GORRILL PALMER

707 Sable Oaks Drive, Suite 30
South Portland, Maine 04106
207.772.2515

Trip Generation Summary
Thompson's Point
September 2017

Date: September 13, 2017
Subject: Updated Trip Generation
Thompson's Point
To: Bo Kennedy, Placemaker Partners, LLC
From: Randy Dunton, Emily Tynes, Gorrill Palmer (JN 3353)

Gorrill Palmer (GP) has prepared this updated trip generation summary to evaluate the trip generation for Thompson's Point in Portland, Maine. The following is a summary of the forecast trip generation for the existing uses, the proposed hotel, and the comparison of the total trip generation to the permitted trip generation.

Existing Trip Generation Summary

The trip generation for the existing Thompson's Point site has been based on information provided by Bo Kennedy in an email dated August 22, 2017. The trip generation was calculated using the same methodology as that used in previous trip generation evaluations for the site. The following table summarizes the trip generation for the existing site:

Existing Site Trip Generation

Building	Description	Size	AM Peak Hour	PM Peak Hour
Brick North				
	Winery	5,890 sf	4	16
	Circus Conservatory	6,800 sf	5	4
	Big Room Studios	3,461 sf	13	20
	Big J's Chicken Shack	1,852 sf	21	20
	Brewery	10,068 sf	7	7
	Distillery	5,284 sf	4	4
	Color Me Mine	2,136 sf	2	6
	International Cryptozoology Museum	993 sf	1	1
	Brick North Total		**57**	**78**
Brick South				
	Event/Assembly Space	2,500 Seats	100	195
	Annex	7,384 sf	--*	--*
	Brick South Total		**100**	**195**
Existing Subtotal			**157**	**273**
Reduction (10%) for Bus / Train / Shared Use			(-16)	(-27)
Existing Trip Generation			**141**	**246**

*Maximum of 2,500 people in the building for events. Highest trip generation would be an event in the Event space, not the Annex.

As shown in the table, the existing site is forecast to generate 141 trip ends during the AM peak hour and 246 trip ends during the PM peak hour.

Proposed Site Trip Generation

The trip generation for the proposed site has been based on a 148 room hotel. The previous master plan included a 125 room hotel. The hotel is proposed to include a restaurant that is intended to serve primarily hotel guests and potentially guests of other Thompson's Point uses. It is not anticipated to draw significant outside traffic, so the trip generation for the restaurant is forecast to be negligible. The trip generation for the hotel was calculated using the same methodology as that used to calculate the hotel trip generation in the original master plan. The following table summarizes the trip generation for the proposed site:

- AM Peak Hour of Adjacent Street: 83 trip ends
- PM Peak Hour of Adjacent Street: 87 trip ends

Site Trip Generation

The trip generation for the existing site has been combined with the trip generation for the proposed hotel to yield the site trip generation. The total site trip generation after the construction of the hotel has been compared to the permitted trip generation to identify the remaining available permitted trips.

Proposed Site Trip Generation

Site	Building	AM Peak Hour	PM Peak Hour
Existing			
	Brick North	57	78
	Brick South	100	195
	Existing Total	**157**	**273**
Proposed			
	Hotel	83	87
	Proposed Total	**83**	**87**
Proposed Site Subtotal		**240**	**360**
Reduction (10%) for Bus / Train / Shared Use		(-24)	(-36)
Proposed Site Trip Generation		**216**	**324**
Permitted Trip Ends		734	1091
Difference Between Permitted and Proposed Site		**518**	**767**

As shown in the table the proposed site is forecast to generate 216 trip ends during the AM peak hour and 324 trip ends during the PM peak hour. This trip generation is 518 trip ends less than the permitted trip generation during the AM peak hour and 767 trip ends less than the permitted trip generation during the PM peak hour.

JN: 3353
Project Description: Thompsons Point Existing
Project Location: Portland, Maine
Date: 9/7/2017

Gorrill Palmer
707 Sable Oaks Drive
Suite 30
South Portland, Maine 04106

Specialty Retail Center
Land Use Code (LUC) 814

Gross Floor Area (ft^2): 5,890

Average Rate

Time Period	ITE Trip Rate	Trip Ends	Number of Studies	Directional Split * IN	Directional Split * OUT	Directional Distribution IN	Directional Distribution OUT	R^2
Weekday	T = 44.32 (X)	261	4	50%	50%	131	130	---
Peak Hour of Adjacent Street Traffic 7-9 AM**	T = 0.74 (X)	4	N/A	60%	40%	2	2	
Peak Hour of Adjacent Street Traffic 4-6 PM	T = 2.71 (X)	16	5	45%	55%	7	9	---
AM Peak Hour of Generator	T = 6.84 (X)	40	4	50%	50%	20	20	---
PM Peak Hour of Generator	T = 5.02 (X)	30	3	55%	45%	17	13	---
Saturday	T = 42.04 (X)	248	3	50%	50%	124	124	---
Saturday Peak Hour of Gen.***	T = 6.63 (X)	39	3	50%	50%	20	19	---

**Based on ratio of AM/PM traffic for LUC 820, Shopping Center and applied to 814 PM rate.
***Saturday Peak Hour comes from a ratio of PM to Saturday trip rates from LUC 820 - Shopping Center
* Percentages rounded to nearest 5%

Fitted Curve Equation

Time Period	ITE Trip Rate	Trip Ends	Number of Studies	Directional Split * IN	Directional Split * OUT	Directional Distribution IN	Directional Distribution OUT	R^2
Weekday	T = 42.78 (X) + 37.66	290	4	50%	50%	145	145	0.69
Peak Hour of Adjacent Street Traffic 7-9 AM	---	---	---	---	---	---	---	---
Peak Hour of Adjacent Street Traffic 4-6 PM	T = 2.40 (X) + 21.48	36	5	45%	55%	16	20	0.98
AM Peak Hour of Generator	T = 4.91 (X) + 115.59	145	4	50%	50%	73	72	0.90
PM Peak Hour of Generator	---	---	---	---	---	---	---	---
Saturday	---	---	---	---	---	---	---	---
Saturday Peak Hour of Gen.	---	---	---	---	---	---	---	---

* Percentages rounded to nearest 5%
(---) Not Given

AM Peak of Adjacent Street 7-9 AM***	T = 0.275 (PM Peak Hour)	8	60%	40%	5	3
Saturday Peak Hour**	T = 1.325 (PM Peak Hour)	40	50%	50%	20	20

**Saturday Peak Hour comes from a ratio of PM to Saturday trip rates from LUC 820 - Shopping Center
***AM Peak Hour of Adjacent Street comes from a ration of PM to AM trip rates from LUC 820 - Shopping Center

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JOB 2419
SHEET NO. _____ OF _____
CALCULATED BY _____ DATE _____
CHECKED BY _____ DATE _____
SCALE _____

Education Space Trip Generation

Total (from 2/27/14 submittal): 25 AM and 21 PM

6,799 SF in Building A
30,600 SF in Building D
} 37,399 SF Total

$\frac{6,799}{37399} \times 25 = 5$ AM trips to Building A

$\frac{6799}{37399} \times 21 = 4$ PM trips to Building A

$\frac{30600}{37399} \times 25 = 20$ AM trips to Building D

$\frac{30600}{37399} \times 21 = 17$ PM trips to Building D

JN:	2419
Project Description:	Thompsons Point
Project Location:	Portland, Maine
Date:	August 14, 2015

Gorrill-Palmer Consulting Engineers, Inc.
P.O. Box 1237
15 Shaker Road
Gray, Maine 04039

General Office Building
Land Use Code (LUC) 710

Square Feet 3,461

Trip Ends Based on Fitted Curve Equation

Time Period	ITE Trip Rate	Trip Ends	Number of Studies	Directional Split * IN	Directional Split * OUT	Directional Distribution IN	Directional Distribution OUT	R^2
Weekday	Ln (T) = 0.77 Ln (X) + 3.65	100	78	50%	50%	50	50	0.80
AM Peak Hour	**Ln (T) = 0.80 Ln (X) + 1.55**	**13**	**217**	**90%**	**10%**	**12**	**1**	**0.83**
PM Peak Hour	**T = 1.12 (X) + 78.81**	**83**	**235**	**15%**	**85%**	**12**	**71**	**0.82**
Saturday	T = 2.14 (X) + 18.47	26	17	50%	50%	13	13	0.66
Peak Hour of Generator	Ln (T) = 0.81 Ln (X) - 0.12	2	10	55%	45%	1	1	0.59

* Percentages rounded to nearest 5%

Trip Ends Based on Average Rate

Time Period	ITE Trip Rate	Trip Ends	Number of Studies	Directional Split * IN	Directional Split * OUT	Directional Distribution IN	Directional Distribution OUT	R^2
Weekday	T = 11.01 (X)	38	78	50%	50%	19	19	---
AM Peak Hour	T = 1.55 (X)	5	217	90%	10%	5	0	---
PM Peak Hour	T = 1.49 (X)	5	235	15%	85%	1	4	---
Saturday	T = 2.37 (X)	8	17	50%	50%	4	4	---
Saturday Peak Hour of Gen.	**T = 0.41 (X)**	**1**	**10**	**50%**	**50%**	**1**	**0**	**---**

* Percentages rounded to nearest 5%

PM Peak Hour:	T = 1.49/1.55 (AM Peak)	12		15%	85%	2	10	0.82

PM Trips Based on Email From Chris T. dated Aug 28, 2015 stating 20 max.

JN:	3353	
Project Description:	Thompson's Point Existing	
Project Location:	Portland, Maine	
Date:	September 7, 2017	

Gorrill Palmer
707 Sable Oaks Drive
Suite 30
South Portland, Maine 04106

High Turnover (Sit Down) Restaurant
Land Use Code (LUC) 932

Gross Floor Area (ft^2): 1,852

Time Period	ITE Trip Rate (Average Rate)	# of Sources	Trip Ends	Directional Split IN	Directional Split OUT	Directional Distribution IN	Directional Distribution OUT	R^2
Weekday	T = 127.15 (X)	14	235	50%	50%	118	117	N/A
AM Peak Adjacent Street	T = 11.52 (X)	18	**21**	50%	50%	11	10	N/A
PM Peak Adjacent Street	T = 10.92 (X)	38	**20**	60%	40%	12	8	N/A
AM Peak of Generator	**T = 13.53 (X)**	**21**	**25**	**50%**	**50%**	**13**	**12**	**N/A**
PM Peak of Generator	**T = 18.80 (X)**	**27**	**35**	**55%**	**45%**	**19**	**16**	**N/A**
Saturday	T = 158.37 (X)	2	293	50%	50%	147	146	N/A
Saturday Peak Hour of Gen.	T = 20.00 (X)	3	**37**	65%	35%	24	13	N/A

JN:	3353	Gorrill Palmer
Project Description:	Thompsons Point Existing	707 Sable Oaks Drive
Project Location:	Portland, Maine	Suite 30
Date:	09/07/17	South Portland, Maine 04106

Manufacturing
Land Use Code (LUC) 140

Gross Floor Area 10,068

Trip Ends Based on Fitted Curve Equation

Time Period	ITE Trip Rate	Trip Ends	Directional Split * IN	Directional Split * OUT	Directional Distribution IN	Directional Distribution OUT	Number of Studies
Weekday	T = 3.88 (X) - 20.70	18	50%	50%	9	9	62
AM Peak Adjacent Street	T = 0.83 (X) - 28.88	-21	75%	25%	-16	-5	50
PM Peak Adjacent Street	T = 0.78 (X) - 12.89	-5	35%	65%	-2	-3	54
AM Peak hour of Generator	T = 0.83 (X) - 17.71	-9	70%	30%	-6	-3	50
PM Peak Hour of Generator	T = 0.76 (X) - 5.15	3	50%	50%	2	1	50
Saturday	Not Given	-	50%	50%	---	---	2
Saturday Peak Hour of Gen.	Not Given	-	50%	50%	---	---	2

* Percentages rounded to nearest 5%

Trip Ends Based on Average Rate

Time Period	ITE Trip Rate	Trip Ends	Directional Split * IN	Directional Split * OUT	Directional Distribution IN	Directional Distribution OUT	
Weekday	T = 3.82 (X)	38	50%	50%	19	19	62
AM Peak Adjacent Street	T = 0.73 (X)	7	75%	25%	5	2	50
PM Peak Adjacent Street	T = 0.74 (X)	7	35%	65%	2	5	54
AM Peak Hour of Generator	T = 0.78 (X)	8	70%	30%	6	2	50
PM Peak Hour of Generator	T = 0.75 (X)	8	50%	50%	4	4	50
Saturday	T = 1.49 (X)	15	50%	50%	8	7	2
Saturday Peak Hour of Gen.	T = 0.28 (X)	3	50%	50%	2	1	2

* Percentages rounded to nearest 5%

JN:	2419	Gorrill-Palmer Consulting Engineers, Inc.
Project Description:	Thompsons Point	P.O. Box 1237
Project Location:	Portland, Maine	15 Shaker Road
Date:	08/14/15	Gray, Maine 04039

Manufacturing
Land Use Code (LUC) 140

Gross Floor Area 5,284

Trip Ends Based on Fitted Curve Equation

Time Period	ITE Trip Rate	Trip Ends	Directional Split * IN	Directional Split * OUT	Directional Distribution IN	Directional Distribution OUT	Number of Studies
Weekday	T = 3.88 (X) - 20.70	0	50%	50%	0	0	62
AM Peak Adjacent Street	T = 0.83 (X) - 28.88	-24	75%	25%	-18	-6	50
PM Peak Adjacent Street	T = 0.78 (X) - 12.89	-9	35%	65%	-3	-6	54
AM Peak hour of Generator	T = 0.83 (X) - 17.71	-13	70%	30%	-9	-4	50
PM Peak Hour of Generator	T = 0.76 (X) - 5.15	-1	50%	50%	-1	0	50
Saturday	Not Given	-	50%	50%	---	---	2
Saturday Peak Hour of Gen.	Not Given	-	50%	50%	---	---	2

* Percentages rounded to nearest 5%

Trip Ends Based on Average Rate

Time Period	ITE Trip Rate	Trip Ends	Directional Split * IN	Directional Split * OUT	Directional Distribution IN	Directional Distribution OUT	
Weekday	T = 3.82 (X)	20	50%	50%	10	10	62
AM Peak Adjacent Street	T = 0.73 (X)	4	75%	25%	3	1	50
PM Peak Adjacent Street	T = 0.74 (X)	4	35%	65%	1	3	54
AM Peak Hour of Generator	T = 0.78 (X)	4	70%	30%	3	1	50
PM Peak Hour of Generator	T = 0.75 (X)	4	50%	50%	2	2	50
Saturday	T = 1.49 (X)	8	50%	50%	4	4	2
Saturday Peak Hour of Gen.	T = 0.28 (X)	1	50%	50%	1	0	2

* Percentages rounded to nearest 5%

JN: 2419
Project Description: Thompsons Point
Project Location: Portland, Maine
Date: 8/14/2015

Gorrill-Palmer Consulting Engineers, Inc.
P.O. Box 1237
15 Shaker Road
Gray, Maine 04039

Specialty Retail Center
Land Use Code (LUC) 814

Gross Floor Area (ft^2): 2,136

Average Rate

Time Period	ITE Trip Rate	Trip Ends	Number of Studies	Directional Split * IN	Directional Split * OUT	Directional Distribution IN	Directional Distribution OUT	R^2
Weekday	T = 44.32 (X)	95	4	50%	50%	48	47	---
Peak Hour of Adjacent Street Traffic 7-9 AM**	T = 0.74 (X)	2	N/A	60%	40%	1	1	
Peak Hour of Adjacent Street Traffic 4-6 PM	T = 2.71 (X)	6	5	45%	55%	3	3	---
AM Peak Hour of Generator	T = 6.84 (X)	15	4	50%	50%	8	7	---
PM Peak Hour of Generator	T = 5.02 (X)	11	3	55%	45%	6	5	---
Saturday	T = 42.04 (X)	90	3	50%	50%	45	45	---
Saturday Peak Hour of Gen.***	T = 6.63 (X)	14	3	50%	50%	7	7	---

**Based on ratio of AM/PM traffic for LUC 820, Shopping Center and applied to 814 PM rate.
***Saturday Peak Hour comes from a ratio of PM to Saturday trip rates from LUC 820 - Shopping Center
* Percentages rounded to nearest 5%

Fitted Curve Equation

Time Period	ITE Trip Rate	Trip Ends	Number of Studies	Directional Split * IN	Directional Split * OUT	Directional Distribution IN	Directional Distribution OUT	R^2
Weekday	T = 42.78 (X) + 37.66	129	4	50%	50%	65	64	0.69
Peak Hour of Adjacent Street Traffic 7-9 AM	---	---	---	---	---	---	---	---
Peak Hour of Adjacent Street Traffic 4-6 PM	T = 2.40 (X) + 21.48	27	5	45%	55%	12	15	0.98
AM Peak Hour of Generator	T = 4.91 (X) + 115.59	126	4	50%	50%	63	63	0.90
PM Peak Hour of Generator	---	---	---	---	---	---	---	---
Saturday	---	---	---	---	---	---	---	---
Saturday Peak Hour of Gen.	---	---	---	---	---	---	---	---

* Percentages rounded to nearest 5%
(---) Not Given

AM Peak of Adjacent Street 7-9 AM***	T = 0.275 (PM Peak Hour)	3	60%	40%	2	1
Saturday Peak Hour**	T = 1.325 (PM Peak Hour)	15	50%	50%	8	7

**Saturday Peak Hour comes from a ratio of PM to Saturday trip rates from LUC 820 - Shopping Center
***AM Peak Hour of Adjacent Street comes from a ration of PM to AM trip rates from LUC 820 - Shopping Center

JN:	3353	Gorrill Palmer
Project Description:	Thompson's Point	707 Sable Oaks Drive
Project Location:	Portland, Maine	Suite 30
Date:	September 7, 2017	South Portland, Maine 04106

Cultural Center
Based on Los Angeles Entertainment District Museum

Gross Floor Area 993

Time Period	Trip Rate per 1000 GFA	Trip Ends	Number of Studies	Directional Split		Directional Distribution		R^2
				IN	OUT	IN	OUT	
PM Peak Hour	T = 1.14(X)	1	1	50%	50%	1	0	---

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JOB 2419 - Thompsons Point
SHEET NO. _____ OF _____
CALCULATED BY ET DATE 8/14/15
CHECKED BY _____ DATE _____
SCALE _____

Trip Generation - Event / Assembly Space / Event Center

Source: Original approved study (Trip Gen Summary Memo 3-3-14)

2500 occupants = 100 AM trips
195 PM trips

Based on City and MaineDOT reviewed and approved rates used in the original approved study. They originate from a study from the Bayside Expo and Executive Conference Center in Boston, Massachusetts

JN:	3353	Gorrill Palmer
Project Description:	Thompson's Point Proposed	707 Sable Oaks Drive
Project Location:	Portland, Maine	Suite 30
Date:	September 7, 2017	South Portland, Maine 04106

Hotel
Land Use Code (LUC) 310

Numer of Rooms: 148

Trip Ends Based on Fitted Curve Equation

Time Period	ITE Trip Rate	Trip Ends	Directional Split *		Directional Distribution	
			IN	OUT	IN	OUT
Weekday	T = 8.95 (X) - 373.16	951	50%	50%	476	475
AM Peak Adjacent Street	Ln(T) = 1.24 Ln(X) - 2.00	66	60%	40%	40	26
PM Peak Adjacent Street	---	---	55%	45%	---	---
AM Peak hour of Generator	Ln(T) = 0.87 Ln(X) + 0.02	79	55%	45%	43	36
PM Peak Hour of Generator	Ln(T) = 1.00 Ln(X) - 0.58	83	60%	40%	50	33
Saturday	T = 9.62 (X) - 294.56	1129	50%	50%	565	564
Saturday Peak Hour of Gen.	T = 0.69 (X) + 4.32	106	55%	45%	58	48

* Percentages rounded to nearest 5%

Trip Ends Based on Average Rate

Time Period	ITE Trip Rate	Trip Ends	Directional Split *		Directional Distribution	
			IN	OUT	IN	OUT
Weekday	T = 8.17 (X)	1209	50%	50%	605	604
AM Peak Adjacent Street	**T = 0.56 (X)**	**83**	**60%**	**40%**	**50**	**33**
PM Peak Adjacent Street	**T = 0.59 (X)**	**87**	**55%**	**45%**	**48**	**39**
AM Peak Hour of Generator	T = 0.52 (X)	77	55%	45%	42	35
PM Peak Hour of Generator	T = 0.61 (X)	90	60%	40%	54	36
Saturday	T = 8.19 (X)	1212	50%	50%	606	606
Saturday Peak Hour of Gen.	T = 0.72 (X)	107	55%	45%	59	48

* Percentages rounded to nearest 5%