	37	66	52	39	91	978
Internal Trips		*9% (34%)*	*3*	*3*	*6*	*18*	*13*	*31*	*332*
External Trips			26	34	60	34	26	60	646
Pass-By Trips	*820*	*34%*	*1*	*1*	*2*	*3*	*3*	*6*	*58*
Pass-By Trips	*932*	*43%*	*5*	*5*	*10*	*5*	*5*	*10*	*106*
Total Pass-by Trips			*6*	*6*	*12*	*8*	*8*	*16*	*164*
Net New Site Trips			**20**	**28**	**48**	**26**	**18**	**44**	**482**

Note: Internal rates presented as AM (PM/ADT)

It should be noted that the prior approved development described in the 2007 traffic study was projected to generate 38 net new morning peak hour trips, 62 net new evening peak hour trips, and 652 net new average weekday trips. Excluding the morning peak hour, the prior approved development was projected to generate approximately 36 percent more net new evening peak hour trips and approximately 41 percent more net new weekday trips than the current proposed development.

Trip Distribution

A preliminary directional distribution of site trips to and from the proposed mixed-use development was estimated based on the assumed distribution presented in the prior 2007 study that was conducted for the site. For the purposes of project scoping, the following distribution was utilized:

- Approximately 60 percent of site trips will travel to/from the south along US-101; and
- Approximately 40 percent of site trips will travel to/from the north along US-101.

Although site access is available at the intersection of Rector Street at US-101 by way of Marine Drive, it is expected that nominal volumes of site trips would utilize this access relative to the intersection of Hemlock Street at US-101 for the following reasons:

- Based on the functional classifications and roadway designs of US-101 and Marine Drive, Marine Drive is expected to provide a slower route of travel between the site and locations to/from the south along US-101 relative to continued travel along US-101.
- The Hemlock Street access will provide a more direct point of access to the site relative to the Rector Street access.
- For non-local traffic, utilizing Hemlock Street to access the site is more intuitive than utilizing Rector Street.

For the above reasons, it is assumed that all site trips would travel generally utilized the Hemlock Street at US-101 intersection to access the site.

It should be noted that the above assumed distribution is preliminary and may be susceptible to change once updated traffic counts have been collected.

Proposed Study Intersections

Based on the preliminary analysis conducted above, it is expected that a significant majority of site trips would impact intersections along US-101. According to ODOT's *Development Review Guidelines* [3], *Table 3.2: TIA Threshold and Analysis Areas*, the area for analysis is defined as the area significantly affected by the development, within reason. Based on best practices, Table 3.2 recommends analysis at intersections where traffic is increased by 50 peak hour trips, 300 average daily trips, or by 10 percent of the intersections total entering volumes.

Excluding the intersection of Hemlock Street at US-101, traffic to other ODOT intersections are not expected to increase by more than 29 peak hour trips (morning or evening) or 290 average weekday trips. Additionally, and according to ODOT's 2018 Transportation Volume Tables, the lowest AADT reported along US-101 was 4400 vehicles near the west City limits. Assuming the 290 average weekday trips is reflective of the AADT generated by the site that travels to/from the south along US-101, no other ODOT intersections within the City of Wheeler are expected to increase in traffic by more than 10 percent.

Based on an evaluation of impacts to the transportation system, the intersection of US-101 at Hemlock Street is recommended for analysis. This is consistent with the study area analysed in the 2007 traffic study that was conducted for the site. Given the current proposed use is projected to generate overall fewer net new trips than the prior approved use, the analysis area is expected to be sufficient to adequately evaluate the transportation impacts that may result from the proposed use.

If you have any questions or concerns regarding technical memorandum, please don't hesitate to contact us.

[3] Oregon Department of Transportation, *Development Review Guidelines*, 2017.

1e

TRIP GENERATION CALCULATIONS

Land Use: Single-Family Detached Housing
Land Use Code: 210
Setting/Location General Urban/Suburban
Variable: Dwelling Units
Variable Value: 30

AM PEAK HOUR

Trip Rate: 0.74

	Enter	Exit	Total
Directional Distribution	25%	75%	
Trip Ends	**6**	**16**	**22**

PM PEAK HOUR

Trip Rate: 0.99

	Enter	Exit	Total
Directional Distribution	63%	37%	
Trip Ends	**19**	**11**	**30**

WEEKDAY

Trip Rate: 9.44

	Enter	Exit	Total
Directional Distribution	50%	50%	
Trip Ends	**142**	**142**	**284**

SATURDAY

Trip Rate: 9.54

	Enter	Exit	Total
Directional Distribution	50%	50%	
Trip Ends	**143**	**143**	**286**

Source: Trip Generation Manual, Tenth Edition

1e

TRIP GENERATION CALCULATIONS

Land Use: Multifamily Housing (Low-Rise)
Land Use Code: 220
Setting/Location General Urban/Suburban
Variable: Dwelling Units
Variable Value: 4

AM PEAK HOUR

Trip Rate: 0.46

	Enter	Exit	Total
Directional Distribution	23%	77%	
Trip Ends	**0**	**2**	**2**

PM PEAK HOUR

Trip Rate: 0.56

	Enter	Exit	Total
Directional Distribution	63%	37%	
Trip Ends	**1**	**1**	**2**

WEEKDAY

Trip Rate: 7.32

	Enter	Exit	Total
Directional Distribution	50%	50%	
Trip Ends	**15**	**15**	**30**

SATURDAY

Trip Rate: 8.14

	Enter	Exit	Total
Directional Distribution	50%	50%	
Trip Ends	**16**	**16**	**32**

Source: TRIP GENERATION, Tenth Edition

1e

TRIP GENERATION CALCULATIONS

Land Use: Hotel
Land Use Code: 310
Setting/Location: General Urban/Suburban
Variable: Rooms
Variable Value: 30

AM PEAK HOUR

Trip Rate: 0.47

	Enter	Exit	Total
Directional Distribution	59%	41%	
Trip Ends	**8**	**6**	**14**

PM PEAK HOUR

Trip Rate: 0.6

	Enter	Exit	Total
Directional Distribution	51%	49%	
Trip Ends	**9**	**9**	**18**

WEEKDAY

Trip Rate: 8.36

	Enter	Exit	Total
Directional Distribution	50%	50%	
Trip Ends	**125**	**125**	**250**

SATURDAY

Trip Rate: 8.19

	Enter	Exit	Total
Directional Distribution	50%	50%	
Trip Ends	**123**	**123**	**246**

Source: TRIP GENERATION, Tenth Edition

1e

TRIP GENERATION CALCULATIONS

Land Use: Shopping Center
Land Use Code: 820
Setting/Location General Urban/Suburban
Variable: 1,000 Sq. Ft. GFA
Variable Value: 4.450

AM PEAK HOUR

Trip Rate: 0.94

	Enter	Exit	Total
Directional Distribution	62%	38%	
Trip Ends	**2**	**2**	**4**

PM PEAK HOUR

Trip Rate: 3.81

	Enter	Exit	Total
Directional Distribution	48%	52%	
Trip Ends	**8**	**9**	**17**

WEEKDAY

Trip Rate: 37.75

	Enter	Exit	Total
Directional Distribution	50%	50%	
Trip Ends	**84**	**84**	**168**

SATURDAY

Trip Rate: 46.12

	Enter	Exit	Total
Directional Distribution	50%	50%	
Trip Ends	**103**	**103**	**206**

Source: Trip Generation Manual, Tenth Edition

TRIP GENERATION CALCULATIONS

Land Use: High-Turnover (Sit-Down) Restaurant
Land Use Code: 932
Setting/Location General Urban/Suburban
Variable: 1,000 Sq. Ft. Gross Floor Area
Variable Quantity: 2.457

AM PEAK HOUR

Trip Rate: 9.94

	Enter	Exit	Total
Directional Distribution	55%	45%	
Trip Ends	**13**	**11**	**24**

PM PEAK HOUR

Trip Rate: 9.77

	Enter	Exit	Total
Directional Distribution	62%	38%	
Trip Ends	**15**	**9**	**24**

WEEKDAY

Trip Rate: 112.18

	Enter	Exit	Total
Directional Distribution	50%	50%	
Trip Ends	**138**	**138**	**276**

SATURDAY

Trip Rate: 122.40

	Enter	Exit	Total
Directional Distribution	50%	50%	
Trip Ends	**150**	**150**	**300**

Source: TRIP GENERATION, Tenth Edition

NCHRP 8-51 Internal Trip Capture Estimation Tool			
Project Name:	Wheeler Mixed-Use Development	**Organization:**	Lancaster Mobley
Project Location:	Wheeler, OR	**Performed By:**	Daniel Stumpf, PE
Scenario Description:		**Date:**	
Analysis Year:		**Checked By:**	
Analysis Period:	**AM Street Peak Hour**	**Date:**	

Table 1-A: Base Vehicle-Trip Generation Estimates (Single-Use Site Estimate)

Land Use	Development Data (*For Information Only*)			Estimated Vehicle-Trips		
	ITE LUCs[1]	Quantity	Units	Total	Entering	Exiting
Office				0		
Retail	820	4,450	SF	4	2	2
Restaurant	932	2,457	SF	24	13	11
Cinema/Entertainment				0		
Residential	210, 220	34	Dwelling Units	24	6	18
Hotel	310	30	Rooms	14	8	6
All Other Land Uses[2]				0		
Total				66	29	37

Table 2-A: Mode Split and Vehicle Occupancy Estimates

Land Use	Entering Trips			Exiting Trips		
	Veh. Occ.	% Transit	% Non-Motorized	Veh. Occ.	% Transit	% Non-Motorized
Office						
Retail	1.25	0%	0%	1.25	0%	0%
Restaurant	1.25	0%	0%	1.25	0%	0%
Cinema/Entertainment						
Residential	1.25	0%	0%	1.25	0%	0%
Hotel	1.25	0%	0%	1.25	0%	0%
All Other Land Uses[2]						

Table 3-A: Average Land Use Interchange Distances (Feet Walking Distance)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						

Table 4-A: Internal Person-Trip Origin-Destination Matrix*

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		0	0	0	0	0
Retail	0		0	0	0	0
Restaurant	0	0		0	0	0
Cinema/Entertainment	0	0	0		0	0
Residential	0	0	3	0		0
Hotel	0	0	1	0	0	

Table 5-A: Computations Summary

	Total	Entering	Exiting
All Person-Trips	85	37	48
Internal Capture Percentage	9%	11%	8%
External Vehicle-Trips[3]	61	26	35
External Transit-Trips[4]	0	0	0
External Non-Motorized Trips[4]	0	0	0

Table 6-A: Internal Trip Capture Percentages by Land Use

Land Use	Entering Trips	Exiting Trips
Office	N/A	N/A
Retail	0%	0%
Restaurant	25%	0%
Cinema/Entertainment	N/A	N/A
Residential	0%	13%
Hotel	0%	13%

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

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

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

[4]Person-Trips

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

Estimation Tool Developed by the Texas Transportation Institute

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

Table 7-A: Conversion of Vehicle-Trip Ends to Person-Trip Ends

Land Use	Table 7-A (D): Entering Trips			Table 7-A (O): Exiting Trips		
	Veh. Occ.	Vehicle-Trips	Person-Trips*	Veh. Occ.	Vehicle-Trips	Person-Trips*
Office	1.00	0	0	1.00	0	0
Retail	1.25	2	3	1.25	2	3
Restaurant	1.25	13	16	1.25	11	14
Cinema/Entertainment	1.00	0	0	1.00	0	0
Residential	1.25	6	8	1.25	18	23
Hotel	1.25	8	10	1.25	6	8

Table 8-A (O): Internal Person-Trip Origin-Destination Matrix (Computed at Origin)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		0	0	0	0	0
Retail	1		0	0	0	0
Restaurant	4	2		0	1	0
Cinema/Entertainment	0	0	0		0	0
Residential	0	0	5	0		0
Hotel	6	1	1	0	0	

Table 8-A (D): Internal Person-Trip Origin-Destination Matrix (Computed at Destination)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		1	4	0	0	0
Retail	0		8	0	0	0
Restaurant	0	0		0	0	0
Cinema/Entertainment	0	0	0		0	0
Residential	0	1	3	0		0
Hotel	0	0	1	0	0	

Table 9-A (D): Internal and External Trips Summary (Entering Trips)

Destination Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles[1]	Transit[2]	Non-Motorized[2]
Office	0	0	0	0	0	0
Retail	0	3	3	2	0	0
Restaurant	4	12	16	10	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	0	8	8	6	0	0
Hotel	0	10	10	8	0	0
All Other Land Uses[3]	0	0	0	0	0	0

Table 9-A (O): Internal and External Trips Summary (Exiting Trips)

Origin Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles[1]	Transit[2]	Non-Motorized[2]
Office	0	0	0	0	0	0
Retail	0	3	3	2	0	0
Restaurant	0	14	14	11	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	3	20	23	16	0	0
Hotel	1	7	8	6	0	0
All Other Land Uses[3]	0	0	0	0	0	0

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

[2]Person-Trips

[3]Total estimate for all other land uses at mixed-use development site-not subject to internal trip capture computations in this estimator

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

NCHRP 8-51 Internal Trip Capture Estimation Tool			
Project Name:	Wheeler Mixed-Use Development	**Organization:**	Lancaster Mobley
Project Location:	Wheeler, OR	**Performed By:**	Daniel Stumpf, PE
Scenario Description:		**Date:**	
Analysis Year:		**Checked By:**	
Analysis Period:	**PM Street Peak Hour**	**Date:**	

Table 1-P: Base Vehicle-Trip Generation Estimates (Single-Use Site Estimate)

Land Use	Development Data (*For Information Only*)			Estimated Vehicle-Trips		
	ITE LUCs[1]	Quantity	Units	Total	Entering	Exiting
Office				0		
Retail	820	4,450	SF	17	8	9
Restaurant	932	2,457	SF	24	15	9
Cinema/Entertainment				0		
Residential	210, 220	34	Dwelling Units	32	20	12
Hotel	310	30	Rooms	18	9	9
All Other Land Uses[2]				0		
Total				91	52	39

Table 2-P: Mode Split and Vehicle Occupancy Estimates

Land Use	Entering Trips			Exiting Trips		
	Veh. Occ.	% Transit	% Non-Motorized	Veh. Occ.	% Transit	% Non-Motorized
Office						
Retail	1.25	0%	0%	1.25	0%	0%
Restaurant	1.25	0%	0%	1.25	0%	0%
Cinema/Entertainment						
Residential	1.25	0%	0%	1.25	0%	0%
Hotel	1.25	0%	0%	1.25	0%	0%
All Other Land Uses[2]						

Table 3-P: Average Land Use Interchange Distances (Feet Walking Distance)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office						
Retail					1000	
Restaurant					1000	
Cinema/Entertainment						
Residential		1000	1000			
Hotel					1000	

Table 4-P: Internal Person-Trip Origin-Destination Matrix*

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		0	0	0	0	0
Retail	0		3	0	3	1
Restaurant	0	5		0	2	1
Cinema/Entertainment	0	0	0		0	0
Residential	0	1	2	0		0
Hotel	0	0	1	0	0	

Table 5-P: Computations Summary

	Total	Entering	Exiting
All Person-Trips	113	65	48
Internal Capture Percentage	34%	29%	40%
External Vehicle-Trips[3]	59	36	23
External Transit-Trips[4]	0	0	0
External Non-Motorized Trips[4]	0	0	0

Table 6-P: Internal Trip Capture Percentages by Land Use

Land Use	Entering Trips	Exiting Trips
Office	N/A	N/A
Retail	60%	64%
Restaurant	32%	73%
Cinema/Entertainment	N/A	N/A
Residential	20%	20%
Hotel	18%	9%

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

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

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

[4]Person-Trips

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

Estimation Tool Developed by the Texas Transportation Institute

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

Table 7-P: Conversion of Vehicle-Trip Ends to Person-Trip Ends

Land Use	Table 7-P (D): Entering Trips			Table 7-P (O): Exiting Trips		
	Veh. Occ.	Vehicle-Trips	Person-Trips*	Veh. Occ.	Vehicle-Trips	Person-Trips*
Office	1.00	0	0	1.00	0	0
Retail	1.25	8	10	1.25	9	11
Restaurant	1.25	15	19	1.25	9	11
Cinema/Entertainment	1.00	0	0	1.00	0	0
Residential	1.25	20	25	1.25	12	15
Hotel	1.25	9	11	1.25	9	11

Table 8-P (O): Internal Person-Trip Origin-Destination Matrix (Computed at Origin)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		0	0	0	0	0
Retail	0		3	0	3	1
Restaurant	0	5		1	2	1
Cinema/Entertainment	0	0	0		0	0
Residential	1	5	2	0		0
Hotel	0	2	7	0	0	

Table 8-P (D): Internal Person-Trip Origin-Destination Matrix (Computed at Destination)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		1	0	0	1	0
Retail	0		6	0	12	2
Restaurant	0	5		0	4	8
Cinema/Entertainment	0	0	1		1	0
Residential	0	1	2	0		1
Hotel	0	0	1	0	0	

Table 9-P (D): Internal and External Trips Summary (Entering Trips)

Destination Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles[1]	Transit[2]	Non-Motorized[2]
Office	0	0	0	0	0	0
Retail	6	4	10	3	0	0
Restaurant	6	13	19	10	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	5	20	25	16	0	0
Hotel	2	9	11	7	0	0
All Other Land Uses[3]	0	0	0	0	0	0

Table 9-P (O): Internal and External Trips Summary (Exiting Trips)

Origin Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles[1]	Transit[2]	Non-Motorized[2]
Office	0	0	0	0	0	0
Retail	7	4	11	3	0	0
Restaurant	8	3	11	2	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	3	12	15	10	0	0
Hotel	1	10	11	8	0	0
All Other Land Uses[3]	0	0	0	0	0	0

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

[2]Person-Trips

[3]Total estimate for all other land uses at mixed-use development site-not subject to internal trip capture computations in this estimator

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

Table 7.1a Adjusted Internal Trip Capture Rates for Trip Origins within a Multi-Use Development			
Land Use Pairs		Weekday	
		AM Peak Hour	PM Peak Hour
From OFFICE	To Office	0.0%	0.0%
	To Retail	28.0%	20.0%
	To Restaurant	63.0%	4.0%
	To Cinema/Entertainment	0.0%	0.0%
	To Residential	1.0%	2.0%
	To Hotel	0.0%	0.0%
From RETAIL	To Office	29.0%	2.0%
	To Retail	0.0%	0.0%
	To Restaurant	13.0%	29.0%
	To Cinema/Entertainment	0.0%	4.0%
	To Residential	14.0%	24.2%
	To Hotel	0.0%	5.0%
From RESTAURANT	To Office	31.0%	3.0%
	To Retail	14.0%	41.0%
	To Restaurant	0.0%	0.0%
	To Cinema/Entertainment	0.0%	8.0%
	To Residential	4.0%	16.7%
	To Hotel	3.0%	7.0%
From CINEMA/ENTERTAINMENT	To Office	0.0%	2.0%
	To Retail	0.0%	21.0%
	To Restaurant	0.0%	31.0%
	To Cinema/Entertainment	0.0%	0.0%
	To Residential	0.0%	8.0%
	To Hotel	0.0%	2.0%
From RESIDENTIAL	To Office	2.0%	4.0%
	To Retail	1.0%	31.9%
	To Restaurant	20.0%	16.0%
	To Cinema/Entertainment	0.0%	0.0%
	To Residential	0.0%	0.0%
	To Hotel	0.0%	3.0%
From HOTEL	To Office	75.0%	0.0%
	To Retail	14.0%	16.0%
	To Restaurant	9.0%	68.0%
	To Cinema/Entertainment	0.0%	0.0%
	To Residential	0.0%	1.9%
	To Hotel	0.0%	0.0%

Table 7.2a Adjusted Internal Trip Capture Rates for Trip Destinations within a Multi-Use Development			
Land Use Pairs		Weekday	
		AM Peak Hour	PM Peak Hour
To OFFICE	From Office	0.0%	0.0%
	From Retail	4.0%	31.0%
	From Restaurant	14.0%	30.0%
	From Cinema/Entertainment	0.0%	6.0%
	From Residential	3.0%	57.0%
	From Hotel	3.0%	0.0%
To RETAIL	From Office	32.0%	8.0%
	From Retail	0.0%	0.0%
	From Restaurant	8.0%	50.0%
	From Cinema/Entertainment	0.0%	4.0%
	From Residential	17.0%	7.6%
	From Hotel	4.0%	2.0%
To RESTAURANT	From Office	23.0%	2.0%
	From Retail	50.0%	29.0%
	From Restaurant	0.0%	0.0%
	From Cinema/Entertainment	0.0%	3.0%
	From Residential	20.0%	10.6%
	From Hotel	6.0%	5.0%
To CINEMA/ENTERTAINMENT	From Office	0.0%	1.0%
	From Retail	0.0%	26.0%
	From Restaurant	0.0%	32.0%
	From Cinema/Entertainment	0.0%	0.0%
	From Residential	0.0%	0.0%
	From Hotel	0.0%	0.0%
To RESIDENTIAL	From Office	0.0%	4.0%
	From Retail	2.0%	46.0%
	From Restaurant	5.0%	16.0%
	From Cinema/Entertainment	0.0%	4.0%
	From Residential	0.0%	0.0%
	From Hotel	0.0%	0.0%
To HOTEL	From Office	0.0%	0.0%
	From Retail	0.0%	17.0%
	From Restaurant	4.0%	71.0%
	From Cinema/Entertainment	0.0%	1.0%
	From Residential	0.0%	12.0%
	From Hotel	0.0%	0.0%