

MEMORANDUM

Ref: 1537A

To: Mark Assia
Chinburg Properties

From: Stephen G. Pernaw, P.E., PTOE

Subject: Proposed Residential Development
Exeter, New Hampshire

Date: May 22, 2014

As requested, Pernaw & Company, Inc. has conducted a trip generation analysis for the proposed project known as “The Residences at 27 Chestnut Street” in Exeter, New Hampshire. This development is comprised of 96 apartments and three house lots and the site is located on the east side of Chestnut Street and the south side of Jady Hill Avenue. In addition, we researched available traffic count data at the New Hampshire Department of Transportation (NHDOT). The purpose of this memorandum is to summarize the results of our analyses and findings.

PROPOSED DEVELOPMENT

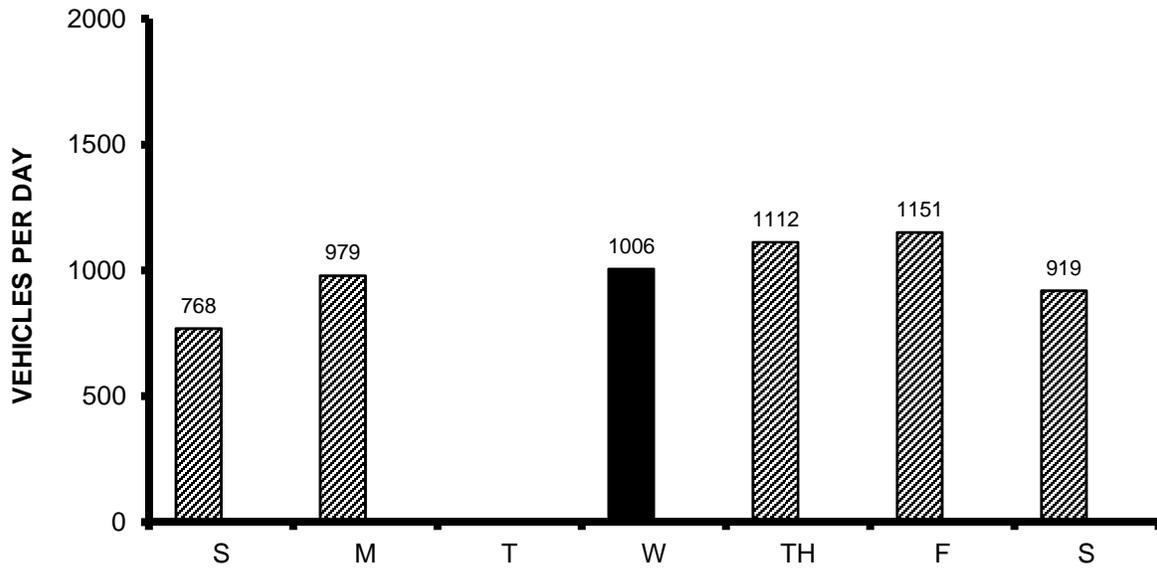
According to the concept plan prepared for 27 Chestnut Street, LLC dated 3/31/14 (Attachment 1) this development includes the construction of two four-story buildings containing forty-eight residential apartments in each. Access to the apartment buildings is proposed via one two-way driveway on the east side of Chestnut Street, along with an internal “loop” road. The three house lots will be accessed via driveways on Chestnut Street (one on the east side) and Jady Hill Avenue (two on the south side). The site was previously occupied by a manufacturing/warehouse building that has since been razed.

EXISTING TRAFFIC VOLUMES

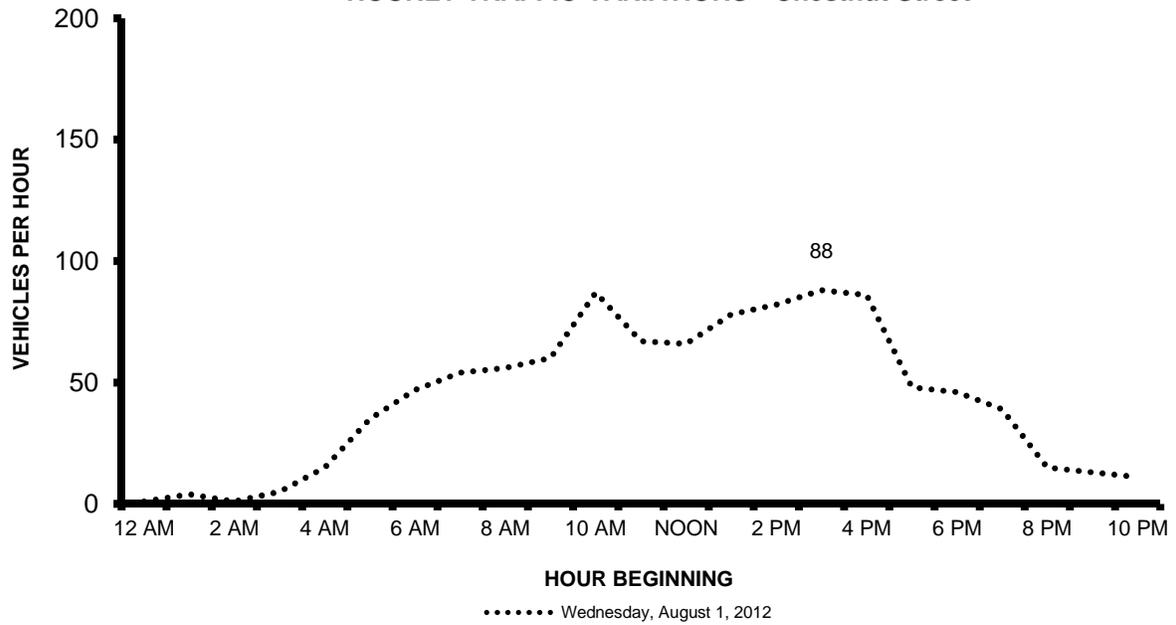
Research at the NHDOT revealed that a short-term Automatic Traffic Recorder count was conducted on Chestnut Street, south of Jady Hill Road in August 2012. This count station is located adjacent to the subject site. According to the NHDOT reports for 2012, that section of Chestnut Street carried an Annual Average Daily Traffic (AADT) volume of approximately 930 vehicles per day (vpd), down from 1,300 vpd and 1,600 vpd in 2009 and 2006 respectively (see Attachment 2).

Data from this nearby count station indicates that weekday traffic volumes on Chestnut Street typically reach peak levels during the typical morning and evening commuter hours (Attachment 3). The diagrams on the following page summarize the daily and hourly variations in traffic demand along this section of Chestnut Street.

DAILY TRAFFIC VARIATIONS - Chestnut Street
 South of Jady Hill Road - August 2012



HOURLY TRAFFIC VARIATIONS - Chestnut Street



MOTOR VEHICLE CRASH HISTORY

Crash data from the State of New Hampshire Department of Transportation for the most recent three-year period (2009 to 2011) was researched to identify accident rates and patterns in the study area. Over the three-year period, the Location Data Reports indicate that 946 crashes were recorded on a town-wide basis. It should be noted that this database is considered to be a subset of the total collisions as not all incidents are required to be reported to the State.

Of these 946 crashes, one contained sufficient detail to locate it in the vicinity of the Chestnut Street / Jady Hill Avenue intersection. This collision involved another motor vehicle and resulted in property damage only. Inclement weather or unfavorable surface conditions does not appear to be a contributing factor. No fatalities were reported in this study group.

SITE GENERATED TRAFFIC

To estimate the quantity of vehicle-trips that will be produced by the proposed residential development, Pernaw & Company, Inc. considered standard trip generation rates and equations published by the Institute of Transportation Engineers¹ (ITE). The closest ITE Land Use Code for these specific uses is Land Use Code (LUC) 220 (Apartments) and LUC 210 (Single-Family Housing).

The table on the following page summarizes the results of the trip generation analysis for the proposed development, and is based on the number of dwelling units as the independent variable. The computations pertaining to the trip generation analyses are attached (Attachment 4-8).

¹ Institute of Transportation Engineers, *Trip Generation*, 9th Edition (Washington, D.C., 2012)
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Table 1	Trip Generation Summary		
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	96 Proposed Residential Apartments ¹	3 Proposed Single-Family Dwelling Units ²	Total
Weekday Total			
Entering	319 veh	15 veh	334 veh
Exiting	<u>319 veh</u>	<u>15 veh</u>	<u>334 veh</u>
Total	638 trips	30 trips	668 trips
Weekday AM Peak Hour			
Entering	10 veh	1 veh	11 veh
Exiting	<u>39 veh</u>	<u>1 veh</u>	<u>40 veh</u>
Total	49 trips	2 trips	51 trips
Weekday PM Peak Hour			
Entering	39 veh	2 veh	41 veh
Exiting	<u>21 veh</u>	<u>1 veh</u>	<u>22 veh</u>
Total	60 trips	3 trips	63 trips
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Saturday Total			
Entering	307 veh	15 veh	322 veh
Exiting	<u>307 veh</u>	<u>15 veh</u>	<u>322 veh</u>
Total	614 trips	30 trips	644 trips
Saturday Peak Hour			
Entering	25 veh	2 veh	27 veh
Exiting	<u>25 veh</u>	<u>1 veh</u>	<u>26 veh</u>
Total	50 trips	3 trips	53 trips

¹ITE Land Use Code 220 - Apartment
²ITE Land Use Code 210 - Single-Family Detached Housing

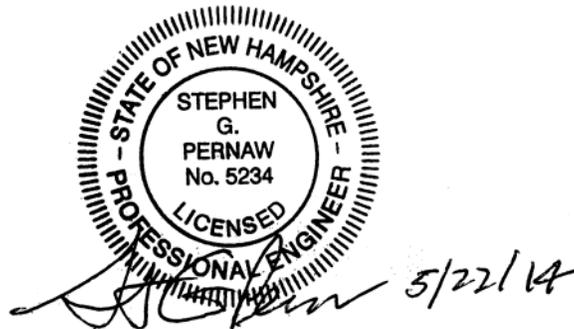
This analysis indicates that the proposed development will generate approximately 63 vehicle-trips during the worst-case weekday PM peak hour (41 arrivals, 22 departures). This type of use generates “primary” trips which are considered to be “new” trips to the area.

CONCLUSIONS

From a traffic engineering standpoint, the hourly rate of traffic flow is of most importance. “The Residences at 27 Chestnut Street” is expected to generate approximately 63 vehicle-trips (41 arrivals, 22 departures) during the worst-case weekday PM peak hour period. This translates into one additional vehicle every minute, on average, during this worst-case peak hour period.

Traffic increases of this magnitude simply will not be perceivable to drivers in the traffic stream on the adjacent street system. The proposed residences will not impact traffic operations in the area, nor affect Level of Service at nearby intersections.

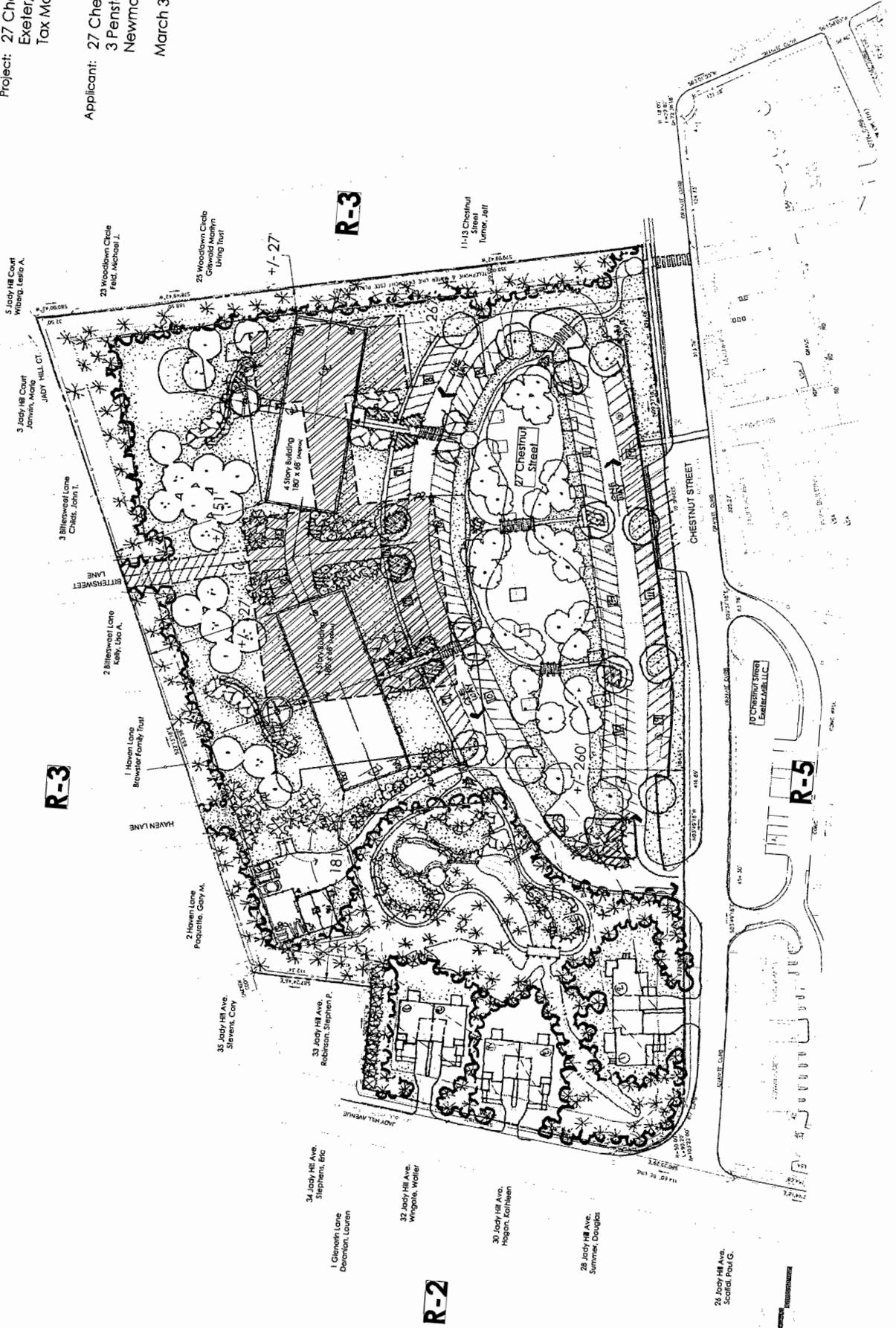
Attachments



The Residences at 27 Chestnut Street

Project: 27 Chestnut Street
Exeter, NH
Tax Map 64; Lot 52

Applicant: 27 Chestnut Street LLC
3 Penstock Way
Newmarket, NH 03857
March 31, 2014



R-3

R-3

R-5

R-2

STATE OF NEW HAMPSHIRE
DEPARTMENT OF TRANSPORTATION
BUREAU OF TRAFFIC

Bureau of Planning, Traffic Section, Traffic Reports

06-Mar-14

STAT. TYPE	LOCATION	FC	2006	2007	2008	2009	2010	2011	2012	2013
Town: EXETER										
153001	02 NH 101 AT MILEPOST 127.4 BETWEEN EXITS 11-12 (EB-WB) (01153150 - 01153151)	12	40000	41000	39000	40000	39804	39375	40319	40555
153009	82 NH 111 (EXETER RD) AT STRATHAM TL (EB-WB) (81153114-81153115)	17	9500	*	*	10000	*	*	10000	*
153010	82 NH 111 (FRONT ST) WEST OF GARFIELD ST (EB-WB) (81153096-81153097)	16	9000	*	*	9200	*	*	8400	*
153011	82 LINCOLN ST NORTH OF NH 111 (FRONT ST)	17	*	3900	*	*	3100	*	*	3800
153012	82 NH 111 (FRONT ST) EAST OF LINCOLN ST	16	*	*	12000	*	*	10000	*	*
153017	82 NH 111A (BRENTWOOD RD) WEST OF COLUMBUS AVE	17	*	*	4100	*	*	4400	*	*
153020	82 NH 111 (FRONT ST) EAST OF WASHINGTON ST	16	*	*	8400	*	*	7900	*	*
153023	82 NH 88 (HAMPTON FALLS RD) SOUTH OF BAYBERRY LANE	17	*	*	2800	*	*	2700	*	*
153024	82 CHESTNUT ST SOUTH OF JADY HILL RD (SB-NB) (81153094-81153095)	19	1600	*	*	1300	*	*	930	*
153028	82 NH 108 (PORTSMOUTH AVE) AT WHEELWRIGHT CREEK	16	*	*	*	19000	*	18000	*	*
153030	82 NH 85 (WATER ST) NORTH OF PARK ST	17	*	*	3300	*	*	*	3300	*
153032	82 NH 27 (WATER ST) WEST OF NH 108/NH 111 (FRONT ST)	16	*	12000	*	*	9800	*	*	8700
153035	82 NH 85 (WATER ST) NORTH OF NH 27 (MAIN ST)	17	*	*	3300	*	3200	*	*	2600
153038	82 NH 27 (MAIN ST) EAST OF CASS ST (EB-WB) (81153092-81153093)	16	8400	*	*	8000	*	*	8300	*
153039	82 LINCOLN ST SOUTH OF NH 27 (MAIN ST)	17	*	*	5300	*	*	4800	*	7700

Phase Time Period Trip Generation
Weekday Average Daily Trips

Attachment 4

Project : The Residences at 27 Chestnut Street
Alternative : Alternative 1
Phase : Phase 1

Open Date : 5/14/2014
Analysis Date : 5/14/2014

ITE	Land Use	Enter	Exit	Total
220	APT 1	319	319	638
	96 Dwelling Units			
210	SFHOUSE 1	15	14	29
	3 Dwelling Units			
Unadjusted Driveway Volume		334	333	667
Unadjusted Pass-By Trips		0	0	0
Internal Vehicle Trips		0	0	0
Adjusted Driveway Volume		334	333	667
Adjusted Pass-By Trips		0	0	0
Adjusted Total Volume Added to Adjacent Streets		334	333	667

Phase Time Period Trip Generation
Weekday AM Peak Hour of Adjacent Street Traffic

Attachment 5

Project : The Residences at 27 Chestnut Street
Alternative : Alternative 1
Phase : Phase 1

Open Date : 5/14/2014
Analysis Date : 5/14/2014

ITE	Land Use	Enter	Exit	Total
220	APT 1	10	39	49
	96 Dwelling Units			
210	SFHOUSE 1	1	1	2
	3 Dwelling Units			
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Unadjusted Driveway Volume		11	40	51
Unadjusted Pass-By Trips		0	0	0
Internal Vehicle Trips		0	0	0
Adjusted Driveway Volume		11	40	51
Adjusted Pass-By Trips		0	0	0
Adjusted Total Volume Added to Adjacent Streets		11	40	51

Phase Time Period Trip Generation
Weekday PM Peak Hour of Adjacent Street Traffic

Attachment 6

Project : The Residences at 27 Chestnut Street
Alternative : Alternative 1
Phase : Phase 1

Open Date : 5/14/2014
Analysis Date : 5/14/2014

ITE	Land Use	Enter	Exit	Total
220	APT 1	39	21	60
	96 Dwelling Units			
210	SFHOUSE 1	2	1	3
	3 Dwelling Units			
Unadjusted Driveway Volume		41	22	63
Unadjusted Pass-By Trips		0	0	0
Internal Vehicle Trips		0	0	0
Adjusted Driveway Volume		41	22	63
Adjusted Pass-By Trips		0	0	0
Adjusted Total Volume Added to Adjacent Streets		41	22	63

Phase Time Period Trip Generation
Saturday Average Daily Trips

Attachment 7

Project : The Residences at 27 Chestnut Street
Alternative : Alternative 1
Phase : Phase 1

Open Date : 5/14/2014
Analysis Date : 5/14/2014

ITE	Land Use	Enter	Exit	Total
220	APT 1	307	306	613
	96 Dwelling Units			
210	SFHOUSE 1	15	15	30
	3 Dwelling Units			
Unadjusted Driveway Volume		322	321	643
Unadjusted Pass-By Trips		0	0	0
Internal Vehicle Trips		0	0	0
Adjusted Driveway Volume		322	321	643
Adjusted Pass-By Trips		0	0	0
Adjusted Total Volume Added to Adjacent Streets		322	321	643

Phase Time Period Trip Generation
Saturday Peak Hour of Generator

Project : The Residences at 27 Chestnut Street
 Alternative : Alternative 1
 Phase : Phase 1

Open Date : 5/14/2014
 Analysis Date : 5/14/2014

ITE	Land Use	Enter	Exit	Total
220	APT 1	25	25	50
	96 Dwelling Units			
210	SFHOUSE 1	2	1	3
	3 Dwelling Units			
Unadjusted Driveway Volume		27	26	53
Unadjusted Pass-By Trips		0	0	0
Internal Vehicle Trips		0	0	0
Adjusted Driveway Volume		27	26	53
Adjusted Pass-By Trips		0	0	0
Adjusted Total Volume Added to Adjacent Streets		27	26	53