Section 3B.2

MARKED CROSSWALK GENERAL INFORMATION

3B.2.1 MUTCD SECTION REFERENCE

Crosswalk Markings 3B.18

3B.2.2 TYPES

Crosswalks can be installed for: a school, an uncontrolled approach at an intersection; mid-block; or a controlled approach at an intersection. These locations have different sets of criteria for installation.

3B.2.3 DEFINITIONS

1. *Uncontrolled Approach:* An approach at an intersection that is not controlled by either a traffic signal, a flashing beacon, or a stop sign.

2. *Controlled Approach:* An approach at an intersection that is controlled by either a traffic signal, a flashing beacon, or a stop sign.

3. *Pedestrian Generator:* A school, library, community center, shopping center, etc.

4. *Adequate stopping sight distance on all approaches:* May be estimated with the equation – Sight Distance (ft) = 10 X Speed Limit (mph)

5. *Median Width:* The ideal median width is 6' with a minimum 5' cut or ADA compliant ramp. The minimum median width is 4'.

6. *ADA Compliant:* The entire intersection must meet all current requirements of the Americans with Disabilities Act. This means the sidewalks must be the correct width, ramps must be present with truncated domes and meet all ADA requirements, pavement/concrete must be in good shape, signs for direction of crossing and pushbuttons are to be tactile and if pedestrian pushbuttons or heads exist then they must be audible and visual.

3B.2.4 REQUIREMENTS FOR ALL CROSSWALKS

A crosswalk may be installed when the following criteria are met:

1. Connect to a sidewalk on each end of the crosswalk unless associated with a pedestrian generator.
2. Intersection must meet ADA compliance.
3. Street parking must be restricted adjacent to the crosswalk. (Typically for a minimum of 50' in advance.)

4. Adequate sight distance of pedestrians by motorists exists and adequate sight distance of motorists by pedestrians exists.
5. Volume requirements as defined below.

3B.2.5 SCHOOL

See Section 7A.2 for school crosswalks.

3B.2.6 UNCONTROLLED APPROACH AT AN INTERSECTION

A. May install if:

1. There are a minimum of 20 pedestrians crossing in a 2 hour period during any 24 hour period and the pedestrians have fewer than 5 gaps in traffic per 5 minute period; or
2. Engineering judgment indicated a need.

B. Do not install if:

1. Posted speeds exceed 40 mph;
2. On a roadway with 4 or more lanes:
   a. without a raised median or crossing island that has (or will soon have) an ADT of 12,000 or more;
   b. with an ADA compliant raised median or crossing island that has (or will soon have) an ADT of 15,000 or more;
3. If engineering judgment indicates.

3B.2.7 MID BLOCK CROSSWALKS

National studies have been conducted on marked mid-block crosswalks versus unmarked crosswalks. These studies have shown that pedestrians pay more attention when crossing the street when there is no marked crosswalk at a mid-block location. Care must be exercised when determining if a mid-block crossing will be marked.

A. May install if:

1. There are 40 or more pedestrians that cross during a one hour period or 25 or more cross per hour for 4 consecutive hours and fewer than 5 gaps in traffic during the peak 5 minute period; and
2. The Average Daily 2 way traffic is above 3500 vehicles per day; or
3. Engineering judgment indicated a need.

B. Do not install if:

1. Another crosswalk exists within 600’; or
2. Posted speeds exceed 40 mph; or
3. If engineering judgment indicates.

3B.2.8 CONTROLLED APPROACH AT AN INTERSECTION

A. May install if:

1. There are a minimum of 20 pedestrians crossing in a 2 hour period during any 8 hour period; or
2. If engineering judgment indicates a need.

Note: If there is a large number of turning vehicles that conflict with the pedestrian movements, then countermeasures such as protected only turns at a signalized intersection should be considered.

3B.2.9 TRAFFIC ENGINEERING STUDY

A traffic engineering study is required to determine if the criteria and warrants are met for a marked crosswalk at a particular approach, and to determine the level of marking justified. The level of detail required for a traffic engineering study will vary with the location under consideration.

The engineering study may include but is not limited to the following:

1. Speed and traffic volume data on streets being crossed
2. Pedestrian volume (Note approximate number of young children and seniors and level of mobility)
3. Location of pedestrian origin and destination points and crossing pattern
4. Existing sidewalk network and sidewalk ramps
5. Sight distances and sight obstructions
6. Street characteristics including grades, curvature, pavement widths, and number of vehicle and bicycle lanes
7. Location of adjacent driveways
8. On-street parking
9. Street lighting
10. Location of drainage structures
11. Distance to nearest protected or marked crossing
12. Traffic signal progression
13. Potential for rear end accidents
14. ADA compliance.

See Figures 3B.2.1 and 3B.2.2 for the Pedestrian Volume and Summary Sheets.

3B.2.10 EQUATIONS

Usable gap (seconds) = [W /pedestrian crossing rate] + 3 + (n-1) * 2

Where ***W*** =the distance, in feet, from the curb, minus the parking lane or the distance, in feet, from the curb to a raised pedestrian refuge island;
pedestrian crossing rate = 2.5 ft/sec to 3.5 ft/sec depending on pedestrian make up; ***3*** = the perception and reaction time in seconds; ***n***=is the number of rows of pedestrians, consisting of 5 pedestrians in each row, n=1 for any group less than 5 (a group of 16 pedestrians, n=4)

{Gaps should be observed during peak traffic hours or peak pedestrian use time, if the peak traffic hours and peak pedestrian use time are not the same.}

Average number of gaps per 5 minute period = total usable gap time in seconds divided by pedestrian crossing rate (2.5 ft/sec to 3.5 ft/sec) multiplied by 12.

3B.2.11 APPROVAL

If the requirements in 3B2.4 are met and a traffic engineering study determines the justified implementation of a marked crosswalk, the District Traffic Operations Engineer may approve.

3B.2.12 DESIGN

For Crosswalk design, see LADOTD Standard Plan PM-08.

3B.2.13 MAINTENANCE

Each crosswalk location should be repaired or replaced as necessary. This includes not only the pavement markings but also the signs associated with the crossing.

Each crosswalk associated with a school crossing should be inspected according to Section 7A.2 Policy for School Areas in this manual.

3B.2.14 IMPLEMENTATION

All new installations shall follow this policy. All other locations may be reexamined using this policy through normal maintenance activities.

3B.2.15 PEDESTRIAN SIGNALS

Refer to LADOTD Traffic Signal Design Manual for the Departments policy on pedestrian heads and pushbuttons.

3B.2.16 DOCUMENTATION

The District Traffic Operations Engineer may consider documenting the locations of the marked crosswalks by either Control Section – Logmile or GPS coordinates.

Figure 3B.2.1 Pedestrian Volume Sheet

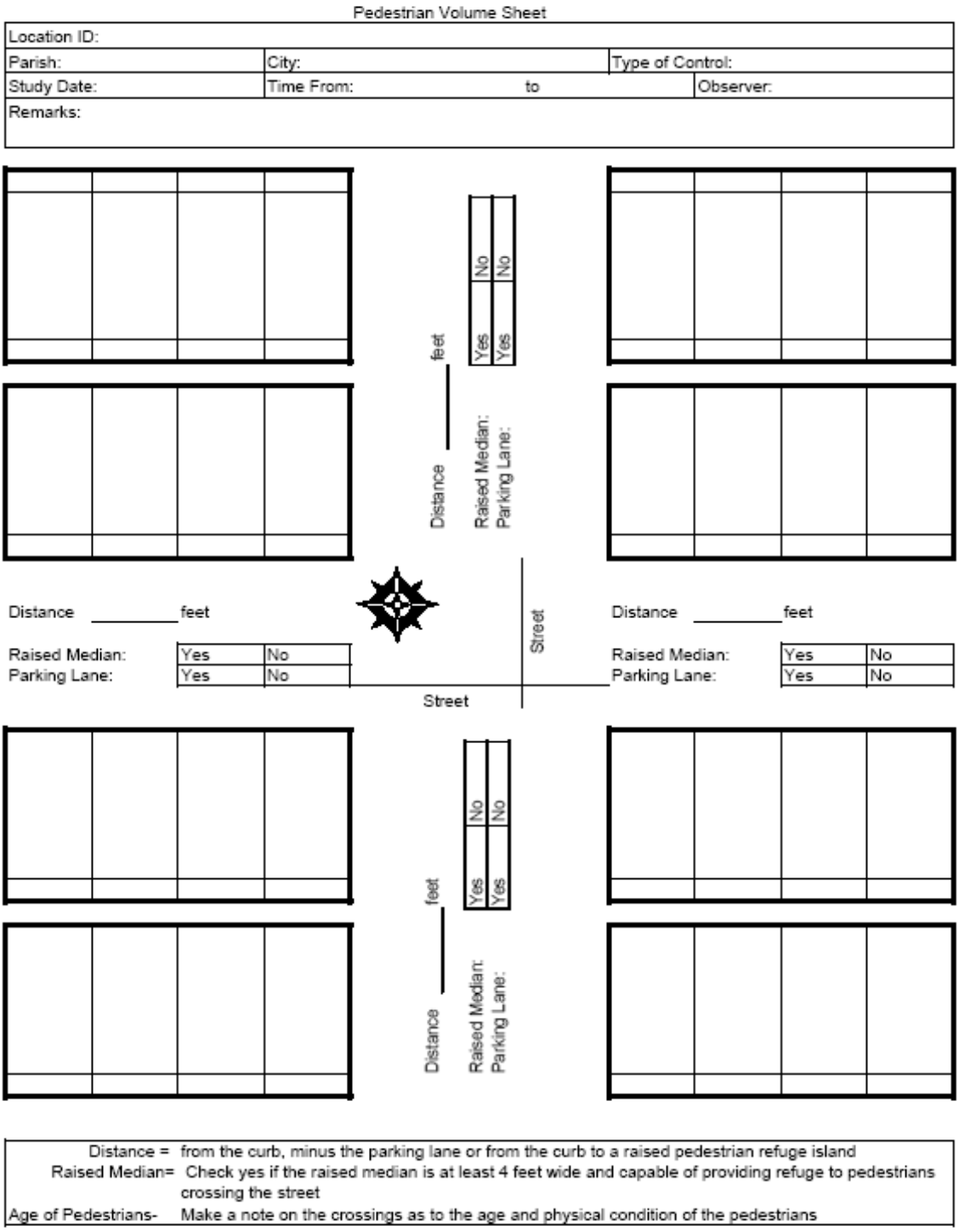

Figure 3B.2.2 Summary of Pedestrian Movements

Summary of Pedestrian Movements

Location ID:		
District:	Parish:	Date:
Observer:	City:	Weather:
		Roadway Width (feet): N/S E/W
		Median Width (feet): >= 4 feet ○ <4 feet ○
Sketch of crossings. Show proposed crosswalks/signs if any.		Remarks:

Pededstrian Movements				
TIME	**NORTH**	**SOUTH**	**EAST**	**WEST**
TOTAL				

* Note the age and ability of Pedestrians