



TRANSPORTATION ADVISORY COMMITTEE

To: Board of Selectmen, Arlington, MA

From: Transportation Advisory Committee (TAC)

Subject: Recommendations for Oakland, Gray & Cliff Intersection

Date: October 17, 2011

At the request of the Board, the TAC formed a Working Group to study the intersection of Oakland Avenue, Gray Street and Cliff Street. The Working Group consists of Elisabeth Carr-Jones, Wayne Chouinard, Jeff Maxtutis, Mike Rademacher and Richard Turcotte. The attached report shows the data collected and the analyses performed.

The Working Group collected data and explored several design options for the intersection. After a review by the Engineering Department, the TAC agreed upon the recommended design. A neighborhood meeting was then held at the intersection. Many neighbors attended the meeting and consensus was reached that the recommended changes are necessary.

As a result of the Working Group's work, the TAC voted unanimously on 14 September 2011 to recommend the following changes be made (please refer to the diagram on page 2 of the report):

1. Install curb extensions to narrow Gray St at corner
2. Install crosswalks and handicap ramps on Oakland Ave and Gray St
3. Install crosswalk signs and advance warning signs for Oakland Ave crosswalks
4. Install sidewalk on Gray St between Oakland Ave and Gray Circle
5. Remove Stop sign on left side of Gray St approach
6. Monitor operations and evaluate effectiveness

These recommendations follow two short-term changes recommended and implemented in November 2010 to address recent crashes at the intersection. These changes were to move the STOP sign on the Gray Street approach to a more visible location and to install a STOP AHEAD sign on Gray Street.

Based on an evaluation of the effectiveness of the implemented recommendations, additional measures could be considered for this intersection, including an all-way STOP.

Respectfully submitted,

Elisabeth Carr-Jones, Working Group Lead

Jeff Maxtutis & Howard Muise, TAC Co-Chairs

Transportation Advisory Committee Members:

Elisabeth Carr-Jones, Wayne Chouinard, Jean Clark, Steve Kurland, Jeff Maxtutis, Howard Muise,
Officer Corey Rateau, Scott Smith, Edward Starr, Richard Turcotte, and Laura Wiener

www.arlingtonma.gov/tac

Project Report

Oakland Avenue, Gray Street & Cliff Street Intersection

Existing Conditions

- Oakland Ave & Gray St classified Urban Collectors, Cliff St classified Local Road
- Oakland Ave, Gray St and Cliff St all public roads
- STOP control on Gray St and Cliff St

Problems with Intersection

Based on materials supplied by the Board's referral and independent field observations, the TAC Working Group identified several safety and operational problems with the current intersection:

- Wide entrance at Gray St makes left turns from Oakland Ave & Gray St difficult
- Stop sign and bar on Gray St poorly located due to wide corner radius
- Right turns onto Gray St from Oakland Ave are steeply banked
- Poor visibility for right turns onto Gray St due to grade and fence
- No crosswalks for Ottoson Middle School students
- No sidewalk on south side of Gray St between Oakland Ave & Gray Circle
- Excessive impervious pavement
- Relatively high vehicle speeds
- Repeated crashes of Gray St traffic into wall and utility pole on Cliff St

Implemented Short-term Changes

Inspection of Arlington Police Department crash reports for the intersection identified an immediate opportunity to improve safety. (Synopsis of Crash Reports appears in Appendix C.) In November 2010, the TAC voted to make the following non-operational sign changes, which Public Works implemented later that month:

1. Move the STOP sign on Gray St to more visible location
2. Install a STOP AHEAD sign on Gray St in advance of the intersection

Data Gathering and Design Options

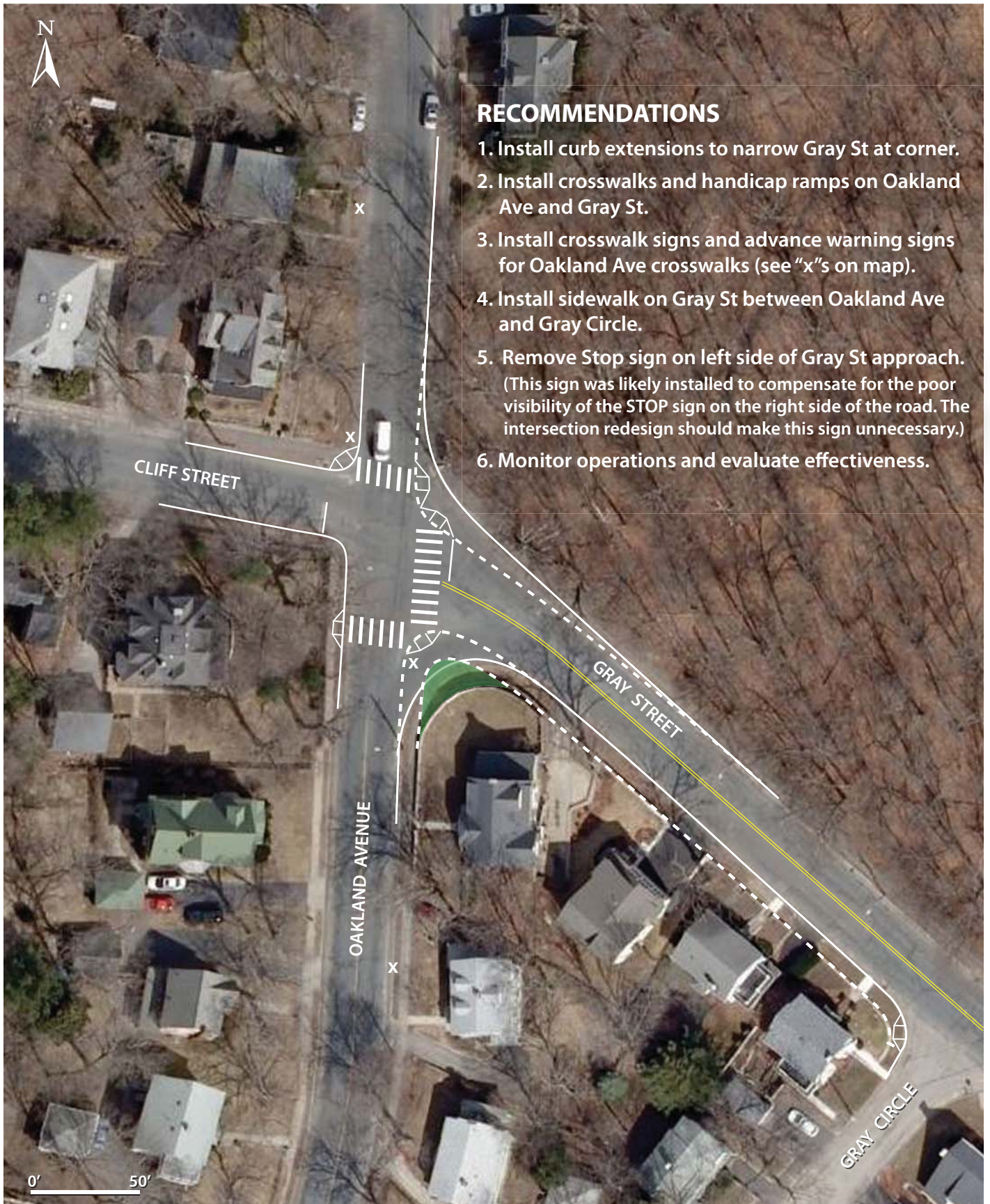
The Working Group conducted observations during the AM and PM peak hours, collecting vehicle turning and pedestrian counts (see Appendix A). The intersection's asymmetry and grade changes also prompted an investigation of several design options, including standard 4-way, realignment and island configurations (see Appendix B).

TAC Recommendations (refer to diagram on page 2)

To minimize the disadvantages and maximize the advantages of the design options, the Working Group proposed the recommended "hybrid" design. The TAC voted to advance this design for review by Public Works and the neighborhood residents. Public Works cleared the design and after an informational mailing was sent to the abutters, a neighborhood meeting was held at the intersection. Several neighbors attended the meeting and consensus was reached that the recommended changes are necessary. (Neighborhood Contact List appears in Appendix D.)

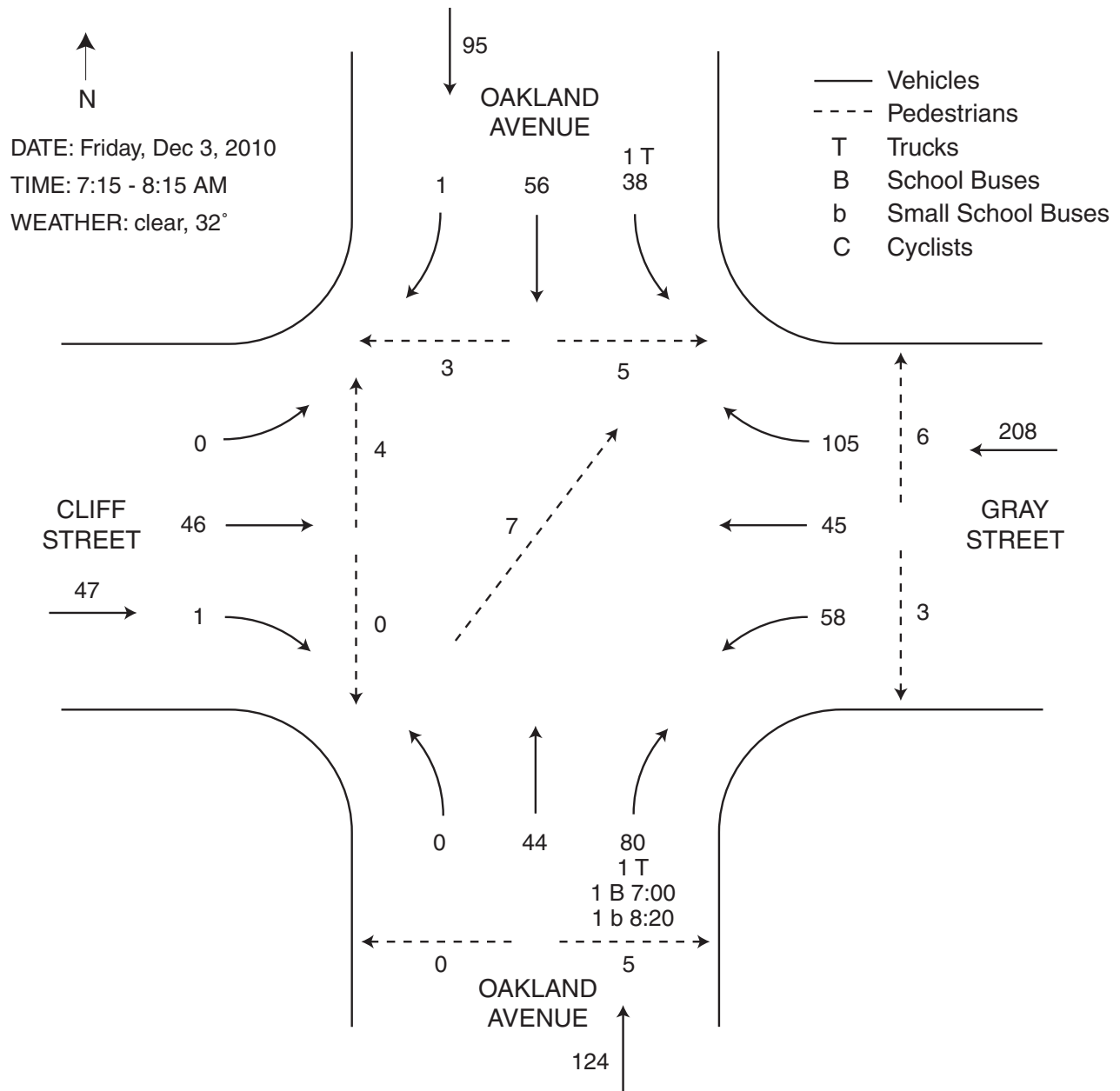
Benefits of Recommendations

- Improved sight lines
- Reduced pedestrian crossing distance
- Reduced vehicle (turning) speed
- Reduced impervious pavement, improves drainage
- ADA facilities
- New sidewalk on south side of Gray St



RECOMMENDATIONS FOR OAKLAND AVE, GRAY ST & CLIFF ST INTERSECTION

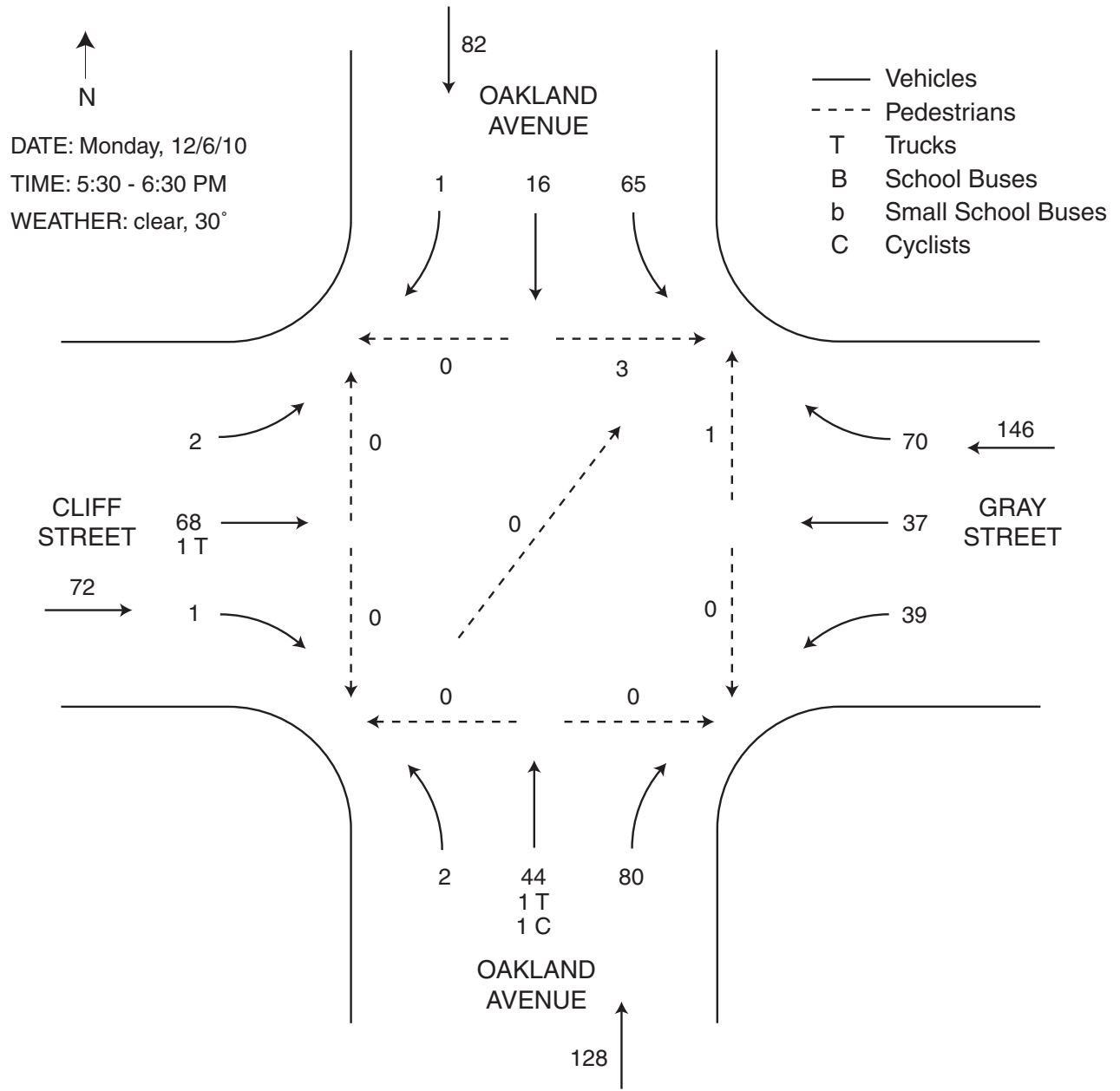
AM TURNING & PEDESTRIAN COUNTS OAKLAND AVENUE, GRAY STREET & CLIFF STREET



OBSERVATIONS:

- Highest traffic and ped volumes were just before Ottoson opening (7:40 - 8 AM)
- A small number of vehicles were traveling too fast for conditions on Oakland and Gray
- Two vehicle vs. vehicle near misses: both NB straight on Oakland vs. Gray to Cliff
- Several vehicles turned left onto Gray too quickly and/or carelessly
- Nearly all pedestrians were Ottoson students, most came from SW on Oakland
- Pedestrians didn't cross Gray or south side of Oakland at intersection (see diagram)
- One pedestrian near miss: ped crossing Gray E of intersection vs. vehicle turning right onto Gray
- Straight & left turn traffic on Gray unsure where to stop, occasionally forming 2-3 lanes
- Frequent rolling stops on right turns from Gray

PM TURNING & PEDESTRIAN COUNTS OAKLAND AVENUE, GRAY STREET & CLIFF STREET



OBSERVATIONS:

- Traffic from Cliff and Gray often accelerated quickly after stopping (even when no other traffic)
- Traffic on Oakland sometimes approached intersection too fast, both directions
- Traffic on Oakland making left turn onto Gray rarely used turn signals



STANDARD 4-WAY CONFIGURATION
INTERSECTION OF OAKLAND AVE, GRAY ST & CLIFF ST



REALIGNMENT

Advantages:

- perpendicular alignment of roads
- simplifies primary pedestrian route
- increases greenspace, reduces impervious

Disadvantages:

- difficult movements Gray to Cliff
- creates two intersections

REALIGNMENT CONFIGURATION
INTERSECTION OF OAKLAND AVE, GRAY ST & CLIFF ST



ISLAND CONFIGURATION
INTERSECTION OF OAKLAND AVE, GRAY ST & CLIFF ST

Crash Report Synopsis
Oakland & Gray Intersection

(from Arlington Police Department Reports provided by affected homeowner)

Tuesday, September 2, 2008 @ 1:54 PM

Single car crash

Driver: 23 years-old, Watertown resident

Driver of vehicle on Gray St didn't observe STOP sign, lost control after crossing Oakland Ave, stuck utility pole on Cliff St, turned over and hit a tree. Driver and occupants reported no injuries. Damage to vehicle and adjacent property. Witness reported speed was a factor. Weather and intoxication were not factors.

Saturday, August 29, 2009 @ 12:40 AM

Single car crash

Driver: 21 years-old, Arlington resident

Driver of vehicle on Gray St didn't observe STOP sign, lost control after crossing Oakland Ave and struck retaining wall on corner of Cliff St. Driver and passenger sustained injuries, but both refused treatment. Damage to vehicle and adjacent property. Speed (driver cited for speeding) and weather (heavy rain reported) were factors. Intoxication was not a factor.

Wednesday, June 23, 2010 @ 12:43 AM

Single car crash

Driver: 18 years-old, Arlington resident

Driver of vehicle on Gray St applied brakes after seeing STOP sign, lost control and struck retaining wall on corner of Cliff St. Driver reported no injuries (no passengers). Damage to vehicle and adjacent property. Speed (driver cited) and intoxication (driver cited) were factors. Weather was not a factor.

**Neighborhood Contact List
Oakland & Gray Project**

Maria Lawcewicz (mailing sent & attended meeting)
49 Oakland Ave

Dale Peterson (received mailing & attended meeting)
69 Oakland Ave (corner of Oakland & Cliff)

Valeria & Jean Louis Tardieux (received mailing & attended meeting)
72 Oakland Ave (corner of Oakland & Gray)

Blaine & Nancy Gaustad (received mailing & attended meeting)
3 Cliff Street (corner of Oakland & Cliff)

Evelyn Ginsparg & Charles Durst (received mailing & attended meeting)
370 Gray Street (corner of Gray & Gray Circle)

Louise Popkin (attended meeting)
9 Cliff Street

Emily Paradise & Arn Franzen (attended meeting)
81 Oakland Avenue

Yongjun Zhang (mailing sent)
374 Gray Street

Edwin Tait (mailing sent)
380 Gray Street