

October 15, 2018

Project #: 22346

Mr. Ryan Schera  
Deacon  
901 NE Glisan Street Suite 100  
Portland OR 97232

***RE: The Cove Mixed-Use Development - Trip Generation Letter***

Dear Ryan,

On behalf of THE COVE, LLC, this letter presents the revised programming and associated trip generation for the Cove Mixed-Use Development Project in Oregon City, Oregon. The proposed land uses for the development have been altered since City approval of the previously submitted traffic impact analysis (TIA) completed by Kittelson & Associates, Inc. (KAI) in July 2015 (Reference 1). This letter compares the new trip generation to the historically approved trip generation.

**INTRODUCTION**

The Applicant previously proposed to develop a largely vacant land parcel located on the southern banks of Clackamette Cove in Oregon City. The land uses of the previously proposed and approved development plan have changed, resulting in a revised trip generation for the site.

**Historically Approved Trip Generation**

The previously approved traffic study for the Cove mixed-use development (Reference 1) was estimated to generate approximately 6,489 net new daily trips. Of the net new daily trips, approximately 406 were estimated to occur during the weekday AM peak hour, and approximately 609 were estimated to occur during the weekday PM peak hour.

Table 1 summarizes the historically approved estimated trip generation from the previous TIA conducted by KAI (Reference 1).

**Table 1: Historically Approved Estimated Trip Generation**

Land Use	ITE Land Use Code	Size	Daily Trips	Weekday AM Peak Hour Trips			Weekday PM Peak Hour Trips		
				Total	In	Out	Total	In	Out
Apartment	220	244 units	1,623	124	25	99	151	98	53
<i>Internal Trips (11% Daily, 25% AM, 11% PM)</i>			-162	-29	-6	-23	-15	-10	-5
Residential Condominium/Townhouse	230	195 units	1,133	86	15	71	101	68	33
<i>Internal Trips (11% Daily, 25% AM, 11% PM)</i>			-113	-20	-3	-17	-10	-7	-3
High Turnover Sit-Down Restaurant	932	5,950 SF	757	64	35	29	59	36	23
<i>Internal Trips (11% Daily, 25% AM, 11% PM)</i>			-76	-15	-8	-7	-6	-4	-2
<i>Pass-by Trips (43% Daily, 43% AM, 43% PM)</i>			-293	-21	-11	-10	-23	-14	-9
Quality Restaurant	931	8,000 SF	720	6	5	1	60	40	20
<i>Internal Trips (11% Daily, 25% AM, 11% PM)</i>			-72	-1	-1	0	-6	-4	-2
Coffee/Donut Shop w/ Drive-Through	937	1,000 SF	819	101	52	49	43	22	21
<i>Internal Trips (11% Daily, 25% AM, 11% PM)</i>			-82	-23	-12	-11	-4	-2	-2
<i>Pass-by Trips (83% Daily, 83% AM, 83% PM)</i>			-611	-64	-33	-31	-32	-16	-16
General Office Building	710	84,212 SF	929	131	115	16	126	22	104
<i>Internal Trips (11% Daily, 25% AM, 11% PM)</i>			-93	-30	-27	-3	-13	-2	-11
Medical-Dental Office Building (average)	720	50,400 SF	1,821	120	95	25	180	50	130
<i>Internal Trips (11% Daily, 25% AM, 11% PM)</i>			-182	-31	-25	-6	-18	-5	-13
Marina (Fitted Daily, AVG AM & PM)	420	150 berths	694	12	4	8	29	17	12
<i>Internal Trips (50% Daily, 50% AM, 50% PM)</i>			-347	-6	-2	-4	-15	-9	-6
Regional Park	417	5.28 acres	24	2	1	1	2	1	1
<b>Total Net New Trip Generation</b>			<b>6,489</b>	<b>406</b>	<b>219</b>	<b>187</b>	<b>609</b>	<b>281</b>	<b>328</b>

## REVISED LAND USES

The first two phases of the Cove Mixed-Use Development are now proposed to include the following land use mix:

- Phase 1:
  - 244 apartments
  - 6,500 square feet of retail space
- Phase 2:
  - 404 apartments (of which 20 will be live/work units) and associated leasing office space
  - 5.28-acre park area
  - 6,800 square feet of retail

- 3,750 square feet of quality restaurant land uses
- 3,750 square feet of high-turnover sit-down restaurant land uses

## Revised Trip Generation

Estimates of daily, weekday AM peak hour, and weekday PM peak hour vehicle trip ends for the first two phases of the revised Cove Mixed Use development are based on empirical observations at similar sites. These observations are summarized in the standard reference *Trip Generation, 9<sup>th</sup> Edition*, published by the Institute of Transportation Engineers (ITE, Reference 2).

Internal trips have been -estimated to reflect the mixed-use nature of this development, based on the rates presented in the *Trip Generation Handbook* (Reference 3). As determined by the ITE methodology, individual land uses within the mixed-use development will generate a proportion of internal trips that will not be generated from outside of the development. Table 1 summarizes the revised estimated trip generation for the first two phases of the Cove development.

**Table 1: Revised Estimated Trip Generation for Revised Land Uses (Phases 1 & 2 Only)**

Land Use	ITE Land Use Code	Size	Daily Trips	Weekday AM Peak Hour Trips			Weekday PM Peak Hour Trips		
				Total	In	Out	Total	In	Out
Phase 1									
Apartment	220	244 units	1,623	125	25	100	151	98	53
Internal Trips (3% Daily, 2% AM, 3% PM)			(54)	(3)	(1)	(2)	(5)	(3)	(2)
Shopping Center	820	6,500	278	6	4	2	24	11	13
Internal Trips (19% Daily, 17% AM,19% PM)			(53)	(1)	(1)	0	(4)	(2)	(2)
Pass-by Trips (34% Daily, 34% AM, 34% PM)			(76)	(2)	(1)	(1)	(7)	(3)	(4)
Phase 2									
Apartment	220	404 units	2,687	206	41	165	251	163	88
Internal Trips (3% Daily, 2% AM, 3% PM)			(90)	(4)	(1)	(3)	(8)	(5)	(3)
Regional Park	417	5.28 acres	24	1	1	0	1	0	1
Shopping Center	820	6,800 SF	290	7	4	3	25	12	13
Internal Trips (19% Daily, 17% AM,19% PM)			(56)	(1)	(1)	0	(4)	(2)	(2)
Pass-by Trips (34% Daily, 34% AM, 34% PM)			(80)	(2)	(1)	(1)	(7)	(3)	(4)
Quality Restaurant	931	3,750 SF	337	3	2	1	28	19	9
Internal Trips (22% Daily, 16% AM, 22% PM)			(75)	0	0	0	(6)	(4)	(2)
Pass-by Trips (44% Daily, 0% AM, 44% PM)			(115)	0	0	0	(10)	(6)	(4)
High Turnover Sit-Down Restaurant	932	3,750 SF	477	40	22	18	37	22	15
Internal Trips (22% Daily, 16% AM, 22% PM)			(106)	(9)	(5)	(4)	(6)	(4)	(2)
Pass-by Trips (43% Daily, 43% AM, 43% PM)			(159)	(14)	(7)	(7)	(13)	(8)	(5)
Total Net New Trip Generation			4,852	352	81	271	447	285	162

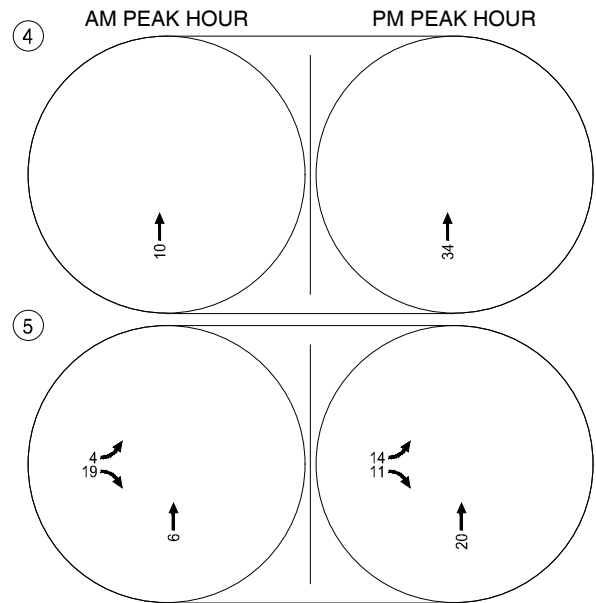
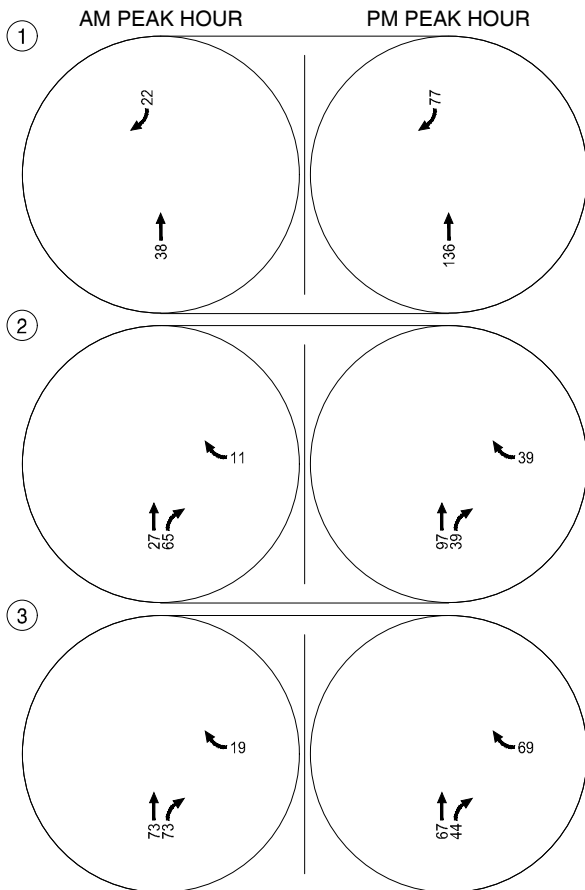
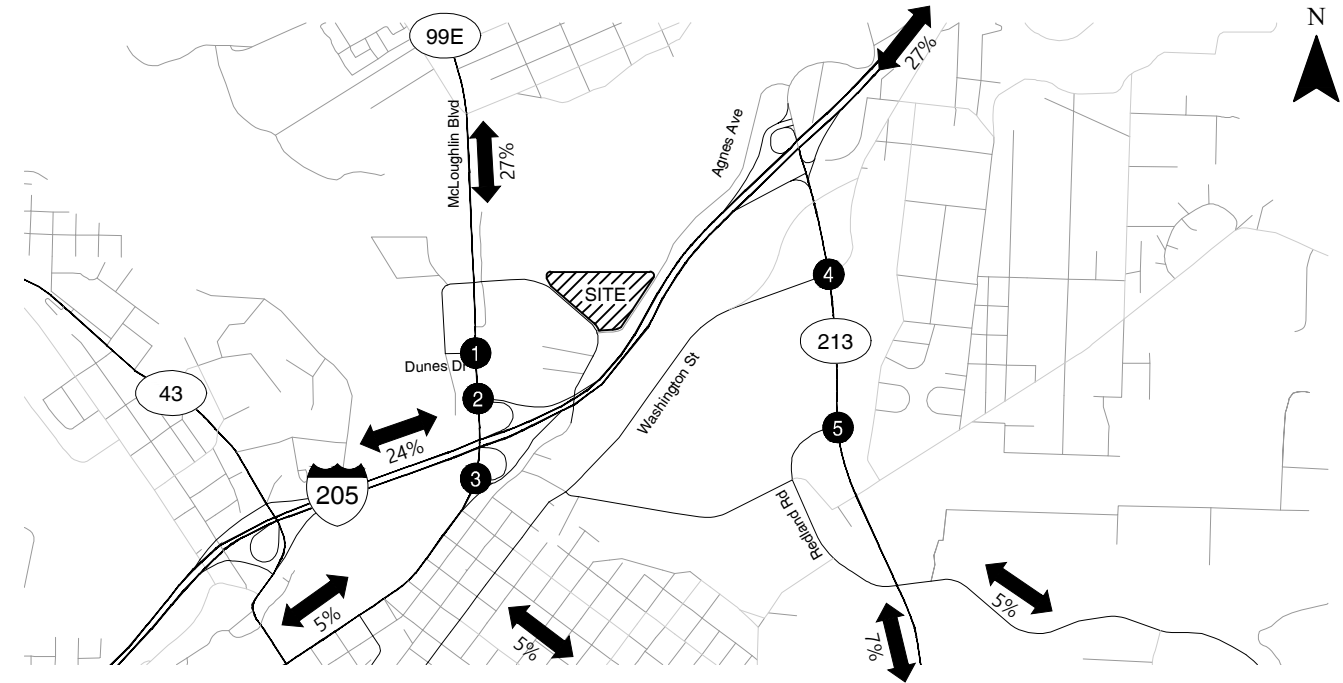
As shown in Table 1, the first two phases of the revised land uses for the Cove mixed-use development are estimated to generate approximately 4,852 net new daily trips. Of the net new daily trips, approximately 352 are estimated to occur during the weekday AM peak hour, and approximately 447 are estimated to occur during the weekday PM peak hour.

*The ITE internalization worksheets for the revised trip generation are included in Attachment “A.”*

## TRIP ASSIGNMENT

The new land uses described in Table 1 for the first two phases of the Cove development result in material changes to the directional (in/out) split in trips during the weekday AM and PM peak hours when compared to the directional split patterns documented in the 2015 TIA trip generation. As such, per the request of Oregon City traffic engineering staff, an updated trip assignment figure for Phases 1 and 2 of the Cove development has been provided and is shown in Figure 1.

*The 2015 TIA Trip Assignment Figure is included in Attachment “B.”*



Note: Some trips have been assigned to routes involving non-study intersections (i.e. Agnes Ave, Main St, Abernethy Rd).

Estimated Trip Distribution Pattern  
And Site Generated Trips  
Oregon City, Oregon

FIGURE  
1

## TRIP GENERATION COMPARISON

Table 3 compares the historically approved trip generation to the revised trip generation estimate for Phases 1 and 2 of the Cove development.

**Table 3: Difference between Historically Approved and Revised Site-generated Trips**

Trip Generation	Daily Trips	Weekday AM Peak Hour Trips			Weekday PM Peak Hour Trips		
		Total	In	Out	Total	In	Out
July 2015 Trip Generation	6,489	406	219	187	609	281	328
October 2018 Trip Generation Revision	4,852	352	81	271	447	285	162
<b>(July 2015) – (October 2018)</b>	<b>1,637</b>	<b>54</b>	<b>138</b>	<b>(84)</b>	<b>162</b>	<b>(4)</b>	<b>166</b>

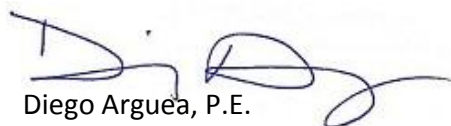
<sup>1</sup> The morning peak hour experiences an increase in outbound site-generated trips (due to increase in apartment land uses and decrease in office space) but an overall decrease in total trips.

As shown in Table 3, after accounting for the proposed development plan for Phases 1 and 2, the remaining number of approved trips from the approved July 2015 Traffic Impact Analysis is approximately 1,637 daily trips, 54 weekday AM trips, and 162 weekday PM peak hour trips.

## FINDINGS

Based on a comparison of trip estimates for the original land use approval for the Cove development, and revised land uses for development Phases 1 and 2, **the remaining trips on site after the proposed development plan revision includes 1,637 daily trips, 54 weekday AM trips, and 162 weekday PM peak hour trips.** These remaining trips should be vested for development of future phases of the Cove Mixed-Use master plan.

Sincerely,  
KITTELSON & ASSOCIATES, INC.



Diego Argüea, P.E.  
Associate Engineer

## REFERENCES

1. Kittelson and Associates, Inc. *Transportation Impact Analysis: The Cove Mixed-use Development*. 2015.
2. Institute of Transportation Engineers. *Trip Generation*, 9<sup>th</sup> Edition. 2012.
3. Institute of Transportation Engineers. *Trip Generation Handbook*, 3<sup>rd</sup> Edition. 2014.

## ATTACHMENTS

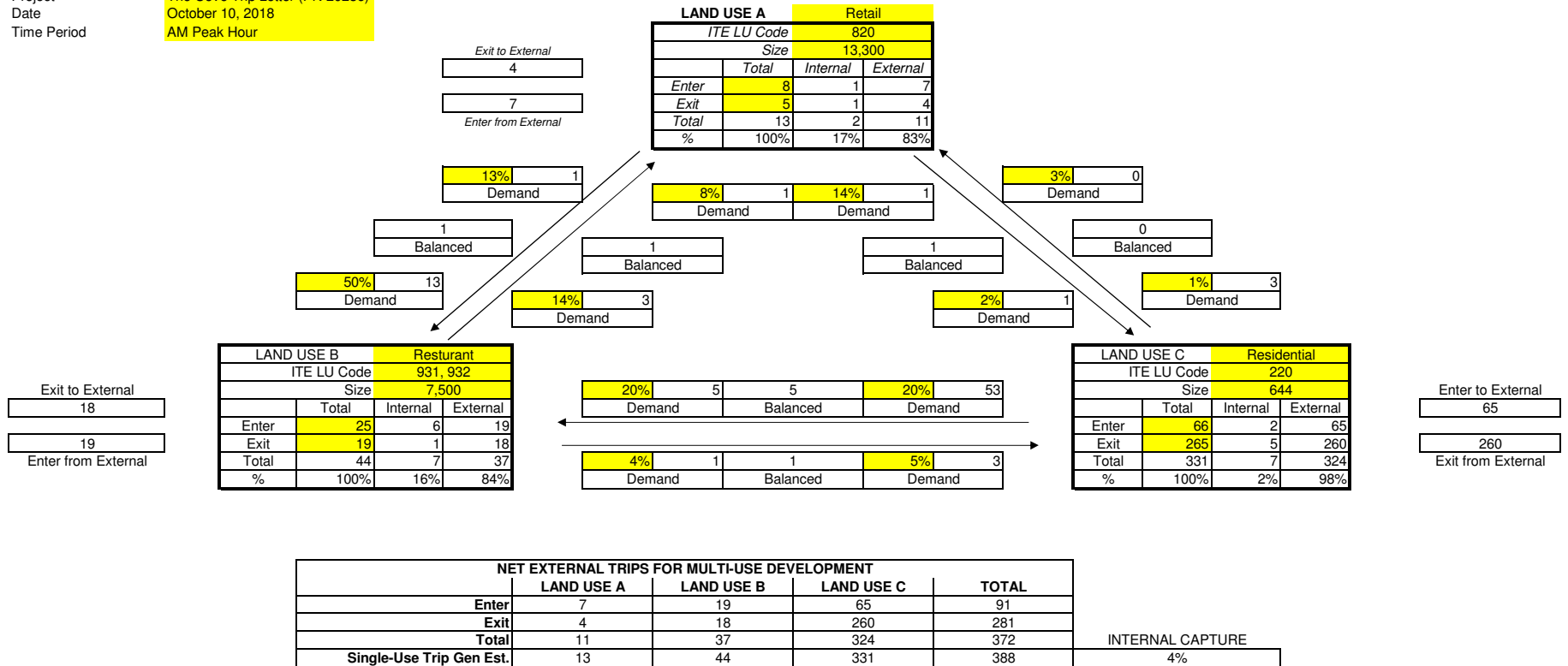
- A. Internal Capture Worksheets
- B. Trip Assignment Figure, 2015 TIA

Attachment A  
Internal Capture Worksheets



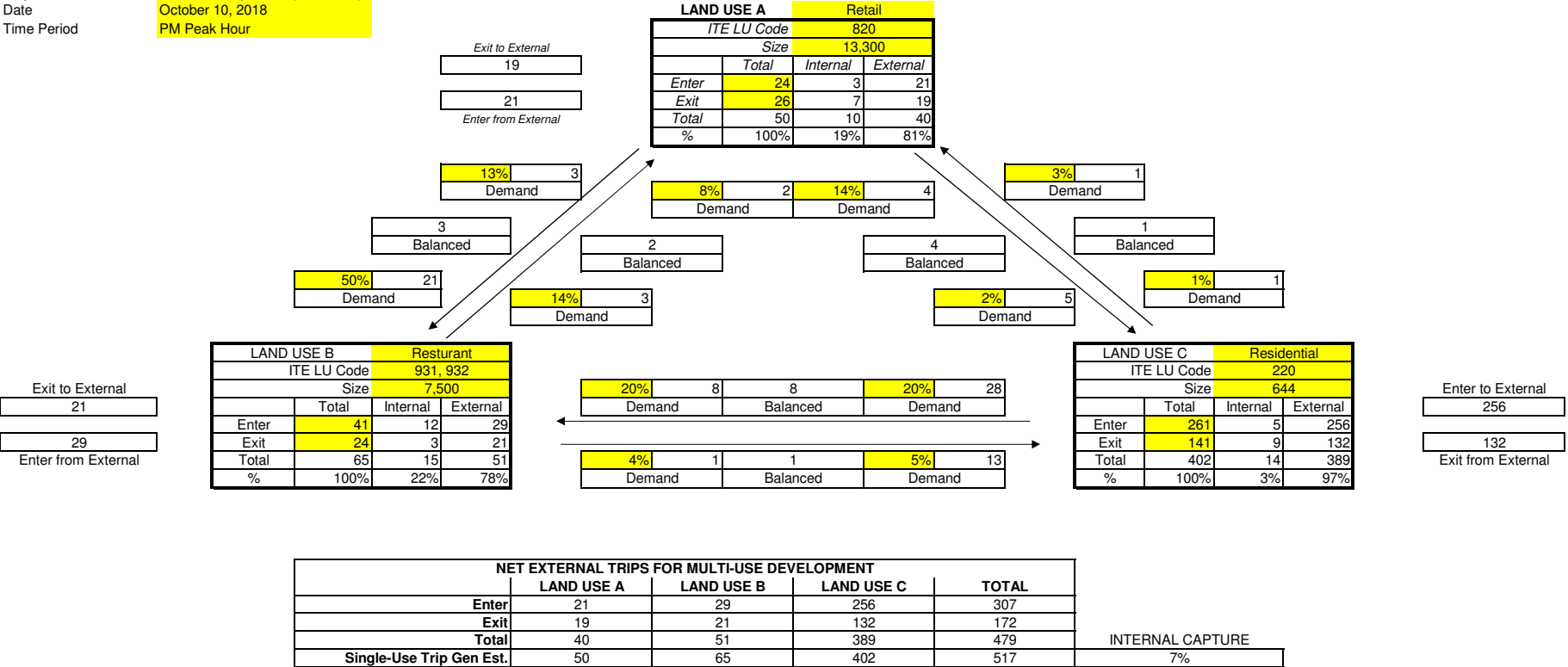
Analyst  
Project  
Date  
Time Period

DFA  
The Cove Trip Letter (PN 20286)  
October 10, 2018  
AM Peak Hour

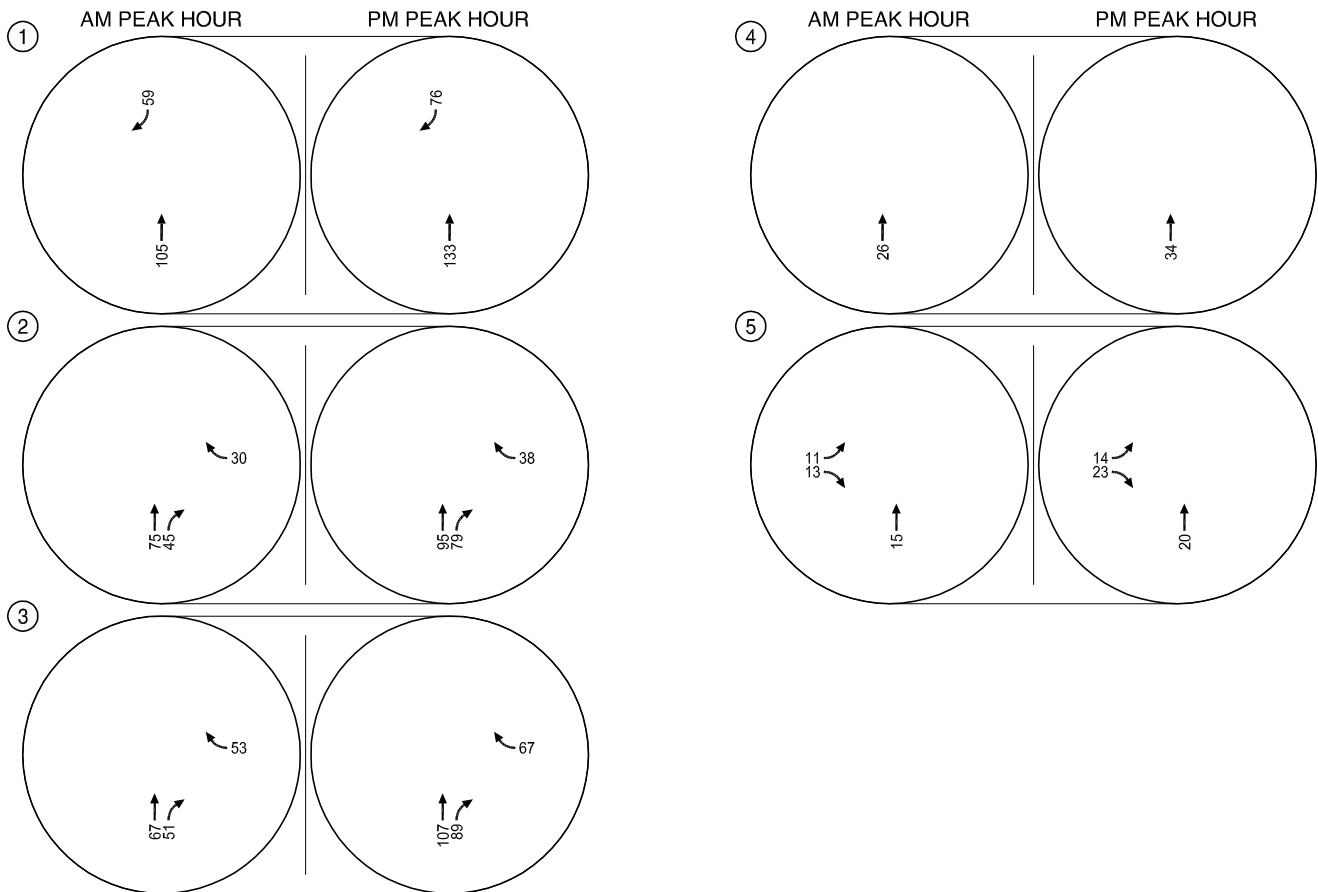
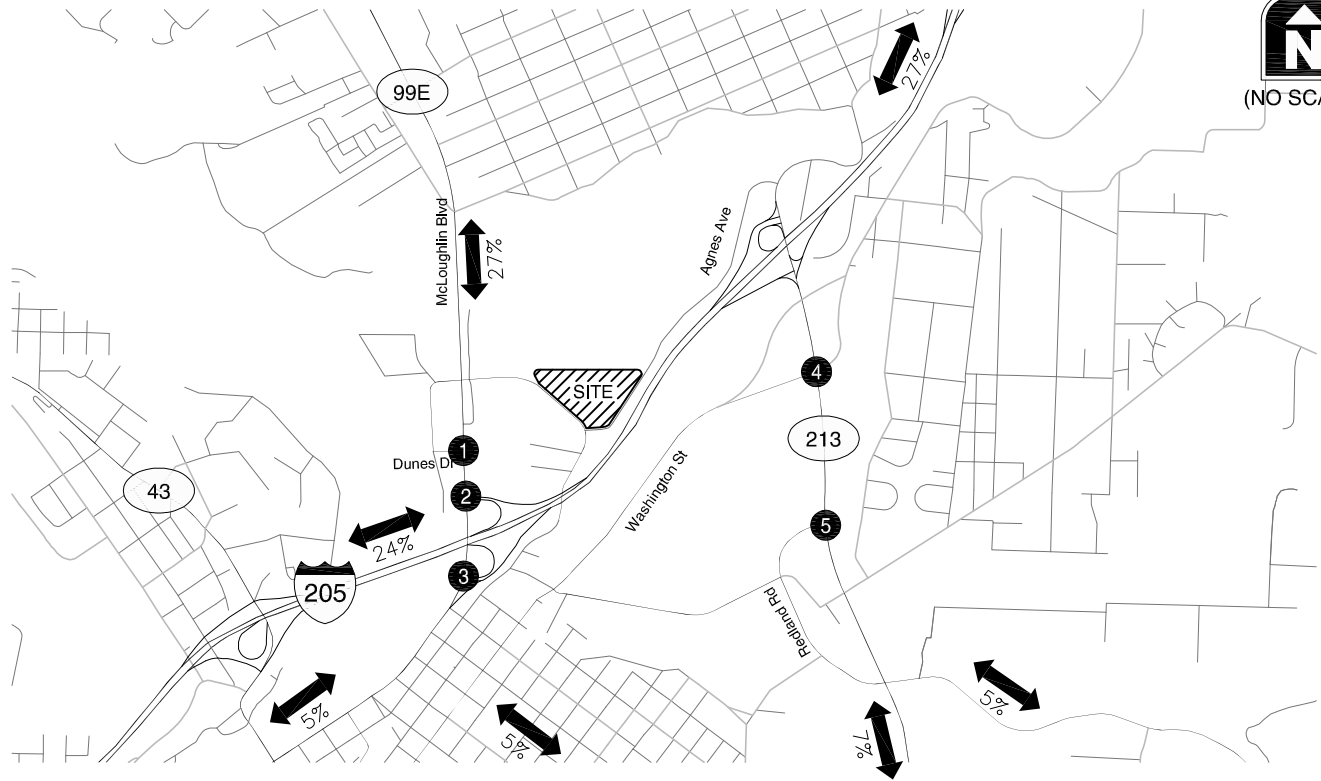


Analyst  
Project  
Date  
Time Period

DFA  
The Cove Trip Letter (PN 22346)  
October 10, 2018  
PM Peak Hour



Attachment B  
Trip Assignment Figure,  
2015 TIA



Note: Some trips have been assigned to routes involving non-study intersections (i.e. Agnes Ave, Main St, Abernethy Rd).

**ESTIMATED TRIP DISTRIBUTION PATTERN  
AND SITE GENERATED TRIPS  
OREGON CITY, OREGON**

FIGURE  
**6**