



## **TRANSPORTATION ADVISORY COMMITTEE**

7 Twin Circle Drive, Arlington, MA 02474

**To:** Board of Selectmen, Arlington, Mass  
**From:** Transportation Advisory Committee (TAC)  
**Subject:** Downing Square Recommendations  
**Date:** 5 October 2009

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At the Board's request, the TAC has been investigating options for Downing Square. With the assistance of DPW and an outside consultant, various trials, surveys and analyses have been performed over the last several years. A report describing these activities and the results is attached. This large effort has been led by Elisabeth Carr-Jones with assistance from Jeff Maxtutis, Mike Rademacher, and Ed Starr. Many residents of the area have also participated, particularly Geoff Edgers and Carlene Hempel.

We researched major modifications to the general intersection as described in the report, but have found none that work satisfactorily. Therefore, we recommend that the basic form of the intersection be retained, but with modifications that make significant improvements to motorist visibility, operations, and pedestrian safety. Concurrently, we recommend that the aesthetics of the area be upgraded.

These considerations have led to the following specific recommendations:

1. Modify signal timing, install vehicle detection loops and designate southbound approach lanes by lane striping at the intersection of Massachusetts and Park Avenues to improve operations and reduce vehicle queues on Park Avenue between Massachusetts Avenue and Downing Square. This measure can be completed as an early action item, before items #2-5 below.
2. Implement Option 1 as illustrated in Figure 6 of the Report
  - a. Tighten corners and provide definitive stop lines at stop-controlled streets to improve motorist visibility and safety.
  - b. Add bump outs, islands and handicap ramps to improve pedestrian safety.
  - c. Institute a parallel parking arrangement on Park Avenue, and consider time limits on adjacent parking places to accommodate businesses.
  - d. Provide advance signage, pavement markings and/or flashing red/yellow beacons alerting motorists to intersection.
  - e. Improve lighting for the intersection, such as increased street lighting for pedestrians and business patrons.
  - f. Repave intersection and adjust drainage as needed.

**Transportation Advisory Committee Members:**

Elisabeth Carr-Jones, Jean Clark, Officer Corey Rateau, Jeff Maxtutis, Howard Muise,  
Michael Rademacher, Scott Smith, Edward Starr, and Laura Wiener

**Web site; [www.tac.arlington.ma.us/](http://www.tac.arlington.ma.us/)**

3. Provide opportunity for enhanced streetscape
  - a. Facilitate development of appropriate character for overall project design.
  - b. Contact Arlington Garden Club for possible business participation in maintaining plantings.
  - c. Suggest that businesses make shared parking arrangements with the two adjacent parking lots, and for employees to park away from site and employ Transportation Demand Management measures.
  - d. Consider rededicating Square to Captain Downing and M. Sergeant Downing upon completion with appropriate ceremony.
  
4. Maintain the ability to consider future improvements such as signalization or further modifications at Bow and Lowell Streets.
  
5. The DPW will oversee the design process, which will include development of concepts and preliminary and final design plans. Draft plans will be presented for public comment and reviewed by the TAC and other Town committees and departments.

While these recommendations do not make a drastic change to the Square, they do achieve the majority of the seven stated goals for the project by: increasing safety for vehicles, pedestrians and cyclists; reducing vehicle queuing from the Mass Ave / Park Ave intersection; and improving the aesthetics, lighting and illumination.

Respectfully submitted,

Elisabeth Carr-Jones  
Edward Starr - Chair

**Transportation Advisory Committee Members:**

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**Report of the Transportation Advisory Committee  
to the  
Arlington Board of Selectmen**

5 October 2009

## **Downing Square Recommendations**

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Transportation Advisory Committee Members:  
Elisabeth Carr-Jones, Jean Clark, John Lentz, Jeff Maxtutis, Howard Muise,  
Michael Rademacher, Corey Rateau, Scott Smith, Edward Starr and Laura Wiener.

### **Downing Square Project Timeline**

Jan 2004	Board of Selectmen's request for recommendations
Feb 2004	TAC Working Group established
Jun 2004	First Public Meeting held
Sep 2004	Open TAC meeting discussion of Downing Square
Apr 2005	TAC recommends Trial of preliminary concepts
Jun 2005	Trial approved by Selectmen
Jul-Nov 2005	Trial conducted with sand bags and paint
Nov 2005	Neighborhood & Business Surveys conducted
Nov 2005	TAC requests Capital Planning funding
Jan 2006	TAC requests support of DPW
Jun 2006	Town Engineer retired
Nov 2006	Westminster one-way survey conducted
Dec 2006	DPW Director resigned
Mar 2007	New DPW Director hired
Jun 2007	Park Ave parking survey conducted
Sep 2007	New Town Engineer hired
Oct 2007	Traffic data collected
Jan 2008	Consultants hired to study new & broader options
Apr 2008	Draft Consultant report received
May 2008	Backup Consultant data received
May 2008	Town Meeting approves authorization to seek grant
Oct 2008	Working Group analysis of Consultant data completed
Nov 2008	Working Group formulates preliminary recommendations
Dec 2008	Second Public Meeting held
Oct 2009	Report on Recommendations submitted to Selectmen

## 1. Introduction

This report documents the Trial experiment and investigation of further transportation options for Downing Square. For additional background information on the project, please refer to the TAC “Downing Square Trial” report from June 2005.

In early 2004, the Board of Selectmen requested the Transportation Advisory Committee (TAC) to study and make recommendations for Downing Square. Downing Square has six intersecting roadways consisting of Park Avenue, Lowell Street (2), Westminster Avenue, Park Ave Extension, and Bow Street. In response to this request, the TAC formed a working group, consisting of TAC members and residents that initiated a study of the very complex traffic patterns in the Square and the related feeder roadways, and held a public meeting to gather information.

The transportation issues identified by the town and residents include:

- Safety, as exhibited by high accident rate
- Confusing circulation pattern for motorists
- Difficult for pedestrians and bicyclists to cross intersection
- Inability of intersection to accommodate peak vehicle demand
- Pressures of on-street parking and school drop-off
- Vehicle queuing impacts from Mass Avenue
- Aesthetically unpleasing and in poor state of repair
- Lack of adequate lighting and illumination

The goal of the study is to develop a feasible set of preferred improvement measures that will address these issues.

In the spring of 2005, the TAC recommended that an experiment be conducted in the Square, using sandbags, cones, paint and a removable rubber raised crosswalk, to observe the impact on traffic and to get resident reactions. This trial was approved by the Board of Selectmen in June 2005, put in place by DPW later in the summer, and dismantled that fall. During the trial, an email survey of local residents and businesses was conducted and the results are included in this report.

Following the Trial, the TAC requested design services from DPW to assist in the detailed work that was needed to go to the next steps. The TAC is a committee of volunteers and does not have the time to perform the detailed design work that goes beyond the development of concepts. A few months later, the Town Engineer retired followed by the Director of DPW leaving for a job in a different town. The project was then stalled for a period until town resources were available.

By the fall of 2007, a new Director of Public Works and Town Engineer had been hired, and the working group significantly increased the scope of options to consider. A consulting firm (the BSC Group) was hired under a small contract to review the options, recommend options of their own, and to perform traffic capacity and simulation analysis using Synchro software. The Town provided current traffic count data for the roadways around and leading to the Square.

Several meetings were held with the consultant to review results and discuss findings. A summary of the intersection capacity results is included in this report and the BSC final report is referenced. This work has led to the specific recommendations as listed below.

A primary issue has been and continues to be funding for the proposed work. By getting these recommendations approved by the Traffic Authority of Arlington (the Board of Selectmen), the study will be complete and the recommendations can be implemented by the Town when funds become available.

## 2. Trial Experiment

Following a preliminary TAC report and the Board of Selectmen's approval, a Trial of modifications to Downing Square was conducted with sandbags and paint in the summer and fall of 2005. The Trial modifications are illustrated in Figure 1. A neighborhood e-mail survey was also conducted to gauge the success of each of the modifications. From this information the TAC evaluated which of the Trial changes were beneficial, which needed modification and which were disruptive.

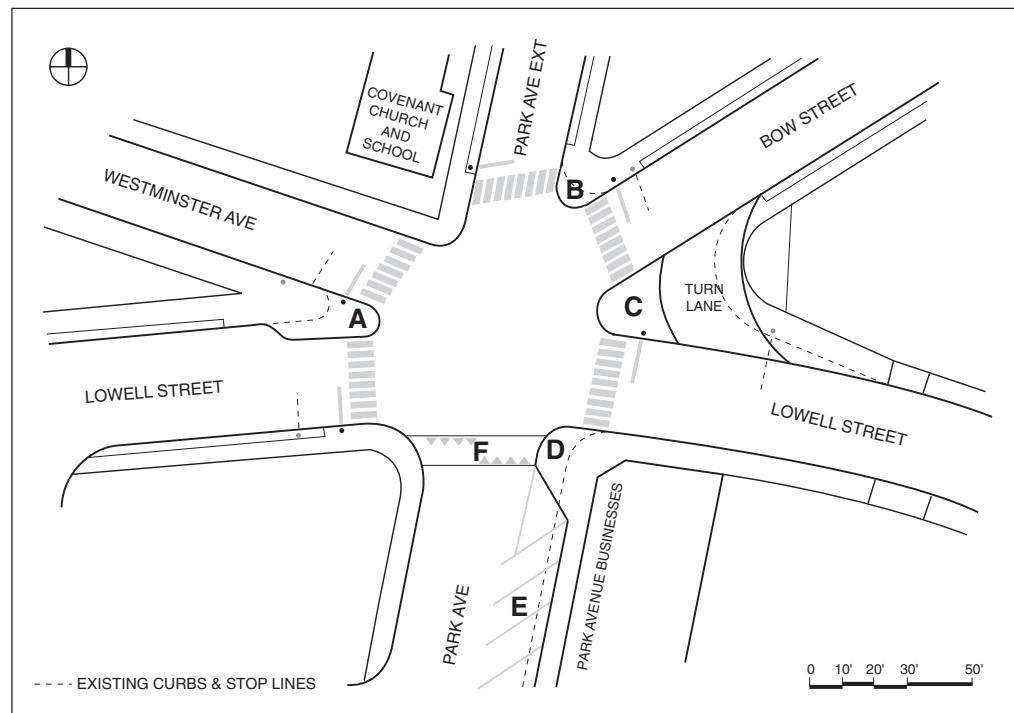


Figure 1 Trial Modifications

### 2.1 Neighborhood Email Survey

Near the end of the Trial, an e-mail survey was sent to the neighborhood contact list of roughly 60 people who had expressed their interest in the Downing Square project through a public meeting or independent contact. Most of the survey recipients either live or work in the neighborhood and have, for the most part, been involved with the project for some time. Although we are grateful to those outside the neighborhood who contacted us regarding the Trial and certainly take their views into account, the TAC is particularly interested in the viewpoints of those living and working in the Downing Square neighborhood.

As anticipated, the Downing Square neighborhood came through with a wealth of information in the survey. The 31 responses were primarily from the TAC's neighborhood contact list, although the list was also shared by a recipient with several Westminster Avenue residents (which accounts for the relatively high number of responses from that street). The results of the survey and written comments from respondents appear in Appendix D.

The survey demographics revealed a high percentage of people using the Square as both motorists (100%) and pedestrians (90%), many of whom regularly either pushed a stroller or walked a child (55%). There is substantial off-peak use (100% on midday / weekends and 66% at night) and a significant number of those responding (39%) regularly dropped off and picked up at the Covenant School, Arlington Heights Nursery School or Chariot Adult Health.

With respect to the Trial, the survey showed considerable support for the curb extension between Park Avenue Extension and Bow Street (71%) (B on the plan on page 2), the pedestrian island and turn lane between Bow Street and Lowell Street (75%) (C on the plan) and the bump out on Park Avenue (71%) (D on the plan). There was very strong support for changes to the parking area on Park Avenue (93%) (E on the plan) with the respondents favoring an angled parking arrangement roughly 2 to 1 over parallel parking. The curb extension between Westminster and Lowell Street (A on the plan) and the raised crosswalk on Park Avenue (F on the plan) received less support (59% and 48%, respectively).

## 2.2 Data and Observations

During the Trial, the TAC collected data on motorist, pedestrian, cyclist and parking conditions affecting the Square. The data was gathered during the morning, afternoon and evening peak periods and revealed several key transportation issues. An Overview of the Data and Observations appears below. Individual data sheets appear in Appendix C.

### Data and Observations Overview Downing Square Trial

#### General Observations

- Six roadways / Motorist right-of-way confusion
- Active school and commercial area
- Tight corners between streets / Large vehicle maneuverability problems

#### Morning Peak (7:30 - 8:30 AM)

- Peak traffic and pedestrian volume through Square (commuters & schools)
- Primary traffic flow is southbound (towards Park Ave & Rt. 2)
- Heaviest crosswalk use, Park Ave Ext, Westminster, Bow, Lowell (E&W)
- Mass Ave signal queue routinely blocks Square between 8:05 and 8:25 AM
- Park Ave Ext and Lowell St W queues caused by Mass Ave signal queue
- Traffic conflicts: LT Park to Lowell, RT Lowell to Park, traffic from Westminster
- Parking issues: trucks in Park Ave lot (2-3), drop-offs at Covenant school
- Cyclist routes: Park Ave Ext to Park Ave, Lowell St W to Lowell St E

#### Afternoon Peak (2:30 - 3:30 PM)

- Pedestrian traffic from 3 schools: Covenant, Ottoson, Peirce
- Crosswalk use: Westminster, Lowell W, Bow, Park Ave Ext, Lowell E, Park Ave
- Motorist traffic less significant than AM or PM peaks
- Parking: Covenant School pick-up, Park Ave business lot (average 3-4 cars)

#### Evening Peak (5:15 - 6:15 PM)

- Primary traffic flow is northbound from Park Ave (to Park Ave Ext, Lowell & Bow)
- Mass Ave signal regulates Park Ave NB traffic so it doesn't back up across Mass Ave
- Pedestrians (up to 1/3) using E side of Park Ave and crossing at Gold's Gym
- Primary cyclist routes: Park Ave, Lowell (E&W), Bow, Park Ave Ext
- Heaviest parking in Park Ave lot (3-5 cars)



### **2.3 Conclusions on the Trial**

Based on the results of the trial, survey and data collection, the TAC narrowed the focus of the project to exclude the raised crosswalk. Despite the pedestrian safety advantages, there was consensus that this feature was too disruptive to the current traffic patterns to be recommended. The following measures were favored:

- two-way pedestrian island / turn lane between Lowell and Bow Streets
- options for the Park Avenue business parking lot / sidewalk bump out
- a smaller modification to the existing Lowell Street / Westminster Ave corner
- one-way options for Westminster Avenue
- general upgrading of crosswalks and roadway.

Recognizing the detrimental effect of congestion at the intersection of Park Ave and Mass Ave--especially during the morning rush hour--the Committee also began a dialog on:

- lane lines & pedestrian signal timing at the Park Ave / Mass Ave intersection.

### **2.4 Requests for Support**

In November of 2005, the TAC approached the Capital Planning Committee with a request for funding for Downing Square. In January of 2006, the TAC requested additional support for the project from the Department of Public Works.

### 3. Westminster One-way Proposal

Although other roadways at Downing Square were considered for one-way restrictions, the TAC considered Westminster Avenue to be the most viable. A proposal was developed to restrict Westminster Avenue traffic from entering the Square by making a short section at Downing Square one-way. With the assistance of the Selectmen's Office, a survey explaining the proposal was mailed in the fall of 2006 to properties directly affected on Westminster Avenue, Lowell Street and Westmoreland Avenue. The proposal appears in Figure 2.

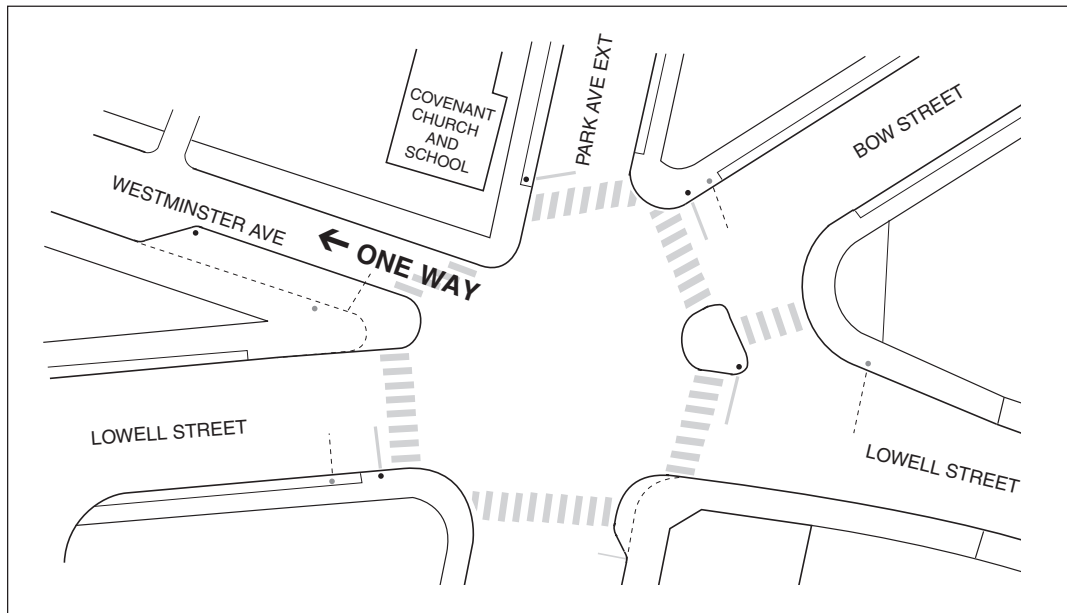


Figure 2 Westminster One-way Proposal

The survey explained a proposal to restrict Westminster Avenue traffic from entering the Square by making a short section of Westminster one-way between Downing Square and the nearest driveway. The remainder of Westminster Avenue would remain two-way. It was mailed to all Arlington properties directly affected by the proposal abutting Westminster Avenue, Lowell Street and Westmoreland Avenue.

After weighing all the information, the TAC concluded that the potential negative impacts of the proposal on the neighborhood would outweigh the advantages at Downing Square. The impacts included: increasing traffic on Westmoreland Avenue, which has a steep approach to Lowell Street; increasing traffic on Lowell Street west of the Square, causing increased traffic queues; and circulation at access restrictions for residents. Refer to Appendix E for more information on the Westminster One-Way survey results.

## Neighborhood Survey Summary Westminster One-Way

The results of the Westminster survey are recorded below. The response rate of 44% was excellent, with residents and businesses voicing concerns with the proposal.

Total of 64 responses from mailing to approximately 145 properties (44%)  
 17 Favored Proposal (27%)  
 36 Opposed Proposal (56%)  
 11 Undecided (17%)

Street	Total Responses	Favored Proposal	Opposed Proposal	Undecided on Proposal
Lowell	23	4	14	5
Westminster	35	13	17	5
Westmoreland	4	0	4	0
West Court	2	0	1	1

### Frequently-mentioned Concerns:

- Lowell traffic volume and speed (16 mentions)
- Covenant school parking problems (14 mentions)
- Westminster speeding (12 mentions)
- Westmoreland hill steep and icy in winter (10 mentions)
- Lowell/Westmoreland intersection dangerous (6 mentions)
- Westminster/Westmoreland intersection problems (4 mentions)

## 4. Park Avenue Considerations

### 4.1 Park Avenue Business Parking

The TAC recommends that a parallel parking arrangement be adopted in front of the Park Avenue businesses in Downing Square. State guidelines indicate that Park Avenue is not wide enough here to safely accommodate diagonal parking. These guidelines appear in Figure 3. Parallel parking is generally safer for those parking, while allowing sufficient space for through traffic, bicyclists and pedestrians.

To accommodate the greatest number of spaces, we are recommending that the parking area be extended toward the bridge. Five parking spaces would be maintained compared to the six to seven legal spaces that would be available if diagonal parking were possible. Refer to Figure 4.

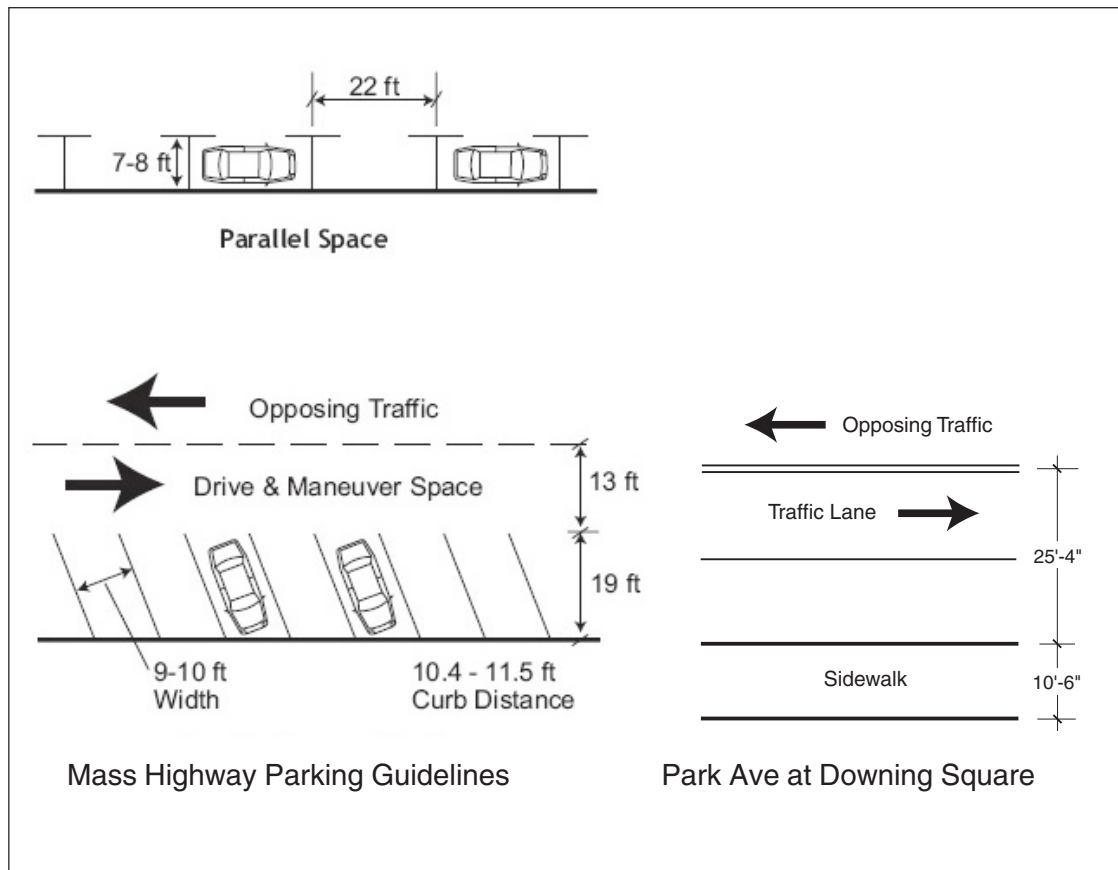


Figure 3 Mass Highway Parking Guidelines and Park Avenue Measurements

In June of 2007, the TAC mailed a package detailing the parallel parking proposal to the businesses occupying these storefronts. We propose working with the businesses to determine if time restrictions make sense to reduce non-business parking. Refer to Appendix F for more on the Park Avenue business parking survey.

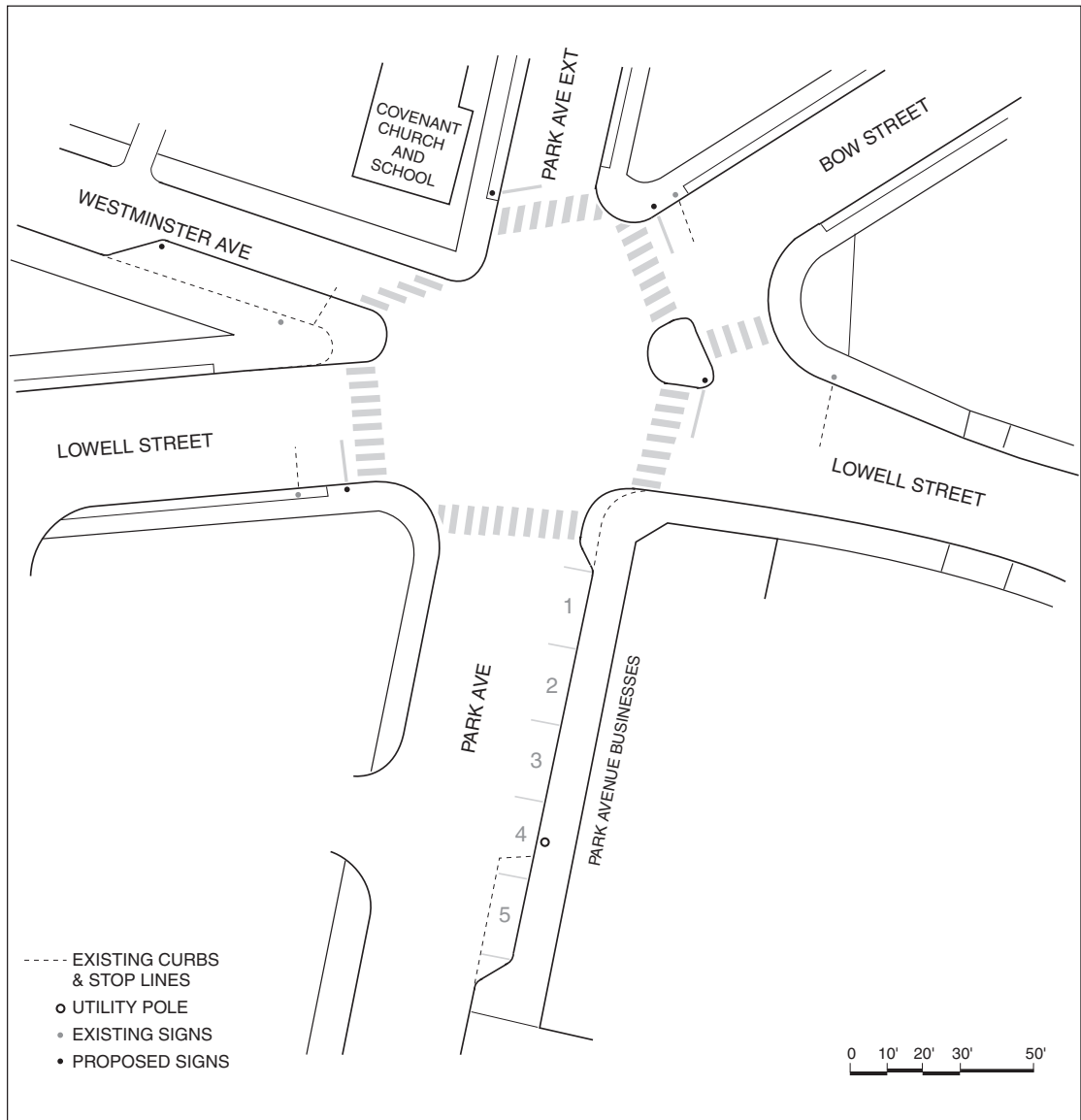


Figure 4 Park Avenue Parallel Parking

#### 4.2 Park Ave / Mass Ave Intersection

Observations of Downing Square during the AM peak period revealed that south-bound Park Ave traffic queues at the intersection with Mass Ave routinely extend back through the Square and to Park Ave Extension and Lowell Street. Beginning in 2006, the TAC began collecting traffic data to determine if modifications at this signalized intersection could diminish traffic queues at Downing Square. Options investigated for the signal include painting lane lines at the Park Avenue south-bound approach and signal timing and detection improvements. It was decided that these measures could reduce the impact on Downing Square and improve overall operations. Refer to Appendix C for more information on observations and measurements during the Trial.

## 5. Analysis of Additional Options

As indicated in the Overview, several additional options were considered in the fall of 2007 by a Working Group consisting of TAC members Elisabeth Carr-Jones, Jeff Maxtutis, Mike Rademacher (Town Engineer), and Ed Starr along with neighborhood representatives. After identification of the options, a small consulting contract was let by the Town to The BSC Group to analyze and review the options, and to make their own suggestions. In support of this contract, the Town gathered current traffic data on surrounding streets.

All of the options included improvements in signal timing at Mass Ave and Park Ave, and parallel parking on Park Ave approaching the Square. It was decided not to revisit options eliminated before the Trial.

The five basic options are listed here and discussed below:

1. Tighten the curbs and sight lines as considered in the Trial;
2. Redirect Bow Street to intersect with Lowell east of the Square;
3. Westminster One-Way out of the Square;
4. Signalize the intersection;
5. Redirect Bow into Lowell and disconnect them from the Square.

In addition to these, BSC combined options to create additional options:

6. Redirect Bow and Signalize (Options 2 and 4);
7. Redirect Bow, Westminster One-Way and Signalize (Options 2, 3 and 4).

Following discussions of the above analyses, another option was added:

8. Redirect Lowell east to Bow, with and without signalization.

An option of installing a roundabout was considered early on in the evaluation process. Due to physical constraints at the intersection, it was determined that a roundabout in conformance with typical industry standards would not be feasible to construct at Downing Square. Therefore, this option was dropped.

### 5.1 Option 1: Tighten curbs and sight lines

This is a redesign of the intersection and curb treatments to improve visibility for drivers, pedestrians, and cyclists. This would also reduce the amount of impervious pavement. A diagram of this option appears below.

This is the option that was considered initially, and formed the basis of the experiment conducted in 2005. This option significantly improves sightlines and shortens pedestrian crossing distances. As a result, it reduces the time for vehicles to traverse the Square, slightly improving operations. It also offers areas for landscaping and aesthetic improvements.



Diagram from BSC Group draft report

Option 1 Diagram

**5.2 Option 2: Redirect Bow Street to intersect with Lowell east of the Square**

This option would eliminate Bow Street’s direct access to the Square by intersecting it with Lowell Street east of the Square, as shown below. This would reduce the number of approaches into the Square from six to five. In order to achieve this, the Town would need to negotiate with the owner of the parking lot and possibly swap or take some land. Town Meeting approval would probably be required for this option. Parking places would be lost on Lowell Street between the Square and the new intersection with Bow Street.

Of concern in this option is the short storage space between the new intersection of Bow and Lowell and the Square itself. Analysis has shown that vehicle queues in this section would extend into the Square, adversely affecting its operation.

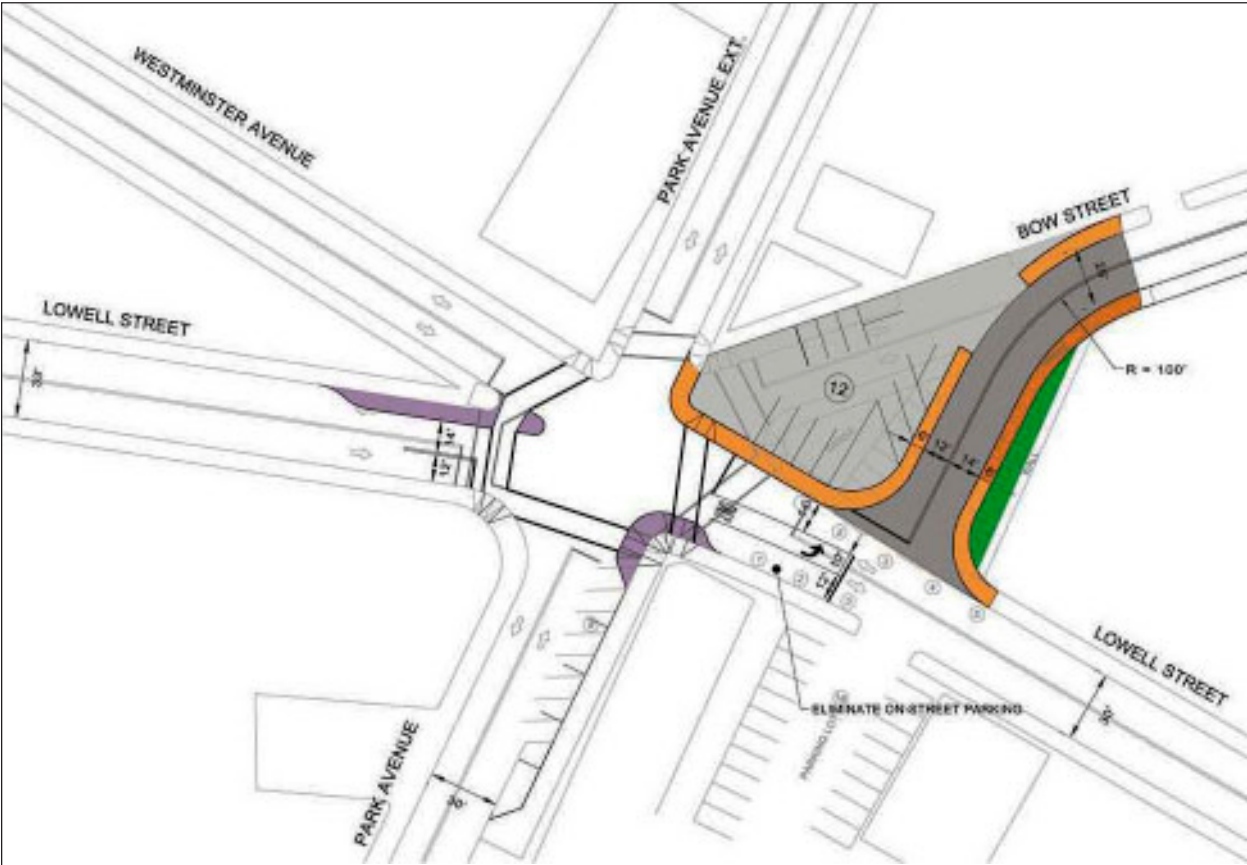


Diagram from BSC Group draft report

Option 2 Diagram



**5.3 Option 3: Westminster One-Way out of the Square**

This option is shown in the diagram below, and has been discussed in Section 3. It eliminates one of the conflicting entrances to the Square, but also creates difficulties in other areas (Lowell and Westmoreland) as traffic adjusts to the mobility restrictions.



Option 3 Diagram

Diagram from BSC Group draft report

#### 5.4 Option 4: Signalize the Intersection

This option is shown in the diagram below and installs a traffic signal to mediate vehicular and pedestrian traffic at the intersection. From the BSC report, the signalization is described as follows:

“The signal timing would require five vehicle phases, as well as an exclusive left-turn lane and protected phase for the Park Avenue northbound vehicles. Pedestrian signals would be installed and an exclusive pedestrian phase would be added to the signal timing. In addition, under this option, the intersection would have to be interconnected with the nearby intersection of Massachusetts Avenue and Park Avenue to coordinate traffic operations.”

The analysis results are discussed in Section 5.12.



Diagram from BSC Group draft report

Option 4 Diagram

**5.5 Option 5: Redirect Bow into Lowell and disconnect from the Square**

This option is shown below. Here neither Bow Street nor Lowell east would enter the Square, reducing the number of entrances to the Square from six to four. This significantly reduces the conflicts in the square, but causes major re-routing of traffic. The traffic on Bow Street would probably go either to Park Avenue Extension or to Forest Street. Park Avenue Extension is narrow and currently has heavy AM and PM traffic. The Forest Street bridge under the bike path and its intersection with Mass Avenue are not safe for significant traffic increases. To address these problems, the bridge on Forest could be rebuilt and a signal placed at Mass Ave and Forest.

The re-routed traffic could not be ignored. Bow Street would essentially become a local street, while other nearby streets carry all of the redirected traffic. This would be a major change to the mobility of the area and lead to significant inequities. Access to the businesses off of Lowell Street behind the Park Avenue would be restricted from the west. Emergency vehicle access would be restricted as well.



Option 5 Diagram

Diagram from BSC Group draft report

### **5.6 Option 6 Redirect Bow St / Signalize**

The BSC Group also analyzed combinations of Options 2, 3 and 4. Option 6 combined Options 2 and 4.

### **5.7 Option 7 Redirect Bow St / Westminster One-Way / Signalize**

The BSC Group's Option 7 combined Options 2, 3 and 4.

### **5.8 Option 8 Redirect Lowell to Bow east of the Square**

This is essentially the reverse of Option 2. Lowell Street would not enter the Square from the east, but would go through to Bow Street. This would have the same issues with land swapping or taking as Option 2. It might, however, present a better storage situation compared to Option 2 because Lowell Street carries less traffic than Bow Street, and the majority of traffic entering Bow Street would not be making a right turn, but rather proceeding on Bow Street.

### **5.9 Town's Data Collection**

In October of 2007, the Town hired a data collection firm to collect traffic data for the intersection and connecting roadways in order to evaluate the options. Traffic turning movement and classification counts were conducted at four intersections:

- Downing Square
- Massachusetts Avenue/Park Avenue
- Lowell Street/Westmoreland Avenue
- Park Avenue Extension/Summer Street

Pedestrians and bicyclists crossing the intersections were also recorded. At the Mass Avenue/Park Avenue and Park Avenue Extension/Summer Street intersections, the number of times the pedestrian phase is activated was also recorded. Traffic volume and speed data was collected with Automatic Traffic Recorder (ATR) machines at the following four locations:

- Park Avenue between Lowell Street and Massachusetts Avenue
- Lowell Street between Park Avenue and Westmoreland Avenue
- Park Avenue Extension north of Lowell Street
- Bow Street east of Park Avenue

All traffic data was collected when school was in session and there was no construction work being performed on Summer Street. Figure 5 shows turning movements at the study intersections for the weekday AM, weekday PM and weekend peak hours.

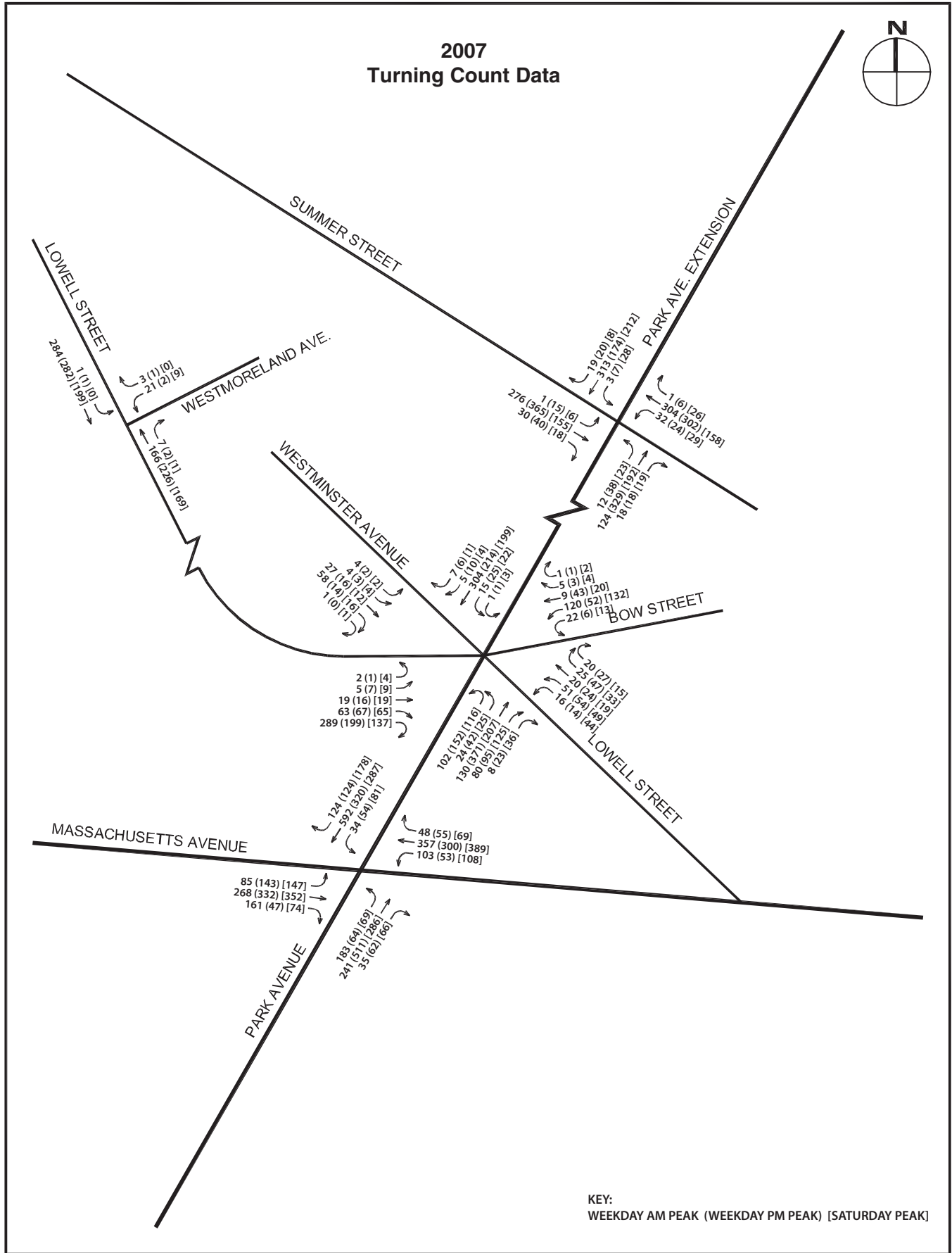


Figure 5 Turning Count Data for Study Intersections

### **5.10 Consultant Evaluation of Options**

In January of 2008, the Town hired the traffic engineering firm the BSC Group to evaluate the five options identified by the TAC, as well as the existing conditions at Downing Square and nearby intersections. A set of criteria was developed as a basis to compare several design options. The criteria were as follows:

- Safety considerations
- Capacity (delays)
- Construction costs
- Aesthetics
- Pedestrian and bicycle accommodation
- Parking availability
- Impacts to school drop-off
- Impacts to emergency vehicle access

In April of 2008, BSC submitted a draft report of their evaluations. The report recommended that the final design include a combination of several improvements: curb extensions within the Square, the Bow Street redirection to Lowell Street and the Westminster one-way conversion.

As a first step, BSC recommended that the signals at Mass Avenue/Park Avenue operate as they were originally designed, with additional green time given to the Park Avenue southbound phase during the morning and additional loop detectors added on Mass Avenue, and the investigation of two through lanes on Park Avenue southbound.

After receiving the draft report, the TAC requested that an option redirecting Lowell Street to Bow Street be evaluated.

### **5.11 Attributes of the Basic Options**

Table 1 summarizes the attributes of the options under consideration. From these considerations, Option 5 is not considered further.

	Option 1 TIGHTEN INTERSECTION	Option 2 REDIRECT BOW TO LOWELL	Option 3 WESTMINSTER ONE-WAY OUT	Option 4 SIGNALIZE THE INTERSECTION	Option 5 DISCONNECT BOW & LOWELL
TRAFFIC SAFETY	+ Improved sight lines	+ Slightly less congestion in Square	+ One less entrance into Square slightly reduces conflicts	+ Fewer conflicts in Square	+ Less congestion in Square
MOTORIST RIGHT OF WAY INTO SQUARE	- No change	+ Slightly improved except during peaks	+ Slightly improved	+ Substantially improved	+ Improved
PEDESTRIAN & CYCLIST SAFETY	+ Shorter crosswalks, improved sight lines	+ Eliminates one crosswalk in Square	+ Reduces Westminster crosswalk length	+ Dedicated pedestrian phase and signals - Park Ave narrower for cyclists	+ Eliminates two crosswalks
TRAFFIC MOBILITY	+ Minor operations improvement in Square o No offsite operations loss	- Bow St queues block Square at peaks - Bow St access lengthened + Minor operations improvement in Square	- Westminster area mobility greatly impacted + Minor operations improvement in Square	o Continues at Level Of Service F - Park Ave queues back to Mass Ave	- Major loss of mobility from N and NE
EQUALITY	o No change	o Bow St users suffer some, others gain some	- Westminster area suffers, others gain a little	+ All suffer equally	- Major inequalities
BUSINESS & SCHOOL IMPACTS	- Minor parking reduction	- Major parking reductions - Access to Lowell St businesses may be impacted	+ Fewer conflicts for school drop-offs	- Left turn lane on Park Ave narrows parking	- Probable parking reductions - Access to businesses limited
EMERGENCY VEHICLES	+ Improved turning into Bow	+ Improved turning into Bow	- Travel time to Westminster area is increased	+ Opticom preemption could be installed	- Reduced access to Square (especially in winter)
AESTHETICS	+ Increased landscape opportunities	+ Increased landscape opportunities	+ Increased landscape opportunities	- Negative visual impact	+ Increased landscape opportunities
EXPENSE	+ Moderate	- Expensive	- Expensive to fix Lowell / Westmoreland	- Very expensive	+ Moderate
ADDITIONAL ISSUES	o None	- Major land swap or taking	- Increased traffic on Lowell - Traffic diverted to Westmoreland / Lowell	- Requires additional left turn lane and minor land taking on Park Ave	- Major disruption to area

Table 1 Summary of Attributes of Basic Options

## 5.12 Engineering Analysis

BSC used the measured traffic data to perform intersection capacity analysis for each of the options using the Synchro computer software program. The analysis provides average vehicle delay, queue lengths, and Level of Service (LOS) for the Downing Square intersection overall, as well as individual approaches and movements. LOS represents the quality of traffic flow at an intersection or roadway facility and ranges from A for excellent to F for poor operating conditions. Of course, not all F's are equal, so one needs to look at the estimate of queue lengths to judge whether one F is poorer than another F.

Table 2 illustrates Synchro capacity analysis results for the first four basic options for the AM and PM peak hours. At the bottom of Table is the approximate storage distance at key approaches where queues can be a problem, such as Park Avenue northbound (NB) and Lowell Street eastbound (EB) for Option 2.

	Option 1 Tighten Intersection			Option 2 Redirect Bow to Lowell			Option 3 Westminster One-Way			Option 4 Signalize Intersection		
	ave delay (sec)	LOS	Queue (ft)	ave delay (sec)	LOS	Queue (ft)	ave delay (sec)	LOS	Queue (ft)	ave delay (sec)	LOS	Queue (ft)
<b>Weekday AM Peak</b>												
PARKEExt SB	>120*	F	2101	>120*	F	1821	>120*	F	2037	>120*	F	755
PARK NB	3.9	A	54	2.9	A	51	2.2	A	15	41.7	D	219
LOWELL EB	>120*	F	488	26.2	D	257	45.5	E	445	>120*	F	392
LOWELL NWB							-					
BOW WB	>120*	F	557	-	-		68.2	F	213	>120*	F	546
<b>Weekday PM Peak</b>												
PARK Ext SB	>120*	F	909	35.4	E	186	>120*	F	1752	62.1	E	351
PARK NB	4.5	A	18	4.1	A	12	4.1	A	19	41.4	D	694
LOWELL EB	>120*	F	666	27.5	D	247	>120*	F	2207	>120*	F	787
LOWELL NWB	>120*	F	947	32.8	D	102	>120*	F	726	80.4	F	261
BOW WB	>120*	F	293	-	-		>120*	F	494	64.7	E	131

Shaded areas indicate failing conditions. Outlines indicate queue lengths that exceed available storage.  
 \*Note: when delay exceeds 120 sec queue lengths are not reliable but indicate general differences.

### Available Storage in Approximate Feet

PARKEExt SB	large	large	large	large
Park NB	600	600	600	600
LOWELL EB	large	80	large	large
LOWELL NWB	large	large	large	large
BOW WB	large	large	large	large

Table 2 Synchro Analysis Results for Options 1 through 4 (using 2007 data)

We consider Option 1 the baseline. It is basically as the intersection operates today, but with increased safety, better sight lines, and pedestrian improvements. We note that three approaches operate at LOS F in the AM peak hour, and four at LOS F in the PM peak hour. However, the tightening of the intersection corners will reduce the area vehicles need to cross through the Square, slightly improving operations. Park Avenue northbound, which carries a major traffic flow in the PM, operates at LOS A.

Moving to Option 2, redirecting Bow into Lowell, we find a significant improvement of LOS for all approaches but Park Ave Extension SB. However, there is a significant storage problem for Lowell EB in both the AM and PM peak hours. Vehicles would queue over 200 feet between the Bow entrance and the Square where the



available storage is only 80 feet. As a result, Lowell eastbound traffic would back up into the Square and block traffic and pedestrians.

Option 3, Westminster One-Way, has been discussed in Section 3. We note from the data that there is some gain for the users of Bow WB in the AM and a more difficult situation for many in the PM. Overall the population using Downing Square gains very little compared with the major disadvantages caused to the area residents around Westminster Avenue.

Option 4, Signalization, improves Park Ave Ext SB in the AM and PM, Lowell WB and Bow WB in the PM. However, the Park Avenue northbound approach would now be required to stop as part of the signal. For Park NB, the queue length of 694 feet exceeds the available storage (600 ft), so the queue would occasionally back up into the Mass/Park intersection. Because the Square and Mass Avenue intersections are fairly close they would be coordinated, which would help minimize queue lengths. However, northbound queues on Park Avenue would routinely occur. Due to the crest in the road on the bridge over the bike path, there is concern for vehicles traveling northbound to rear-end vehicles in the northbound queue.

In addition, signalizing a six way intersection is unconventional and would continue to operate at LOS F overall in both the AM and PM peak hours. An exclusive pedestrian phase would be included as part of the signal which would improve safety for pedestrians. However, vehicle delay and queuing would significantly increase for all intersection movements when the pedestrian phase is activated. In addition, the equipment needed to implement a 6-way signalized intersection could not be placed without significant aesthetic impacts. Obviously, a signal at this location must be studied very carefully before selecting this option.

As indicated earlier, the other options are combinations of the first four above. Option 6 combined signalization with the redirection of Bow Street to Lowell Street. Adding the signalization increased the queue of Lowell eastbound, worsening the backup into the Square. This also occurred in Option 7, which added Westminster one-way out.

During discussion of the results, Option 8 was added. It redirects Lowell to Bow Street, to see if the queue into the Square created by redirecting Bow Street and the resulting left turns onto Bow Street, would be fixed. Table 3 shows this option with and without signal compared to the baseline and Option 2. We see significant improvement with signalization and redirecting Lowell to Bow. But the Park northbound queue in the evening significantly exceeds the available storage which creates operational and safety issues not present today.

Option 8 with signalization is a complicated and expensive option to implement. It requires land taking or swapping, signalization, and finding a way to reduce the Park northbound queue.

	Option 1 Tighten Intersection			Option 2 Redirect Bow to Lowell			Option 8 - no signal Redirect Lowell to Bow			Option 9 - with signal Redirect Lowell to Bow		
	ave delay (sec)	LOS	Queue (ft)	ave delay (sec)	LOS	Queue (ft)	ave delay (sec)	LOS	Queue (ft)	ave delay (sec)	LOS	Queue (ft)
<b>Weekday AM Peak</b>												
PARKEExt SB	>120*	F	2101	>120*	F	1821	>120*	F	2037	103	F	847
PARK NB	3.9	A	54	2.9	A	51	3	A	27	31	C	392
LOWELL EB	>120*	F	488	26.2	D	257	>120	F	1958	77	E	581
LOWELL NWB						-						
BOW WB	>120*	F	557	-	-	-	83	F	224	83	F	217
<b>Weekday PM Peak</b>												
PARK Ext SB	>120*	F	909	35.4	E	186	>120*	F	742	65	E	402
PARK NB	4.5	A	18	4.1	A	12	3	A	9	67	E	939
LOWELL EB	>120*	F	666	27.5	D	247	>120*	F	1593	69	E	536
LOWELL NWB	>120*	F	947	32.8	D	102						
BOW WB	>120*	F	293	-	-	-	>120*	F	198	65	E	189

Shaded areas indicate failing conditions. Outlines indicate queue lengths that exceed available storage.  
 \*Note: when delay exceeds 120 sec queue lengths are not reliable but indicate general differences.

**Available Storage in Approximate Feet**

PARKEExt SB	large	large	large	large
Park NB	600	600	600	600
LOWELL EB	large	80	large	large
LOWELL NWB	large	large	large	large
BOW WB	large	large	large	large

Table 3 Synchro Analysis Results for Options 1, 2, 8 and 9 (using 2007 data)

**5.13 Second Public Meeting**

In December of 2008, the TAC held a second public meeting for the Downing Square project at the Peirce School. At this meeting, the various options were explained and the recommendations were presented.

**5.14 Capital Planning Funding**

Although Town Meeting approved the 2008 Capital Planning budget, which included a \$300,000 line item for Downing Square, the line item did not allocate any actual funds for the project.

## 6. Recommendations

We have worked hard to find a major improvement for this complex six-way intersection that improves safety, mobility and is clearly for the greater good of Arlington and the neighborhood. Unfortunately, we have not found one.

We therefore recommend that the basic form of the intersection be retained and modified to improve motorist visibility, operations, and pedestrian safety. Concurrently, the aesthetics of the area should be greatly improved. We recommend not making any changes that would disrupt the ability to implement future improvements that include signalization (Option 4) and redirecting Lowell to Bow (Option 8) if warranted in the future by changes in traffic volume or patterns.

These considerations lead to the following recommendations:

1. Modify signal timing, install vehicle detection loops and designate southbound approach lanes by lane striping at the intersection of Massachusetts and Park Avenues to improve operations and reduce vehicle queues on Park Avenue between Massachusetts Avenue and Downing Square. This measure can be completed as an early action item, before items #2-5 below.
2. Implement Option 1 as illustrated in Figure 6
  - a. Tighten corners and provide definitive stop lines at stop-controlled streets to improve motorist visibility and safety.
  - b. Add bump outs, islands and handicap ramps to improve pedestrian safety.
  - c. Institute a parallel parking arrangement on Park Avenue, and consider time limits on adjacent parking places to accommodate businesses.
  - d. Provide advance signage, pavement markings and/or flashing red/yellow beacons alerting motorists to intersection.
  - e. Improve lighting for the intersection, such as increased street lighting for pedestrians and business patrons.
  - f. Repave intersection and adjust drainage as needed.
3. Provide opportunity for enhanced streetscape
  - a. Facilitate development of appropriate character for overall project design.
  - b. Contact Arlington Garden Club for possible business participation in maintaining plantings.
  - c. Suggest that businesses make shared parking arrangements with the two adjacent parking lots, and for employees to park away from site and employ Transportation Demand Management measures.
  - d. Consider rededicating Square to Captain Downing and M. Sergeant Downing upon completion with appropriate ceremony.
4. Maintain the ability to consider future improvements such as signalization or further modifications at Bow and Lowell Streets.
5. The DPW will oversee the design process, which will include development of concepts and preliminary and final design plans. Draft plans will be presented for public comment and reviewed by the TAC and other Town committees and departments.

While our recommendations do not include a drastic change to the Square, they do achieve most of the seven stated goals for the project by: increasing safety for vehicles, pedestrians and cyclists; reducing vehicle queuing from the Mass Ave / Park Ave intersection; and improving the aesthetics, lighting and illumination.

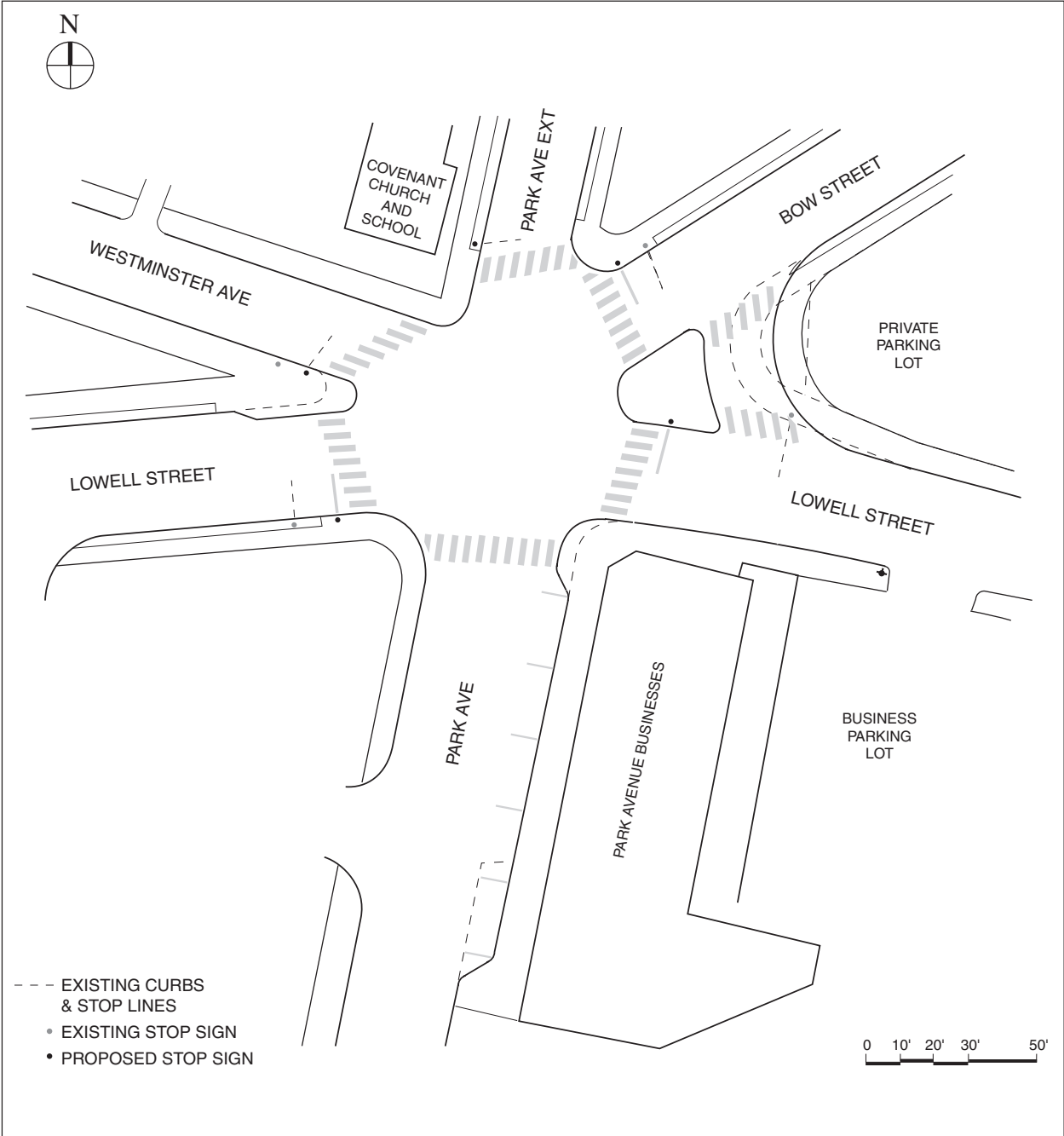


Figure 6 Recommendations for Downing Square

## **APPENDICES**

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### **Downing Square Recommendations**

- A. Dedication Article (1946)
- B. Photos Taken During Trial
- C. Trial Data and Observations
- D. Trial Survey Results
- E. Westminster Survey Results
- F. Park Ave Parking Survey Results

Downing Square Dedication Article  
(Courtesy of Howard Winkler)

## 500 ATTEND DEDICATION OF DOWNING SQUARE

Five hundred people crowded into the intersection of Park avenue, Bow street, Westminster avenue and Lowell street, last Sunday afternoon in the dripping rain for the dedication of that spot as Downing Square. It has been so named in memory of Captain James F. Downing, AAF, who was killed near San Diego, Calif., Sept. 10, 1943, and M. Sgt. Cornelius Downing of the 88th Army Division who was killed in action in Italy, November 20, 1944, sons of Mrs. Cornelius Downing of 9 Blossom street.

The memorial sign was unveiled by Lt. Edward Downing, brother of the heroes, while another brother, John Downing, who is in the Navy, placed a wreath on the sign. Rev. Richard T. Broeg of the Heights Methodist Church pronounced the invocation. Rev. Maurice J. O'Connor, D.D., pastor of St. James' Church, gave the benediction and presented to Mrs. Downing scrolls enrolling her two sons in a religious order.

Congresswoman Edith Nourse Rogers came from Washington especially to be present and to speak at the exercises. Other speakers were Col. Maurice Reynolds, United States Army chaplain, representing the 1st Service Command; Representative Hollis M. Gott of this town, Joseph Peterson, chairman of the Board of Selectmen; Arthur J. Mansfield, chairman of the Arlington War Finance Committee.

Presiding was Donald Black whose home is a short distance away on Park avenue. Mr. Black was leader in the movement to name the square and aiding him in preparations for the ceremony were Warren O'Leary and Warren Zwicker. Preceding the exercises there was a parade led by the Veterans of Foreign Wars, with St. Joseph's CYO Band from Medford furnishing the music.

Presiding was Donald Black whose home is a short distance away on Park avenue. Mr. Black was leader in the movement to name the square and aiding him in preparations for the ceremony were Warren O'Leary and Warren Zwicker. Preceding the exercises there was a parade led by the Veterans of Foreign Wars, with St. Joseph's CYO Band from Medford furnishing the music.

The Arlington Advocate, Thursday, May 9, 1946, p. 8, c. 3



Photos taken during the Trial

**DOWNING SQUARE TRIAL DATA AND OBSERVATIONS  
MORNING PEAK**

**Monday Morning (7:30 to 8:30AM ) 31 October 2005** (Counts conducted at SW corner of Park Ave bridge)

	Time that Park Ave queue reached Gold's Gym entrance	Number of Pedestrians in Square
7:30 to 7:45 AM	0 min	26
7:45 to 8:00 AM	0 min	37
8:00 to 8:15 AM	0 min	28
8:15 to 8:30 AM	0 min	<u>16</u>
		Total 107

- Park Ave Ext SB backed up to the top of the hill for about 3 min in 7:45 to 8:00, about 4 min from 8:00 to 8:15, and for about a min from 8:15 to 8:30. This of course slowed traffic on Park Ave Extension.
- Traffic backed up from Mass Ave to the Square a few times. 7:45 to 8:00 about 1 light cycle, 8:00 to 8:15 about 3-4 light cycles. None afterwards.
- Much of the morning pedestrian traffic is heading to schools – local to the Square or to Peirce. Crossing guard present from about 7:40 to 8:12. One adult on a bicycle. Probably 10-20 dogs being walked.
- Intersection in general worked well given the amount of traffic going through. Major flows were Park Ave Ext SB, Lowell St EB with right turn onto Park Ave SB, Park Ave NB with left turn onto Lowell. Bow St into the intersection was significant but less than the above.
- Conflict points:
  - a. Park Ave left turn conflicting with Park Ex SB
  - b. Lowell RT with Park Ex SB
  - c. Incoming traffic from Westminster, although infrequent disrupted the general flow.
- Sign on the raised crosswalk helped the Park Ave left and Lowell St right be requiring the turning Park Ave traffic to not cut the corner.

**Thursday Morning (7:45 to 8:45 AM) 17 November 2005** (Counts conducted on Park Ave by Serv Station)

	Park backup to Square			Time to Sq min	Peds/ bikes	# parked vehicles				% Park Ext back past curve	# of Horns	School Buses	Big Trucks
	.5 min	.75 min	1+ min			:45	:50	:55	Illeg				
7:45 - 8:00	4	0	0	2	44/0	3	2	2	0	0	0	4	0
8:00 - 8:15	0	2	1	3	16/1	4	4	2	0	0	0	0	2
8:15 - 8:30	2	3	4	7.5	17/0	2	2	2	0	@50	1	3	2
8:30 - 8:45	0	0	0	0	18/1	3	3	1	1	0	2	0	3

Main traffic flows      Park Ext South through to Park Ave  
    "Park Ave North, including left onto Lowell west"  
    Lowell east turning left onto Park

Other significant flows      Bow west to Lowell and Park Ave south



**Thursday Morning (7:30 - 8:30 AM) 10 November 2005** (Counts conducted in Square)

Schools     Ottoson students: 10  
              Peirce students: 5  
              School buses: 11 (1 had difficulty w/Lowell/West. curb ext, Park to Lowell)

Turns        Right turns from Lowell to Bow: 17  
              Left turns from Bow to Lowell: 24 (including 2 using turn lane)  
              Right turns from Bow to Park Ave Ext: 2  
              Right turns from Westminster to Lowell St W: 1  
              Left turns from Westminster to Park Ave Ext: 2

Parking     Average number of spaces used in parking lot: 2.3 (nearly all trucks)  
              Number of parked vehicles blocking Peter Pan corner: 1  
              Number of parked vehicles blocking Covenant Church corner: 1

Crosswalks Park Ave: 3  
              Lowell St E: 20  
              Bow St: 28  
              Park Ave Ext: 43  
              Westminster Ave: 34  
              Lowell St W: 20

Cyclists     Lowell St W to Lowell St E: 1  
              Lowell St E to Lowell St W: 1  
              Park Ave Ext to Park Ave: 1

General     Number of times there was gridlock: 7  
              Number of horn honks: 5  
              Number of times the intersection completely cleared: 1  
              Number of times a motorist expressed his displeasure: 1

- Traffic Supervisor noted that traffic was unusually heavy (check Summer St const.)
- Park Ave backed up to the Square most of the time between 8:05 and 8:25 AM
- Park Ave back up caused back up on Park Ave Ext, Lowell St W and Bow St
- Traffic back up on Lowell St W for right turn caused EB traffic to form two lanes
- There were more left turns from Bow to Lowell than right turns from Lowell to Bow
- Trucks in Park Ave parking area obstructed NB traffic on Park Ave

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**Tuesday Morning (7:30 - 8:30 AM) 15 November 2005** (Counts conducted in the Square)

Turns        Lowell Street E to Bow Street (right turn): 18 (all correctly using turn lane)  
              Bow Street to Lowell Street E (left turn): 16 (including 1 incorrectly using turn lane)  
              Westminster Avenue to Lowell Street W (right turn): 0  
              Lowell Street W to Westminster Avenue (left turn): 3  
              Bow Street to Park Avenue Extension (right turn): 0

- The turning lane from Lowell to Bow seems to work really well.
- The sandbags in front of the Peter Pan have been knocked down and driven over so many times they're basically ignored.
- The crossing guard likes the changes but thinks the intersection is - my editorial observation - beyond saving.
- One woman passing would like a blinking yellow light instead of the raised crosswalk.
- Another woman said it was really inconvenient to turn from Westminster to Lowell W.

**Friday Morning (7:30 - 8:30 AM) 4 November 2005** (Counts conducted on Park Ave Ext near Alpine St)

Schools      Ottoson students: 10  
                 Peirce students: 11  
                 Traffic Supervisor on duty from 7:45

Lg Vehicles   School buses: 8 (1 had difficulty squeezing between parked trucks & barrel)  
                 Tractor trailers: 3

Parking        Average number of spaces used in parking lot: 2.6 (mostly trucks)  
                 Number of illegally parked vehicles on Peter Pan corner: 2

Pedestrians   Total pedestrians visible during hour: 88 (could not see all crossings)

Cyclists       Total cyclists visible during hour: 3

General       Number of times there was gridlock: 4  
                 Number of horn honks: 6

- Power outage at Ottoson that morning (probably didn't affected results)
- Park Ave traffic came in waves from signal at Mass Ave
- SB Park Ave queue blocked the Square routinely between 8:05 and 8:25
- All queues cleared by 8:30
- Park Ave queue caused queues on Park Ave Ext and Lowell St W

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**Monday Morning (7:30 - 8:30 AM) 14 November 2005** (Counts Conducted on Park Ave bridge)

Signal        SB Left turns onto Mass Ave: 43  
                 SB Straight across to Park Ave: 579  
                 SB Right turns onto Mass Ave: 163  
                 Number of pedestrian signal activations: 13 (out of 55 - 60 signals)  
                 SB Park Ave vehicles running red light: 1  
                 SB Park Ave vehicles turning right on red: 1

Cyclists       Along Park Ave: 1

- SB Park Ave queue reached to Downing Square from 8:15 - 8:20 AM
- Sometimes SB Park Ave traffic didn't form two lanes, causing longer queues
- Painting lanes to Arlington Coal & Lumber entrance might help
- SB designated left turn lane wouldn't help because too few cars turn left
- NB Park Ave traffic was relatively light
- Left turns from Park Ave NB and SB were still sometimes a problem
- Arlington Coal & Lumber trucks were large but infrequent and negotiated well

## **DOWNING SQUARE TRIAL DATA AND OBSERVATIONS AFTERNOON PEAK**

### **Tuesday Afternoon (2:30 - 3:00 PM) 8 November 2005 (Counts Conducted in Square)**

Schools      Ottoson students: 15  
                 Peirce students: 8  
                 School buses: ?

Crosswalks Park Ave: 6  
                 Lowell St E: 10  
                 Bow St: 22  
                 Park Ave Ext: 21  
                 Westminster Ave: 52  
                 Lowell St W: 25

Cyclists      through Square: 2

General      Number of times there was gridlock: 0  
                 Number of horn honks: 0  
                 Number of times the intersection completely cleared: ?  
                 Number of times a man driving a car expressed his displeasure to me: 1

- No traffic back ups

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### **Thursday Afternoon (2:30 - 3:00 PM) 3 November 2005 (Counts Conducted in Square)**

Schools      Ottoson students: 20  
                 Peirce students: 2

Parking      Average number of cars in Park Ave parking lot: 3.4  
                 Illegal parking on Lowell St at Peter Pan entrance (not blocking crosswalk): 6

Turns        Cars using turn lane to make left from Bow to Lowell: 1

- Little to no scraping on the raised crosswalk
- School buses negotiated raised crosswalk without difficulty
- Overall, intersection was orderly
- Covenant School pick ups stretched over more than 30 minutes
- Significant pedestrian traffic
- Traffic Supervisor on duty from 2:25 to 2:55
- Nursery School not an issue during 2:30 to 3:00 peak period
- @50 Covenant School students formed a walking school bus from Bow to School

## DOWNING SQUARE TRIAL DATA AND OBSERVATIONS EVENING PEAK

**Tuesday Evening (5:00 - 6:15 PM) 1 November 2005** (Counts conducted on Park Ave)

Queues on Park Ave NB based upon green cycles of Mass Ave signal  
(Queue length defined as where the last car from the green slowed to a near stop)

Queue at:	5:00 - 5:15	5:15 - 5:30	5:30 - 5:45	5:45 - 6:00	6:00 - 6:15	SUM
Mass Ave	0	2	0	1	0	3
Golds Gym	0	2	0	0	1	3
Btwn Golds/So. Bridge	1	1	1	2	1	6
South edge of Bridge	2	3	0	3	2	10
Shorter than above	<u>9</u>	<u>4</u>	<u>10</u>	<u>6</u>	<u>9</u>	38
Totals	12	12	11	12	13	

	5:00 - 5:15	5:15 - 5:30	5:30 - 5:45	5:45 - 6:00	6:00 - 6:15	SUM
Pedestrians	12	11	4	8	9	44
Peds on wrong side cyclists*	0	3	1	2	0	6
			1			1

\*Came north on Park and turned left onto Lowell (on sidewalk - kid)

Parking on Park Ave at businesses

5:00	4	5:20	5	5:40	5	6:00	4	
5:05	5	5:25	3	5:45	5	6:05	3	
5:10	4	5:30	4	5:50	5	6:10	3	
5:15	4	5:35	4	5:55	3	6:15	3	1 illegal

**Thursday Evening (5:15 - 6:15 PM) 3 November 2005** (Counts conducted on Park Ave south of bridge)

Signal Info    Number of signal cycles during count: 50  
                   Number of cycles with pedestrian signal: 30  
                   Length of signal cycle with pedestrian signal: @80 sec  
                   Length of signal cycle without pedestrian signal: @60 sec  
                   Length of Park Avenue signal: @30 sec

Queues        Number of signal cycles NB queue reached past the crest of the bridge: 29  
                   Number of signal cycles NB queue reached entrance to Gold's Gym: 1  
                   Number of times SB queue reached past the crest of the bridge: 5

Pedestrians    Along and across Park Ave: 47

Cyclists        Along and across Park Ave: 3 (including 2 on sidewalk)

General        Number of horn honks: 3

- Park Ave NB queue to Paul Revere Rd at virtually every signal cycle
- Mass Ave signal regulates NB Park Ave traffic approaching Square
- Pedestrians cross at Gold's Gym entrance, which is darkest section of roadway
- Pedestrians walk along east side of Park Ave despite lack of sidewalk
- Turning movements counts should be conducted at Mass/Park intersection
- If there is space, a left turn lane on Park Ave SB could be considered

**Tuesday Evening (5:15 - 6:15 PM) 8 November 2005** (Counts conducted on Park Ave south of bridge)

Signal Info    Number of signal cycles during count: 50  
                  Number of cycles with pedestrian signal: 28  
                  Length of signal cycle with pedestrian signal: @80 sec  
                  Length of signal cycle without pedestrian signal: @60 sec  
                  Length of Park Avenue signal: @30 sec

Queues        Number of signal cycles NB queue reached past the crest of the bridge: 22  
                  Number of signal cycles NB queue reached entrance to Gold's Gym: 3

Pedestrians    Along east side of Park Ave (no sidewalk): 8  
                  Along west side of Park Ave (sidewalk): 16  
                  Crossing Park Ave near Gold's Gym entrance: 11

Cyclists        Along and across Park Ave: 3 (including 1 on sidewalk)

General        Number of horn honks: 0

- Park Ave NB queue to Paul Revere Rd at virtually every signal cycle
- Mass Ave signal regulates NB Park Ave traffic approaching Square
- Pedestrians cross at Gold's Gym entrance, which is darkest section of roadway
- Pedestrians walk along east side of Park Ave despite lack of sidewalk
- Turning movements counts should be conducted at Mass/Park intersection
- If there is space, a left turn lane on Park Ave SB could be considered

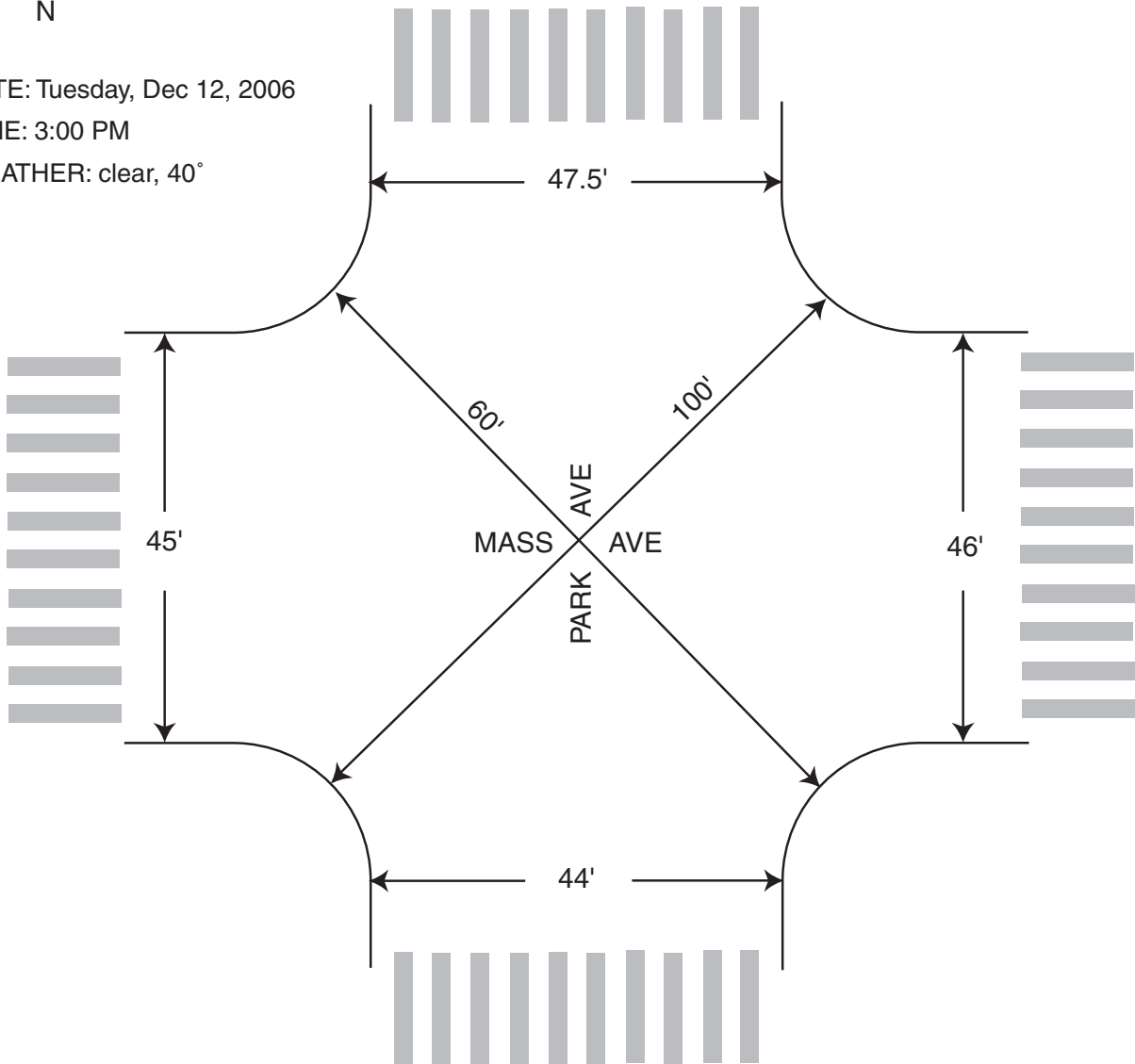
# MEASUREMENTS PARK & MASS AVE



DATE: Tuesday, Dec 12, 2006

TIME: 3:00 PM

WEATHER: clear, 40°



## SIGNAL TIMING:

- Mass Ave cycle: 40-41 seconds
- Park Ave cycle: 27-28 seconds
- Ped cycle: 15-16 seconds
- $47.5' / 3.5 \text{ ft/sec} = 13.6 \text{ seconds}$

## **Neighborhood Email Survey Results Downing Square Trial**

Percentages are calculated from number of responses to each question

### **1. How do you usually travel through the Square?**

100% as a motorist (29 of 29)  
17% as a cyclist (5 of 29)  
90% as a pedestrian (26 of 29)  
55% pushing a stroller or walking a child (16 of 29)  
0% using a wheelchair (0 of 29)

### **2. At what times do you usually travel through the Square?**

83% at morning rush hour (24 of 29)  
100% at midday or weekend day (29 of 29)  
59% at evening rush hour (17 of 29)  
66% at night (19 of 29)

### **3. What usually brings you to the Square?**

97% traveling through (27 of 28)  
82% shopping in the Square or Arlington Heights (23 of 28)  
7% working in the Square or Arlington Heights (2 of 28)  
39% dropping off/picking up at Covenant or Nursery School, or Chariot Adult Health (11 of 28)  
21% other: attending Church, walking or driving to Peirce (3), getting to/from Bikeway, going for a walk (6 of 28)

### **4. The curb extension between Westminster Avenue and Lowell Street (A on the plan)**

59% an improvement as tested in the trial (17 of 28)  
14% an improvement with modification: limit parking at corners, 6-way stop, raised crosswalks at all streets (4 of 28)  
21% better the way it was before the trial (6 of 28)

### **5. The curb extension between Park Avenue Extension and Bow Street (B on the plan)**

71% an improvement as tested in the trial (20 of 28)  
11% an improvement with modification: limited parking at corners, raised crosswalks at all approaches (3 of 28)  
18% better the way it was before the trial (5 of 28)

### **6. The pedestrian island & turn lane between Bow Street and Lowell Street (C on the plan)**

75% an improvement as tested in the trial (21 of 28)  
7% an improvement with modification: better signage at turn lane, pedestrian island without turn lane (2 of 28)  
18% better the way it was before the trial (5 of 28)

### **7. The bump out on Park Avenue (D on the plan)**

71% an improvement as shown in the trial plan (20 of 28)  
7% an improvement with modification: bump out connected to crosswalk (2 of 28)  
21% better the way it was before the trial (6 of 28)

### **8. The parking area on Park Avenue (E on the plan)**

63% an improvement as shown in the trial plan, with marked angled parking and a narrower sidewalk (17 of 27)  
30% an improvement as a parallel parking area with fewer, more accessible spaces and a wider sidewalk (8 of 27)  
0% an improvement with another modification (0 of 27)  
7% better the way it was before the trial (2 of 27)

### **9. The raised crosswalk on Park Avenue (F on the plan)**

48% an improvement as tested in the trial (13 of 27)  
19% an improvement with modification: raised inbound side only, lower rise, raised intersection (5 of 27)  
33% better the way it was before the trial (9 of 27)

### **10. Overall, the intersection would be**

45% an improvement with the changes tested in the trial (13 of 29)  
38% an improvement with modification(s): without raised crosswalk (2), with limited parking near intersection (3), with Westminster and Bow one-way, with parallel parking on Park Ave (2), with stop sign and parallel parking on Park Ave, without turn lane between Lowell and Bow, with raised crosswalk at Park Ave Ext, with all crosswalks or entire intersection raised, with curb extensions and speed bumps to reinforce stop signs (11 of 29)  
17% better the way it was before the trial (5 of 29)

## DOWNING SQUARE TRIAL EMAIL SURVEY

### Written Comments

Text in [ ] added to link comments to specific survey items

#### Distribution of Survey Responses

- Alpine Street	2 Lowell Street	- Reservoir Road
1 Blossom Street	1 Madison Avenue	1 Summit Street
3 Bow Street	- Mill Lane	- Sunset Road
- Branch Avenue	2 Montague Street	- Thompson Place
1 Colonial Village Drive	- Newland Road	1 Viking Court
1 Crescent Hill Avenue	- Nourse Road	1 Watermill Place
- Elder Terrace	1 Oakledge Street	1 Westcourt Terrace
1 Lennon Road	- Park Avenue	8 Westminster Avenue
- Locke Street	3 Park Avenue Extension	2 Westmoreland Avenue
- Lowell Street Place	- Park Place	1 Unspecified

#### Response 1:

Thanks for your email. I have been thinking about the changes at Downing Square again and these are my observations:

- 1) The speed bump is slowing down the cars entering the intersection from Park Ave and this gives the other parts of the intersection a better chance at taking turns to enter. This works almost as though the Park Ave side also had a Stop sign.
- 2) The mouth of Lowell St. is still too compressed. The sandbags intrude into the driving space and when there is a large truck on one side, I need to squeeze my Toyota Matrix through the space. I worry about the accessibility for fire trucks and emergency vehicles in this compressed space, especially since the area hosts a school, a nursery school, an elderly facility and in the summer a swimming area (all consumers who may have a greater than residential need for emergency services.)

In general, the traffic has been unusually backed up in the 8-9 AM timeframe for several months (since the start of school.) I can't say what part of this is due to the trial, but I do know that it is taking much longer to drive through the area and that the normal attempts at turn taking have been disrupted since cars are clogging the intersection waiting for the Park Ave toward Mass. Ave traffic to clear.

#### Response 2:

There would need to be consideration given to the potential overhang of car bumpers over the narrower sidewalks [at Park Avenue angled parking area] which could potentially impede the ability of passersby on that section of the sidewalk and force pedestrians back out into traffic in an effort to get around the said vehicle

#### Response 5:

The first option sounds great; [Park Ave parking area with marked angled parking and a narrower sidewalk] but with limited spaces on the end nearest to the intersection.

#### Response 6:

First of all, thank you for looking into this. I have lived on Bow Street for ten years and have to navigate this intersection several times a day. I greatly appreciate your time and efforts. Although the curb improvements are helpful for pedestrians and motorists alike, the raised crosswalk, while helpful for pedestrians, has increased the "insanity" level of driving through the intersection, especially at rush hour. With six streets coming together, it is confusing for motorists to determine who has the right of way. The steady flow of traffic from Mass Ave was one of the "givens". Everyone else had to wait. Now, the cars coming over the crosswalk have to slow down almost to a stop. In that moment of "hesitation", cars coming from other directions pull into the intersection. In other words, since the installation of the crosswalk, the "given" of the Mass Ave right of way has been lost, adding one more street to the craziness.

I have never understood why the town does not make Westminster Avenue one-way going out of the intersection, up until Westmoreland. Westminster is a narrow street, with parking on one side down by Downing Square, making two-way traffic difficult anyway. There is also a school on the corner. Bow Street could also be made one-way out of the intersection, down to Oakledge or Newland. Making both of these streets one-way would put more traffic on Lowell and Park Avenue Extension (mainly on Park Ave. Extension, but the distance between the light on Summer and the stop sign at Downing Square seems sufficient to absorb it). Since cars would be coming from 4 streets instead of 6, the traffic from Lowell and Park Ave. Extension would move through the intersection faster than it does now. The other addition I would suggest is a larger Stop sign at Park Avenue Extension, since so many motorists feel free to completely ignore the regular-sized one that is currently in place (one of those "Stop here and I mean it" signs). Anyway, that's my four cents.

#### Response 7:

I have noticed that vehicles who try and make a right on to Lowell Street [from Westminster] (especially trucks and vans) have to make at least two turns and often block traffic when doing so.

Almost an impossibility for trucks and busses to negotiate the turn onto Park Ave Ext [with curb extension between Bow & Park Ave Ext].



Vehicles who are not familiar with the intersection [at pedestrian island and turn lane between Lowell and Bow Streets] think that you can only make a right turn!

I don't like speed bumps, but it is effective in slowing down vehicles. However, it [bump out on Park Ave] should go completely across the street.

If no modifications were available, it [the overall intersection] was better prior to the test changes.

I feel that the best change made is the moving of the stop sign on Lowell Street up further (instead of being placed on the telephone pole. This requires vehicles to proceed further into the intersection with a much greater visibility. This is an intersection where I feel the crosswalks must be constantly painted to insure vehicle visibility.

**Response 8:**

Even if all of the changes are implemented, there will be only a small improvement in the traffic problems. The major problem is drivers traveling south on Park Ave Extension who ignore the stop sign. What are you going to do about that?

**Response 10:**

The speed bump on Park Avenue is a very good idea: Traffic can proceed without coming to a stop, but slowing down is a very good idea.

**Response 11:**

You have GOT TO get rid of parked cars on the end of Westminster Ave in front of the church. It's dangerous walking and driving either in or out of the street. No one can see over those minivans to what's out in the intersection or on Westminster until you are already in the way.

**Response 12:**

The sooner you can implement these permanent changes, the better! Although the intersection is still not perfect (there will always be some confusion there), I find that traffic goes more smoothly through the intersection from Park Ave. up to Park Ave. Extension since the speed bump (F) was installed. As a pedestrian, it's much easier to cross because of the various bump-outs; the walk across each street is much shorter, especially at A and C, making conditions safer. As a driver, I can finally see who's coming up Park Ave. when I'm at the stop sign at C — I no longer fear emerging from Lowell Street! Thank you for the trial, and thank you for conducting this discernment process.

**Response 13:**

The increase in visibility and shrinking the interior area of the square is a good idea. The speed bump is confusing to all, and really messes things up.

**Response 14:**

Oncoming cars don't seem to realize that people coming down park ave (with peter pan on your right) don't have a stop sign. Can you post signs that inform them?

The angled parking is a dangerous situation, it really should be parallel. People seem to backup into traffic without looking or park so that they're still poking out onto park ave, making the street even narrower. There's barely enough room to get by sometimes because of the way people park. Also, it's nearly impossible to cross Park ave or get to Lowell from bow street because you can't see past the cars parked there. Making the turn (left) from Lowell onto Westminster is very difficult with the new plan. Overall, the new intersection is very tight; there is not a lot of room to get by, especially when you get people parking at the church or the nursery school. I appreciate the efforts to make it passable for pedestrians and moms like me with strollers, because before it was very difficult, but just make sure there is enough space for cars to get by.

**Response 15:**

Making Westminster ave and/or Bow street one way, especially during rush hour, would greatly improve things. Or no entry except to residents, as is the case on Venner road near rte. 2.

**Response 17:**

Raised cross walk is a bad idea and making things actually worse as there is much more time for cars at the other stops to run through them.

There continues to be a huge visibility problem at Park Ave Extension coming into the intersection for cars to realize that Westminster Ave exists - cars continually don't bother to look to the right There also continues to be a huge concern regarding parking on Westminster Ave at the Covenant School - particularly during school session drop off and pick up times. This issue really needs to be addressed for anything else to work in the Square.

**Response 19:**

Thanks for your diligent work on this (I saw you taking notes there on a recent morning!). All-in-all, I don't see much change in the traffic in the intersection, motorists don't seem to change their driving behavior much. But I do think this is an improvement for pedestrian traffic. I also see slight traffic improvement in the speed bump, as it gives other drivers more opportunities to get access.

**Response 20:**

Parking on Westminster near Covenant Church is a huge problem not addressed. There needs to be a sign that says 'no parking here to corner' at the first driveway. Too many mini-vans park right in front of the church making it difficult to enter or exit the intersection from Westminster.

**Response 21:**

No parking should be allowed on right side of Westminster Street as you turn off Park Ave.. Cars leaving Park Ave for Westminster are often left hanging in the intersection due to the narrow street that can not accommodate oncoming traffic and street parking.

Some enforcement of stop sign violations would create a safer environment for pedestrians, especially. Once drivers recognize there are penalties for disobeying traffic laws, they might become more cautious at the intersection.

**Response 22:**

I believe a stop sign at Park Ave. where it meets the intersection would be a great improvement. I understand the concern is that traffic will back up to Mass Ave., but if safety is the concern then why is the traffic at another intersection taking priority? My experience is that the drivers waiting at the other stop signs get impatient and then ignore all the rules that apply to a four-way or multi-way intersection, i.e. everyone just tries to get through the intersection any way they can and it is very unsafe.

As a pedestrian with small children I appreciate the efforts to make crossing the intersection safer. Even with the trials and with a crossing guard, I still feel quite unsafe with the drivers behavior. Perhaps having a police officer there once in a while to deter those who hardly stop at stop signs or just ignore them, would help improve safety. It would also be greatly helpful if parking were restricted to one side of Westminster or at least have no parking on Westminster close to the intersection - vision for both drivers and pedestrians is quite difficult when the Covenant school children are being dropped off and picked up and the cars are very close to the intersection.

**Response 23:**

It is VERY difficult to turn right from Westminster onto Lowell with the new sharper curb "point," especially in a minivan.

I usually approach the intersection from Bow St, and feel better positioned to enter the intersection with the stop line moved forward as in the trial.

This [Lowell/Bow ped island & turn lane] plan improves the sightline for vehicles entering from Lowell who wish to cross the intersection, while allowing those who wish to turn right onto Bow St. to do so unencumbered.

This [Park Ave bump out] defines the parking area and prevents cars from parking in the crosswalk (as I have seen).

Please be sure that the marked angled parking spaces [on Park Ave] are truly wide enough

to accommodate the width of minivans & SUVs!! Door dings are becoming a serious problem in parking areas where spaces are "squeezed in" to satisfy zoning laws!!

I LOVE the raised crosswalk and how it slows down traffic without requiring a full stop! The slow down allows cars from the other streets to enter the intersection more quickly.

You can tell by the broken sandbags which corners are too sharp. Please consider all sizes of vehicles & their turning radiuses (Garbage trucks, fire trucks, moving vans & delivery trucks) before implementing the final changes. Also, I think readers of the Arlington Advocate would be interested in the results of your survey.

**Response 24:**

Adding a raised crosswalk at each entrance to the intersection, not just the one spot, would solve many of the problems brought up by critics. For example, critics of the raised crosswalk say that it destroys the "pecking order" established by not having a stop sign there. That drivers at the other five roads see the raised crosswalk as an opportunity to cut in front. A raised crosswalk on each segment would slow people coming into the square at equal rates. I do think that even the one raised crosswalk makes the area much safer for pedestrians and no more dangerous for drivers.

One other idea: Could we have a pedestrian crossing cone in the center, where right now the barrel and "speed hump" sign rests, and one of those bright, fluorescent crosswalk signs?

First, we want to thank the TAC and, in particular, Elisabeth Carr-Jones, for the effort she has put into this project. That said, it's important that the TAC, and Selectmen, see these changes as only the first step in the general remodeling of the Summer Street/Park Ave. Ext./Mass Ave. corridor into a more walkable community. A lot has changed over the years. Development on both sides - Winchester and Arlington - of Downing Square has created more traffic than in the past. The narrow streets, not designed for this flow, create congestion. Frustrated drivers go too fast. This is not just an annoyed neighbor's opinion. It is in the statistics charted by the Arlington Police Department as part of this Downing Square study.

We need help with traffic calming. We need road signs and police patrols. And we need places for the many school-children, who are being encouraged to walk up Park Ave. Ext. to the Peirce School by school officials, to cross the road safely. It is absurd that not a single 20 MPH or "Slow Children" or crosswalk exists between Downing Square and Peirce.

**Response 25:**

C [ped island & turn lane between Bow & Lowell] was the only change which seemed to me to be an improvement. The speed bumps on Park Ave seemed to make the traffic flow through the square worse – in one direction it acted like a Stop sign (where there is none) on entering the square, and in the other it slowed traffic from leaving the square, adding to the congestion. (I actually think that a Stop sign at the Park Ave entrance would not be a bad thing, as it would make the rules of the junction less confusing. A lot of people coming from Park Ave stop anyway, and traffic coming from other directions don't know whether to give priority to the traffic from Park Ave.) Maybe we need signs at all of the entrances reminding drivers what the traffic rules are. I know at the meeting it was stated that the priority was to slow traffic passing through, and that the confusion may not be a bad thing, but I disagree. Drivers get frustrated (rightly or wrongly) when they think that people ahead of them are waiting too long, and this can cause dangerous driving (I have seen this happen).

**Response 26 (second response from household of Response 15)**

The bump [raised crosswalk] is HORRIBLE, and achieves nothing!

Having given this intersection a lot of thought in the six years that I've been suffering through it, I have this to say: Westminster Avenue and Bow Street should both be one way streets, which would eliminate cut through traffic and a lot of trouble at the intersection. Cars coming from the Winchester direction on Park Avenue should be better warned of the right of way coming from Park Ave/Mass Ave, as those cars most often run the stop sign. This would do it. Bumps and reassigned curbs aren't gonna cut it.

**Response 27:**

Really need to do something to control the speed on the traffic on the adjacent streets. Especially Bow where some people drive over twice the speed limit.

**Response 28:**

Excellent! [bump out on Park Ave] Keeps drivers from parking on crosswalk.

Excellent! [raised crosswalk] Slows Park Ave traffic to a sane speed. No longer so scary spot to walk cross.

Elisabeth, I would call the trial a great success. The new configuration has made it so much calmer and safer to both walk and drive through Downing Square. I look forward to permanent changes. Thanks to you and others who have worked on this project.

**Response 29:**

I think the turn lane [between Lowell and Bow] adds hazards for pedestrians and motorists, but the curb extension is ok.

Bumps should be at other [than Park Ave] entrances, and not at exits.

**Response 31:**

It is VERY difficult to turn onto Lowell St. (west) with the sandbags [at intersection with Westminster].

Not sure if it [curb extension between Park Ave Ext & Bow St] is an improvement or not.

Not sure if it [pedestrian island and turn lane between Lowell & Bow] is an improvement or not.

Not sure if it [bump out on Park Ave] is an improvement or not.

[marked angled parking with narrower sidewalk on Park Ave] probably an improvement, but doesn't it have angled parking now?

## WESTMINSTER ONE-WAY MAIL SURVEY

### Package

Dear Downing Square Neighbor,

As you may be aware, Arlington's Transportation Advisory Committee (TAC) has been considering improvements to Downing Square. This mailing is to inform you and to get your feedback on one specific proposal: the TAC is considering restricting Westminster Avenue traffic from entering the Square by making a short section of Westminster one-way between Downing Square and the nearest driveway. The remainder of Westminster Avenue would remain two-way. Having only westbound traffic on Westminster Avenue at the Square would provide the following benefits:

- The number of traffic conflicts in the intersection would be reduced.
- Pedestrian/motorist conflicts during the morning school rush hour would be reduced.
- A significant motorist visibility problem (the corner of Westminster Avenue and Park Avenue Extension) would be eliminated.
- Cut-through traffic might be reduced.

In this proposal, a neck-down and a "Do Not Enter" sign would be installed on Westminster Avenue at the Square (see attached drawing). An additional "No Outlet" sign would be placed on Westminster Avenue at Westmoreland Avenue, and a temporary "New Traffic Pattern: No Direct Access To Park Avenue" sign is proposed for the intersection with Lowell Street in Lexington. Two-way access for local traffic would be retained west of the neck-down. For reference, traffic data collected for the Downing Square roadways appears below.

Street	Average Daily Traffic
Park Avenue	11,704
Park Avenue Extension	6,100
Lowell Street (west of Square)	5,193
Lowell Street (east of Square)	3,293
Bow Street	3,551
Westminster Avenue	1,229

All data from Arlington Police Department traffic counts.

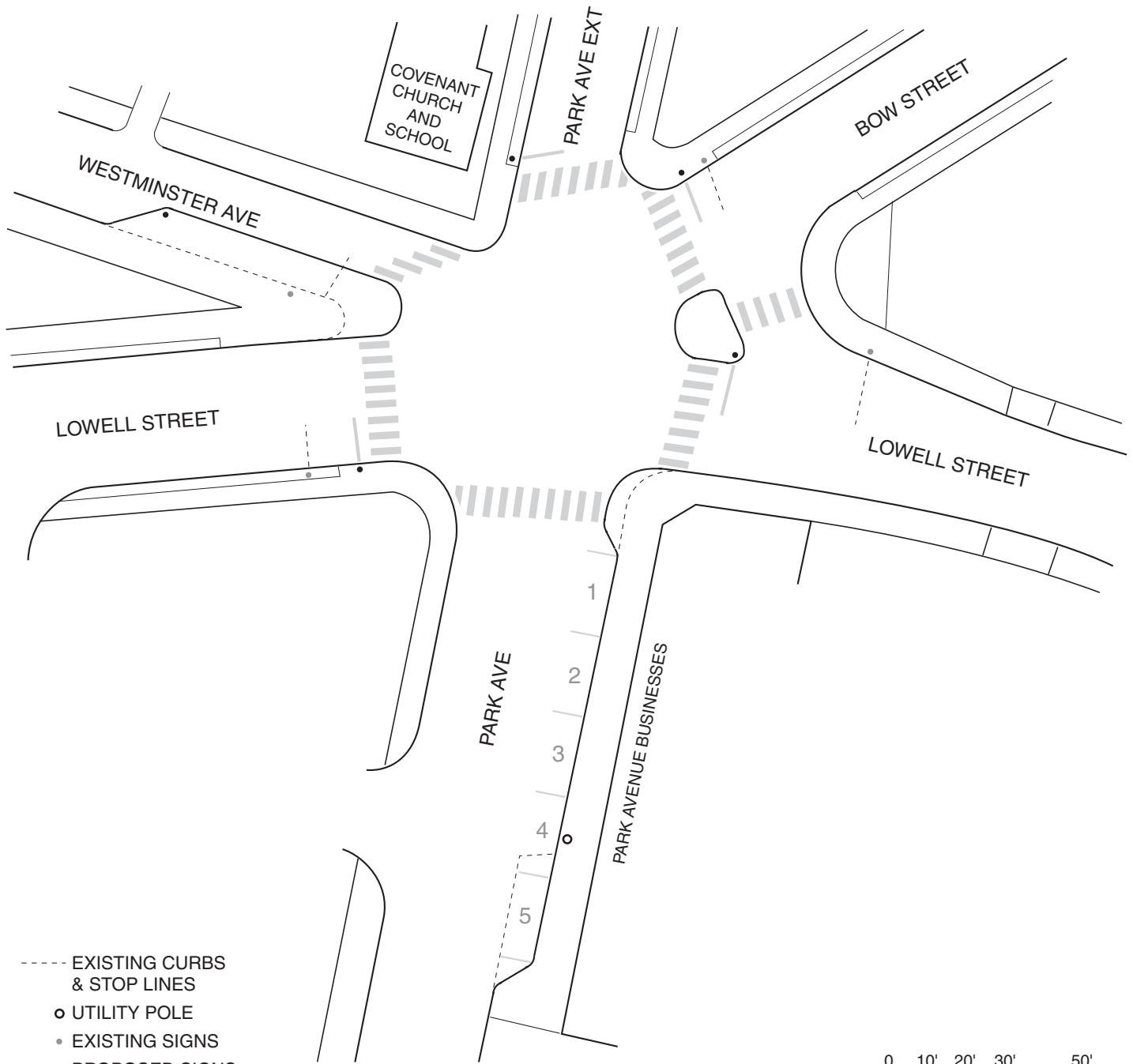
The TAC is seeking comments from those who would be affected on Westminster Avenue, Lowell Street and Westmoreland Avenue. Since this proposal would result in increased traffic on Lowell Street west of the Square and Westmoreland Avenue, some mitigations (such as traffic calming, additional sidewalks, thermoplastic crosswalks and/or improved signs) are also under consideration.

A Response Form is enclosed. We urge you to take a few minutes to fill it out and return it in the enclosed postage-paid envelope. The TAC will hold another public meeting on the Downing Square project before making final recommendations to the Board of Selectmen. Construction on the project is currently planned for next summer.

Thank You,  
Edward Starr, Chairman  
Transportation Advisory Committee

# DOWNING SQUARE

08/29/06



**PARK AVE PARKING MAIL SURVEY  
PACKAGE TO BUSINESSES**

**Dear Downing Square Business Owner,**

As you may be aware, Arlington's Transportation Advisory Committee (TAC) has been considering improvements to Downing Square. This mailing is to inform you of one specific recommendation: the TAC is suggesting a parallel parking arrangement in front of the businesses on Park Avenue, as shown in the enclosed drawing labeled Downing Square.

The 2006 Mass Highway Department guidelines for diagonal parking are shown as Figure 1 on the enclosed sheet labeled Parking Diagrams. A minimum of 32 feet is required from the curb to the roadway centerline (19 ft for the parking space and 13 ft for drive and maneuver space) to safely accommodate diagonal parking. As shown in Figure 2, Park Avenue at Downing Square only has 25 feet. Even with a reduction in the sidewalk width, Park Avenue at Downing Square is not wide enough to safely accommodate diagonal parking. Figure 3 shows the existing diagonal parking on Park Avenue near Massachusetts Avenue, where sufficient width is available.

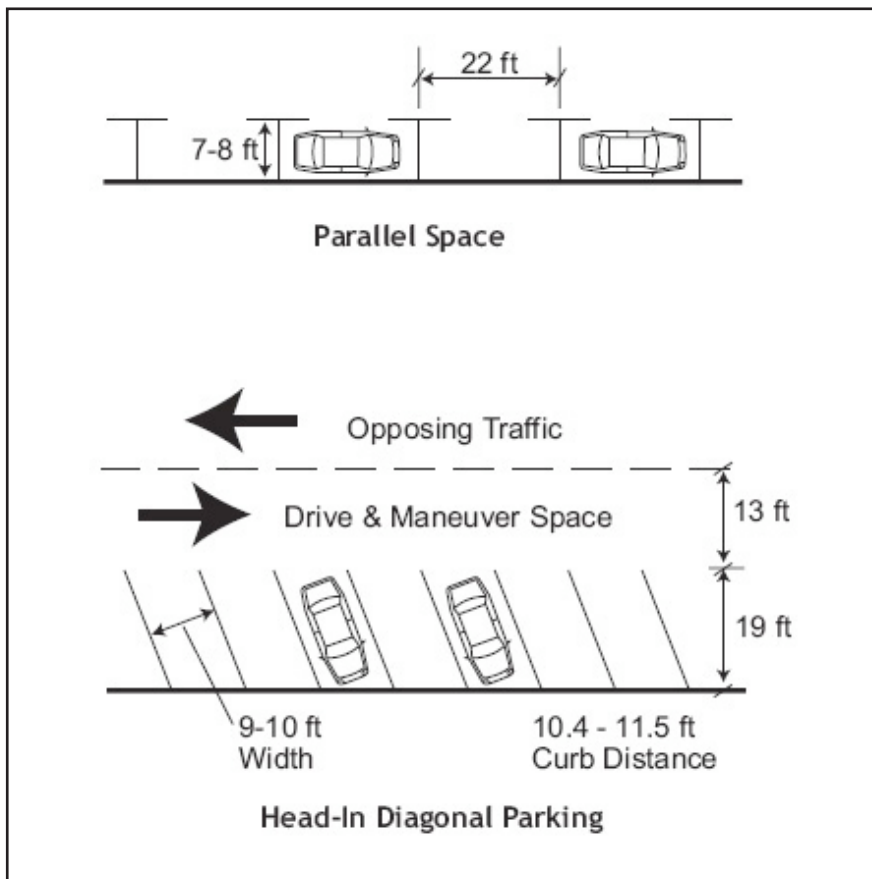
Parallel parking has the benefits of being generally safer for those parking, while allowing sufficient space for the travel lane, bicyclists and pedestrians. To allow the greatest number of spaces, the parallel parking area would be extended toward the bridge as shown in the Downing Square drawing. By doing so, five parking spaces are maintained compared to the six to seven legal spaces that would have been available if diagonal parking were an option.

To be responsive to your business needs, we will propose that this parking be time-restricted to reduce the number of cars using these spaces for commuting or other non-business purposes. Options under consideration are restricting the parking to 2 hours and/or having one or two spaces restricted to 15 minute parking.

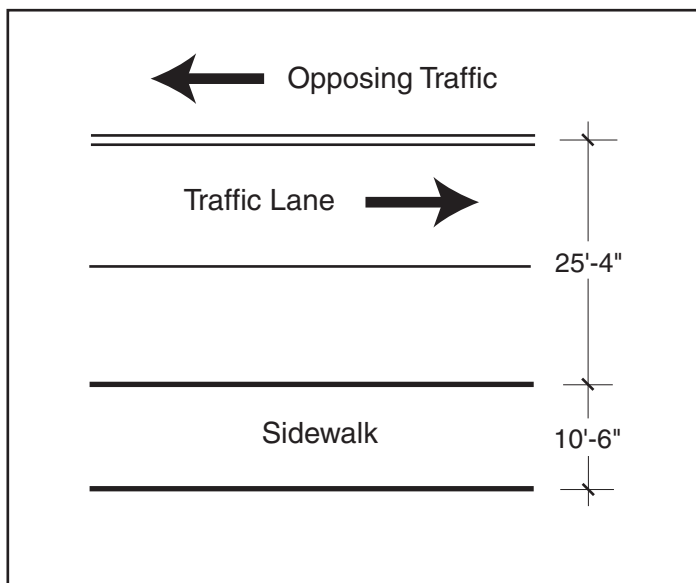
A Response Form for your comments or suggestions on this parking arrangement is enclosed, along with a postage-paid return envelope. The TAC will hold another public meeting on the Downing Square project before making final recommendations to the Board of Selectmen. Construction on the project is currently planned for next summer.

Thank You,  
Edward Starr, Chairman  
Transportation Advisory Committee

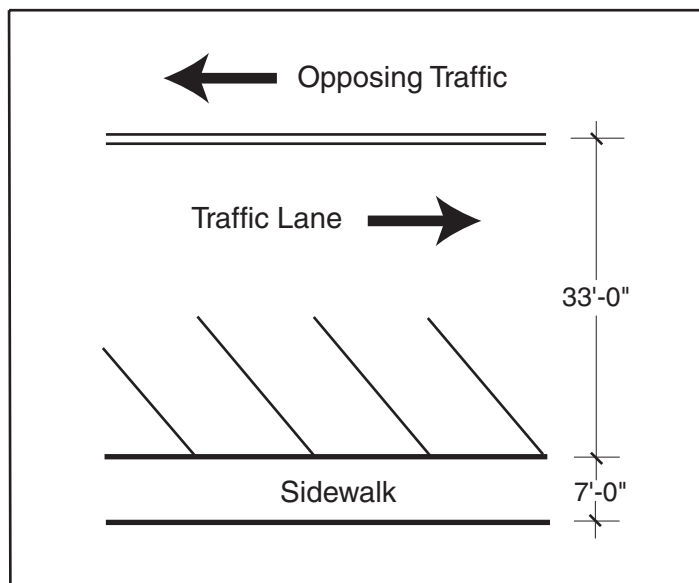
# Parking Diagrams



**Figure 1** Parking Guidelines from the 2006 Massachusetts Highway Department Project Development & Design Guide (Exhibit 16-6)



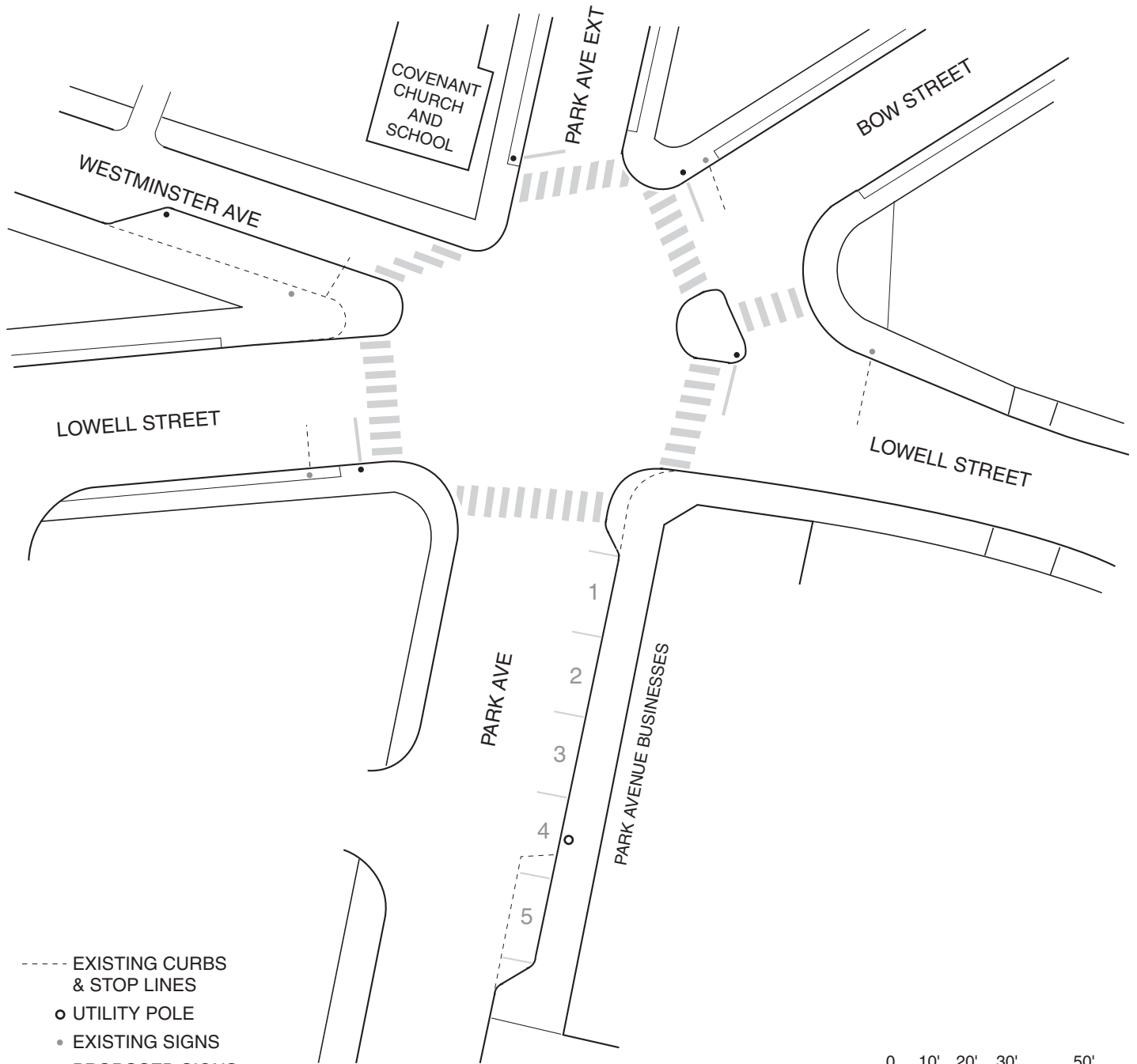
**Figure 2** Park Ave at Downing Square Parking Area



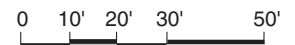
**Figure 3** Park Ave at Mass Ave Parking Area

# DOWNING SQUARE

08/29/06



- EXISTING CURBS & STOP LINES
- UTILITY POLE
- EXISTING SIGNS
- PROPOSED SIGNS





## **PARK AVE PARKING MAIL SURVEY**

### **Written Comments**

3 responses were received from the five businesses the survey was mailed to.

#### **Response 1:**

I think will be mistake to have parallel parking. It is easy for people to say and do things that doesn't affect you personally. But the consumer is paying all the time. I think you should think as a business man then move accordingly. We need some more parking spaces not to take away. If you could come with better ideas I will love to listen. By doing parallel parking you take away from the businesses, you will be destroying the businesses. I will be more happy as much as the other with head-in diagonal parking. Thank you for your understanding.

PS To make narrower sidewalk for easier pull in and out.

#### **Response 2:**

On the parking side of the street, close to the bridge visibility is poor due to the fence & large amount of tall weeds that grow behind it. We suggest moving the fence and making a concrete patio type space (possibly with a bike rack) for customers walking or driving. This would allow greater visibility & hopefully prevent the frequent accidents that occur in this area. It is unsafe on the non-sidewalk side of Park Ave for biking, walking, or for parking. Traffic moves quite fast and is very difficult to cross especially for our elderly customers. We think some kind of speed limit enforcement would be beneficial.

Our customers typically don't need more than 20 minutes to shop with us, so a 20 minute limit for 2 or 3 spaces would be great. We do notice that some cars park in those spaces for a very long time! It makes it harder for our customers to just pop in & out, we most likely lose a lot of business because those spaces are usuall always taken. Enforcement for these time limits is crucial!!

#### **Response 3:**

The only problem I see with diagonal parking is trucks & SUVs, they take up too much space.

Parallel parking would take away parking spots, where there are few too many already & having 1 or 2 spaces for 15 minute parking would be great for Peter Pan. It would not be good for any one else.