



# 4. HIKE NETWORK

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## 4.0 Overview

The proposed hike network for Arlington includes a series of pedestrian improvements that create a more connected, comprehensive system. It has been developed from past planning efforts, public input, committee input, field analysis, and geographic information systems (GIS) mapping. This chapter presents the methodology, recommended hike network project types, intersection improvement recommendations, and pedestrian network maps for the City of Arlington.

Successful development of the hike network will require a long-term, cooperative effort between the City of Arlington and TxDOT. This partnership is important because many key recommendations are located on roadways that are owned and maintained by different entities.

## 4.1 Methodology

The guiding philosophy in devising the network is the hub and spokes model. Hike corridors (spokes) should connect to trip attractors (hubs), such as parks, schools, Downtown, shopping centers, and other pedestrian corridors. The network then becomes a practical solution for pedestrian travel (see diagram on the next page).

### Hub And Spokes Diagram

Fieldwork included an examination of conditions at major intersections, along primary corridors, at pedestrian hubs, and near schools, and a consideration of gap connectivity. Map discussion and analysis was conducted at Steering Committee meetings and public meetings to pinpoint specific areas in need of pedestrian improvements.

### HUB AND SPOKES DIAGRAM

The 'hubs and spokes' model conceptually illustrates how destinations are linked through various types of pedestrian facilities.



## 4.2 Pedestrian Network Project Types

The Proposed Pedestrian Network for Arlington consists of three chief types of projects:

**Sidewalk projects** - The recommended sidewalks aim to expand upon the existing network of sidewalks to provide a better connected system that links destinations along roadways. Approximately 149 miles of sidewalks are recommended for the City of Arlington.

**Greenway/Trail projects** – The recommended greenways, described in Chapter 3, aim to expand upon a comprehensive off-road system that utilizes stream corridors and utility easements. Approximately 64 miles of greenways are recommended.

**Crossing improvements** – 190 crossing improvements are recommended to improve existing street crossings or create new crossings at intersections and mid-block locations. These improvements are critical in order to maintain a safe, connected system throughout the City.

## 4.3 Enhancing Walkability: Additional Pedestrian Improvements

In addition to these three chief capital improvement efforts, the City of Arlington should take a comprehensive approach geared towards walkability. This includes, but is not limited to:

- Traffic Calming
- Driveway access management
- Connectivity between and within land uses

### Traffic Calming

Traffic calming is a critical element of a safe pedestrian system and should be considered with all pedestrian improvements made throughout the City, especially for residential and collector roads. Traffic calming elements can be combined with sidewalk and crossing improvement projects or can be developed on their own. In many cases, sidewalk development may not be feasible due to challenges such as right-of-way availability. In these cases, especially near schools, parks, and lower-income residential areas, traffic calming is an effective solution to slow traffic and create safer environments for pedestrians. Examples of traffic calming elements are: in-roadway pedestrian crossing signs (for mid-block crossings), median refuges, curb extensions, and speed humps. See Chapter 8: Design Guidelines for more detail.



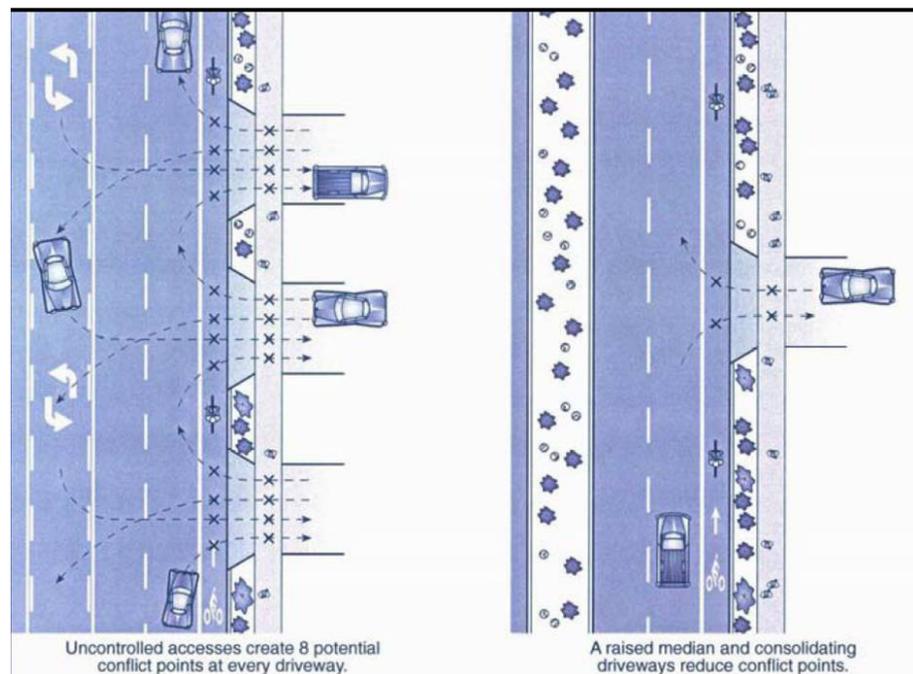
Above and below: examples of mid block crossings.



### Driveway access management

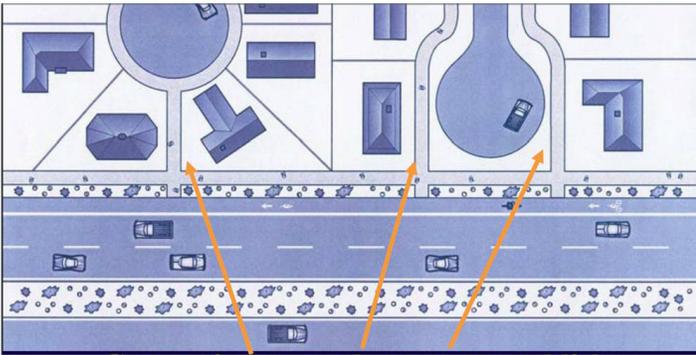
High frequencies of driveways and curb-cuts create hazards for bicyclists and pedestrians. Every time an automobile enters or exits a roadway, it presents a hazard to pedestrians and bicyclists as it crosses their travel path. Hazards are limited by diverting access points to side streets, combining them for adjacent businesses, and closing all redundant or unnecessary access points. Roadway segments with particularly high numbers of curb-cuts include Cooper Street and Collins Street. The City of Arlington should ensure future development limits driveway access.

Driveway access management detail.

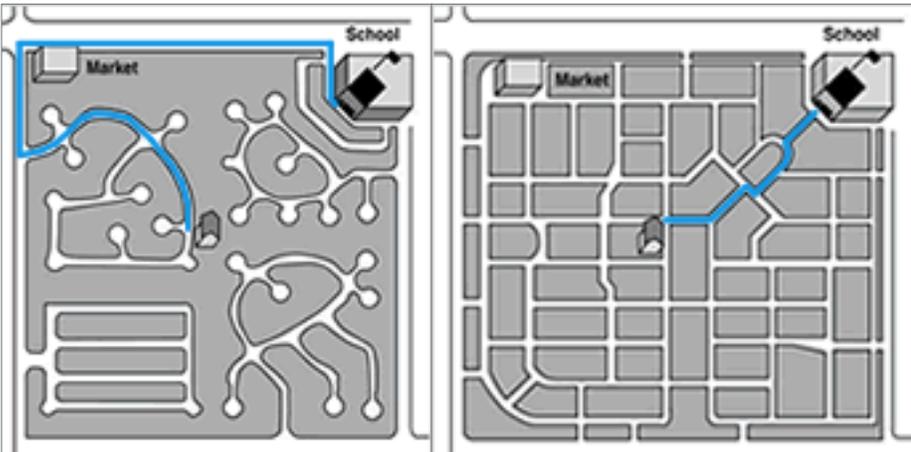


### Connectivity Between and within Land Uses

Critical to the walkability of an area is the connection of multiple land uses and the creation of safe, walkable spaces within each type of land use. This principle should be applied to all new development. Mixed-use development promotes bicycle and pedestrian travel for utilitarian trips. However, pedestrian connectivity can also be provided between differing adjacent land uses as well.



Connecting severed streets reestablishes walking routes.



These example diagrams show the route from home to school in two scenarios: a sprawling development pattern that creates indirect routes (left) and a traditional grid street network that allows for more direct routes and more alternative routes between destinations (right).

### 4.4 Recommendations and Network Map

The pedestrian recommendations in this Plan should be developed or improved to create a safe and connected pedestrian network throughout Arlington. All pedestrian projects undertaken should aim to meet the highest standards possible when site conditions allow. Design guidelines in Chapter 7 provide detailed information regarding type, treatment, and proper placement.

Some of the treatments recommended in this chapter have been proven to reduce crashes, as shown in the 2007 FHWA Crash Reduction Factors Study (<http://safety.fhwa.dot.gov>). Table 4.1 shows some typical countermeasures and associated crash reduction factors from that study.

**Table 4.1 Pedestrian Crash Reduction Factors**

<i>Countermeasure</i>	<i>Crash Reduction Factor</i>
Install sidewalk	74%
Install pedestrian countdown signal heads	25%
Install pedestrian refuge islands	56%
Improve/install pedestrian crossings	25%

All recommendations were developed at a planning level. Each of these locations will need a more detailed project-level review. The conclusions reached through more detailed review may vary from those presented herein.

### **Intersection Recommendation Tables**

Most intersections and mid-block crossings in Arlington need some form of improvement (190 intersections were analyzed in detail and recommendations are provided). Pedestrians have a much greater risk of being struck by a vehicle when crossing a roadway as opposed to walking on the shoulder or sidewalk beside it. Nationally, nearly 75% of all police-reported pedestrian crashes involve pedestrians crossing roadway travel lanes.

Committee input, public input, and consultant fieldwork identified the 190 key intersections in Arlington in need of improvement. These are by no means the only crossing improvements needed throughout the City. All intersections should meet standards provided in Chapter 7: Design Guidelines. See Appendix F: Intersection Inventory and Recommendations for these tables.

### **Hike Network Map**

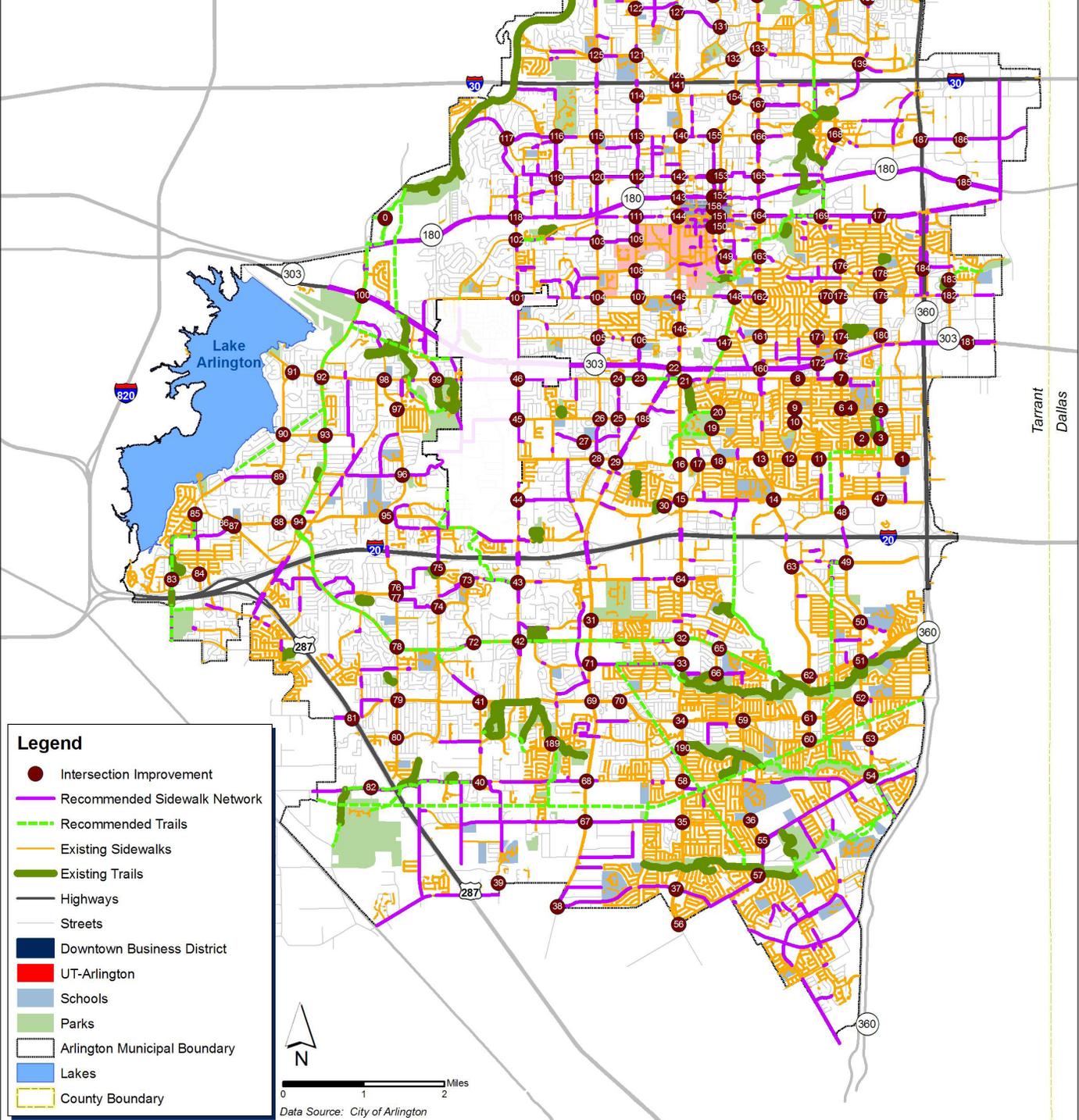
The following citywide map displays the hike recommendations (sidewalks, greenways, and crossing improvements). For easier interpretation, see Appendix G for tiled network maps.

# CITY OF ARLINGTON HIKE AND BIKE SYSTEM MASTER PLAN



## Hike System Recommendations

Map 4.1



Intersection numbers correspond with tables in Appendix F.

## 4.5 Pedestrian Treatment Photo Visualizations

Various corridors and intersections were photographed and rendered to illustrate proposed recommendations along the hike network. The following graphic examples are intended as a visual guide for planning purposes only. A more thorough examination by a landscape architect and/or engineer is warranted prior to implementation.

### Pioneer Parkway Sidewalk



Existing Conditions



Proposed improvements include introduction of sidewalk

### Cooper Street Sidewalk - Curb Ramps



Existing Conditions



Proposed improvements include the introduction of sidewalk and curb ramps, crosswalks at driveway intersections

## Green Oaks Boulevard & Matlock Road Crosswalk + Median Refuge Island



Existing Conditions



Proposed improvements include high visibility crosswalk striping and a median refuge island.

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## Stadium Drive & Abram Street High Visibility Crosswalk



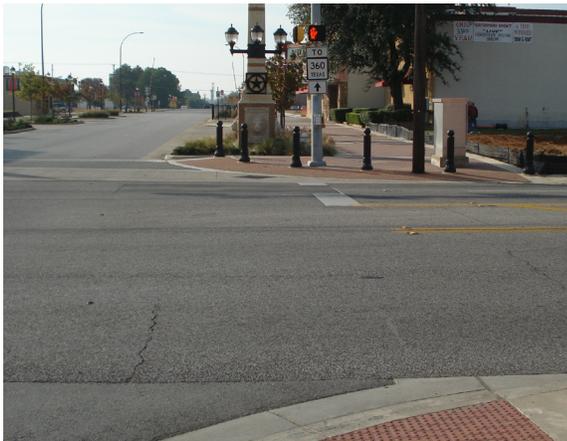
Existing Conditions



Proposed improvements include introduction of high visibility crosswalk and curb ramps with truncated domes.

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## Center Street & Division Street High Visibility Crosswalk



Existing Conditions



Proposed improvements include introduction of highly visible crosswalks and advance stop lines.