2017

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Thoroughfare Plan

Thoroughfare Network, Functional Classification, and Cross-Sections

An important element of the Transportation Master Plan is a Thoroughfare Plan that establishes a long-range vision for the City of Bastrop major street network. The plan is designed to meet the future travel needs of the City by classifying the streets and roadways within the City and the ETJ based on access to adjacent land use, mobility, and context within the surrounding area.

This Thoroughfare Plan addresses both existing and proposed streets and roadways. This plan also provides conceptual standards by thoroughfare type for use in the implementation of future roadways or the reconstruction of existing roadways. The plan provides a guide for use by City officials and staff, developers, business owners, and residents to better understand the City's vision for its street and roadway system.

FUNCTIONAL CLASSIFICATION SYSTEM

In addition to defining a thoroughfare network, a classification system was assigned to area roadways based on thoroughfare type. Functional classification is the process by which local and regional roadways are grouped into hierarchal categories according to the transportation objectives the roadways are intended to provide. This process identifies the role each roadway serves in the context of the larger transportation system, and facilitates planning for logical and efficient routing of traffic through the roadway network. Functional classification was mandated by the Federal-Aid Highway Act of 1973 and remains in effect today.

The Thoroughfare Plan provides guidance only for those streets and roadways that are under the legal control of the City of Bastrop. Attributes, proposed improvements and functional classifications for state maintained roadways of regional significance and county roadways in the ETJ were defined based on their definitions in the CAMPO 2040 Regional Transportation Plan and the 2016 Bastrop County Transportation Plan, respectively, which were incorporated into this City of Bastrop Thoroughfare network by reference.

Purpose

Transportation systems are designed to serve a diverse range of travel needs, from long-distance travel between cities to local trips between home and the grocery store. Assigning a functional class to each roadway in the system helps ensure that the transportation system can serve the diverse travel needs of users in a logical and efficient manner. Functional classifications provide a basis for selecting appropriate speed and geometric design criteria for a given roadway. However, this does not mean that the functional classification for a given roadway prescribes specific design criteria.

Instead, the actual configuration of streets and roadways is subject to review and adjustment through detailed engineering studies to ensure facility design is coordinated with adjacent development, and takes into account other community goals and objectives. A context sensitive approach that takes into account the compatibility of thoroughfare types with surrounding land uses, in addition to the efficient movement of traffic, was used for designating functional classifications for the City of Bastrop Thoroughfare Network. The proposed functional classifications were determined by weighing mobility versus access needs, the surrounding land uses, and the facility characteristics of existing roadways.

Mobility vs. Access

The two primary travel needs served by roadways are mobility, or the ability to move people or goods efficiently between locations, and access, or the ability to reach numerous desired destinations. While all roadways serve these two needs to at least some degree, by design certain types of roadways serve one need better than the other. Highways, for example, provide a high degree of mobility, facilitating long-distance travel between destinations by providing minimal traffic conflicts and few opportunities to enter/exit the roadway. Such roadways are classified as Principal Arterials under the City of Bastrop classification system (described in more detail in the next section). Neighborhood streets, on the other hand, provide a high degree of access (to homes, shopping centers, etc.), but offer lower mobility due to the presence traffic signals, lower speed limits and other design characteristics. These roadways are classified as local streets under the City of Bastrop functional classification system. Figure 5.1 shows the relationship between mobility and access.

Map 5.1: 2040 Major Thoroughfare Map, City of Bastrop TMP

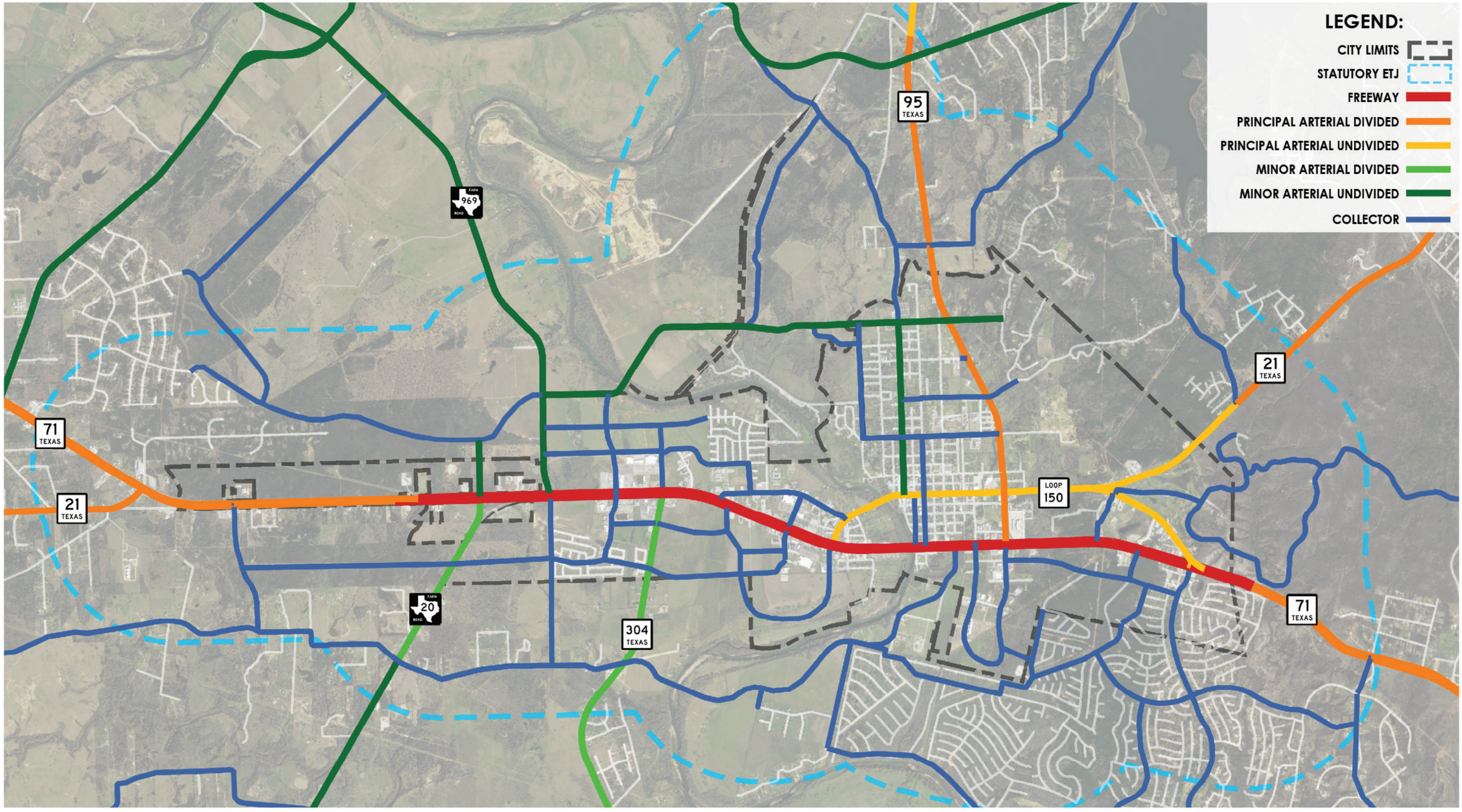
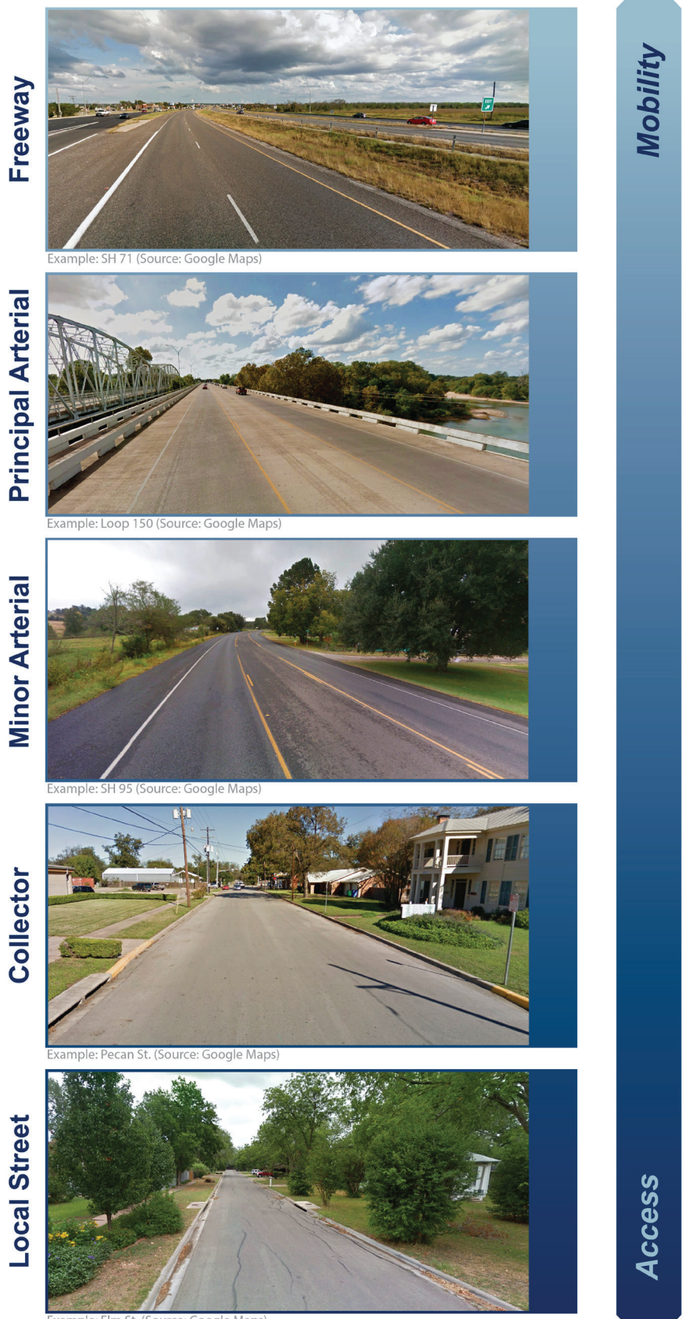


Figure 5.1: Mobility vs Access



Functional Classifications

This Thoroughfare Plan uses the following classifications as defined below. Note that in the context of the mobility versus access continuum, higher functional classes (e.g. principal arterials) serve mobility while lower classes (local streets) prioritize access.

Freeways

Freeways provide maximum mobility and do not directly serve land uses. Freeways are generally separated by physical barriers and their access and egress points are limited to on- and off- ramps. Freeways are typically two lanes in each direction.

Principal Arterials

Principal arterials provide a high degree of mobility by serving travel between major destinations or activity centers, as well as long-distance traffic that goes through or bypasses an area. They are designed to minimize travel time by providing high posted speed limits, offering physical separation from other roadways (e.g. few at-grade intersections) and providing a limited number of access/egress points (e.g. on- and off- ramps).

Minor Arterials

Minor arterials are intended to connect traffic into and between the principal Arterial system. They can serve trips of moderate length by connecting smaller geographic areas. While minor arterials provide slightly less mobility benefit than principal arterials, overall they are characterized by relatively high travel speeds and low interference from cross traffic.

Collectors

Collectors provide a balance between mobility and access, primarily serving to “collect” traffic from local streets and provide connections to arterials. In urban areas, collectors provide traffic circulation in residential areas or commercial districts, while in rural areas they primarily serve travel within the City (i.e. trips shorter than those served by arterials). Due to the large number of col- lector roadways and the diversity of adjacent land uses, appropriate context subcategories were defined for collector roadways. These categories include residential, commercial, and mixed-use collectors.

Local Streets

Local streets offer lower mobility than other functional classes but provide the highest degree of access to adjacent land. They discourage through traffic with low posted speed limits and the use of traffic calming features. Local streets make up the bulk of the transportation system in terms of mileage.

Typical Roadway Cross Sections

For each of the functional classes defined in the thoroughfare plan, a typical cross section was developed for use in the planning and conceptual engineering of new roadways or in the potential upgrade of existing roadways as they are reconstructed or expanded. The following typical cross sections are intended as conceptual frameworks to facilitate the planning process. Specific engineering requirements and design guidelines for implementation of roadways are contained in the City subdivision regulations and other capital improvement program guidelines. The engineering and design of specific facilities must be carried out in collaboration with and under the review of the City Engineer.

Figure 5.2: Neighborhood Collector Constrained ROW- Extreme Case

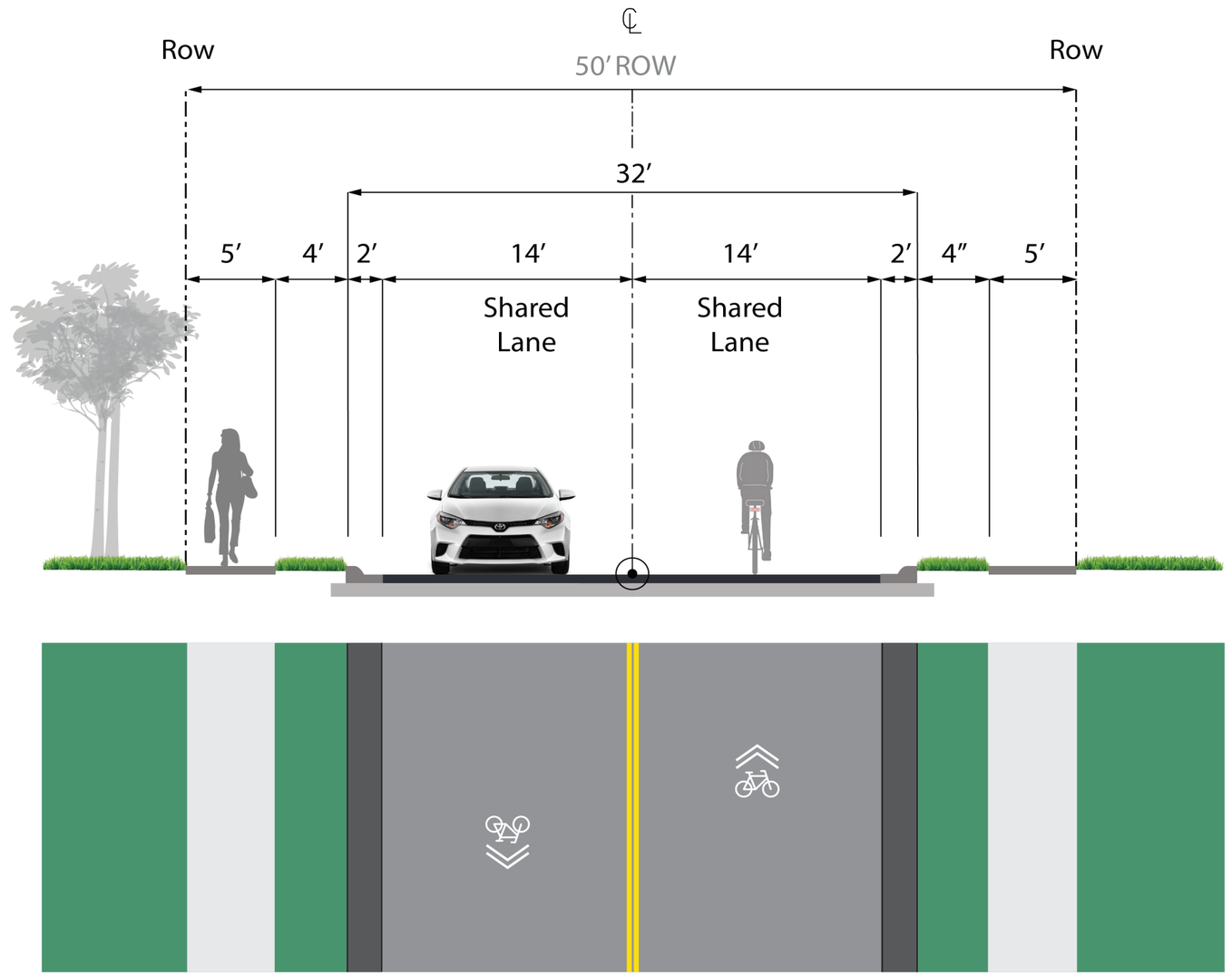


Figure 5.3: Principal Arterial/Divided Minor Arterial- Typical Urban Section

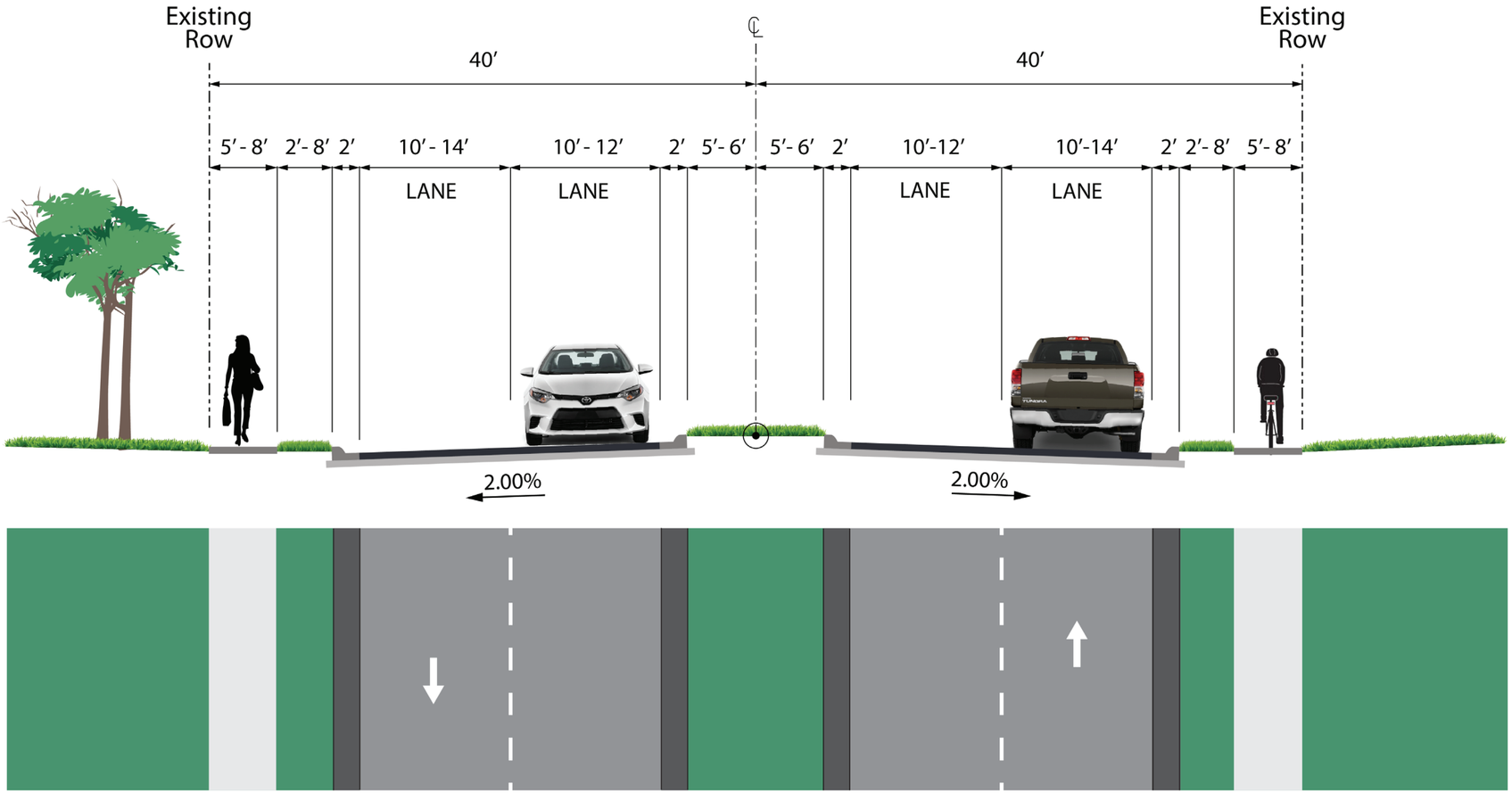


Figure 5.4: Example Downtown Cross Section

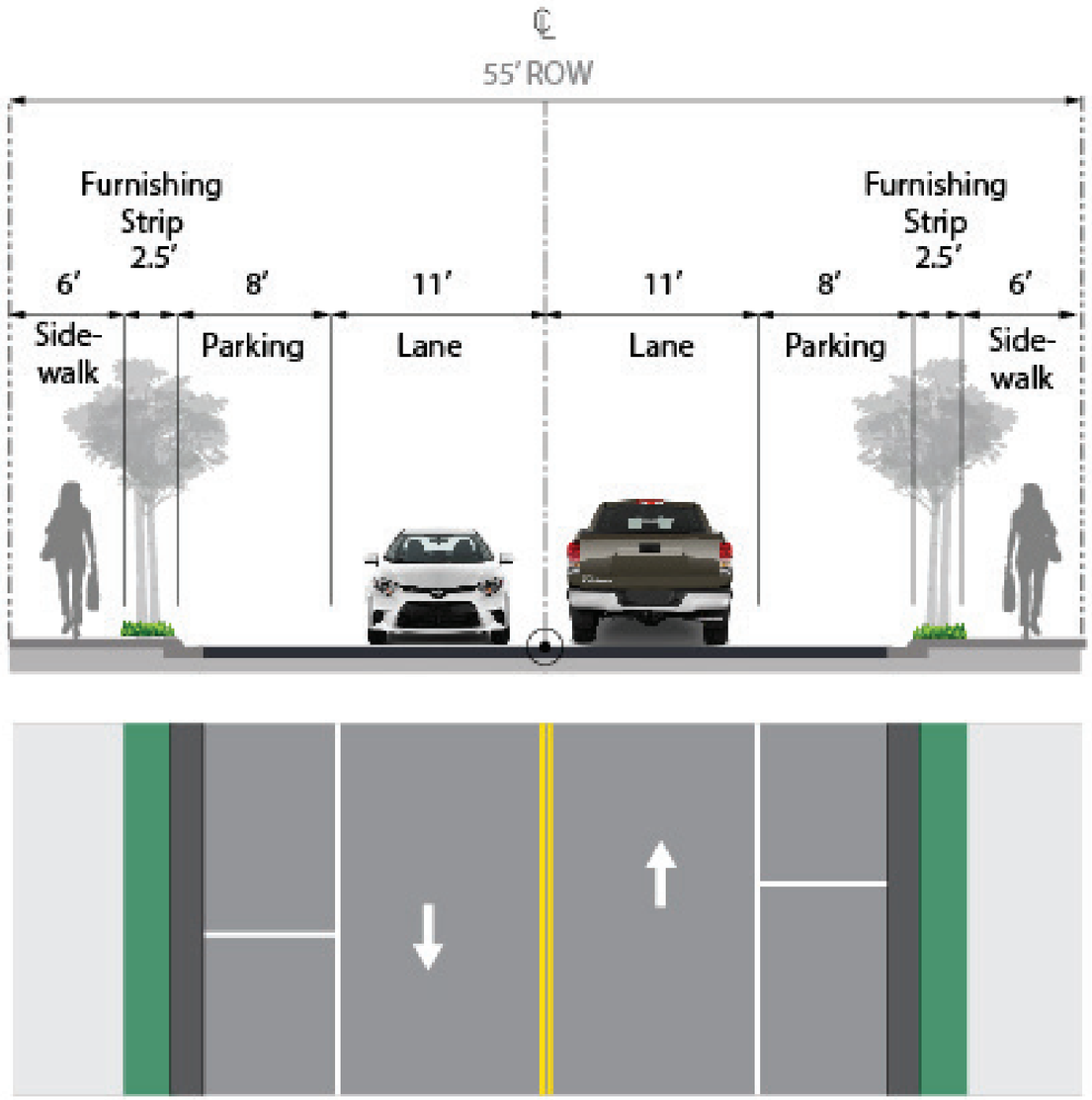
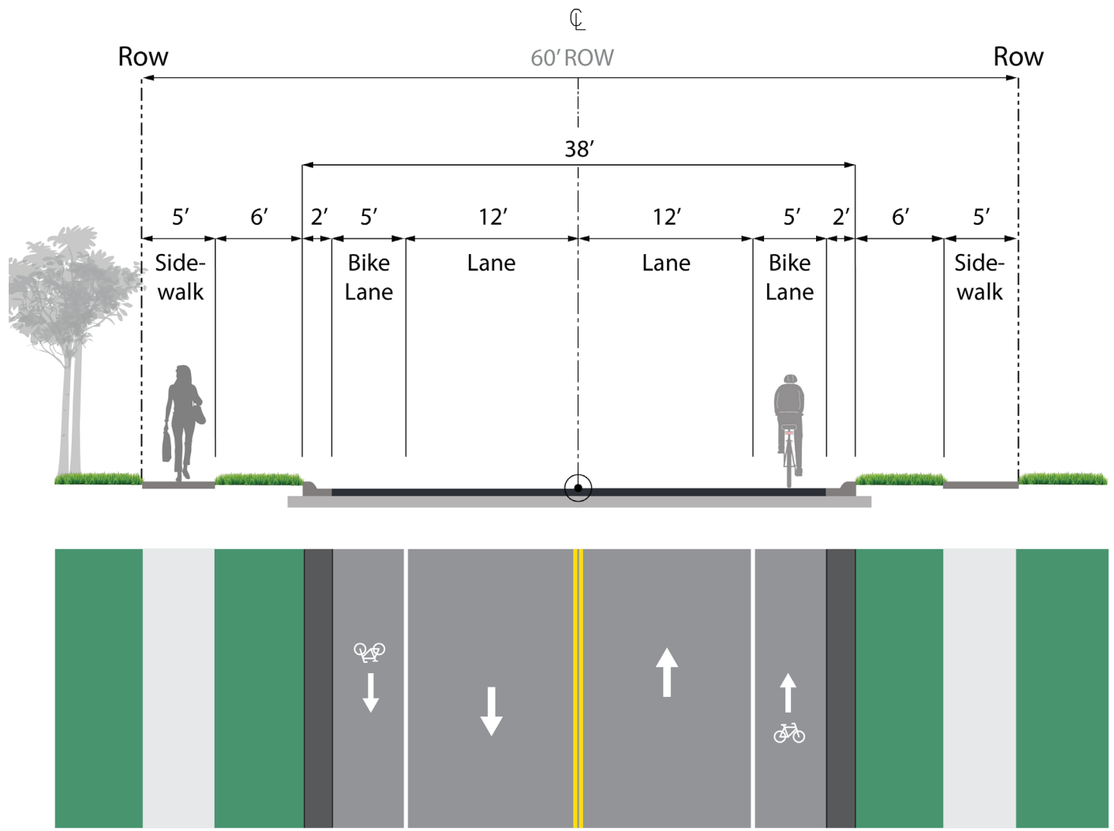


Figure 5.5: Minor Arterial/Collector- Typical Section



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