Traffic Assessment and Mitigation Summary
Executive Summary

# *Linden Square Redevelopment*

## Wellesley, Massachusetts


Prepared for

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# Executive Summary

## Introduction

This document is to serve as an Executive Summary and update to the Traffic Assessment and Mitigation Summary prepared in March 2005 for the redevelopment of the Linden Square site and address comments from Town Boards and the Town Traffic Consultant (BETA). In that report, Vanasse Hangen Brustlin, Inc. (VHB) conducted an evaluation of the existing and projected future traffic conditions, and anticipated traffic impacts associated with the redevelopment of the Linden Square site in accordance with the proposed overlay zone. The study was performed to provide the Town of Wellesley with preliminary traffic information to assist in the review process regarding the proponent's petit ion to create a zoning overlay district encompassing the project site. A final comprehensive traffic impact and access study will be provided to the Town as part of a subsequent application for permits and subject to the Town's Pro ject of Significant Impact (PSI) review process.

## Project Description

The 18.4 acre site currently consists of approximately 225,496 square feet of mostly retail use with some office space in fifteen buildings on the north and south sides of Linden Street. The south side of the site, with approximately 90,200 square feet of primarily retail space, houses a Roche Bros. supermarket, a Volkswagen car dealership, banks, a pharmacy and several smaller retail uses. The north side of the site consists of a variety of retail stores, banks, a gas station, hardware store and office space. A large portion of the site formerly contained the Diehl' s Hardware and Building Supply Company.

As proposed, the redevelopment will consist of 276,122 square feet of retail and office space including the continued gas station use, plus the addition of four townhouse style residential units. The 276,122 square feet of space will consist of no more than 260,000 square feet for commercial uses other than offices and not more than 30,000 square feet for office uses (excluding office space ancillary to retail uses). The retail space includes the relocation of the approximately 40,000 square foot existing Roche Bros. supermarket from the south side of the street to an approximately 50,000 square foot space on the north side. The redevelopment encompasses the demolition of seven existing buildings, the construction of several new buildings, the upgrade of the existing buildings that will remain, significant additional parking, pedestrian amenities, vehicular circulation and safety improvements and a large increase in green space on the site resulting in the general beautification of the area. Figure 1 illustrates the conceptual redevelopment plan for the site.

## Traffic Assessment

This traffic evaluation was prepared in conformance with the Massachusetts Executive Office of Environmental Affairs (EOEA)/Executive Office of Transportation and Construction (EOTC) and the Town of Wellesley guidelines.
Traffic assessments of this type typically involve a multi-step process, specifically:

- Step 1 – establish existing (2004) conditions within the study area
- Step 2 – project future (2010) conditions without the project, as proposed. (i.e., no-build)
- Step 3 – project the traffic generation and distribution associated with the project, as proposed. (i.e., build)
- Step 4 – identify and evaluate traffic-related impacts of the project.
- Step 5 – identify and evaluate potential mitigation measures to address the impacts identified in step 4.

The traffic study includes recent traffic counts (September 2004) and it utilizes a five-year planning horizon (year 2010). The selection of a 2010 future year for analysis is in conformance with State and local (typically a 3-year horizon is required by the Town) criteria and allows sufficient time for the proposed project to be substantially complete.

## Study Area

The Town of Wellesley Zoning Bylaws states that the evaluation of a Project of Significant Impact (PSI) needs to provide traffic analyses at roadways impacted by development traffic. An impacted roadway consists of *"a roadway segment, inc luding one or more approaches to an intersection, over which 30 or more vehicles related to the development parcel travel in a single direction during any single hour"*. In accordance with this standard, considering the traffic projections described below, the study area comprises 13 intersections in the general vicinity of the proposed site, plus 9 driveways or intersections across the site. In addition to these 22 locations required by the PSI standards, the Town and its traffic consultant also requested that 8 additional or " secondary" intersections be investigated. The following lists the PSI and secondary intersections:

*PSI Locations (Impacted roadways)*

- Turner Road/Avon Road at Weston Road
- Curve Street at Weston Road
- Howe Street at Weston Road
- Linden Street at Weston Road
- Linden Street at Curve Street
- Linden Street at Crest Road
- Linden Street at Delanson Circle
- Linden Street at Hollis Street
- Linden Street at Everett Road
- Linden Street at Pine Tree Road/Site Drive

- Linden Street at Hill Top Road/Site Drive
- Linden Street at Donizetti Street
- Linden Street at Kingsbury Street
- Linden Street at Linden Square Additional Site Drives

*Secondary Locations (Do not meet PSI standards for impacted intersections)*

- Washington Street at Kingsbury Street;
- Central Street at Crest Street;
- Central Street at Weston Road;
- Washington Street at Wellesley Avenue;
- Washington Street at Grove Street;
- Washington Street at Forest Street/Rockland Street;
- Linden Street at Rockland Street; and
- Route 9 at Kingsbury Street.

Traffic counts were conducted and development related traffic projections were distributed at all locations for this assessment (PSI and secondary). Additionally, traffic operational analyses are also provided for all locations as requested by the Town.

## Projected Traffic

Future projections of traffic involve two steps; (1) establishing potential increases in traffic volume not related to the proposed project, and (2) volume increases associated with the proposed project. As discussed above, existing 2004 traffic volumes were projected to 2010 in accordance with State and local traffic impact guidelines, as well as to allow sufficient time for the project to be fully built.

Step one involves projections of future traffic volumes accounting for both regional traffic growth throughout the area, as well as specific local traffic that could be generated by other nearby projects. Consistent with other recent traffic studies in the area, this evaluation includes a one percent annual growth rate to account for expected regional growth. The study also considered traffic from the Dana Hall School Athletic, Health and Wellness Center development, the potential redevelopment of the Tailby Commuter Parking Lot and the planned Middle and High School renovations.

For step two VHB conducted an extensive evaluation of potential site trip generation for the proposed project. Table 1 presents the total of new vehicle trips anticipated from the development project, as compared to the site fully utilized at current development levels (i.e., 223,400 square feet used in original calculations). This data is based on information provided in the industry standard Institute of Transportation Engineers (ITE) *Trip Generation*[1] report.

In summary, the proposed redevelopment is expected to generate approximately 185 additional vehicle trips during the weekday evening peak hour (100 vehicles entering and 85

[1] Institute of Transportation Engineers, Trip Generation, Seventh Edition, Washington, D.C., 2003.

vehicles exiting the site), and approximately 265 additional vehicle trips during the Saturday midday peak hour (140 vehicles entering and 125 vehicles exiting the site). These traffic flows represent a total of one-way trips such that a vehicle entering and then exiting the site would represent two trips.

It should be noted that this traffic evaluation is based on a total of 290,000 square feet of space (13,878 square feet more than proposed) even though the proposed Linden Square project will not exceed 276,122 square feet per the Development Agreement. As the site plan has progressed since September of 2004 (and proposed square footage reduced) VHB did not revise its trip generation calculation and associated analysis as this provides for a more conservative evaluation of the project's impact. The o riginal evaluation also included proposed basement and mezzanine square footage at full shopping center retail rates further adding a level of comfort to the projected trip generation data.

Further restrictions provided in the Development Agreement also increase the level of comfort associated with the trip generation calculated and analyzed, including:

- No hotels or motels
- No movie theater
- No drive through windows where food or beverage is purchased
- No McDonalds, Burger King, Wendy's, KFC, Taco Bell or equivalent type restaurants
- No "flea ma rket"
- No more than one grocery store or supermarket
- No more than one "h igh turnover sit-down" and one "qual ity" restaur ant
- No more than two coffee shops
- No more than one video store
- No more than one additional bank with drive-through
- No more than one pharmacy with drive-through
- No Adult Uses

As a further check on trip generation, the proponent has agreed in the Development Agreement to provide biannual traffic counts establishing the total trip generation of the project site in 2009 and 2010. If actual trips exceed trip generation estimates contained herein, restrictions on a high-generating use (i.e., drive through banks) shall be enforced.

Traffic to and from the redeveloped property was distributed and added to traffic traveling on the area roadways. The distribution pattern for traffic to and from the site was estimated based on existing travel patterns in the area and travel patterns derived from the 2000 U.S. Census for the Town of Wellesley. Traffic from the site is split approximately 56 percent approaching the site from the west and 44 percent from the east. In the vicinity of the site, approximately 31 percent of the added traffic uses Weston Road, 17 percent uses Crest Road, 6 percent uses Everett Street, 31 percent uses Kingsbury Street, 11 percent uses Rockland Street, and the remaining 4 percent uses other local area roads.

The site-generated trips were assigned to the area network based on the estimated trip generation and distribution. (See the Appendix to the original Traffic Assessment and Mitigation Summary for additional details)

Existing (2004) and projected future (2010) traffic volume networks (based on the information detailed above) were developed and analyzed with and without the proposed project and are presented in the original Traffic Assessment and Mitigation Summary. These volume networks are developed detailing the study area described for a typical weekday evening (PM) peak hour and Saturday midday peak hour for analysis and evaluation.

**Table 1**
**Linden Square Redevelopment Trip Generation Summary**

| Time Period | Total Linden Square Traffic | | Additional Trips | | | | |
|---|---|---|---|---|---|---|---|
| | Fully Occupied Existing | Redeveloped Center | Total | Pass-by | Diverted Link | Shared | New |
| *Weekday* | | | | | | | |
| Daily[a] | | | | | | | |
| Enter | 7,920 | 9,700 | 1,780 | 495 | 30 | 55 | **1,200** |
| Exit | 7,920 | 9,700 | 1,780 | 495 | 30 | 55 | **1,200** |
| Total | 15,840 | 19,400 | 3,560 | 990 | 60 | 110 | **2,400** |
| Evening Peak Hour[b] | | | | | | | |
| Enter | 745 | 890 | 145 | 30 | 10 | 5 | **100** |
| Exit | 825 | 955 | 130 | 30 | 10 | 5 | **85** |
| Total | 1,570 | 1,845 | 275 | 60 | 20 | 10 | **185** |
| *Saturday* | | | | | | | |
| Daily[a] | | | | | | | |
| Enter | 11,380 | 13,835 | 2,455 | 410 | 230 | 75 | **1,740** |
| Exit | 11,380 | 13,835 | 2,455 | 410 | 230 | 75 | **1,740** |
| Total | 22,760 | 27,670 | 4,910 | 820 | 460 | 150 | **3,480** |
| Midday Peak Hour[b] | | | | | | | |
| Enter | 1,000 | 1,195 | 195 | 20 | 30 | 5 | **140** |
| Exit | 935 | 1,115 | 180 | 20 | 30 | 5 | **125** |
| Total | 1,935 | 2,310 | 375 | 40 | 60 | 10 | **265** |

Source: Trip Generation, 7th Edition; Institute of Transportation Engineers (ITE); Washington, D.C. (2003). Land Use Codes 820 (Shopping Center), 850 (Supermarket) and 945 (Gas/Service Station with Convenience Market).

a – vehicles per day

b – vehicles per hour

## Traffic Operations and Safety

As discussed above, VHB established traffic operating conditions within the defined study area for the existing 2004 weekday evening (PM) peak hour and Saturday midday peak hour.

VHB then utilized the projected 2010 future traffic volumes with and without the project to evaluate the proposed Development's impact to study area roadways and intersections.

Level of service (LOS) is the term used to denote the different operating conditions that occur on a given roadway segment or intersection under various traffic volume loads. It is a qualitative measure that considers a number of factors including roadway geometry, speed, travel delay, freedom to maneuver, and safety. Level of service provides an index to the operational qualities of a roadway segment or an intersection. Level of service designations range from A to F, with LOS A representing the best operating conditions and LOS F representing the worst operating conditions.

The level of service designation is reported differently for signalized and unsignalized intersections. For signalized intersections, the analysis considers the operation of all traffic entering the intersection and the LOS designation is for overall conditions at the intersection. For unsignalized intersections, however, the analysis assumes that traffic on the mainline is not affected by traffic on the side streets. Thus, the LOS designations provided are for the critical movements entering and exiting the side street. The evaluation criteria used to analyze area intersections and roadways are based on the 2000 *Highway Capacity Manual* (HCM) and the SYNCHRO traffic software (version 5.0).

Tables 2 and 3 attached summarize the results of the capacity analysis completed for the project. Table 2 presents the existing 2004, projected 2010 no-build, projected 2010 build and projected 2010 build with mitigation level-of-service (LOS) results for the signalized study area intersections (PSI and secondary locations) calculated for the weekday evening (PM) and Saturday midday peak hours. Table 3 presents the same information for the unsignalized study area intersections.

As can be seen by Table 2, all signalized PSI locations can be mitigated to the same LOS, or better than that which is projected for 2010 without the project. The only signalized location that doesn't experi ence a marked improvement with the proposed mitigation (see below) is Weston Road at Linden Street. Physical constraints to widening prevent improving upon the current LOS "F" condition s. However, signalization will afford a level of improvement with regard to safety by creating gaps for Linden Street traffic to utilize. The project will continue to work with the Town in developing proposed improvements for this location. No secondary locations experience a LOS degradation associated with the proposed project and therefore no mitigation is proposed for these locations (although other improvements may be developed in concert with the project proponent (see mitigation section below)).

Table 3 reveals that for a limited number of minor street movements, at unsignalized intersections, a LOS drop will occur as a result of the project. However, the increase in average delay for these movements is between only 5 and 12 seconds per vehicle during the peak hours of traffic analyzed. The proponent will investigate mitigation actions and measures to alleviate these conditions.

Complete LOS analysis and results are presented in the original Traffic Assessment and Mitigation Summary.

VHB also compiled and evaluated accident data within the study area for the years 2000-2002 to further establish existing conditions. Complete accident and operating conditions data and analysis are provided in the original Traffic Assessment and Mitigation Summary.

## Mitigation Summary

Based on the proposed development impacts, background growth, adjacent proposed projects, and input from Town officials, staff and consultants, the proponent has committed to provide significant pedestrian and traffic improvements within the study area to mitigate potential impacts associated with the additional project traffic, and to help address existing traffic operational deficiencies where possible

As proposed, the site design will help minimize the need for vehicular cross-traffic between the north and south side and to provide extensive pedestrian and bicycle facilities and amenities, as well as facilities for existing or future public transportation systems.

The following provides a brief summary of the proposed mitigation to address specific project-related impacts to roadway and intersection operations that are to be constructed by the Owner as part of the project:

- Traffic Control Upgrade at Kingsbury Street/Linden Street, including provision of southbound exclusive right-turn lane, sequence and timing improvements, and equipment upgrades, as required.
- Optimization of signal coordination along Kingsbury Street between Washington Street and Linden Street, including sequence and timing improvements
- Full-depth roadway reconstruction and widening along Linden Street between Everett Street and Hill Top Road, including:

  - consolidation and alignment of existing curb cuts and driveways to minimize potential points of conflict between site traffic and traffic traveling on Linden Street

  - provision of exclusive left-turn lanes for all streets and driveways

  - reconstruction of existing sidewalks and replace the existing crosswalks to improve and enhance pedestrian connectivity along Linden Street

  - installation of street lighting

  - potential traffic calming and sight line improvements

- Installation of Traffic Signal Control at primary Site Driveway along Linden Street.

- Traffic Control Upgrade at Everett Street/Linden Street, including sequence and timing improvements and vehicle detection upgrades.
- Traffic Control Upgrade at Linden Street/Crest Road, including sequence and timing improvements.
- Consideration for installation of Traffic Signal Control at Weston Road at Linden Street, including interconnection with Central Street/Weston Road intersection.
- Traffic signal interconnection and coordination along Linden Street, from Kingsbury Street to Weston Road, including closed-loop system and potential implementation of adaptive signal control strategy.
- Installation of emergency vehicle pre-emption at signalized locations of Kingsbury Street, Site Driveway, Everett Street, Crest Road and Weston Road.
- Implementation of a traffic management plan for peak holiday periods per language provided in the Development Agreement.

As discussed and detailed above in Tables 2 and 3 these proposed mitigation measures will fully address project-related impacts. A more detailed description of the proposed mitigation is provided in the Traffic Assessment and Mitigation Summary.

The proponent is also committed, through the Development Agreement, to provide funding to implement additional traffic and roadway improvements not included in the summary above along the balance of Linden Street (between Weston Road and Rockland Street), as well as the Washington Street signal system (i.e., the "L oop"). These improvements are not related to specific project impacts and will be refined and developed in conjunction with the Town.

INSERT FIGURE 1

## Table 2
## Signalized Intersection Capacity Analysis Summary

| Location | Period | 2004 Existing v/c * | 2004 Existing Delay ** | 2004 Existing LOS *** | 2010 No-Build v/c | 2010 No-Build Delay | 2010 No-Build LOS | 2010 Build v/c | 2010 Build Delay | 2010 Build LOS | 2010 Build w/ Mitigation v/c | 2010 Build w/ Mitigation Delay | 2010 Build w/ Mitigation LOS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| *PSI Locations* | | | | | | | | | | | | | |
| Linden Street at | Weekday Evening | 0.81 | 31 | C | 1.03 | 63 | E | 1.11 | 83 | F | 0.93 | 42 | D |
| Crest Road | Saturday Midday | 0.86 | 40 | D | 1.07 | 81 | F | 1.20 | 118 | F | 1.03 | 68 | E |
| Linden Street at | Weekday Evening | 0.66 | 32 | C | 0.80 | 78 | E | 0.85 | 98 | F | 0.79 | 17 | B |
| Everett Street | Saturday Midday | 0.60 | 23 | C | 0.72 | 50 | D | 0.80 | 90 | F | 0.76 | 15 | B |
| Linden Street at | Weekday Evening | 0.77 | 32 | C | 0.86 | 42 | D | 0.93 | 49 | D | 0.80 | 31 | C |
| Kingsbury Street | Saturday Midday | 0.78 | 30 | C | 1.00 | 47 | D | 1.10 | 64 | E | 0.91 | 36 | D |
| Linden Street at | Weekday Evening | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | 1.45 | + | F |
| Weston Street* | Saturday Midday | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | 1.44 | + | F |
| Linden Street at | Weekday Evening | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | 0.77 | 14 | B |
| North and South Site Drives #4** | Saturday Midday | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | 0.89 | 19 | B |
| *Secondary Locations* | | | | | | | | | | | | | |
| Washington Street at | Weekday Evening | 0.69 | 33 | C | 0.80 | 35 | D | 0.83 | 36 | D | 0.83 | 34 | C |
| Kingsbury Street | Saturday Midday | 0.68 | 51 | D | 0.76 | 67 | E | 0.79 | 68 | E | 0.79 | 35 | C |
| Route 9 at | Weekday Evening | 0.90 | 12 | B | 0.89 | 22 | C | 0.90 | 25 | C | n/a | n/a | n/a |
| Kingsbury Street | Saturday Midday | 0.80 | 14 | B | 0.89 | 27 | C | 0.90 | 29 | C | n/a | n/a | n/a |
| Central Street at | Weekday Evening | 0.80 | 30 | C | 0.89 | 37 | D | 0.89 | 38 | D | n/a | n/a | n/a |
| Weston Road | Saturday Midday | 0.83 | 28 | C | 0.93 | 36 | D | 0.95 | 38 | D | n/a | n/a | n/a |
| Central / Washington Street at | Weekday Evening | 0.98 | 51 | D | 1.09 | 65 | E | 1.09 | 65 | E | n/a | n/a | n/a |
| Grove Street | Saturday Midday | 0.94 | 67 | E | 1.01 | 88 | F | 1.02 | 90 | F | n/a | n/a | n/a |
| Washington Street at | Weekday Evening | 0.72 | 25 | C | 0.86 | 33 | C | 0.86 | 34 | C | n/a | n/a | n/a |
| Wellesley Avenue | Saturday Midday | 0.72 | 62 | E | 0.79 | 85 | F | 0.80 | 87 | F | n/a | n/a | n/a |
| Washington Street at | Weekday Evening | 0.96 | 34 | C | 1.12 | 60 | E | 1.15 | 65 | E | n/a | n/a | n/a |
| Forest Street/Rockland Street | Saturday Midday | 0.79 | 22 | C | 0.94 | 30 | C | 0.95 | 32 | C | n/a | n/a | n/a |

Source: Vanasse Hangen Brustlin, Inc.

* V/C = volume to capacity ratio

** Delay = Average delay in seconds per vehicle

*** LOS = Level of Service

\+ Delay cannot be calculated for V/C > than 1.2 for signalized intersections.

n/a Not applicable

* existing location is unsignalized (see Table 3)

** signalization of future site driveway only related to build with mitigation condition

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'SI Locations - Unsignalized Intersection Capacity Analysis Summary - Weekday Evening Peak Hour

| ɔcation | Movement | 2004 Existing Demand * | 2004 Existing Delay ** | 2004 Existing LOS *** | 2010 No-Build Demand | 2010 No-Build Delay | 2010 No-Build LOS | 2010 Build Demand | 2010 Build Delay | 2010 Build LOS |
|---|---|---|---|---|---|---|---|---|---|---|
| *SI Locations* | | | | | | | | | | |
| Weston Road at | EB All | 20 | 26 | D | 25 | 30 | D | 30 | 31 | D |
| Turner Road/Avon Road | WB All | 10 | 19 | C | 15 | 39 | E | 15 | 44 | E |
| | NB All | 740 | <1 | A | 825 | <1 | A | 845 | 1 | A |
| | SB All | 690 | <1 | A | 765 | <1 | A | 785 | < 1 | A |
| Weston Road at | WB All | 15 | 21 | C | 15 | 25 | D | 15 | 27 | D |
| Curve Street | NB All | 735 | <1 | A | 820 | <1 | A | 840 | <1 | A |
| | SB All | 690 | <1 | A | 775 | <1 | A | 800 | <1 | A |
| Weston Road at | WB All | 5 | 17 | C | 5 | 19 | C | 5 | 20 | C |
| Howe Street | NB All | 725 | <1 | A | 815 | <1 | A | 835 | <1 | A |
| | SB All | 695 | <1 | A | 780 | <1 | A | 805 | <1 | A |
| Weston Road at | WB All | 480 | + | F | 600 | + | F | 635 | + | F |
| Linden Street | SB All | 690 | 3 | A | 775 | 5 | A | 800 | 6 | A |
| | NB All | 530 | <1 | A | 580 | <1 | A | 585 | <1 | A |
| Linden Street at | EB All | 240 | <1 | A | 345 | <1 | A | 385 | <1 | A |
| Curve Street | WB All | 490 | <1 | A | 615 | <1 | A | 650 | <1 | A |
| | SB All | 5 | 15 | B | 10 | 20 | C | 15 | 23 | C |
| Linden Street at | EB All | 390 | <1 | A | 550 | <1 | A | 610 | <1 | A |
| Delanson Circle | WB All | 745 | <1 | A | 905 | <1 | A | 955 | 1 | A |
| | NB All | 70 | 52 | F | 110 | + | F | 110 | + | F |
| | SB All | 5 | 31 | D | 5 | 59 | F | 5 | 74 | F |
| Linden Street at | EB All | 405 | <1 | A | 565 | 1 | A | 625 | 1 | A |
| Hollis Street | WB All | 720 | <1 | A | 880 | <1 | A | 930 | <1 | A |
| | NB All | 50 | 41 | E | 50 | + | F | 50 | + | F |
| | SB All | 15 | 22 | C | 15 | 35 | D | 15 | 42 | E |
| Linden Street at | EB All/Left | 470 | < 1 | A | 580 | <1 | A | 10 | 9 | A |
| Pine Tree Road | WB All | 580 | < 1 | A | 710 | <1 | A | 760 | < 1 | A |
| | SB All | 15 | 19 | C | 15 | 25 | D | 15 | 28 | D |
| Linden Street at | EB All | 470 | < 1 | A | 580 | <1 | A | 605 | <1 | A |
| Hill Top Road/Site Drive | WB All | 595 | < 1 | A | 725 | <1 | A | 770 | <1 | A |
| | NB All | < 5 | 20 | C | < 5 | 27 | D | 20 | 30 | D |
| | SB All | 10 | 20 | C | 10 | 29 | D | 10 | 31 | D |
| Linden Street at | EB All | 435 | 1 | A | 545 | 2 | A | 580 | 2 | A |
| Donizetti Street | WB All | 590 | < 1 | A | 715 | < 1 | A | 770 | < 1 | A |
| | SB All | 65 | 24 | C | 75 | 41 | E | 75 | 50 | E |
| *ɜcondary Locations* | | | | | | | | | | |
| Linden Street at | EB All | 180 | 8 | A | 195 | 9 | A | 205 | 9 | A |
| Rockland Street | NB All | 270 | 10 | B | 305 | 11 | B | 315 | 11 | B |
| | SB All | 45 | 8 | A | 45 | 8 | A | 45 | 8 | A |
| Central Street at | EB All | 450 | 4 | A | 500 | 5 | A | 510 | 6 | A |
| Crest Street | WB All | 915 | < 1 | A | 1010 | < 1 | A | 1015 | < 1 | A |
| | SB All | 465 | + | F | 525 | + | F | 540 | + | F |
| Central Street at | EB All | 655 | 5 | A | 740 | 6 | A | 745 | 6 | A |
| Railroad Avenue | WB All | 815 | < 1 | A | 905 | < 1 | A | 910 | < 1 | A |
| | SB All | 120 | 16 | C | 125 | 19 | C | 125 | 19 | C |

Source: Vanasse Hangen Brustlin, Inc.

* Demand of critical movement

** Delay = Average delay in seconds per vehicle

*** LOS = Level of Service

\+ Delay exceeds 120 seconds.

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## Insignalized Intersection Capacity Analysis Summary – Saturday Midday Peak Hour

| | | 2004 Existing | | | 2010 No-Build | | | 2010 Build | | |
|---|---|---|---|---|---|---|---|---|---|---|
| ocation | Movement | Demand * | Delay ** | LOS *** | Demand | Delay | LOS | Demand | Delay | LOS |
| *'SI Locations* | | | | | | | | | | |
| Weston Road at | EB All | 35 | 24 | C | 50 | 29 | D | 55 | 31 | D |
| Turner Road/Avon Road | WB All | 30 | 18 | C | 35 | 34 | D | 35 | 39 | E |
| | NB All | 760 | <1 | A | 835 | 1 | A | 865 | 1 | A |
| | SB All | 605 | <1 | A | 685 | <1 | A | 710 | <1 | A |
| Weston Road at | WB All | 25 | 27 | D | 25 | 34 | D | 25 | 38 | E |
| Curve Street | NB All | 750 | <1 | A | 825 | <1 | A | 855 | <1 | A |
| | SB All | 630 | <1 | A | 730 | <1 | A | 760 | <1 | A |
| Weston Road at | WB All | 20 | 21 | C | 20 | 25 | D | 20 | 27 | D |
| Howe Street | NB All | 740 | <1 | A | 815 | <1 | A | 845 | <1 | A |
| | SB All | 635 | <1 | A | 735 | <1 | A | 765 | <1 | A |
| Weston Road at | WB All | 430 | + | F | 515 | + | F | 570 | + | F |
| Linden Street | SB All | 495 | <1 | A | 545 | <1 | A | 560 | <1 | A |
| | NB All | 635 | 5 | A | 735 | 7 | A | 765 | 8 | A |
| Linden Street at | EB All | 305 | <1 | A | 425 | <1 | A | 490 | <1 | A |
| Curve Street | WB All | 430 | <1 | A | 515 | <1 | A | 580 | <1 | A |
| | SB All | 10 | 13 | B | 15 | 18 | C | 20 | 22 | C |
| Linden Street at | EB All | 465 | <1 | A | 655 | <1 | A | 750 | <1 | A |
| Delanson Circle | WB All | 640 | <1 | A | 760 | <1 | A | 845 | <1 | A |
| | NB All | 5 | 17 | C | 15 | 32 | D | 15 | 44 | E |
| | SB All | <5 | 23 | C | <5 | 37 | E | <5 | 49 | E |
| Linden Street at | EB All | 465 | <1 | A | 650 | <1 | A | 745 | <1 | A |
| Hollis Street | WB All | 635 | <1 | A | 755 | <1 | A | 840 | <1 | A |
| | NB All | 5 | 17 | C | 5 | 24 | C | 5 | 30 | D |
| | SB All | 20 | 19 | C | 20 | 27 | D | 20 | 35 | E |
| Linden Street at | EB All/Left | 515 | < 1 | A | 615 | <1 | A | < 5 | 10 | A |
| Pine Tree Road | WB All | 560 | < 1 | A | 715 | <1 | A | 775 | < 1 | A |
| | SB All | 20 | 16 | C | 25 | 20 | C | 25 | 22 | C |
| Linden Street at | EB All | 525 | <1 | A | 625 | <1 | A | 675 | < 1 | A |
| Hill Top Road/Site Drive | WB All | 565 | < 1 | A | 715 | <1 | A | 780 | < 1 | A |
| | NB All | <5 | 23 | C | <5 | 32 | D | 20 | 70 | F |
| | SB All | 5 | 27 | D | 10 | 32 | D | 10 | 42 | E |
| Linden Street at | EB All | 510 | < 1 | A | 610 | <1 | A | 670 | < 1 | A |
| Donizetti Street | WB All | 580 | < 1 | A | 710 | < 1 | A | 775 | < 1 | A |
| | SB All | 15 | 16 | C | 20 | 18 | C | 20 | 20 | C |
| *econdary Locations* | | | | | | | | | | |
| Linden Street at | EB All | 180 | 8 | A | 200 | 9 | A | 210 | 9 | A |
| Rockland Street | NB All | 190 | 9 | A | 225 | 10 | A | 240 | 10 | B |
| | SB All | 40 | 8 | A | 50 | 8 | A | 50 | 8 | A |
| Central Street at | EB All | 555 | 5 | A | 605 | 6 | A | 615 | 7 | A |
| Crest Street | WB All | 880 | < 1 | A | 980 | < 1 | A | 990 | < 1 | A |
| | SB All | 410 | + | F | 455 | + | F | 475 | + | F |
| Central Street at | EB All | 735 | 5 | A | 805 | 5 | A | 815 | 5 | A |
| Railroad Avenue | WB All | 795 | < 1 | A | 890 | < 1 | A | 900 | < 1 | A |
| | SB All | 110 | 40 | E | 115 | 62 | F | 115 | 66 | F |

Source: Vanasse Hangen Brustlin, Inc.

* Demand of critical movement

** Delay = Average delay in seconds per vehicle

*** LOS = Level of Service

\+ Delay exceeds 120 seconds.