

**SUSAN A. BERNSTEIN, Attorney at Law**

200 Highland Avenue, Suite 306  
Needham, MA 02494-3035  
Tel: 781-290-5858  
Fax: 781-247-4266  
email: susan@sabernlaw.com  
www.sabernlaw.com

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May 08, 2012

**BY HAND DELIVERY**

Mr. Chris Laskey, Code Enforcement Officer  
Town of Bedford  
Municipal Building  
10 Mudge Way  
Bedford, MA 01730

RE: Supplementary Material to Accompany Previously Filed Application for Site Plan Review of Redevelopment Plan at 285 Great Road, Bedford, MA (Travelodge site)

Dear Mr. Laskey:

This office represents Great Road Shopping Center LLC ("GRSC"), owner of the property located at 285 Great Road (the "Property"), currently occupied by the Travelodge Motel. Pursuant to §7.5.2.1 of the Bedford Zoning Bylaw, we are transmitting this information to you for distribution to the appropriate boards. Accordingly, copies are attached.

Following GRSC's presentation to the Planning Board on December 13, 2011, we have revised our plans in order to respond to the issues raised by the Board.

The major concern expressed to us involved traffic issues, including entry and exit from the Property; and the impact on the existing status of the Great Road. Accordingly we have met with the Bedford Department of Public Works ("DPW") to discuss the traffic issues. At their suggestion, we have revised our plans as outlined on the attached documents and plans.

We have also met with representatives of the Massachusetts Department of Transportation ("Mass DOT"), as the Great Road in front of the Property is a state highway and therefore under the jurisdiction of Mass DOT. Since the Bedford DPW recommended that we reposition the existing curb cut onto the Great Road, to increase safety, access, and flow; we have sought the input of Mass DOT prior to returning to the Planning Board. We will be submitting a formal access permit to Mass DOT after we have obtained approval from the Planning Board.

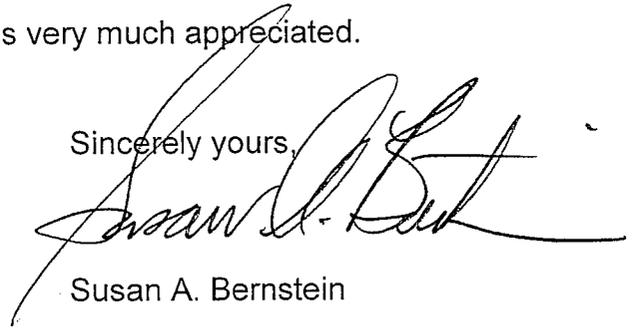
Since appearing before the Planning Board last December, we have

obtained an Order of Conditions (dated January 12, 2012) from the Bedford Conservation Commission. We will proceed with our request for a hearing before the Zoning Board of Appeals after we have completed the Site Plan Review process.

We have been advised that we will be placed on the Board's meeting agenda for May 22<sup>nd</sup>. We look forward to more fully discussing our revisions to the redevelopment of this site at that time.

Your ongoing cooperation and assistance is very much appreciated.

Sincerely yours,

A handwritten signature in black ink, appearing to read "Susan A. Bernstein", written over the typed name below.

Susan A. Bernstein

Attachments: Summary of Proposed Traffic Mitigation and Project Status  
Revised Traffic Plan  
Updated Traffic Study Memo  
Revised Site Plan

Cc: Glenn Garber, Planning Director  
Adrienne St. John, Town Engineering  
C. Gerard Drucker, W. Drucker, J. Drucker, GRSC, LLC  
M. Lesburg, AIA, Architect  
J. Hession, EBI Consulting  
S. Martorano, S. Offeiaddo, BSC Group

# Summary of Proposed Redevelopment of the Travelodge Motel 285 Great Road, Bedford

## Proposed Redevelopment Plan:

Great Road Shopping Center, LLC ("the Applicant"), is the owner of the property located at 285 Great Road ("the Property"), currently occupied by the Travelodge Motel (the "Motel"). The Applicant has proposed to redevelop the Property by demolishing the Motel and replacing it with an approximately 3,600 square foot quick-serve restaurant with 68 seats, 23 parking spaces, and drive-thru service window. As listed below, the Applicant has filed for reviews and approvals with the Bedford Planning Board, the Bedford Conservation Commission, and the Bedford Zoning Board of Appeals. The Property is approximately 28,797 square feet, which is a relatively small area, which has constraints due to size and property lines (separate and distinct parcel from the Shopping Center).

**Current Status:** We have obtained an Order of Conditions from the Conservation Commission, we are continuing to present material to the Planning Board, and will proceed to request a hearing at the Zoning Board of Appeals after the Planning Board completes its review and recommendation to the Building Commissioner.

**Objective of the Redevelopment:** To provide an environmentally improved and aesthetically complimentary development that will offer food choices to Bedford residents and patrons, provide job opportunities, and enhance the use of the parcel. Proposed traffic mitigation is aimed at enhancing safety, reducing traffic conflicts on the Great Road by improving turning lanes, signalization, sight lines and distance, traffic flow, and access to several properties.

## Revised Plan Presented to the Planning Board for Discussion at meeting on May 22, 2012

At the first formal presentation to the Planning Board in December 2011, we received many comments from the Board members, mainly relating to traffic and access issues; additional items were also received from the members as well as comments from other town departments. As a result of these comments, the Applicant has expanded its traffic study of the area and revised its traffic plan. The revised traffic patterns will benefit not only the Applicant's Property but other commercial properties along this section of the Great Road, as well as provide better access to the Town's DPW facility. We have informally presented our revised plans to the staff at the Bedford Department of Public Works, the Planning Director, and the Massachusetts Department of Transportation (the later involved due to the proposed repositioning of the curb cut on the Great Road, which is a state highway). We will be submitting a formal access permit to Mass DOT after we have obtained approval from the Planning Board.

The plan includes:

- (1) Introduce center turn lane to benefit existing and proposed commercial properties: by restriping the Great Road approach to the traffic light to allow for a middle two-way left turn only lane, for the use of patrons entering and exiting the Property, as well as for use by the patrons of Dunkin Donuts and Papa Gino's, and enhancing the safety for vehicles entering the Town of Bedford Department of Public Works ("DPW") site;
- (2) Proposed left-turn lane for DPW Driveway and entry into Papa Gino's store;
- (3) Reposition site driveway to increase sight distance and minimize conflicts, by repositioning the existing curb cut entry/exit to the Property approximately 40-feet to the east in order to: (1) align with the entry driveway of the Dunkin Donuts store across the Great Road; (2) enhance exit to the west; and (3) increase and improve the sight-lines for vehicles looking towards the state-owned bridge over the Elm Brook; (4) reduce conflict between vehicles turning left into the Property and into the Dunkin Donuts store; and (5) continue to enable left-turns into and out of the Property;
- (4) Provide wider shoulders for bicycle accommodation along the Great Road for cyclists;
- (5) Provide on-site racks for bicycle storage;
- (6) Modify signal for proposed left turn lane into DPW Drive;
- (7) Provide additional left turn signal for vehicles entering Great Road Shopping Center ("GRSC"): by adding a *far-side* signal for the Great Road westbound approach that will enable vehicles within the signalized intersection to the GRSC to see the signal indications as they turn into the GRSC;
- (8) Relocate and reconstruct the existing crosswalk, wheelchair ramps and pedestrian signals across the westerly side of the intersection of the Great Road and the GRSC and the DPW driveway;
- (9) Provide pedestrian connection to existing walkway; by utilizing the existing pathway along the easterly side of the Property (from the Great Road to the GRSC), and adding a short transverse pathway leading directly to the Property from the existing walkway;
- (10) Provide appropriate signs for proposed road improvements;
- (11) Enhancement of the landscaping, including a one-time only initial trimming by the Applicant of the shrubs at the bridge over the Elm Brook along the Great Road, to improve the sight lines and safety, after which the Town will be responsible for trimming and maintaining the shrubs; and
- (12) Overall enhancement of the Property and greater environmental protection for the wetlands and stormwater.

**Other issues raised by the Board to which we have responded include:**

- (1) Conservation Commission issues: GRSC obtained an Order of Conditions on January 12, 2012. This approval included stormwater calculations and site drainage issues which were reviewed and approved by the DPW, which we believe address the Board's concerns. A copy of the final Order is attached hereto.
- (2) Provided a wider circumferential roadway of 18 feet, at the request of the Fire Department.
- (3) Increased pedestrian access with pathway along the east property line.

**History of Meetings and Filings**

October 27, 2011, the Applicant filed an application for Site Plan Review to redevelop the existing use and building in the General Business District, from a two-story motel, to an approximately 3,600-sq. ft. restaurant. Pursuant to the Bedford Zoning Bylaw, Site Plan Review is required by the Planning Board for a restaurant use in the GB district.

Simultaneously, the Applicant filed an application with the Zoning Board of Appeals for two special permits for the following: (1) changing the structure or use on a pre-existing non-conforming lot; and (2) proposed restaurant use. Given the informal participation of members of the ZBA at the Planning Board meetings, the Applicant requested that the public hearing at the ZBA be postponed until the Applicant completed the Site Plan Review Process. The Applicant also filed a Notice of Conditions with the Bedford Conservation Commission for work to be conducted in the buffer and riverfront zones, based upon the proposed redevelopment. The Bedford Conservation Commission issued its approval (Order of Conditions) on January 12, 2012.

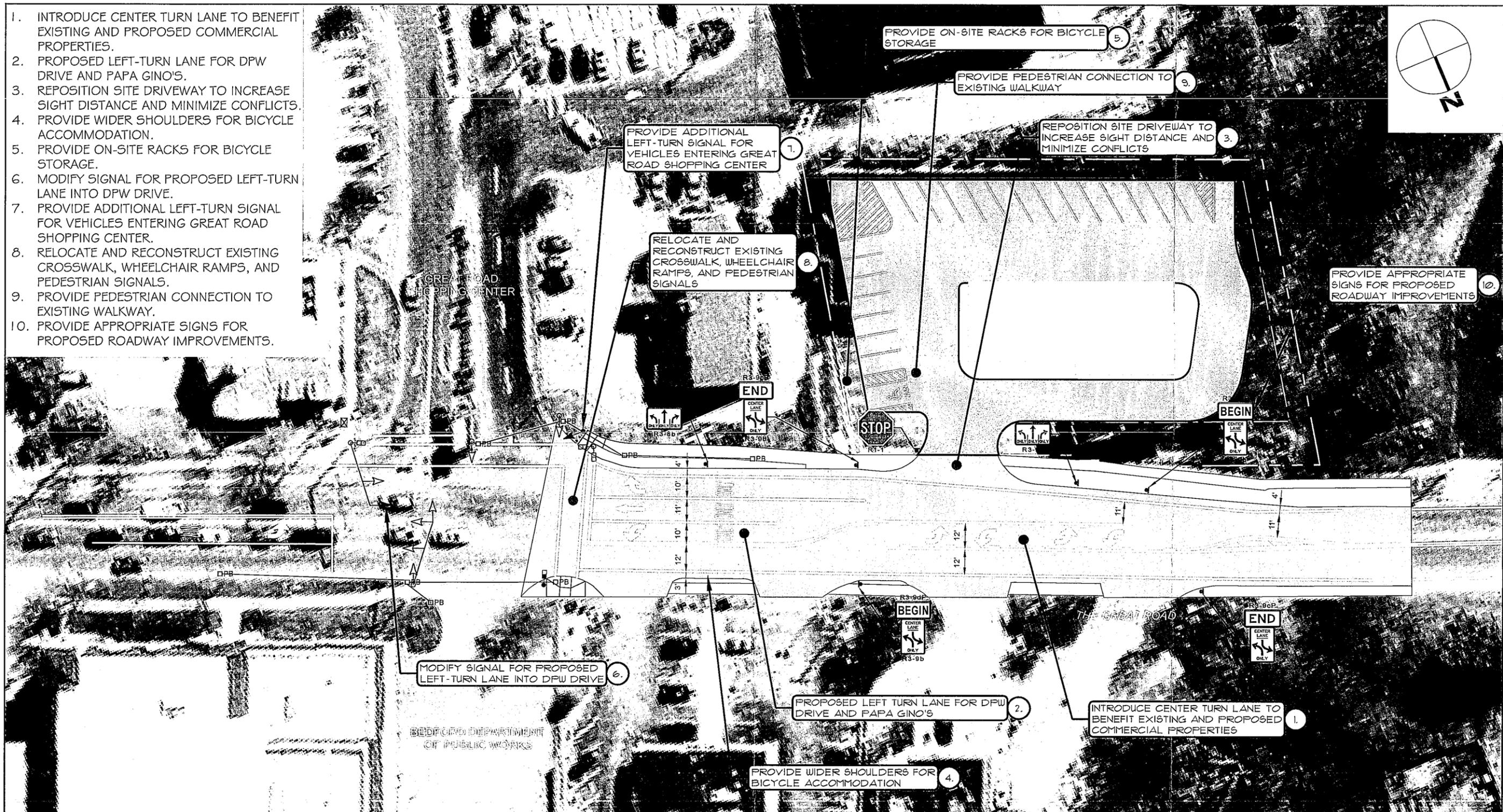
November 2<sup>nd</sup>, 2011: Informal meeting with Planning Board to present the redevelopment concept.

December 13, 2011: Formal Presentation to Planning Board for Site Plan Review, with Site Plan, Traffic, Architectural and Landscape Plans.

January 12, 2012: The Bedford Conservation Commission issued its approval (Order of Conditions).

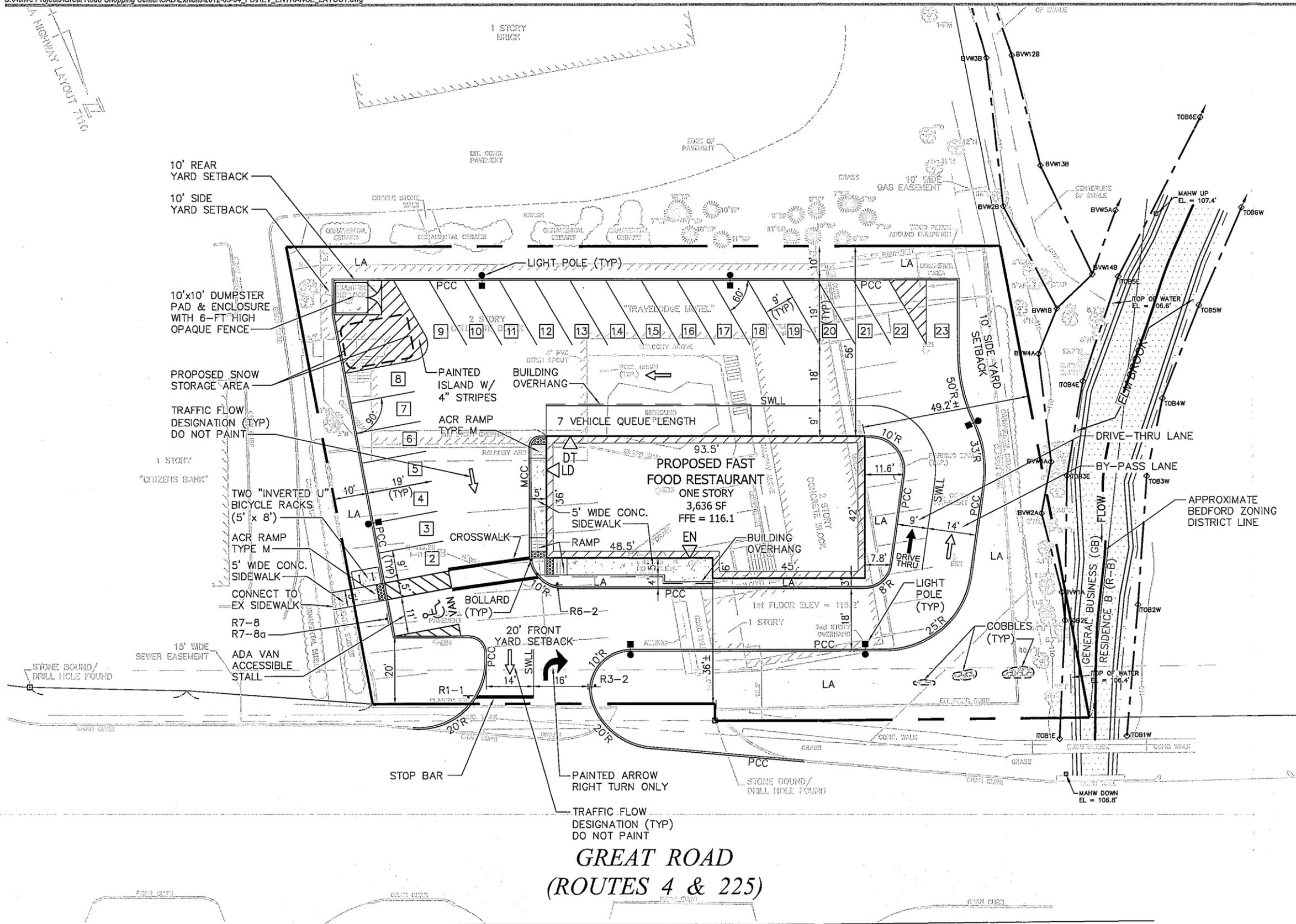
May 22, 2012: Return to Planning Board with revised Traffic Mitigation.

1. INTRODUCE CENTER TURN LANE TO BENEFIT EXISTING AND PROPOSED COMMERCIAL PROPERTIES.
2. PROPOSED LEFT-TURN LANE FOR DPW DRIVE AND PAPA GINO'S.
3. REPOSITION SITE DRIVEWAY TO INCREASE SIGHT DISTANCE AND MINIMIZE CONFLICTS.
4. PROVIDE WIDER SHOULDERS FOR BICYCLE ACCOMMODATION.
5. PROVIDE ON-SITE RACKS FOR BICYCLE STORAGE.
6. MODIFY SIGNAL FOR PROPOSED LEFT-TURN LANE INTO DPW DRIVE.
7. PROVIDE ADDITIONAL LEFT-TURN SIGNAL FOR VEHICLES ENTERING GREAT ROAD SHOPPING CENTER.
8. RELOCATE AND RECONSTRUCT EXISTING CROSSWALK, WHEELCHAIR RAMP, AND PEDESTRIAN SIGNALS.
9. PROVIDE PEDESTRIAN CONNECTION TO EXISTING WALKWAY.
10. PROVIDE APPROPRIATE SIGNS FOR PROPOSED ROADWAY IMPROVEMENTS.



285 The Great Road  
Bedford, Massachusetts

May 2012



### Sign Summary

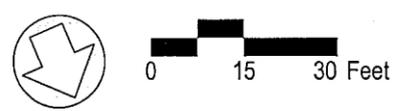
Sign	M.U.T.C.D. Code	Height	Width
	R1-1	30"	30"
	R3-2	24"	24"
	R5-1	30"	30"
	R6-2	24"	18"
	R7-8	18"	12"
	R7-8a	6"	12"

### Zoning Summary Chart

Zoning District Information		
ZONING DISTRICT(S): GENERAL BUSINESS (GB) *		
OVERLAY DISTRICT(S): NONE		
Zoning Requirements	Required	Provided
LOT AREA (MIN):	80,000 SF	28,797 SF **
FRONTAGE (MIN)	- FT	210.54 FT
YARD SETBACKS:		
FRONT YARD (MIN):	10 FT	±36.0 FT
SIDE YARD (MIN):	10 FT	±49.2 FT
REAR YARD (MIN):	10 FT	±56.0 FT
BUILDING HEIGHT (MAX):	37 FT	< 37 FT
LOT COVERAGE (MAX):	35 %	±13 %
LOT LANDSCAPING (MIN):	25 %	±33 %
PAVEMENT / PARKING SETBACK (MIN): ***	20/10/10 FT	20/10/10 FT

\* THE ENTIRE PROJECT SITE IS LOCATED WITHIN THE GENERAL BUSINESS ZONING DISTRICT.  
 \*\* THE LOT IS AN EXISTING NON-CONFORMING LOT RELATIVE TO MINIMUM LOT AREA.  
 \*\*\* FRONT/SIDE/REAR SETBACKS  
 \*\*\*\* A PORTION OF THE SITE IS WITHIN THE 100-YR FLOODPLAIN. THE FLOOD ELEVATION IS 112 FEET (NAVD88) AS SHOWN ON FEMA FIRM MAP 25017C0382E

## GREAT ROAD (ROUTES 4 & 225)



**To:** Susan A. Bernstein, Esq.  
on behalf of Great Road Shopping Center, LLC

**Date:** May 3, 2012

**From:** Sam Offei-Addo, P.E., P.T.O.E.  
Joanna Lunsford, P.E.

**Proj. No.** 2.8281.00

**Re:** Bedford Travelodge – Response to Comments

BSC has prepared this memorandum to address comments raised from the Town of Bedford Planning Director and Public Works Engineer regarding traffic impacts of the proposed approximately 3,600 SF restaurant with drive-through to be located at 285 The Great Road, in Bedford, Massachusetts. Comments were raised initially in response to the Traffic Impact Study (TIS) prepared by BSC Group dated December 2011. Additional comments were raised during the Planning Board Hearing on December 13, 2011, and during subsequent discussions with staff regarding the revised traffic plan proposed on The Great Road.

This memo presents proposed mitigation to improve access and egress to the site as well as to other commercial properties across from the site. The responses to comments and proposed mitigation measures are summarized below.

1. *Additional traffic counts* – conducted during the weekday lunchtime peak hours and including the Papa Gino's driveway.
2. *Site egress / sight distance* - addressed sight distance and left-turning vehicles exiting the Project site drive onto The Great Road.
3. *Traffic operations on The Great Road* – provided additional LOS analysis output for vehicles traveling on The Great Road.
4. *Mitigation* – extended the two-way left turn lane (TWLTL) further west to include the Dunkin Donuts exit driveway and further east to incorporate a left-turn lane for vehicles entering the Bedford DPW driveway.

### **ADDITIONAL TRAFFIC COUNTS**

Additional traffic counts were conducted during the weekday midday peak hours at all study area intersections, as well as at the nearby two Papa Gino's Drives. Turning Movement Counts (TMCs) were conducted at the four intersections between 11:00 AM – 1:00 PM on Wednesday December 21, 2011. It should be noted that these counts were conducted during the busy Christmas shopping season. In addition, this day was a half-day for area schools. These two occurrences resulted in a heavier than normal traffic condition on the Great Road.

Additional TMCs were conducted during the weekday afternoon peak hours at the two Papa Gino's drives to supplement the original data. Figures R1-A and R1-B show the Existing Condition traffic volumes. Future No Build Traffic volumes are shown in Figures R2-A and R2-B.

### **SITE EGRESS / SIGHT DISTANCE**

The traffic study prepared in December 2011 indicated that the Intersection Sight Distance (ISD) at the proposed drive did not meet the desired minimum for vehicles exiting the drive looking west on The Great Road. Based on discussions with the Town, the location of the site drive has been repositioned approximately 40 feet east, resulting in a location more directly across from the Dunkin Donuts entrance drive.

Measurements for available sight distance were taken at the revised site drive location. The table below shows the measured sight distance, as compared to the previously proposed site drive location and to the required minimum (Stopping Sight Distance) or desired minimum (Intersection Sight Distance).

**Table 1: Sight Distance**

<u>Location</u>	<u>Measured (ft) – Original Drive Location</u>	<u>Measured (ft) – Revised Drive Location</u>	<u>Min. Required<sup>a</sup> (feet)</u>	
<b>STOPPING SIGHT DISTANCE</b>				
The Great Road, traveling eastbound	255	305	246	
The Great Road, traveling westbound	675	>500	246	
<b>INTERSECTION SIGHT DISTANCE</b>	<u>Measured (ft) – Original Drive Location</u>	<u>Measured (ft) – Revised Drive Location</u>	<u>Minimum Desired (feet)</u>	<u>Desirable</u>
Site Drive (looking west on The Great Road)	200	235	246	386
Site Drive (looking east on The Great Road)	545	>500	246	386

<sup>a</sup> Values based on AASHTO requirements for 35 MPH

Table 1 above shows that the measured Stopping Sight Distance (SSD) at the revised Site Drive location is greater than the minimum required SSD. The ISD at the revised Site Drive location was measured to be 235 feet. While this is still less than the minimum desired, it is an improvement over the previously measured ISD. The ISD restriction is due to the fact that the new driveway is set back further from the travel way on The Great Road, and due to the existing headwall over the Elm Brook, as mentioned in the December 2011 TIS.

The Bedford DPW requested that BSC examine the impact if the curb on The Great Road in front of the proposed site is reset 5 feet north into the existing travel way. With this change, the ISD will be improved to exceed the desired minimum. However, this change would shift the transition area and the beginning of the right turn lane into the Great Road Shopping Center, thereby shortening the length of the right-turn lane. Because this is a heavily utilized right-turn lane, BSC does not recommend this option.

The measured 235 feet represents the continuously visible distance for a motorist exiting the Site Drive and looking left (west), which is the approved method for determining available ISD. However, it was observed during field measurements that beyond the measured 235 feet, when looking between the existing headwall and the pedestrian bridge, an additional distance was visible beyond 290 feet. This additional distance is only visible, however, assuming that the existing vegetation at this location is cleared and maintained by the Town. While this distance creates a gap in the observed vehicle flow for drivers exiting the site, it may aid exiting drivers when they are deciding when to exit.

### **RE-STRIPING ON THE GREAT ROAD**

A lane restriping plan has been prepared and included in this submission along The Great Road in order to mitigate impacts of left-turn vehicles in the area of the project site. This plan depicts a 12-foot wide two-way left turn lane approximately 170 feet long, beginning in front of the western Dunkin Donuts Drive and ending in the east just before the Papa Gino's drive. This two-way left turn lane will provide a waiting area not only for vehicles traveling west and intending to turn left into the project site, but also for vehicles traveling east and intending to turn into the Dunkin Donuts entrance or the Papa Gino's drive. In addition, it will function as a storage area for vehicles turning left exiting from either of these drives, before they enter the opposing traffic stream. At the eastern end of the two-way left turn lane, approximately 50 feet of an exclusive 10-foot wide left-turn lane has been provided for vehicles turning left into the Bedford Department of Public Works site driveway or the Papa Gino's drive.

The plan also depicts revised travel lanes on The Great Road, including one 10-foot wide right-turn lane, one 11-foot wide, and the above-mentioned 10-foot wide left-turn lane. The westbound travel lane on The Great Road is shown as 12 feet wide. These lane widths allow a 3-foot bicycle accommodation on the north side of the roadway and a 4-foot

bicycle accommodation on the south side of The Great Road. Two bicycle racks will be provided on-site. The plan shows appropriate signage related to the proposed roadway lane assignments. Based on the roadway layout information available to BSC, the proposed layout has been achieved within the existing roadway footprint without the need to relocate any curbing.

BSC has met with MassDOT to discuss site access and the proposed restriping for the center TWLTL. MassDOT has expressed their general agreement for the plan. The applicant is to make a formal submission of an access permit, which will include the proposed lane restriping, signal and timing modifications, signing, etc., for review and approval.

### **TRAFFIC OPERATION ANALYSIS**

As mentioned in the Supplemental Analysis, the Highway Capacity Manual method for calculating level of service (LOS) at an unsignalized intersection is based on the delay caused by a stop or yield control sign. Since, by definition, major street through movements do not have any control, the LOS is not applicable. Therefore, the LOS reported in this memorandum is for the left-turn movements on the major road and for all movements at the Site Drive, Dunkin Donuts Drives, and Papa Gino's Drives.

The analysis takes into account the following:

- The revised analysis of the Dunkin Donuts drives - the access and egress are analyzed as two separate drives.
- The revised site drive location, located across from the Dunkin Donuts entrance.
- The inclusion of the weekday midday time period for all locations.
- The inclusion of the Papa Gino's drives during the weekday midday and afternoon time periods.
- The restriping of The Great Road to include the two-way left-turn center lane under future Build conditions.

The revised capacity analysis at the signalized intersection was performed using Synchro (Version 6), while the analyses at the unsignalized intersections were performed using the SIDRA Intersection 5.1 software. Tables 2 and 3 present the results of this analysis. The following compares the future No Build condition (five years into the future assuming the Project is not built) to the future Build condition (five-year planning horizon assuming the construction of the Project). Figures R3-A and R3-B show the project trips associated with the proposed Project. Figures R4-A and R4-B show the future Build condition traffic volumes.

As can be seen in Table 2, under future No Build conditions, the Site Drive northbound approach is expected to operate at LOS C during the weekday morning peak hour, LOS E during the weekday afternoon peak hour, and LOS F during the weekday and Saturday midday peak hours. Under future Build condition, this approach will operate at LOS F during all four peak hours.

Also seen in Table 2, the Dunkin Donuts southbound left turn will operate at LOS F under the future No Build condition, and continue to operate at LOS F under the future Build condition during all four peak hours. Left-turn operations on The Great Road are expected to improve due to the addition of the center TWLTL. This lane will provide storage for vehicles turning left and reduce impacts to through traffic on The Great Road.

Table 3 summarizes the capacity analysis for the signalized intersection at The Great Road / Great Road Shopping Center Drive / DPW Drive. It is expected that under the future No Build condition, this intersection will operate at an overall LOS B during the weekday morning and weekday afternoon peak hours and at LOS C during the weekday and Saturday midday peak hours. Under future Build conditions, this intersection will continue to operate at the same overall LOS.

### **RECOMMENDATIONS**

BSC recommends that the following improvements be implemented in order to improve traffic operations along The

Great Road and at the proposed Site Drive and nearby Dunkin Donuts and Papa Gino's drives:

- Reposition the Site Driveway approximately 40 feet east, to be located directly across from the Dunkin Donuts entrance.
- Restripe The Great Road to provide a two-way center left-turn lane. This will allow left-turning vehicles into the Site Drive, Dunkin Donuts, Papa Gino's, and the DPW Drive to move out of the through-flow on The Great Road. In addition, provide an exclusive left-turn lane into the DPW Drive.
- Modify the existing traffic signal at the intersection of The Great Road / Great Road Shopping Center Drive / DPW Drive to include: a revised left-turn signal for the proposed left-turn lane into the DPW Drive and an additional far-side left-turn signal for vehicles entering the Great Road Shopping Center.
- Revise traffic signal phasing and timing to accommodate the proposed left-turn into the DPW Drive.
- Clear vegetation and trim overhanging tree limbs between the pedestrian bridge and the roadway bridge headwall at the Elm Brook to improve sight distance.
- Move the existing crosswalk across the west leg of The Great Road at the intersection of The Great Road / Great Road Shopping Center Drive / DPW Drive in order to provide additional storage for the proposed left-turn lane at this intersection.
- Relocate and reconstruct the existing wheelchair ramps and pedestrian signals to align with the new crosswalk location.

**CC:**

Table 2: Capacity Analysis Summary – Unsignalized Intersections

	2011 Existing				2016 Future No-Build				2016 Future Build			
	Ave. Delay (sec)	LOS	V/C Ratio	Queue Length (feet)*	Ave. Delay (sec)	LOS	V/C Ratio	Queue Length (feet)*	Ave. Delay (sec)	LOS	V/C Ratio	Queue Length (feet)
<b>WEEKDAY MORNING PEAK HOUR</b>												
<i>The Great Rd / Dunkin Entrance / Site Dr</i>												
The Great Road EB LTR	13.1	B	0.89	-	18.7	C	0.96	-	-	-	-	-
The Great Road EB L	-	-	-	-	-	-	-	-	7.8	A	0.13	8
The Great Road WB LTR	7.4	A	0.59	-	7.9	A	0.64	-	-	-	-	-
The Great Road WB L	-	-	-	-	-	-	-	-	7.5	A	0.10	7
Site Drive NB LTR	19.3	C	0.03	2	24.3	C	0.04	4	101.1	F	0.79	110
<i>The Great Rd / Dunkin Exit</i>												
Dunkin Donuts Drive SB L	82.3	F	0.62	68	>120	F	0.79	96	>120	F	0.89	119
Dunkin Donuts Drive SB R	14.3	B	0.18	19	15.2	C	0.21	21	15.8	C	0.22	22
<b>WEEKDAY MIDDAY PEAK HOUR</b>												
<i>The Great Rd / Dunkin Entrance / Site Dr</i>												
The Great Road EB LTR	10.7	B	0.80	-	12.3	B	0.84	-	7.2	-	-	-
The Great Road EB L	-	-	-	-	-	-	-	-	-	A	0.07	5
The Great Road WB LTR	6.9	A	0.58	-	7.4	A	0.61	-	6.2	-	-	-
The Great Road WB L	-	-	-	-	-	-	-	-	-	A	0.06	5
Site Drive NB LTR	42.1	E	0.03	3	56.0	F	0.07	5	>120	F	1.07	176
<i>The Great Rd / Dunkin Exit</i>												
Dunkin Donuts Drive SB L	>120	F	0.63	54	>120	F	0.81	75	>120	F	0.87	84
Dunkin Donuts Drive SB R	18.7	C	0.13	12	19.9	C	0.14	13	20.4	C	0.15	13
<i>The Great Rd / Papa Gino's West</i>												
The Great Road EB LTR	10.0	A	0.77	-	11.1	B	0.81	-	-	-	-	-
The Great Road EB L	-	-	-	-	-	-	-	-	7.1	A	0.01	1
Papa Gino's West SB LR	49.4	E	0.34	30	59.9	F	0.39	34	65.9	F	0.41	37
<i>The Great Rd / Papa Gino's East</i>												
The Great Road EB LTR	9.8	A	0.77	-	10.9	B	0.81	-	-	-	-	-
The Great Road EB L	-	-	-	-	-	-	-	-	6.8	A	0.00	1
Papa Gino's East SB LR	53.5	F	0.09	7	62.8	F	0.11	8	67.7	F	0.12	9

Abbreviations: EB = Eastbound, WB = Westbound, NB = Northbound, SB = Southbound, L = Left, T = Through, R = Right  
 \*Existing queues on The Great Road from the signalized intersection extend beyond individual site driveways. Due to this overlap, queues on The Great Road at site driveways are not shown separately.

Table 2 (cont'd): Capacity Analysis Summary – Unsignalized Intersections

	2011 Existing			2016 Future No-Build			2016 Future Build		
	Ave. Delay (sec)	V/C Ratio	Queue Length (feet)*	Ave. Delay (sec)	V/C Ratio	Queue Length (feet)*	Ave. Delay (sec)	V/C Ratio	Queue Length (feet)
<b>WEEKDAY AFTERNOON PEAK HOUR</b>									
<i>The Great Rd / Dunkin Entrance / Site Dr</i>									
The Great Road EB LTR	8.3	0.68	-	9.2	0.73	-	-	-	-
The Great Road EB L	-	-	-	-	-	-	8.0	0.04	3
The Great Road WB LTR	10.6	0.81	-	12.5	0.86	-	-	-	-
The Great Road WB L	-	-	-	-	-	-	7.1	0.07	4
Site Drive NB LTR	29.6	0.04	4	37.9	0.07	6	117.3	0.73	84
<i>The Great Rd / Dunkin Exit</i>									
Dunkin Donuts Drive SB L	76.7	0.23	19	104.2	0.32	25	114.8	0.34	27
Dunkin Donuts Drive SB R	18.0	0.09	8	19.6	0.11	10	20.1	0.11	10
<i>The Great Rd / Papa Gino's West</i>									
The Great Road EB LTR	9.7	0.07	-	11.3	0.83	-	-	-	-
The Great Road EB L	-	-	-	-	-	-	7.4	0.02	1
Papa Gino's West SB LR	34.3	0.77	5	41.3	0.08	6	43.8	0.09	7
<i>The Great Rd / Papa Gino's East</i>									
The Great Road EB LTR	9.3	0.76	-	10.7	0.81	-	-	-	-
The Great Road EB L	-	-	-	-	-	-	7.1	0.00	0
Papa Gino's East SB LR	38.6	0.02	2	46.6	0.02	2	49.3	0.03	2
<b>SATURDAY MIDDAY PEAK HOUR</b>									
<i>The Great Rd / Dunkin Entrance / Site Dr</i>									
The Great Road EB LTR	11.2	0.82	-	13.1	0.86	-	-	-	-
The Great Road EB L	-	-	-	-	-	-	7.1	0.07	6
The Great Road WB LTR	6.8	0.57	-	7.3	0.60	-	-	-	-
The Great Road WB L	-	-	-	-	-	-	6.6	0.10	10
Site Drive NB LTR	53.7	0.03	2	64.5	0.07	5	>120	>1.20	319
<i>The Great Rd / Dunkin Exit</i>									
Dunkin Donuts Drive SB L	>120	0.74	69	>120	0.94	100	>120	1.00	110
Dunkin Donuts Drive SB R	18.3	0.13	12	19.5	0.15	14	20.5	0.16	14

Abbreviations: EB = Eastbound, WB = Westbound, NB = Northbound, SB = Southbound, L = Left, T = Through, R = Right  
 \*Existing queues on The Great Road from the signalized intersection extend beyond individual site driveways. Due to this overlap, queues on The Great Road at site driveways are not shown separately.

Table 3: Capacity Analysis Summary – Signalized Intersection

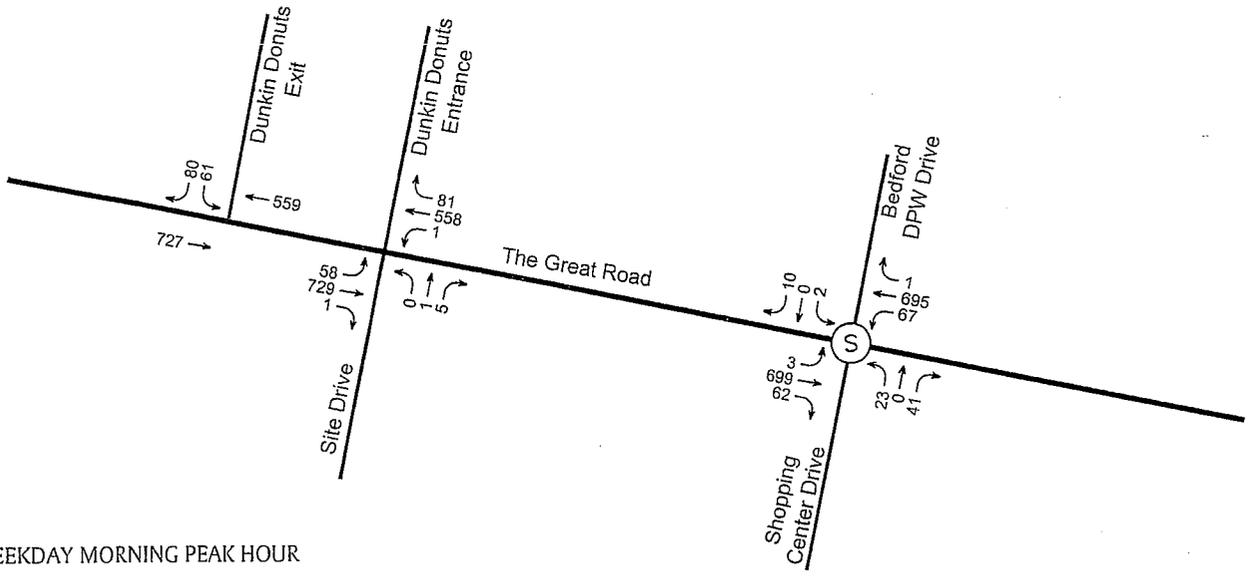
	2011 Existing			2016 Future No-Build			2016 Future Build					
	Ave. Delay (sec)	LOS	V/C Ratio	Queue Length (feet)	Ave. Delay (sec)	LOS	V/C Ratio	Queue Length (feet)	Ave. Delay (sec)	LOS	V/C Ratio	Queue Length (feet)
<b>WEEKDAY MORNING PEAK HOUR</b>												
<i>The Great Rd / GRSC Dr / DPW Dr</i>												
The Great Road EB LT	20.8	C	0.82	371	22.8	C	0.85	420	-	-	-	-
The Great Road EB L	-	-	-	-	-	-	-	-	9.2	A	0.03	6
The Great Road EB T	-	-	-	-	-	-	-	-	25.2	C	0.87	505
The Great Road EB R	9.3	A	0.04	16	9.3	A	0.04	16	9.2	A	0.04	17
The Great Road WB L	19.0	B	0.28	23	20.9	C	0.29	24	21.7	C	0.29	23
The Great Road WB TR	13.0	B	0.74	289	12.9	B	0.76	334	13.3	B	0.77	362
GRSC Dr NB LT	17.0	B	0.08	29	19.3	B	0.09	31	20.7	C	0.09	31
GRSC Dr NB R	16.5	B	0.04	19	18.7	B	0.04	19	20.1	C	0.04	19
DPW Drive SB LTR	16.3	B	0.02	8	18.6	B	0.03	9	19.9	B	0.03	9
Overall	16.6	B	0.54		17.6	B	0.58		18.9	B	0.61	
<b>WEEKDAY MIDDAY PEAK HOUR</b>												
<i>The Great Rd / GRSC Dr / DPW Dr</i>												
The Great Road EB LT	23.1	C	0.80	388	24.4	C	0.82	421	-	-	-	-
The Great Road EB L	-	-	-	-	-	-	-	-	11.3	B	0.02	6
The Great Road EB T	-	-	-	-	-	-	-	-	26.1	C	0.85	450
The Great Road EB R	12.7	B	0.23	40	12.9	B	0.24	41	12.7	B	0.24	41
The Great Road WB L	38.2	D	0.86	122	46.2	D	0.91	191	48.6	D	0.92	207
The Great Road WB TR	8.7	A	0.59	224	8.6	A	0.61	244	8.6	A	0.62	258
GRSC NB LT	42.5	D	0.81	334	56.3	E	0.90	356	61.9	E	0.93	356
GRSC NB R	23.7	C	0.33	104	27.1	C	0.42	134	28.5	C	0.44	141
DPW Drive SB LTR	19.8	B	0.01	12	21.5	C	0.01	13	22.4	C	0.01	13
Overall	22.4	C	0.82		25.8	C	0.88		27.1	C	0.89	

Abbreviations: EB = Eastbound, WB = Westbound, NB = Northbound, SB = Southbound, L = Left, T = Through, R = Right

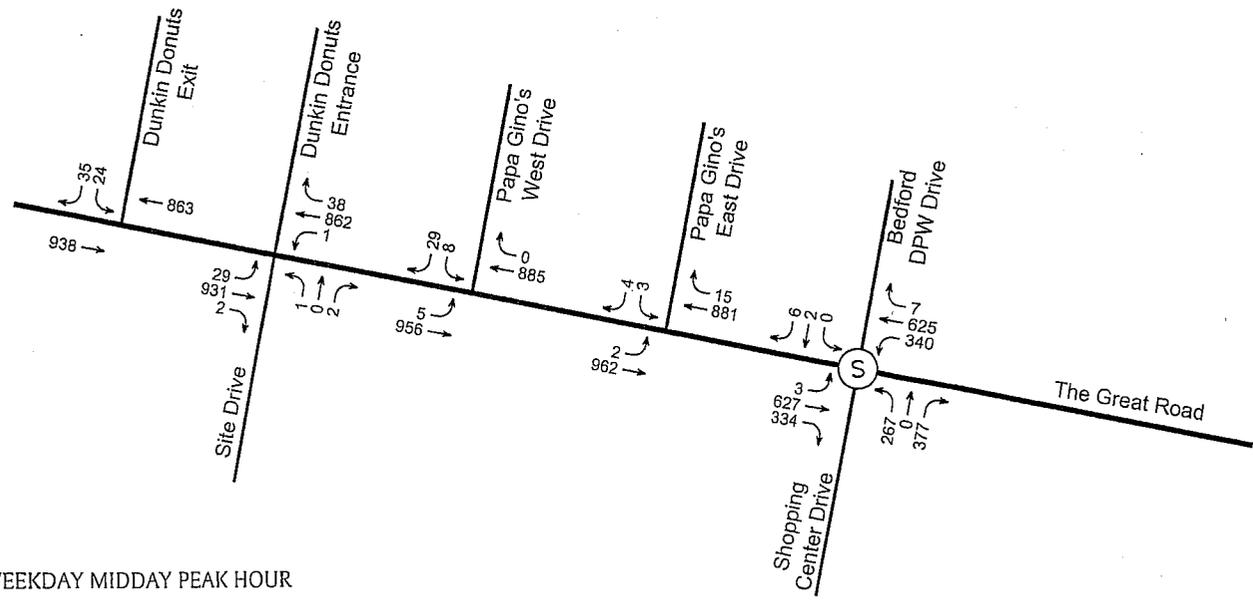
Table 3 (cont'd): Capacity Analysis Summary – Signalized Intersection

	2011 Existing				2016 Future No-Build				2016 Future Build			
	Ave. Delay (sec)	LOS	V/C Ratio	Queue Length (feet)	Ave. Delay (sec)	LOS	V/C Ratio	Queue Length (feet)	Ave. Delay (sec)	LOS	V/C Ratio	Queue Length (feet)
<b>WEEKDAY AFTERNOON PEAK HOUR</b>												
<i>The Great Rd / GRSC Dr / DPW Dr</i>												
The Great Road EB LT	19.7	B	0.76	279	20.3	C	0.78	326	-	-	-	-
The Great Road EB L	-	-	-	-	-	-	-	-	0.0	A	0.00	0
The Great Road EB T	-	-	-	-	-	-	-	-	21.5	C	0.80	354
The Great Road EB R	11.4	B	0.14	29	11.2	B	0.14	30	10.9	B	0.14	30
The Great Road WB L	18.9	B	0.54	58	22.0	C	0.59	59	22.6	C	0.59	59
The Great Road WB TR	10.5	B	0.66	242	11.0	B	0.69	272	11.0	B	0.70	284
GRSC NB LT	24.4	C	0.58	205	28.8	C	0.65	254	30.7	C	0.67	263
GRSC NB R	17.0	B	0.17	53	18.7	B	0.18	58	19.6	B	0.18	59
DPW Drive SB LTR	15.4	B	0.00	6	17.1	B	0.01	12	17.9	B	0.01	12
<i>Overall</i>	16.2	B	0.66		17.5	B	0.70		18.1	B	0.73	
<b>SATURDAY MIDDAY PEAK HOUR</b>												
<i>The Great Rd / GRSC Dr / DPW Dr</i>												
The Great Road EB LT	23.8	C	0.83	435	25.5	C	0.85	475	-	-	-	-
The Great Road EB L	-	-	-	-	-	-	-	-	10.6	B	0.01	4
The Great Road EB T	-	-	-	-	-	-	-	-	27.6	C	0.88	522
The Great Road EB R	11.8	B	0.21	37	11.9	B	0.22	37	11.9	B	0.22	37
The Great Road WB L	30.3	C	0.74	83	35.1	D	0.79	118	39.5	D	0.81	150
The Great Road WB TR	8.7	A	0.60	231	8.7	A	0.61	253	8.8	A	0.64	280
GRSC NB LT	37.7	D	0.75	303	47.2	D	0.83	323	54.4	D	0.87	323
GRSC NB R	22.1	C	0.20	67	24.0	C	0.21	68	25.7	C	0.21	70
DPW Drive SB LTR	20.1	C	0.01	4	21.7	C	0.01	5	23.3	C	0.02	5
<i>Overall</i>	20.2	C	0.75		22.5	C	0.79		24.3	C	0.82	

Abbreviations: EB = Eastbound, WB = Westbound, NB = Northbound, SB = Southbound, L = Left, T = Through, R = Right



WEEKDAY MORNING PEAK HOUR



WEEKDAY MIDDAY PEAK HOUR

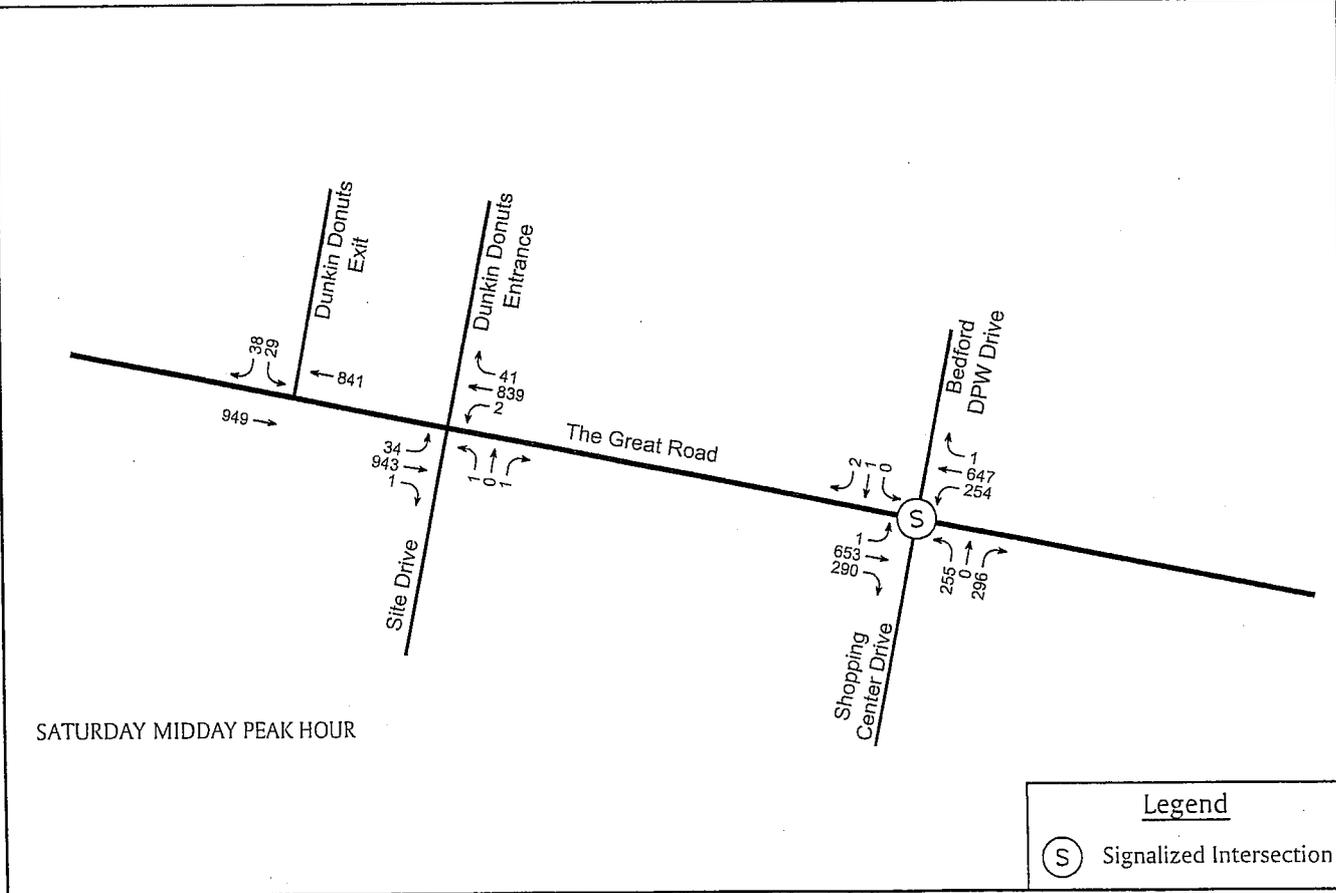
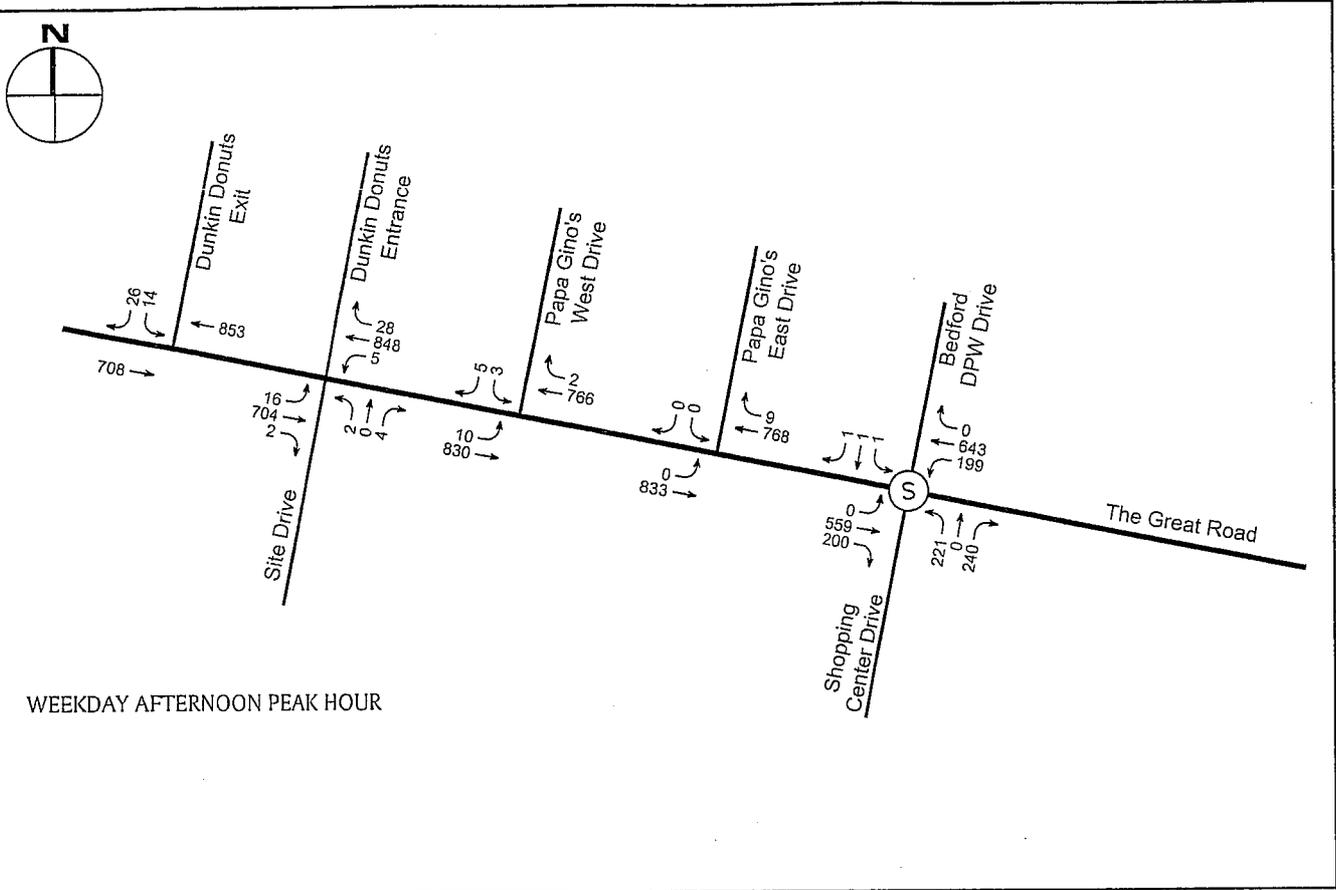
**Legend**

(S) Signalized Intersection

2011 Existing Conditions Peak Hour Traffic Volumes  
 285 The Great Road  
 Bedford, Massachusetts

Figure R1-A  
 Not to Scale



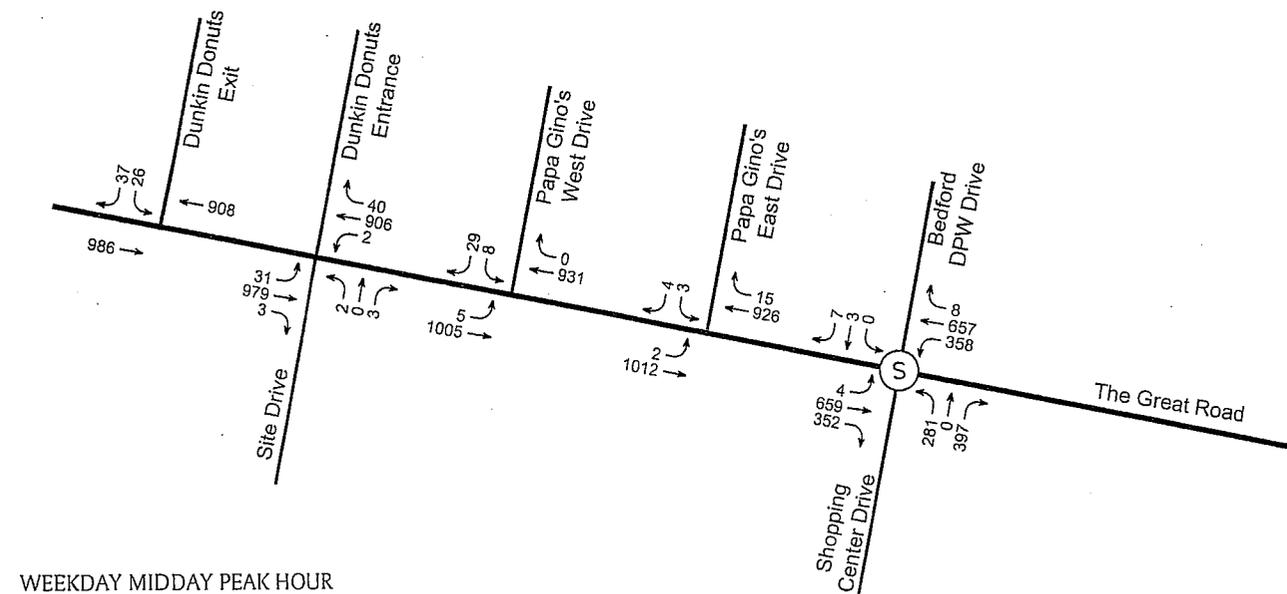
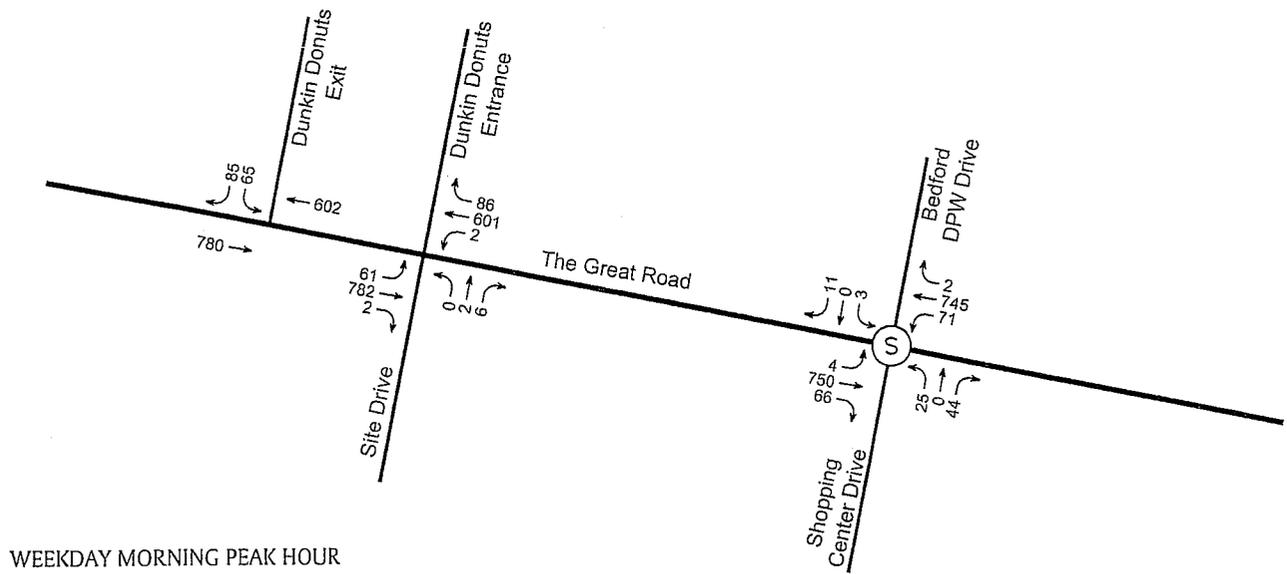


**Legend**  
 (S) Signalized Intersection

2011 Existing Conditions Peak Hour Traffic Volumes  
 285 The Great Road  
 Bedford, Massachusetts

Figure R1-B  
 Not to Scale





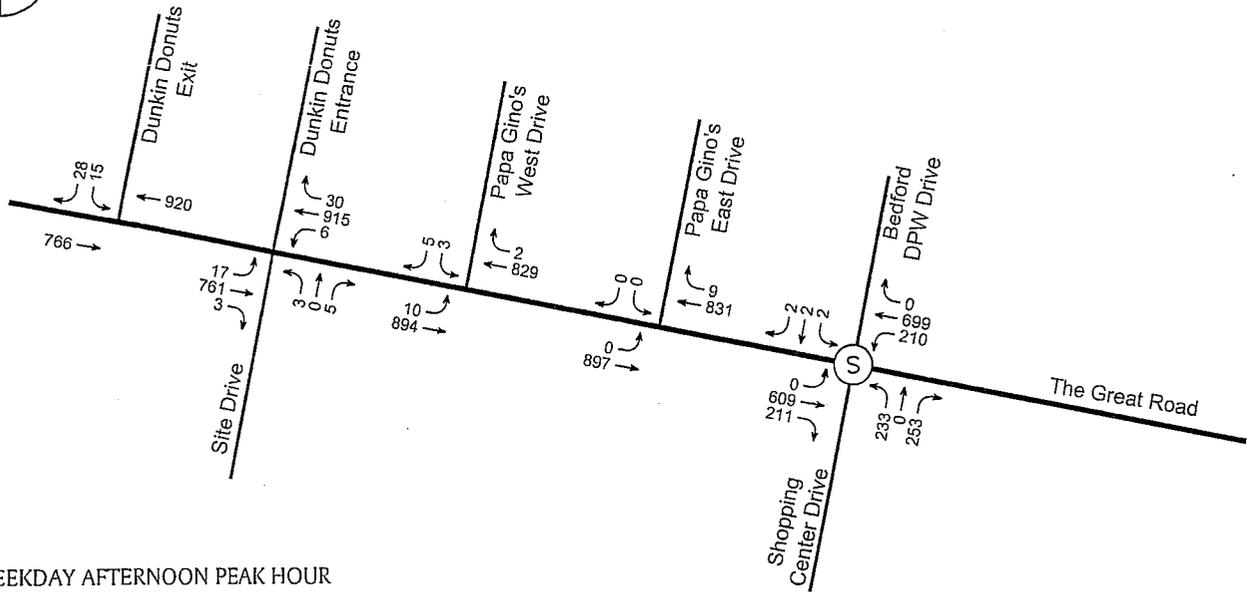
**Legend**

(S) Signalized Intersection

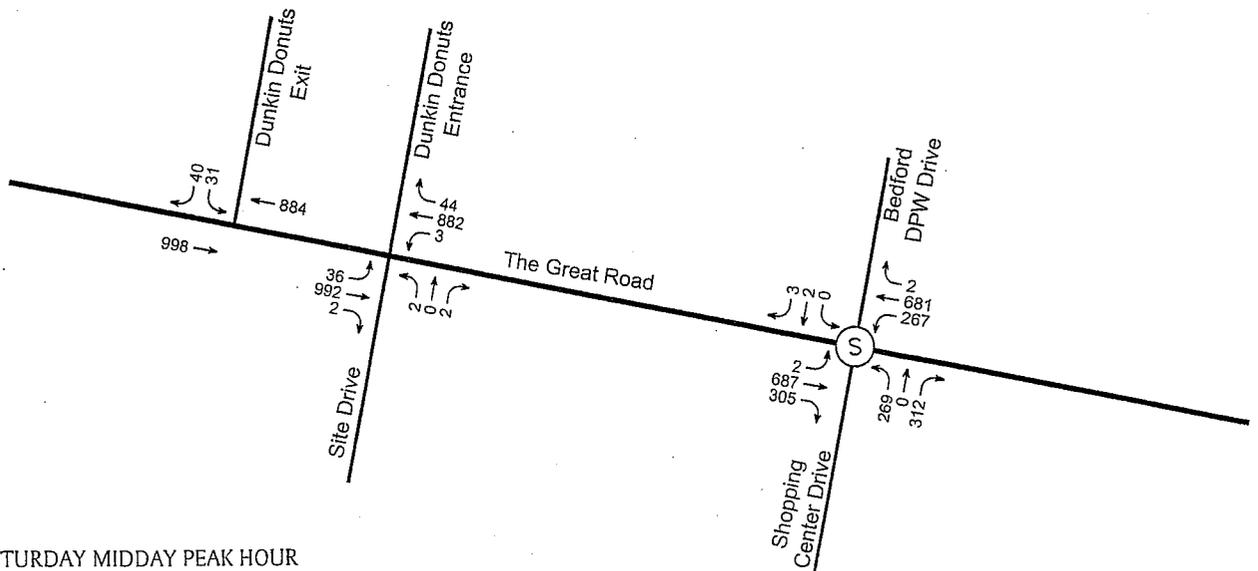
2016 Future No-Build Peak Hour Traffic Volumes  
 285 The Great Road  
 Bedford, Massachusetts

Figure R2-A  
 Not to Scale





WEEKDAY AFTERNOON PEAK HOUR

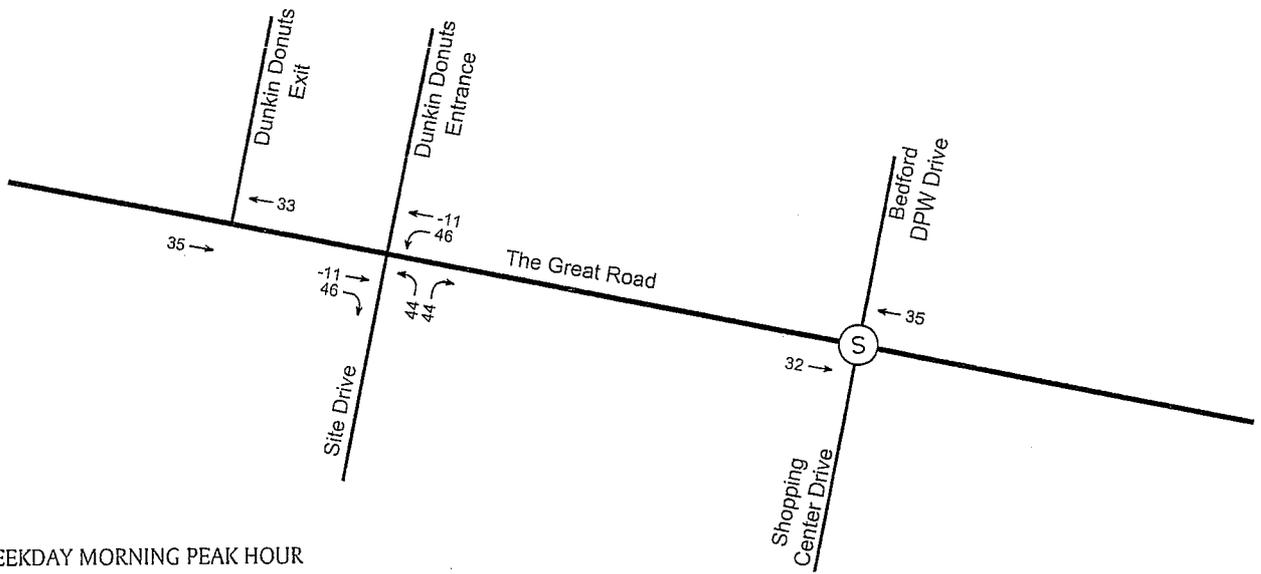


SATURDAY MIDDAY PEAK HOUR

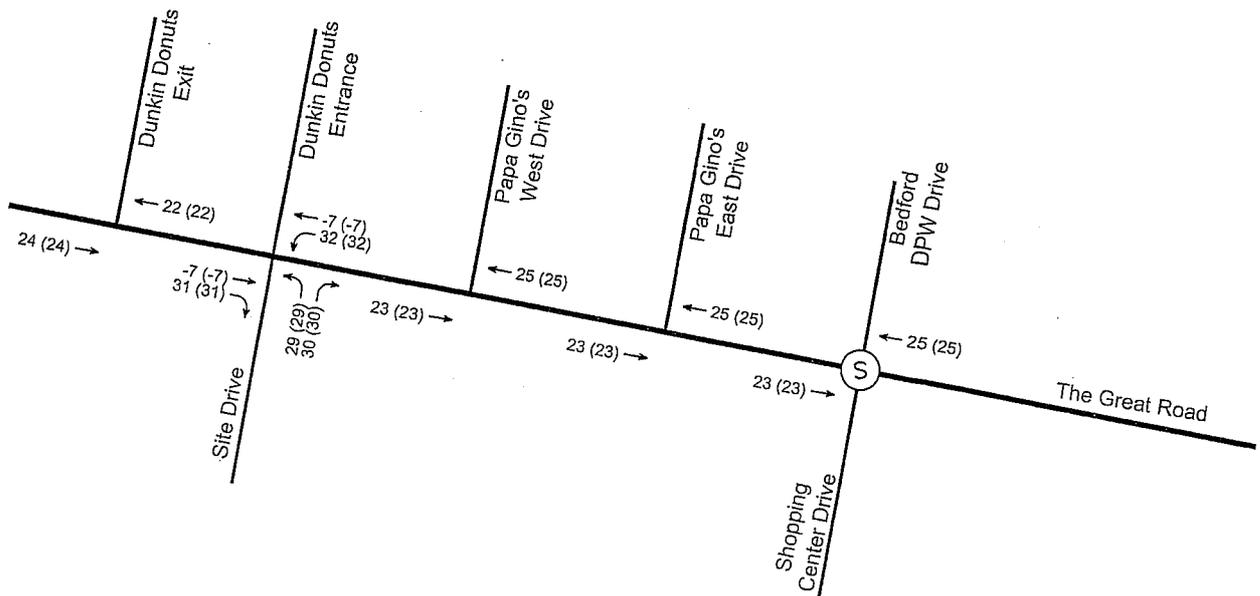
Legend  
S Signalized Intersection

2016 Future No-Build Peak Hour Traffic Volumes  
285 The Great Road  
Bedford, Massachusetts

Figure R2-B  
Not to Scale



WEEKDAY MORNING PEAK HOUR



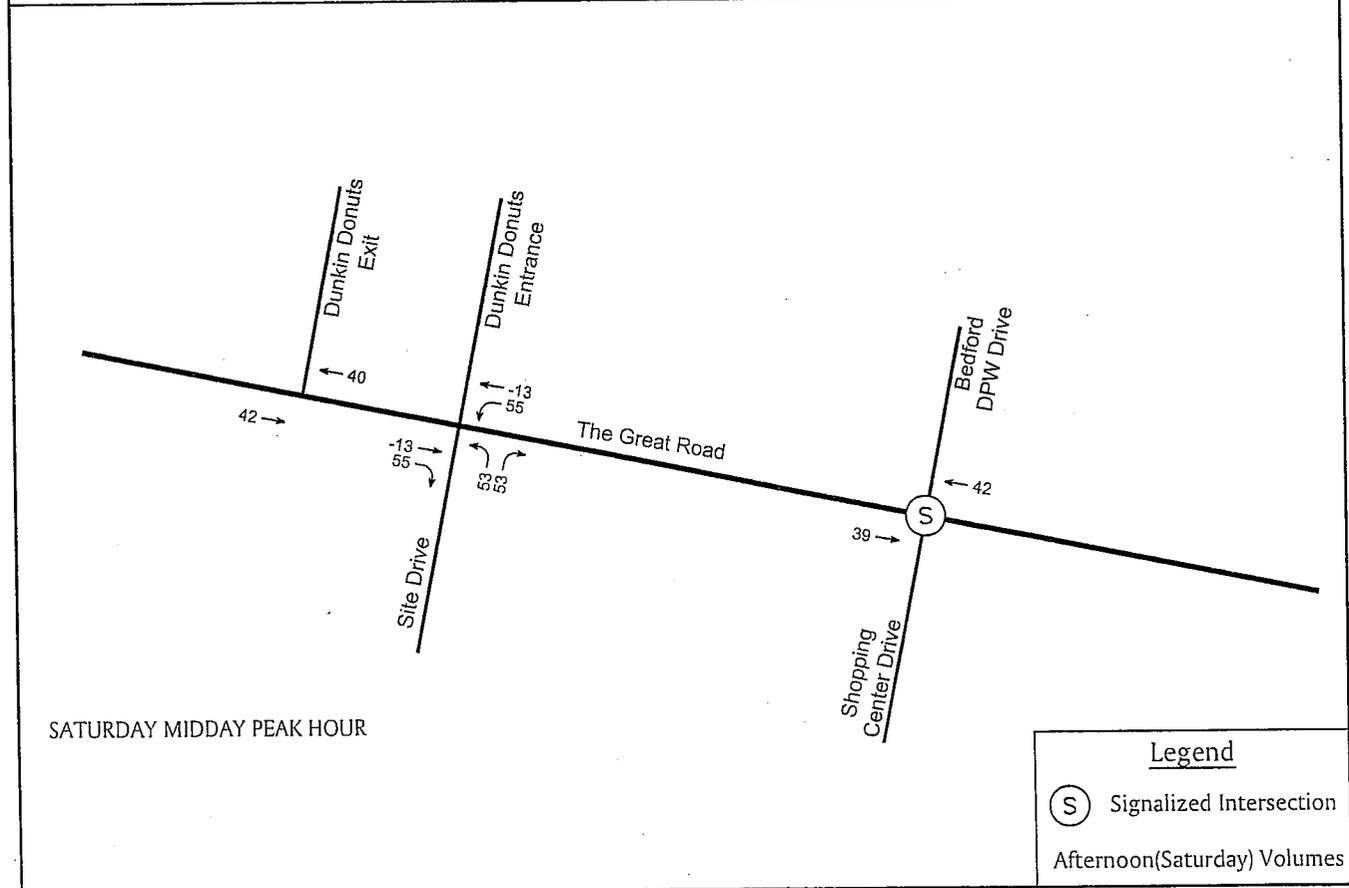
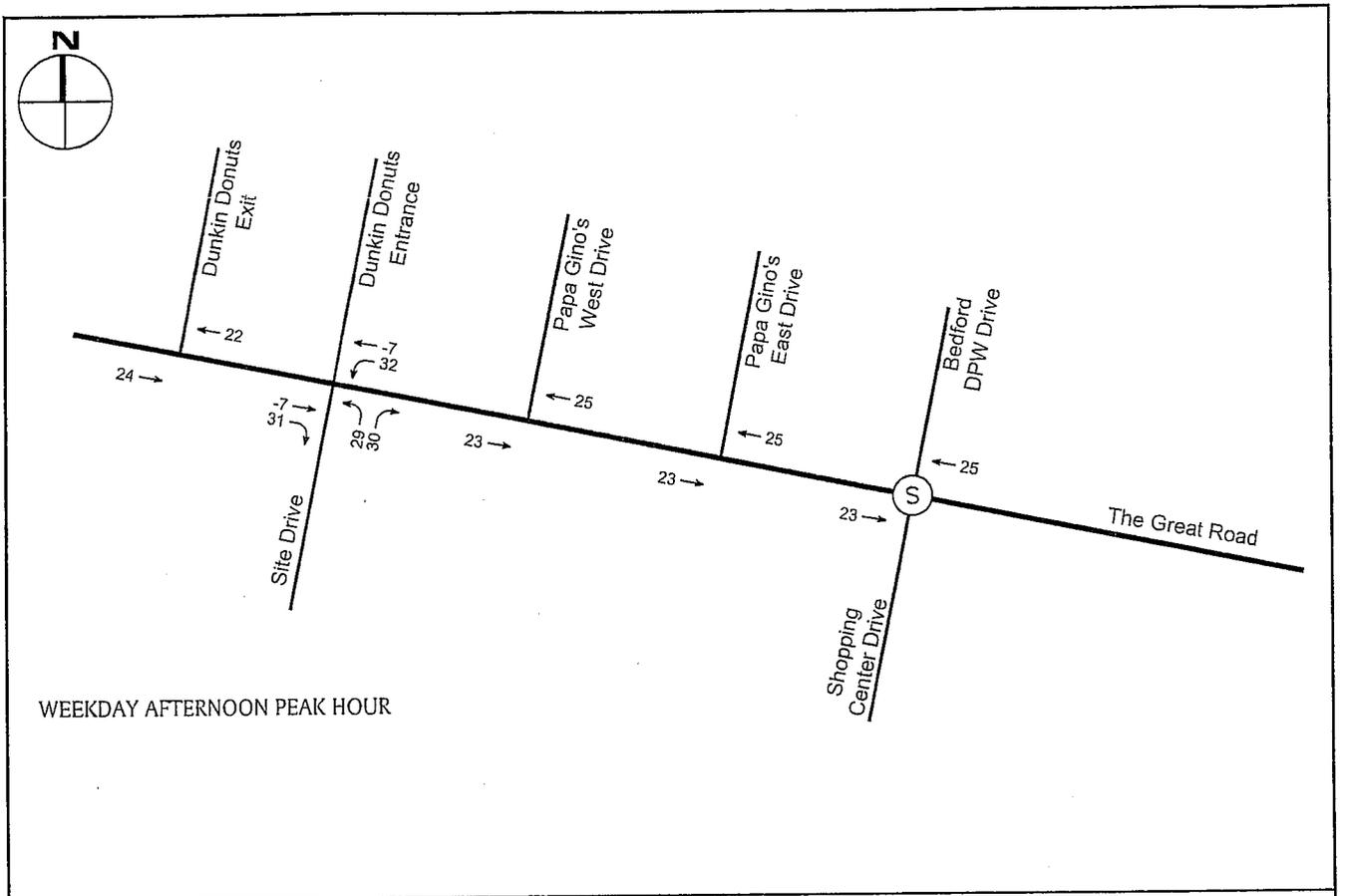
WEEKDAY MIDDAY PEAK HOUR

**Legend**

 Signalized Intersection

Site-Generated Vehicle-Trips with Pass-By  
285 The Great Road  
Bedford, Massachusetts

Figure R3-A  
Not to Scale



**Legend**

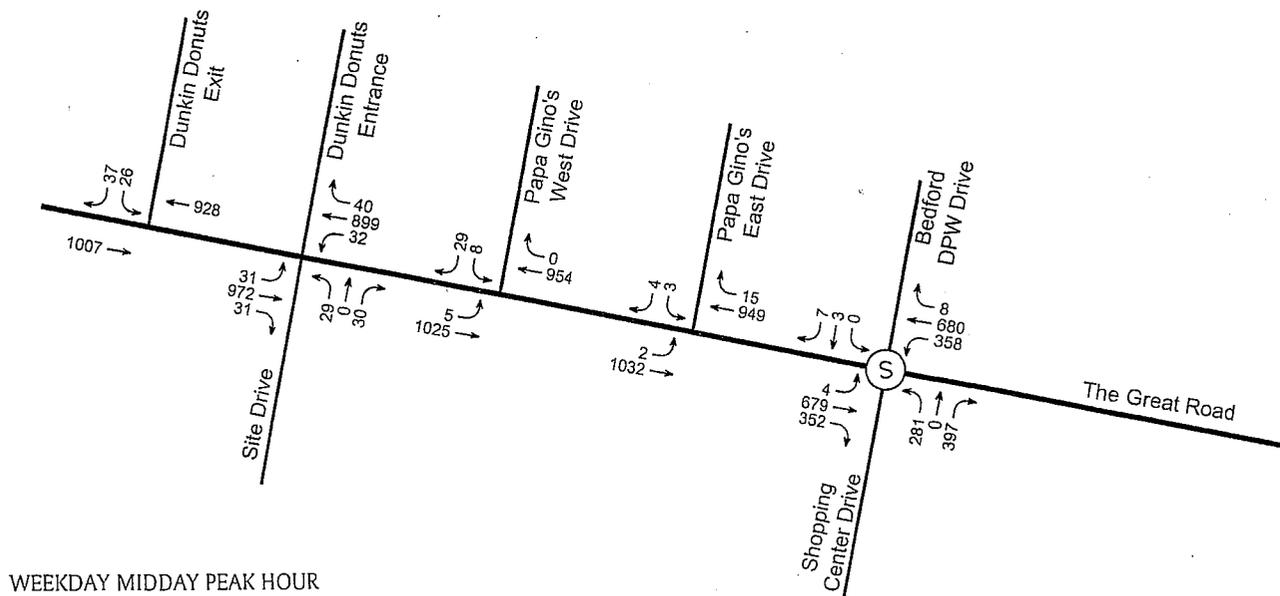
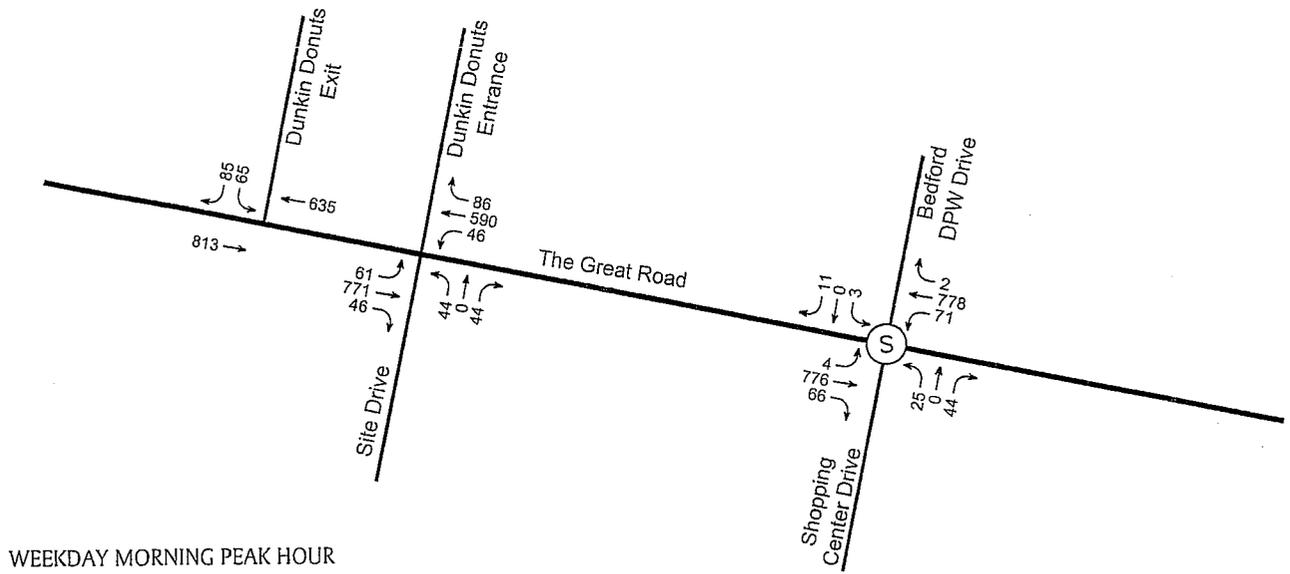
(S) Signalized Intersection

Afternoon(Saturday) Volumes

Site-Generated Vehicle-Trips with Pass-By  
285 The Great Road  
Bedford, Massachusetts

Figure R3-B  
Not to Scale





**Legend**

(S) Signalized Intersection

2016 Future Build Peak Hour Traffic Volumes  
 285 The Great Road  
 Bedford, Massachusetts

Figure R4-A  
 Not to Scale

