

## **ACCESS MANAGEMENT & TRANSIT VEHICLES, BICYCLISTS AND PEDESTRIANS**

Discussion and analysis of access management techniques is often focused on safety and efficiency for vehicular travel. However, most street systems also accommodate travel by pedestrians, cyclists, and passengers in transit vehicles. Different access management techniques change the design and environment of the street system and therefore also affect travel for all road users. This section provides general information on how different access management techniques affect pedestrians, cyclist, transit vehicles and passengers.

### **PEDESTRIANS AND CYCLISTS**

Poor access management has the following implications for bicycle and pedestrian travel:

- Frequent driveways create multiple conflict points between vehicles entering and exiting a roadway and pedestrians and cyclists;
- Poorly defined and continuous curb cuts obscure sidewalks and create gaps in the pedestrian network;
- Poorly defined and continuous curb cuts complicate cycling by making it difficult to predict where vehicles may enter and exit the adjacent roadway; and
- Poorly designed, congested, and unsafe intersections do not efficiently or safely accommodate pedestrians and cyclists as they travel between arterial highways and the connecting local street systems.

Almost all access management designs and operational strategies impact pedestrians and bicyclists. In general, pedestrians and bicyclists need to be well protected where they cross major streets. Where vehicles cross pedestrian or bicycle facilities, the crossing should be design to encourage lower speeds and to minimize conflicts. The following access management strategies promote pedestrian and bicycle travel<sup>1</sup>.

- *Maximize driveway spacing.* Larger driveway spacing reduces conflicts and hazards. Reducing driveways also makes it easier to accommodate people with disabilities with a reduction in need for special treatments at driveway cuts.
- *Sidewalk location.* Locating sidewalks away from the curb offers many operational and safety benefits. If the green strip is of an adequate width, drivers can pull completely out of the traffic stream before yielding to a pedestrian on the sidewalk. Pedestrians are separated from street traffic and are better protected.
- *Medians.* Medians offer areas of safe refuge to pedestrians. Pedestrian crash rates are lower on roads with raised medians than on undivided highways or those with continuous two-way

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<sup>1</sup> Compiled from Iowa Access Management Handbook, TRB Access Management Manual, and Mass Highway 2006 Edition.

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left turn lanes<sup>2</sup>. Medians with cut-throughs and adequate storage space promote pedestrian and bicycle safety.

- *Mid-block crossings.* Mid-block pedestrian crossings can reduce crashes, travel distance, and inconvenience. As noted in the A/GFTC Bicycle and Pedestrian Plan, mid-block crossings are not as desirable as intersection crossings. However, when intersection spacing is large, mid-block crossings may be necessary to provide a more direct route between pedestrian origins and destinations.
- *Right turn lanes.* Right turn lanes can reduce speeds at the sidewalk crossing and reduce conflicts and confusion. Right turn lanes provide a dedicated space for vehicles to decelerate and turn using a minimum turn radius. The turn lane allows for slower turning speeds which help shorten roadway crossing distances for pedestrians due to a smaller radius (although the additional lane could also increase crossing distance).
- *Inter-parcel connections* for both pedestrians and motorists can limit short trips on the main route. These connections often take the form of simple curb cuts and short sidewalks between commercial sites, so that traffic and people moving from one to the other need not access the arterial.
- *Specialized and Interconnected Street System.* From a system-wide perspective, a well connected network of local, collector, and arterial roadways provides mobility for through traffic and access to land. The street system can also support a network of pedestrian and bicycle facilities. The street network provides alternative routes for local circulation away from the arterial for vehicles, cyclists, and pedestrians. If possible, the network should consist of blocks that range between 600-800 feet. These smaller blocks make the area more pedestrian and bicycle friendly and increase opportunities for side-street and rear access to parcels.

As noted in the *NYS DOT Policy and Standards of Entrances to State Highways*, all sidewalks, walkways, and stairways shall be constructed consistent with *NYS DOT Highway Design Manual* Chapter 18. Where sidewalks cross a driveway, several design issues need to be considered. The sidewalk surface should extend across the driveway to clearly establish the pedestrian right-of-way. Turning radii at the driveway should be as small as possible to encourage slow speeds as vehicles cross a sidewalk. As a sidewalk crosses a driveway, its cross-slope should not exceed 2% and sidewalk ramps should not exceed 8.3%. Driveways and driveway aprons that are constructed like ramps, with steep, short side flares, can render a section of sidewalk impassable, especially for people in wheel chairs. *Figure 1* on the following page shows how this issue can be addressed.

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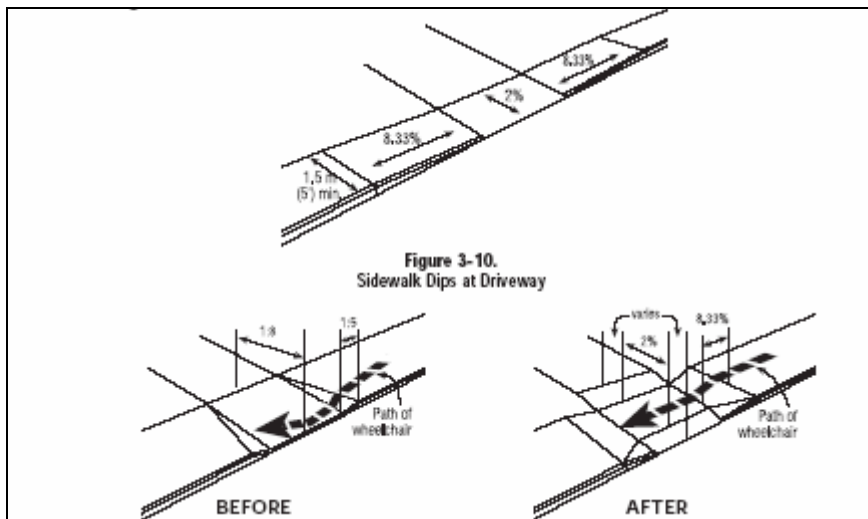
<sup>2</sup> A study conducted in Georgia found that non-traversable medians had 78% fewer pedestrian fatalities per 100 mile of road versus TWLTL. TRB Access Management Manual, Page 18.

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**Figure 1: Addressing Driveway and Sidewalk Slopes<sup>3</sup>**



## TRANSIT

Transit riders can benefit from good access management practices through reduced delay and travel time, a safer walking environment, and better access to transit stops as connectivity of streets, sidewalks, and other pedestrian ways are improved. A connected street system can also provide for improved transit routing.

The following functional requirements of transit vehicles and the basic safety and access needs of transit riders are important access issues:

- Adequate turning radii and throat width
- Adequate queue storage on-site and for left turn lanes
- Continuous pedestrian access along sidewalks and pathways
- Bicycle access or storage facilities
- Clean, well-lit comfortable places for transit riders to wait

Access to informal, curb-side bus stops should also be considered. As transit vehicles stop along a curb to pick up or drop off passengers, they interrupt the flow of traffic on the arterial. This issue could be addressed by providing bus pull-off lanes. Curb-side bus stops should also be located beyond the functional areas of intersections (the area where vehicles queue at traffic signals and change lanes as they approach or depart the intersection).

<sup>3</sup> Page 3-18, "Vermont Pedestrian and Bicycle Facility Planning and Design Manual", National Center for Bicycling and Walking; December 2002