NACTO Urban Street Design Guide
By Cities, For Cities, and in Color!

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Why the USDG
COMPLETE STREET DESIGN TREES - Pedestrian, Mixed-Use.

**Mode Hierarchy**
- **PEDESTRIAN**
  - P > T > B > A
- **TRANSIT**
  - T > P > B > A
- **BICYCLE**
  - B > P > A > T
- **AUTO**
  - A > P > T > B

**Building Form and Function**
- **P** Parks
- **R** Residential
- **M** Mixed-Use
- **C** Commercial Center
- **D** Downtown
- **IC** Institutional/Campus
- **IN** Industrial

**Roadway Form and Function**
- **ROW Width**
- **Target Speed**
- **Volume - ADT**

**Cross Sections**
- **PW** Pedestrian Way
- **SW** Service Way
- **NS** Neighborhood Street
- **MS** Main Street
- **CN** Connector
- **TH** Thoroughfare

Label Code = mode.building.roadway

### PW Pedestrian Way
- Variants

### SW Service Way
- Variants
- 5 to 10 mph

### NS Neighborhood Street
- 10 to 20 mph
- < 5,000 Vehicles

### MS Main Street
- 15 to 25 mph
- < 10,000 Vehicles

### CN Connector
- 20 to 30 mph
- < 25,000 Vehicles

### TH Thoroughfare
- > 100 feet
- 25 to 30 mph
- > 20,000 Vehicles
**Near-side Stop**

**Advantages**

<table>
<thead>
<tr>
<th>Advantage</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minimizes interference when traffic is heavy on the far-side of the intersection</td>
<td>1</td>
</tr>
<tr>
<td>Allows passengers to board bus closest to crosswalk</td>
<td>2</td>
</tr>
<tr>
<td>Width of intersection is available for the bus to pull away from curb and reenter traffic</td>
<td>3</td>
</tr>
<tr>
<td>Eliminates the potential for double stopping/parking</td>
<td></td>
</tr>
</tbody>
</table>

**Disadvantages**

<table>
<thead>
<tr>
<th>Disadvantage</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Increases sight distance problems for crossing pedestrians</td>
<td></td>
</tr>
</tbody>
</table>

**Mid-block Stop**

**Advantages**

<table>
<thead>
<tr>
<th>Advantage</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Passenger waiting areas experience less pedestrian congestion</td>
<td>1</td>
</tr>
<tr>
<td>Minimizes sight distances problems for vehicles and pedestrians</td>
<td></td>
</tr>
<tr>
<td>May result in less interference with traffic flow</td>
<td>2</td>
</tr>
</tbody>
</table>

**Disadvantages**

<table>
<thead>
<tr>
<th>Disadvantage</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Requires additional curb space for no-parking restriction unless bus bulb is provided</td>
<td></td>
</tr>
<tr>
<td>Encourages passengers to cross street at mid-block (jaywalking)</td>
<td></td>
</tr>
</tbody>
</table>
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Raised Intersections

Raised intersections create a safe, slow-speed crossing and public space at minor intersections. Similar to speed humps and other vertical speed control elements, they reinforce slow speeds and encourage motorists to yield to pedestrians at the crosswalk.

1. Raised intersections are flush with the sidewalk and ensure that drivers traverse the crossing slowly. Crosswalks do not need to be marked unless they are not at grade with the sidewalk. ADA-compliant ramps and

2. Raised intersections (and mini roundabouts) with yield control are preferred to signals on low-speed (<20 mph) and low-volume (<3,000 ADT) streets, as well as some moderate-volume streets in 30 mph zones. STOP signs should be used instead of YIELD signs if there are concerns that drivers might ignore the pedestrians.

3. Where two 1-way streets intersect, there will be two corners around which no drivers turn. This can be designed with the smallest constructible radius (approximately 2 feet) as long as a 40-foot fire truck can make the turn without encroaching upon the sidewalk.
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National Association of City Transportation Officials
Memorandum

To: HIGHWAY DESIGN MANUAL HOLDERS

From: TIMOTHY Craggs
Chief
Division of Design

Subject: DESIGN FLEXIBILITY IN MULTIMODAL DESIGN

The Caltrans Program Review, and more recently the SSTI report, identified a need to provide more flexibility in Caltrans' highway design standards and procedures, especially in the context of urban environments and multimodal design.

Date: April 10, 2014

File:

Serious drought.
Help Save Water!
Phases of Transformation

Existing

Interim

Reconstruction
Existing
Interim
Reconstruction
Street Design in Context
Street Design in Context
Levels of Guidance

Critical
Recommended
Optional

Gateway
Curb extensions are often applied at the mouth of an intersection. When installed at the entrance to a residential or low-speed street, a curb extension is referred to as a “gateway” treatment and is intended to mark the transition to a slower speed street.

Critical
The length of a curb extension should at least be equal to the width of the crosswalk, but is recommended to extend to the advanced stop bar.

Recommended
A curb extension should generally be 1-2 feet narrower than the parking lane, except where the parking lane is treated with materials that integrate it into the structure of the sidewalk.

Optional
Curb extensions may be treated with corner street furniture and other amenities that enhance the public realm.

NEW YORK, NY
In advance of a full reconstruction, gateways can be designed using striping or signage that communicates the entrance into a slow zone.

INDIANAPOLIS, IN
Curb extensions may be combined with bioswales in order to decrease puddling at crosswalks.
Street Design Principles

- Streets Are Public Spaces
- Great Streets are Great for Businesses
- Streets Can Be Changed
- Design for Safety
- Streets are Ecosystems
- Act Now!
INTERSECTIONS

Principles
Major Intersections
Intersections of Major and Minor Streets
Raised Intersections

Mini Roundabout
Complex Intersections
Complex Intersection Analysis
Redesign
Intersection Design Principles

- As compact as possible
- Part of network, not isolation
- Integrate time and space

- Shared space, all users
- Utilize excess space as public space
- Design for the future
Intersections of Major and Minor Streets

Existing Conditions

The illustration above shows a typical intersection of a minor street with a major through street or collector. The low-volume minor approach is unsignalized while the major corridor has high speeds, making it difficult to cross the street.

1. Crossing major streets can be intimidating for many pedestrians, especially where insufficient gaps in traffic make crossings risky and no striping or signage exists to alert motorists.

2. Cars turn at high speeds onto the minor street, compromising the slow-speed, residential environment.

3. The traffic on the major street discourages pedestrian and bicycle crossings. Crosswalks and signage are lacking at the minor street, failing to alert motorists to potential cross traffic.

Recommendations

1. Evaluate intersection volumes to ensure that there are sufficient gaps in traffic for an unsignalized, marked crossing. Look at the overall traffic network to balance permeability while minimizing cut-through traffic. Do not restrict bicycle or pedestrian crossings of major roads, even if warrants are not met.

2. Use raised crossings and curb extensions to limit turning speeds from the major to the minor street. Raised crossings increase visibility and the potential for a vehicle to yield to a crossing pedestrian. When crossing a minor street, a raised crossing track can be carried through an intersection and be combined with a raised crosswalk to clarify and accentuate priority.

3. Minimize turning speeds from the major to the minor street. Design to that drivers on the major street yield to people in the crosswalk and cycle track. Ensure that drivers on the minor street can turn onto or cross the major street without excessive delay (either caused by signals or traffic). Bollards at left turns keep turning drivers off the crosswalk and reduce crashes with pedestrians.

4. If a signal is used, shorten cycle lengths and coordinate signal timing to ensure routine gaps in traffic. Otherwise, pedestrians may try to cross on a red signal with a gap in the vehicle platoon. Long, unsignalized corridors may require the installation of all-way stop signs.

5. Step crosswalks at unsignalized crossings and critically evaluate whether or not pedestrians may benefit from enhanced crossing treatments, such as safety islands, high-visibility signage, actuated beacons, or full signalization.
Available online at
www.nacto.org/usdg

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