

COMPLETE STREETS
COMPLETE NETWORKS
**RURAL
CONTEXTS**



ACTIVE
TRANSPORTATION
ALLIANCE

ACKNOWLEDGEMENTS

ABOUT THE CONSULTANTS

The mission of Active Transportation Alliance is to make bicycling, walking, and public transit so safe, convenient, and fun that we will achieve a significant shift from environmentally harmful, sedentary travel to clean, active travel. We advocate for transportation that encourages and promotes safety, physical activity, health, recreation, social interaction, equity, environmental stewardship, and resource conservation.

We are both Chicagoland’s voice for better biking, walking, and transit and a premier consultancy. Our staff includes planning, policy, and education experts who developed many of the best practice programs and policies included in this plan. By partnering with us on this project, you not only get the best plan possible, you also support our mission to improve active transportation throughout the Chicagoland region.

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ABOUT WE CHOOSE HEALTH

The project is part of the Illinois Department of Public Health’s We Choose Health Initiative, which is made possible by funding from the Centers for Disease Control and Prevention.



ABOUT COMPLETE STREETS, COMPLETE NETWORKS, RURAL CONTEXTS

This guide is intended to help planners, engineers, and decision-makers in rural Illinois communities understand the Complete Streets roadway design process, and how it can be applied in smaller communities. It is intended as a companion to *Complete Streets, Complete Networks, A Manual for the Design of Active Transportation*.

TABLE OF CONTENTS

CHAPTER 1: INTRODUCTION: RURAL AREAS NEED COMPLETE STREETS

Purpose of the Rural Companion to <i>Complete Streets, Complete Networks</i>	7
What are Complete Streets?	7

CHAPTER 2: COMPLETE STREETS IN A RURAL CONTEXT

How This Guide Defines Rural Areas	10
Why Complete Streets are important in rural areas	10
How Complete Streets differ in rural versus urban and suburban contexts	12

CHAPTER 3: HOW TO BUILD COMPLETE STREETS: POLICY AND PROCESS CONCEPTS

Opportunities for Achieving Complete Streets	14
Roadway Jurisdiction	15
Transportation Agency	16
Transportation Planning	17

CHAPTER 4: HOW TO BUILD COMPLETE STREETS: DESIGN CONCEPTS

The Built Environment	20
Roadway Network	21
Components of the Right-of-Way	22
Design Guides	24
Design Controls	25

CHAPTER 5: CONTEXT SENSITIVE DESIGN

Land use in a Rural Context	29
Development Pattern Intensity	34
Roadway Typology	36
Modal Prioritization	37
Developing the Cross Section	40
Boulevard Right-of-Way Tables and Cross Sections	41
Avenue Right-of-Way Tables and Cross Sections	49
Street Right-of-Way Tables and Cross Sections	57

INTRODUCTION: RURAL AREAS NEED COMPLETE STREETS



**Purpose of the
Rural Companion to
Complete Streets,
Complete Networks.**

**What are Complete
Streets?**



FIGURE 1.1
PEOPLE WALKING
Lowell, IN



FIGURE 1.2
BOARDING A BUS
Manteno, IL



FIGURE 1.3
PEOPLE BIKING
Dwight, IL



Introduction: Rural areas need Complete Streets

Complete Streets provide all people, regardless of their age, ability, or mode of transportation with safe and healthy travel options throughout their community. Whether in a big city or a small town, residents need safe access to local resources and the places that they want to go, whether they're walking, biking, catching a bus, or driving a car.

A connected network of bikeable, walkable streets supports increased property values and access to jobs, reduced traffic congestion, improved community health, and better air quality. Complete Streets enable older adults to age in place and help kids get to and from school safely and independently.

While traditional roadway design practice focuses almost solely on capacity and vehicle traffic volumes, the Complete Streets philosophy challenges engineers and planners to think more comprehensively about project goals and community impact. From scoping to construction to maintenance, all project designs should be developed with consideration for all people who will be using the road and how to accommodate diverse travel modes. Considerations must also be made for current and future land use and development.

Smaller communities face unique transportation challenges. Major roads that bring traffic through town can pose significant safety barriers for residents on foot or on bike, and they are often controlled by State or County agencies. These major roads are not only key transportation routes, but are also important to the economic vitality of a community. With a Complete Streets approach, municipalities are empowered to coordinate with outside agencies on new project designs to ensure that it will serve local residents as well as visitors.

These major roads are not only key transportation routes, but are also important to the economic vitality of a community. The businesses on major roads rely on spending from locals as well as visitors. A network of Complete Streets provide improved access to residents living nearby and calm traffic so out of town visitors are more likely to drive slowly down a main street and stop to patronize local businesses, thus supporting local economic vitality.

1.4

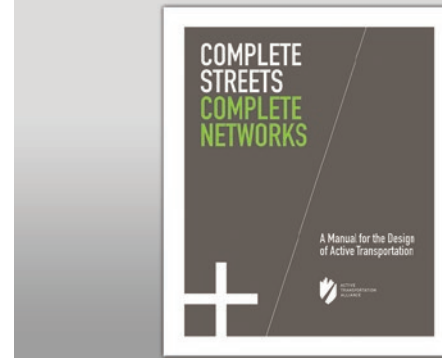


FIGURE 1.4
THIS MANUAL IS
A COMPANION TO
COMPLETE STREETS
COMPLETE NETWORKS,
accessed atpolicy.org

THE RURAL COMPANION AND COMPLETE STREETS, COMPLETE NETWORKS

The following guide explores how Complete Streets apply to rural communities and small towns. It is written for professionals with some familiarity with urban planning, transportation engineering, or design, but who may not have explicit knowledge of Complete Streets principles.

The guide is intended to help planners, engineers, and decision-makers in rural Illinois communities understand the Complete Streets roadway design process, and how it can be applied in smaller communities. This piece is intended as a companion to *Complete Streets, Complete Networks, A Manual for the Design of Active Transportation*.

Also available, is a second companion guide focused on the Complete Streets policy development and adoption. For step by step instructions on how to work with a steering committee to develop and adopt a comprehensive Complete Streets policy, see the *Complete Streets Starting Point, A Policy Development and Adoption Workbook for Public Health Professionals*.

FIGURE 1.5
COMPLETE STREET
Morris, IL

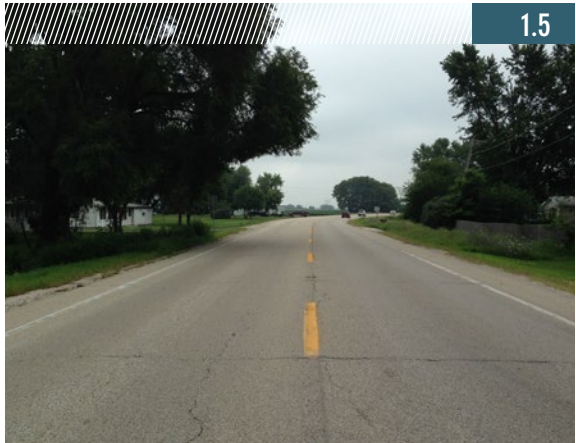
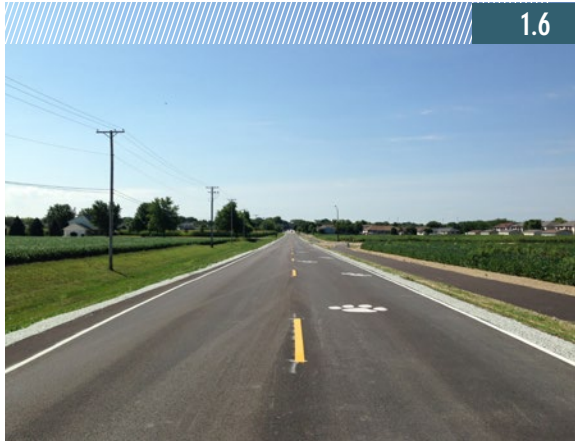


FIGURE 1.6
COMPLETE STREET
Manteno, IL



WHAT ARE COMPLETE STREETS?

Complete Streets are developed through a design approach and are supported by policy.

Complete Streets are designed and operated to enable safe access for all users. Pedestrians, bicyclists, motorists, and transit riders of all ages and abilities must be able to safely move along and across a Complete Street.

A Complete Streets Policy is a commitment by a jurisdiction to routinely design and operate the entire right-of-way to ensure safe access for all users: drivers, transit users, bicyclists and pedestrians, including older people, children, people with disabilities, and --in rural areas--people transporting farm equipment and using equestrian vehicles.

COMPLETE STREETS IN A RURAL CONTEXT

How this Guide Defines Rural Areas

Why Complete Streets are Important in Rural Areas

How Complete Streets Differ in Rural Versus Urban and Suburban Contexts

2

Complete Streets in a Rural Context

HOW THIS GUIDE DEFINES RURAL AREAS

In this guide, the term “rural” is defined broadly to include small towns, individual communities, and clusters of communities that are not considered part of a metropolitan area. It also includes land that is predominantly agricultural, forested, or prairie land. At present, most existing Complete Streets design resources provide limited guidance for rural areas and small towns, and instead are focused on urban and suburban areas that are part of a larger metropolitan region. This guide recognizes that rural areas have unique land use patterns and transportation needs that are not typically found in larger cities, and intends to address those.

WHY COMPLETE STREETS ARE IMPORTANT IN RURAL AREAS

People in small towns and rural areas can benefit greatly from Complete Streets in the following ways:

SAFETY

Nationally, people in rural areas can be most severely affected by a lack of Complete Streets. A disproportionate number of bicycle and pedestrian fatalities occur in rural areas. Less than 20% of the US population lives in rural areas, while 26% of all pedestrian fatalities and 31% of all bicyclist fatalities occurred in rural areas.

PUBLIC HEALTH

People living in rural areas suffer from disparities in health equity. Obesity related diseases are among the top causes of death in the US, and obesity rates are higher in rural areas than in urban areas. Through a Complete Streets approach to roadway design, public agencies will facilitate the simplest ways to combat these health risks: routine, physically active transportation such as walking and biking.

EQUITY AND ECONOMY

One third of Americans do not drive. This number includes seniors beyond their driving years, people with disabilities, children, and the economically disadvantaged. The cost of car ownership can be a significant burden in poorer communities, but traveling by foot, bike, and transit helps families save money on gas and other expenses. Households that spend less on transportation are able to budget that money in other ways, and often spend money saved at local businesses. Complete Streets provide a safer environment for struggling families to access community resources and jobs.

CONNECTIVITY

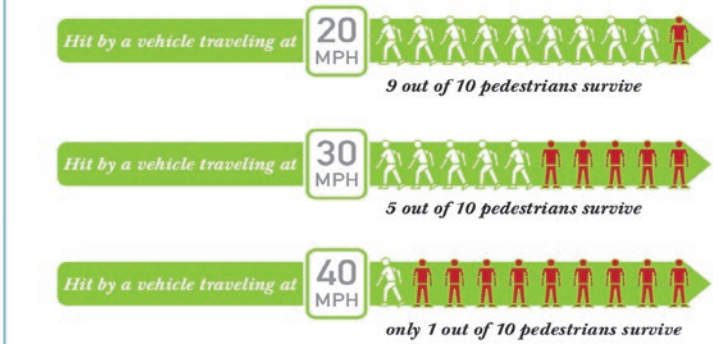
Rural areas have unique development patterns. Many towns are surrounded by agricultural land and connected to nearby towns by only a few roads. Small towns often have a Main Street style downtown with shops and restaurants, but grocery stores and other basic necessities are located on the edge of town, often in developments that are unsafe or unreachable on foot, on bike, or by transit. Complete Streets give people better access to commercial areas and a choice of modes to use when traveling.

LOCAL EMPOWERMENT

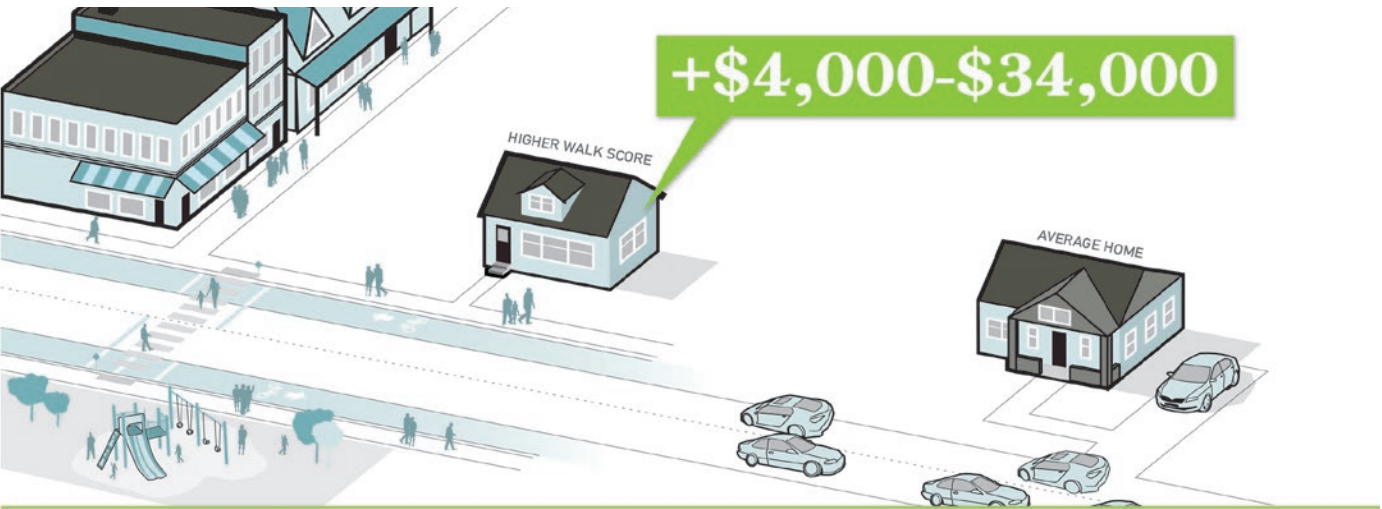
Often, a town’s main street and other major roads are not controlled by the local community, but rather by the state Department of Transportation, whose main focus is on moving cars and trucks throughout the state, and not necessarily the quality of life in each community. Complete Streets policies empower local communities to work with larger transportation departments to build roadways that meet community needs.

WHY COMPLETE STREETS ARE IMPORTANT

FOR MORE INFORMATION ON THE BENEFITS OF COMPLETE STREETS, VISIT ATPOLICY.ORG AND SEARCH FOR FACT SHEETS

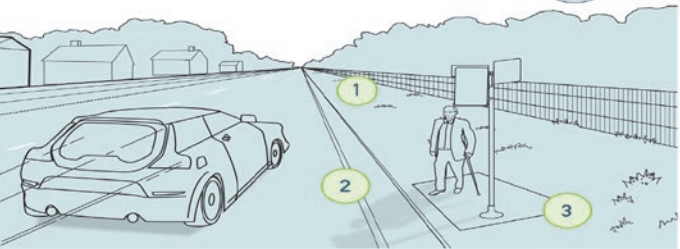


Designing roads to suit posted speed limits can help reduce the severity of pedestrian crashes.



Homes in neighborhoods with high Walk Scores sell for \$4,000 to \$34,000 more than the average home.

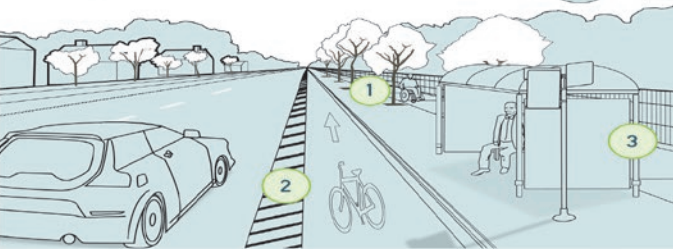
Incomplete Street



Among adults over 50:

1. 40% believe their neighborhood lacks adequate sidewalks.
2. 55% have inadequate places to bike.
3. 48% have no comfortable place to wait for the bus.

Complete Street



Positive improvements:

1. Sidewalks provide more people with access to transit and local businesses.
2. Bike lanes provide a more comfortable place for cyclists of all ages.
3. Shade & shelter at transit stops vastly improves the transit experience for those with health or mobility challenges.

1. US Census 2010
2. NHTSA Fact Sheets <http://www-nrd.nhtsa.dot.gov/CATS/listpublications.aspx?Id=A&ShowBy=DocType>
3. Rural Health and Human Services Issues [ftp://ftp.hrsa.gov/ruralhealth/NAC2005.pdf#page=43](http://ftp.hrsa.gov/ruralhealth/NAC2005.pdf#page=43)

HOW COMPLETE STREETS DIFFER IN RURAL VERSUS URBAN AND SUBURBAN CONTEXTS

There are many types of Complete Streets. Not all roadways need a sidewalk, bike lane, and car lanes to be considered a Complete Street. Some roads in agricultural areas can be considered “complete” by providing a paved shoulder. Beyond walking, bicycling, driving, and transit, rural areas have other unique transportation modes such as farm equipment and horse drawn carriages.

Major roads, especially those without accommodations for all modes of travel can cause significant neighborhood divide and be barriers to access. A child living just a few blocks from school or a senior beyond her driving years may not be able to independently travel to important destinations because just one road or intersection along their route is too hazardous to cross. Complete Streets design helps all people access the places they want to go.

HOW TO BUILD COMPLETE STREETS: POLICY AND PROCESS CONCEPTS

3



**Opportunities for
Achieving Complete
Streets**

Roadway Jurisdiction

Transportation Agency

**Transportation
Planning**

FIGURE 3.1
ROAD
RECONSTRUCTION
Manteno, IL



How to Build Complete Streets: Policy and Process Concepts

Successful Complete Streets design and implementation is often the result of internal and external policies and procedures created by agencies that build and fund roadways. The following concepts will help you understand the process by which Complete Streets are developed at the local level.

OPPORTUNITIES FOR ACHIEVING COMPLETE STREETS

Every roadway maintenance or construction project is an opportunity to include Complete Streets design elements. Some of the most common ways to construct Complete Streets are listed below.

NEW CONSTRUCTION

As municipalities grow, new roads will need to be constructed to accommodate the expansion. Allocating right-of-way for pedestrians, cyclists, and transit vehicles in initial roadway design will prevent communities from having to retrofit roads in the future.

ROAD RECONSTRUCTION

Road reconstruction completely removes the existing roadway and replaces it with a new roadway. This type of project may include a complete redesign, expansion of right-of-way, change to drainage, and reallocation of right-of-way from one mode to another. Reconstruction is an opportunity to move curbs and expand the roadway to allow for Complete Streets elements.

UTILITY WORK

When utility companies dig under a street or sidewalk to access their lines, the company must reconstruct the roadway when they are finished with the work. Municipalities can use this reconstruction as a lower cost opportunity to patch sidewalk or resurface the road where the utility company did their work. New striping or thermoplastic installation can be included in these projects.

RESURFACING

Resurfacing is when the top layer of a roadway is removed and new layer is installed. This type of project can be an opportunity to reconfigure a cross section to include a bike lane, on-street parking, or a median without expanding the roadway. It's also an opportunity to add or redesign crosswalks and curb ramps for improved safety.

SUBDIVISION AND SITE REDEVELOPMENT

Typically, developers of new buildings and subdivisions are required to build roads within a new subdivision and make improvements to the front of the property in order to comply with existing or planned roadway standards. New developments can be set back to account for future sidewalk or bikeway construction. Developers can be asked or required by municipalities to construct sidewalks, and commercial, intuitional and industrial developments should always include bike parking on-site.

ROADWAY JURISDICTION

Although all roads within a single municipality are interconnected, not all roads within the town are owned and maintained by the municipality. Each road is owned by a public agency responsible for funding, construction, maintenance, signage, repair, and operations of that road. In rural areas, typically there is a main road or roads traveling through the center of a town connecting it to other towns, which is owned by Illinois Department of Transportation, a network of local roads providing access to the homes and businesses

within the town, which are owned and maintained by the municipality, and several roads leading out of the town, which are owned and maintained by the county or township. When a road is being resurfaced, reconstructed, or receiving maintenance, it must meet the design standards of the agency that owns it. To ensure that local goals and needs are served, municipalities should communicate proactively with other agencies whose projects occur within their borders.

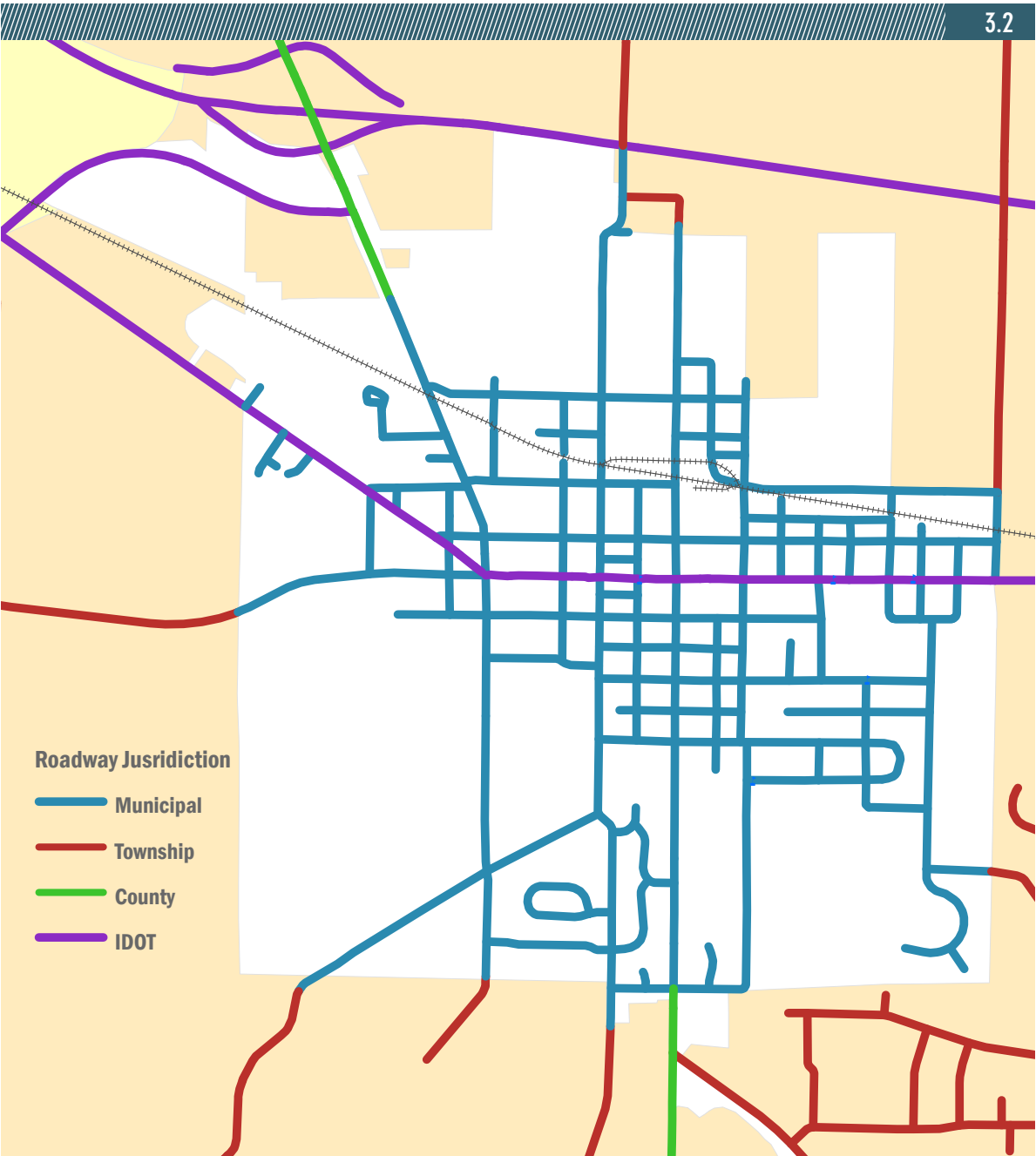


FIGURE 3.2
ROADWAY
JURISDICTIONS
Knoxville, IL

TRANSPORTATION AGENCY

In Illinois, the following agencies own and maintain roads, provide funding for roadways, and/or govern roadway design.

ILLINOIS DEPARTMENT OF TRANSPORTATION (IDOT)

The Illinois Department of Transportation owns and maintains most of the major roadways in Illinois. Its network of roads facilitates travel within and between cities throughout the state. IDOT also receives and distributes Federal funding allocated through the Federal transportation bill. The state is divided into 9 districts. Each district office provides maintenance, design and construction to roads under IDOT's jurisdiction within that district.

In 2007, a Complete Streets law was passed by the Illinois General Assembly, and in 2010, IDOT updated its design guidance to include recommendations for the accommodation of bicycle and pedestrian facilities. IDOT's policy has resulted in an increased coordination with local agencies about the inclusion of Complete Streets elements in State-led roadway projects.

At present, IDOT's policy requires an 80/20 cost sharing agreement for roadway projects that include bike and pedestrian accommodations. Local municipalities have to pay for 20% of the cost of bicycle and pedestrian accommodations on IDOT led projects. The Illinois Bike Transportation Plan recommends eliminating local funding match requirements for bike and pedestrian facilities. So, this cost sharing requirement may change in the future.

COUNTY DEPARTMENT OF TRANSPORTATION

Each county in Illinois has a department of transportation which owns and maintains some roads in the county. Some of these agencies provide coordination services between municipalities, townships, and the state to ensure a consistent and connected transportation network for county residents and businesses. In rural areas, county roads typically provide inter-town connectivity between smaller towns not served by IDOT roadways, or offer a second, alternative route between two towns. Some counties in Illinois, including Lake, DuPage and Cook County have adopted Complete Streets Policies.

MUNICIPAL

Municipalities in Illinois own and maintain roads only within their political boundary. These roads are usually "local" roads that serve lower traffic volumes and short trips within the town, and are usually designed and constructed on an as-need basis to serve the local businesses and residents. A municipality can also obtain jurisdiction over high capacity roads through a process called jurisdictional transfer.

TOWNSHIP

Townships in Illinois are a local form of governance that provides services to unincorporated areas within a county. Most township roads have low traffic volumes and go through areas with very low population densities.

METROPOLITAN PLANNING ORGANIZATION (MPO)

Metropolitan planning organizations are comprised of elected officials and staff representing urbanized areas with a population of 50,000 or more. These organizations are responsible for planning of the regional transportation network, regularly updating the regional transportation plan, and distributing Federal funds in accordance with the regional plan. MPOs typically do not have jurisdiction over any roadways, but may work closely with counties and municipalities to set roadway design standards.

REGIONAL PLANNING AGENCY OR REGIONAL PLANNING COMMISSION

Regions with lower population densities coordinate planning activities through a regional planning agency or commission. These agencies work with cities, towns, and counties within the region but do not typically have jurisdiction over any roadways.

TRANSPORTATION PLANNING

Transportation facilities have a long lifecycles that can span an entire generation. Each public agency with roadway jurisdiction must consider both current and future conditions with each roadway project, and plan for changes to its overall network. Planning, as a practice, strives to anticipate those changes over time in order to meet a community or region's transportation needs. Plans help communities coordinate future development and leverage State and Federal funding for implementation. Typically plans are developed on one of the following time frames:

LONG RANGE PLANS

Long Range Plans consider long term changes of a municipality or county over a 10- or 20-year period. These types of plans usually outline a vision and goals, provide a network map of the geographic area considered under the plan, and include a phasing agenda to prioritize the projects should be completed first. Common types of long range plans are Comprehensive Plans, Transportation Plans, Bicycle Plans, Pedestrian Plans, Non-motorized Plans, Transit Oriented Development Plans, Neighborhood Plans, Corridor Plans, and Sustainability Plans.

CAPITAL IMPROVEMENT PLAN/PROGRAM

A Capital Improvement Program (CIP) is a municipality or county's list of transportation projects that the agency anticipates to construct in the near term. Typically the CIP outlines the next 5 years of transportation projects based on the agency's anticipated budget and other available funding. Once a project is included within a CIP, detailed planning and design work can begin. Each municipality, county, MPO and State maintains a CIP.

MUNICIPAL CODES AND DESIGN GUIDES

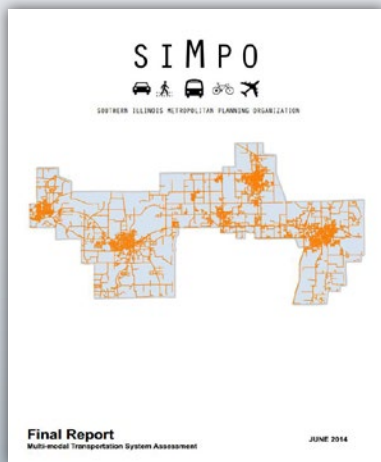
Municipal codes, especially subdivision ordinances and design guides provide design details for roadways and right-of-way. This type of plan outlines how much right-of-way is required for a road, the frequency of roadway connectivity, and engineering level details for how the roadway should be designed. Each municipality and county maintain a municipal code, and may adopt their own design guidance or use IDOT and Federal guidance.

3.3 A



FIGURES 3.3 A,B, & C
TRANSPORTATION
PLANS PROVIDE
INSIGHT ON FUTURE
ROADWAY PROJECTS

3.3 B



3.3 C



HOW TO BUILD COMPLETE STREETS: DESIGN CONCEPTS

4



The Built Environment

Roadway Network

**Components of the
Right-of-Way**

Design Guidance

Design Controls

How to Build Complete Streets: Design Concepts

This guide uses the following concepts as a basis for understanding Complete Streets design in rural communities:

THE BUILT ENVIRONMENT

We define the built environment as the human-made world around us: The homes we live in, the buildings we work in, the roads we travel upon, and the infrastructure that brings us clean water, electricity, and communications. Engineers, architects, planners, construction workers, elected officials, and community members affect the built environment through construction of new buildings, regulation of development patterns, and provision of transportation and utilities. The built environment is constantly changing to suit the needs of the people that live within it. As a population changes, transportation, housing, and commercial centers will grow or shrink to meet the demands of the community. Built environment patterns should be considered when planning for and designing Complete Streets.

In rural areas, towns are generally surrounded by agricultural or open space land uses. Land on the edge of towns is often the most affordable to develop, compared to land at the center of town, which can be constrained by existing buildings, or land farther out of town, which may not be connected to the sewer or electrical grid. Yet land on the edge of town is often the farthest from existing services and destinations, making it difficult for someone living on the edge of town to access those destinations on foot or bike. So, Complete Streets design, especially in rural areas encourages more concentrated development so people can walk or bike to destinations in a reasonable amount of time.

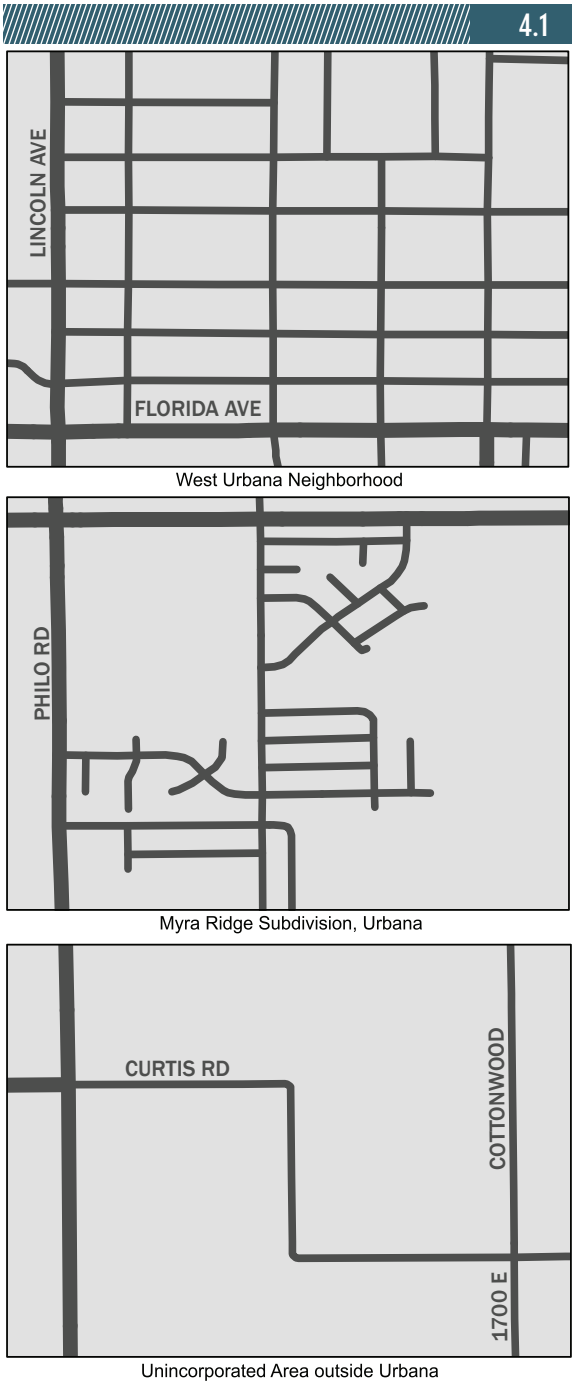
ROADWAY NETWORK

All transportation networks must provide access and connectivity to destinations. Trips begin with an origin, follow a route along an interconnected network of roadways, sidewalks, paths, or bikeways, and end at a destination. People and goods travel along the interconnected paths in order to arrive at their desired destination.

Networks are laid out in different patterns with varying levels of intersection frequency. Highly connected networks are laid out in a grid pattern, while networks with less connectivity are more likely to have a single main road with several local streets feeding off it.

In rural areas, road networks are designed to accommodate two types of trips, short trips within the town, and longer trips between towns.. Typically, roads providing connectivity within the town are designed for lower traffic volumes, and slower moving traffic. Whereas, roads providing connections between towns are designed for higher travel speeds and higher traffic volumes.

FIGURE 4.1
EXAMPLES OF
ROADWAY NETWORKS
Urbana, IL



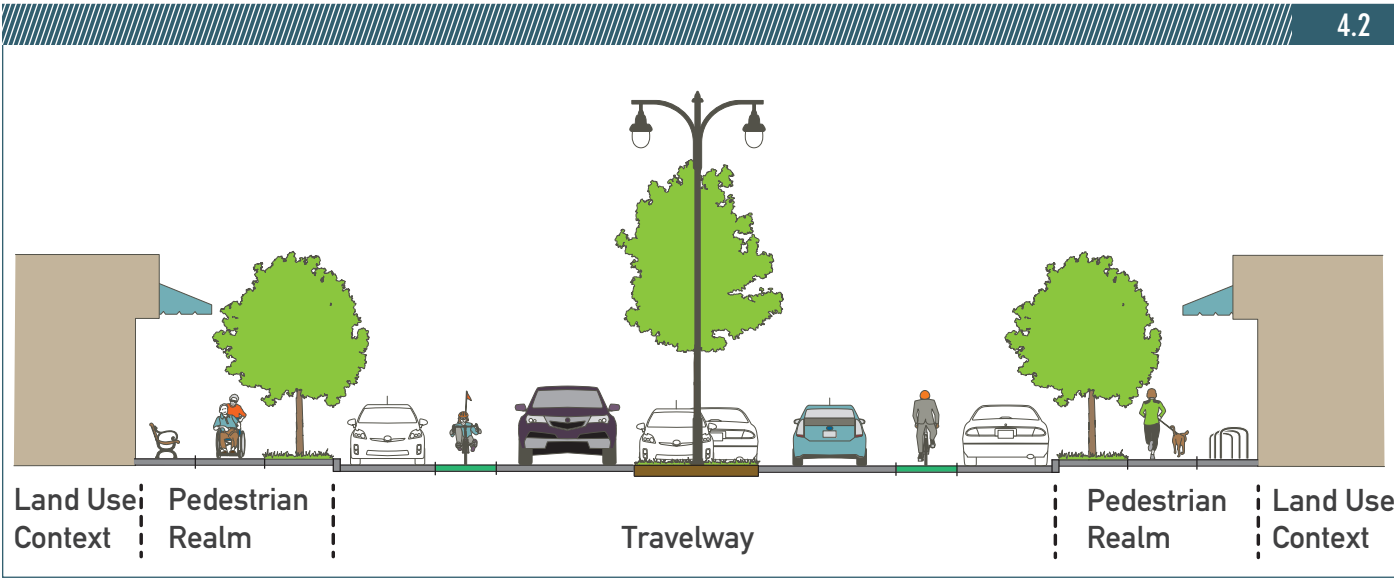


FIGURE 4.2
CROSS SECTION

FIGURE 4.3
PEDESTRIAN REALM
Monence, IL

FIGURE 4.4
PEDESTRIAN REALM
Grant Park IL



COMPONENTS OF THE RIGHT-OF-WAY

The right-of-way is publicly owned land maintained for the purpose of transporting people and goods. A Complete Street is comprised of multiple realms, and several zones within each realm. Each realm serves a different purpose and each zone provides travel space or a buffer for a specific mode.

LAND USE CONTEXT

Land Use context is the area outside of the public right-of-way. It consists of the buildings, parking lots, and landscaping that is privately owned and maintained, but accessed from the public right-of-way. Building size, placement and type of use can affect the number of people that want to walk or bike there.

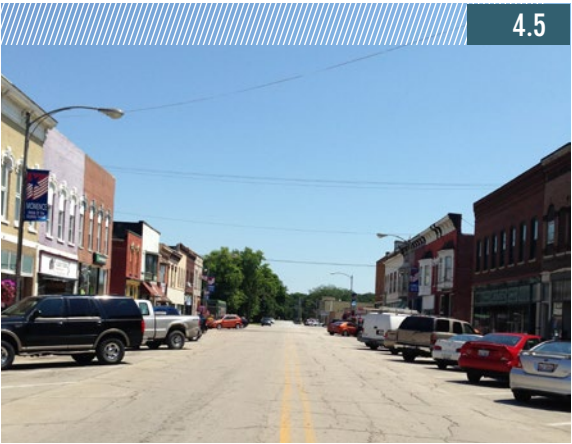
PEDESTRIAN REALM

The pedestrian realm is the area dedicated to travel for pedestrians. It has three main component zones:

FRONTAGE ZONE: The frontage zone is the outer most component of a cross section and is the area between the edge of the sidewalk and the edge of the public right-of-way.

PEDESTRIAN ZONE: The pedestrian zone is intended for people on foot, in wheelchairs, or pushing strollers, and should be clear of obstacles.

BUFFER ZONE: The buffer zone, also known as the curb zone or furniture zone serves as a buffer between pedestrians and moving traffic. Landscaping, utilities, bus shelters, and bicycle parking can be found in this area.



TRAVELWAY

The travelway is located between the curbs or shoulders, and allows for through movement of vehicles, including bicycles, cars, and trucks. It has three main component zones:

BIKEWAY: Bikeways are space for travel by people on bicycle. Depending on the roadway conditions, bike travel can occur in either a dedicated lane, on a shoulder, or in mixed traffic with slow moving cars.

PARKING: On-street parking provides a space for cars to park in the short term. Most commonly, parking is located on the outside edge of the travelway, but in some instances, on-street parking may act as a buffer between moving cars and bike travel.

VEHICLE LANE: Vehicle lanes are dedicated space for the movement of cars and trucks.

MEDIAN: Medians are located in the center of the roadway and allow for separation of each direction of travel and/or turn lanes. They may also accommodate crossing islands for pedestrians.

FIGURE 4.5
TRAVELWAY
Monence, IL

FIGURE 4.6
DESIGN GUIDES FOR
COMPLETE STREETS

DESIGN GUIDANCE

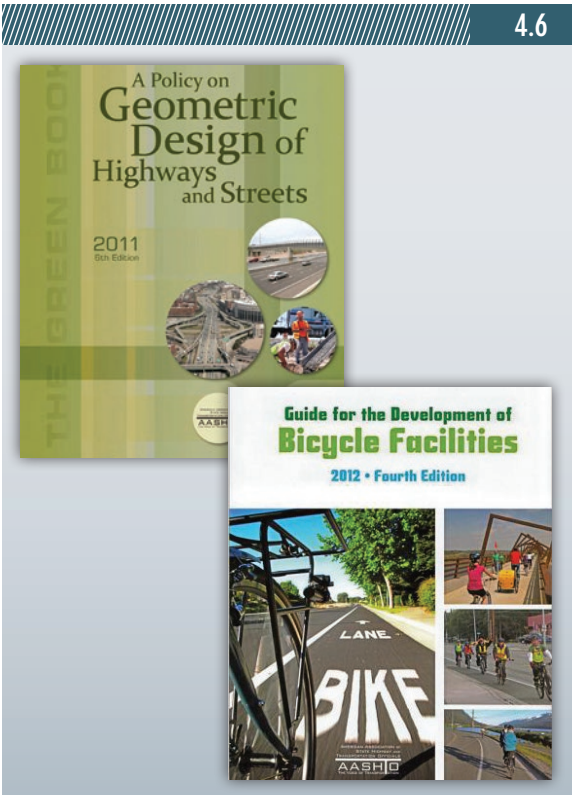
Street design standards are set by the public agency that funds, owns, and maintains a given roadway. In Illinois, most of the major roadways connecting cities and towns are owned and maintained by the Illinois Department of Transportation, yet municipalities, counties and townships receive funding from the State to support roadway maintenance. All state-funded roadway projects must generally conform to IDOT's design standards, however the agency may approve some design deviations when a municipality can demonstrate a need for more robust facilities to improve safety and access. IDOT uses two main design guides for roadway design and construction.

BUREAU OF DESIGN AND ENVIRONMENT MANUAL

This guide establishes policies and procedures for roadways under jurisdiction of the State of Illinois.

BUREAU OF LOCAL ROADS AND STREETS MANUAL

This guide establishes policies and procedures for roadways under the municipal, township and county jurisdiction



ROADWAY DESIGN GUIDANCE

Roadway design guidance issued in Illinois is based on research and federal guidance developed by Federal transportation agencies such as Federal Highway Administration (FHWA), the American Association of State Highway and Transportation Officials (AASHTO), and the National Association of City Transportation Officials (NACTO). The following design guides represent national best practices for bicycle and pedestrian design and may be more accessible to a reader without an engineering background:

NACTO Urban Bikeway Design Guide

NACTO Urban Street Design Guide

AASHTO Guide for the Development of Bicycle Facilities

AASHTO Guide for the Planning, Design, and Operation of Pedestrian Facilities

DESIGN CONTROLS

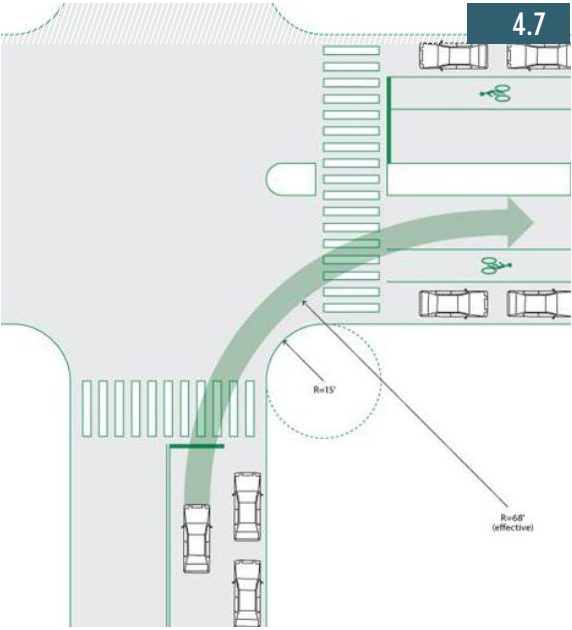
Design controls are the parameters around which engineers select geometrics for roadways. These parameters may be different for each project, but should generally reflect community-wide goals and standards. Selecting the smallest possible design vehicle and lowest speed supports bicycle and pedestrian mobility.

FUNCTIONAL CLASSIFICATION

Functional classification is a system of grouping roadway based on desired attributes for automobiles; vehicle speed, traffic volume, length of roadway, and accessibility of adjacent land uses. The three most common functional classifications in order from highest motorized vehicle capacity to lowest are arterial, collector, and local.

DESIGN VEHICLE

A design vehicle is the vehicle-type for which an engineer selects geometrics for lane widths and turning radii for a given project. Larger vehicles require wider turning radii than smaller vehicles do. However, a wider turning radius can encourage all traffic to speed around corners, creating unsafe crossing conditions for pedestrians. While the conventional approach would be to promote maximum vehicular throughput by selecting a large design vehicle, the Complete Streets approach is to use a smaller design vehicle, such as a delivery truck, whenever possible based on the land use context.



TARGET SPEED

Target Speed is the speed at which vehicles should operate on a thoroughfare in a specific context, consistent with the level of multimodal activity generated by adjacent land uses to provide both mobility for motor vehicles and a safe environment for pedestrians and bicyclists.

DESIGN SPEED

Design speed is the speed at which the road is designed to be driven upon. It is usually derived from policy or standards set by the roadway jurisdiction. Roadway geometrics --such as lane widths and turning radius-- can inadvertently encourage people to drive faster than the posted speed limit by permitting wider lanes and wider turning radii than necessary to allow driving at the posted speed limit. Design speed should be selected so drivers naturally drive at the posted speed limit.

FIGURE 4.7
DESIGN VEHICLES
INFLUENCE
TURNING RADIUS
AND PEDESTRIAN
CROSSING
Source: NACTO
Streetscape
Design Guide

CONTEXT SENSITIVE DESIGN

5



Land Use in a Rural
context

Development Pattern
Intensity

Roadway Typology

Modal Prioritization

Developing the Cross
Section

Boulevard Cross
Sections

Avenue Cross Sections

Street Cross Sections

Context Sensitive Design

Context Sensitive Design is the practice of creating designs based on routine considerations for the places adjacent to the roadway, the people that use it, and how the roadway serves the needs of the community. This strongly growing practice is unique from the traditional approach to roadway design which typically over all other considerations.

Context Sensitive Design applies an “outside-in” approach. This means beginning a design project by first identifying the types of destinations and land uses “outside” the travelway, as well as why, how, and how many people will need to access them. Then, shift focus toward the “inside” the public right-of-way, consider the transportation modes people are likely to use and any local goals for modeshare or modeshift. Finally, select a roadway typology as a guide for allocating right-of-way based on the land use and modal priorities. This is unlike the traditional approach in which designers begin their considerations at the street centerline, first setting the number and width of vehicle travel lanes, and then only considering parking, bikeways, and pedestrian ways when additional right-of-way is leftover.

In rural areas, context can dramatically affect roadway design. A two lane road connecting two small villages is likely to have some, but not many bike or pedestrian trips, so a paved shoulder between the travel-way and a drainage ditch can accommodate the few bike and pedestrian trips made between the towns, making the roadway safer and more accessible for all users –especially the economically disadvantaged. Whereas, that same road may go through the center of a business district, where a person might bike to the district, park and then walk between the businesses. To safely accommodate travel within that business district, wider sidewalks, parking and crosswalks would need to be included as part of the roadway design for that roadway to be considered a Complete Street.

The following chapter outlines the steps for developing Complete Streets designs in rural areas.

- 1. Identify land use context
- 2. Identify intensity of the development pattern
- 3. Select roadway typology
- 4. Select modal priority
- 5. Develop cross-section

Each section describes how context influences transportation design, and how roads, even those with the same amount of right of way can look very different, depending on which modes are prioritized in the roadway design.

For more details on how to select facilities for roadway design, see Complete Streets, Complete Networks Chapters 3, Geometrics: Components for Assembling Complete Streets and Chapter 4, Amenities: Components for Assembling Complete Streets.

These chapters are collections of best practices for design elements to include in roadways. They include sections on both “Getting Started” and “Going the Distance,” which describe approaches for communities that are committed to building Complete Streets, and include cutting-edge approaches now in use across the country.



FIGURE 5.1
RESIDENTIAL
LAND USE
Grant Park, IL



FIGURE 5.2
RESIDENTIAL
LAND USE
Morris, IL



FIGURE 5.3
RESIDENTIAL
LAND USE
Manteno, IL

LAND USE IN A RURAL CONTEXT

Land use helps the roadway designer understand the number or trips, mode share, and time of day for trips generated by the buildings and destinations adjacent to a roadway. The most common types of land uses found in rural areas are listed below.

RESIDENTIAL

Residential areas are characterized by the presence of housing units. The single family home located on an individual parcel of land is the most common type of residential land use in rural areas. However, all types of housing; single family house, townhome, multi-family apartments and condominiums, and mobile homes are all considered residential land uses.

Schools, houses of worship, small parks, and community centers are also frequently located in residential areas.

FIGURE 5.4
COMMERCIAL
LAND USE
Morris, IL



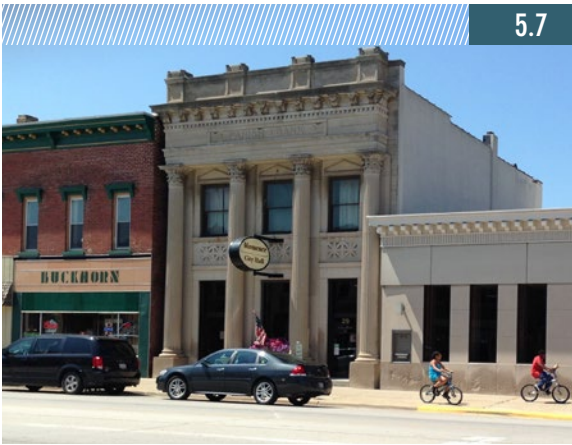
FIGURE 5.5
COMMERCIAL
LAND USE
Morris, IL



FIGURE 5.6
COMMERCIAL
LAND USE
Grant Park, IL

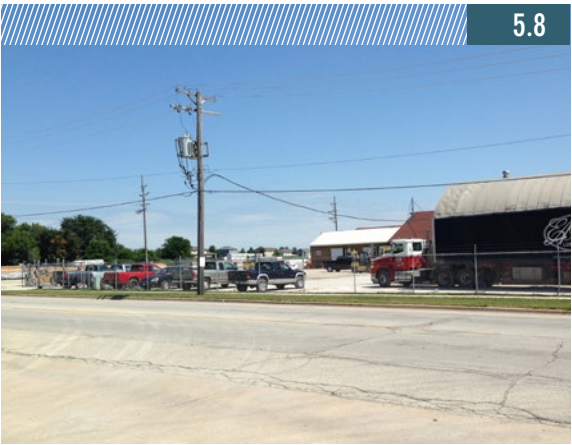


FIGURE 5.7
COMMERCIAL
LAND USE
Monence, IL



COMMERCIAL

Commercial land use refers to both office and retail uses. Towns in rural areas are likely to have a Main Street commercial district with small offices, stores, restaurants, bars, and entertainment venues. Larger rural towns may also have strip-center style development, office parks, or big box retail corridors that draw customers and employees from outside the town.



INDUSTRIAL

Industrial land uses include warehousing, manufacturing, processing, and shipping. These types of uses can be loud and generate odor, so they are rarely located near residential areas. Some of these facilities operate 24 hours with employees and trucks arriving and departing at all times of day. Although truck mode share is relatively high in this type of land use, employees, especially lower paid employees may be arriving on foot or bike.

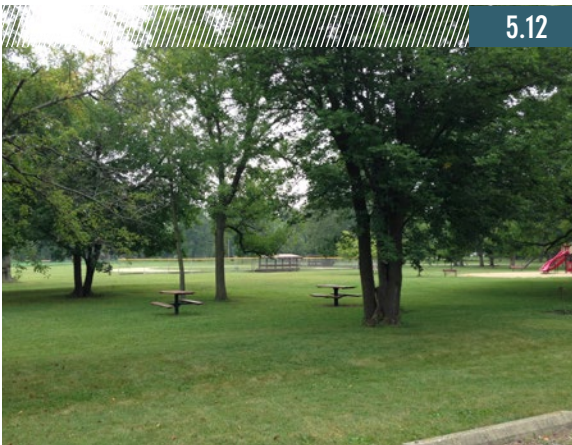
FIGURE 5.8
INDUSTRIAL LAND USE
Monence, IL

FIGURE 5.9
INDUSTRIAL LAND USE
Grant Park, IL

FIGURE 5.10
INDUSTRIAL LAND USE
Dwight, IL

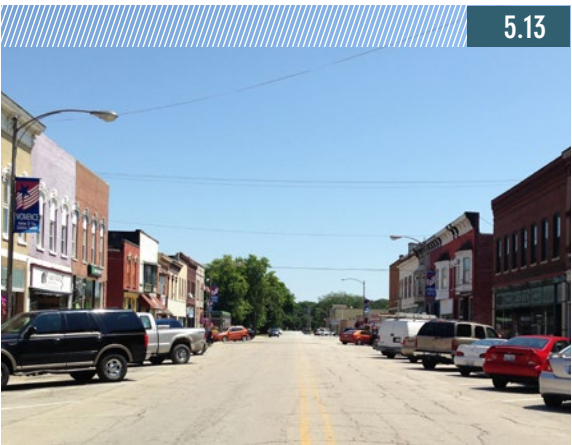
FIGURE 5.11
OPEN SPACE
Morris, IL

FIGURE 5.12
OPEN SPACE
Dwight, IL



OPEN SPACE

Open space land uses refer to areas with few buildings or structures, such as parks, forests, gardens, and agricultural land. When located within a town, recreational spaces in particular may attract visitors arriving on foot or bike. Open space, especially agricultural land, outside of a town may generate trips on less conventional modes such as horses or farm equipment.



OVERLAYS

An overlay is a district or area with a general, unifying purpose and special provisions to support it. For example, a college campus will have dorms (residential), classrooms and offices (commercial), and a sports field (open space), and may need to design wider sidewalks and pedestrian paths to allow for travel around campus.

FIGURE 5.13
HISTORIC OVERLAY
DISTRICT
Momence, IL

SUMMARY OF DEVELOPMENT PATTERN INTENSITIES AND COMMON ATTRIBUTES IN RURAL AREAS

Development Pattern intensity	Common land uses	Separation between buildings	Road Network	Intersection Density	Sewer Connectivity	Transit Present
Low	Agricultural, forest, prairie	High	Sparse, disconnected	Low	Septic	None, dial a ride
Medium	Large lot single family residential, big box retail	Medium	Sprawling, somewhat connected	Medium	Sewer or septic	Limited, fixed route or dial a ride
High	Small lot single family residential, Multi family, entertainment/ cultural,	Low	Gridded, highly connected	High	Sewer	Fixed route

DEVELOPMENT PATTERN INTENSITY

Compete Streets Design Manuals use a land use model called the transect, to describe intensity of land use and development pattern. The transect uses the built form; building height, setback, space between buildings and roadway network design to describe the levels of land use intensity. Transects usually occur in six categories, T1 to T6 which represent the spectrum of land uses from extremely rural low density development (T1) to extremely dense, urban development patterns (T6).Transects can be customized to local development patterns.

This guide has adapted the transect concept and calibrated it for rural Illinois, making it unique from its original framework developed by the Congress for New Urbanism and the Institute of Transportation Engineers. Typically, terms like urban, suburban, and rural are used to describe the development patterns within the transect, but as this guide is intended only for rural areas, the following terms will be used:

LOW INTENSITY

Low intensity development patterns are located outside of a town. Development would be extremely sparse with just a few residences or businesses surrounded by agricultural or natural land. Nearby buildings are separated by hundreds of feet, and few, if any destinations can be reached on foot in less than 10 minutes. Most buildings are on a septic system, and are not located within an incorporated municipality. The roadway network is extremely sparse. Examples: farmhouse, grain silo, roadside fruit stand.

MEDIUM INTENSITY

Medium intensity development patterns are located on the edge of a town. Development is characterized by long, wide setbacks, one or two story buildings with parking lots in front or on the side of the building. Adjacent buildings can be reached in less than 2 minutes walking. Buildings may be on septic or sewer. This pattern can be found either on the outside edge of an incorporated area, or just outside of the incorporated area. The roadway network is often set up in a pattern of curvilinear streets with long blocks and infrequent intersections. Examples: farmettes, large lot subdivisions, big box stores, industrial parks, truck stops.

HIGH INTENSITY

High intensity development patterns are located in the center of a town. Development is characterized by limited setbacks, buildings can be multi-story, and many buildings can be reached within a 10 minute walk. The roadway network is often set up in a grid pattern with short blocks and frequent intersections. All buildings are connected to sewer and are located in incorporated areas. In larger towns and cities, fixed route transit service can be found in these areas.

Examples: small lot subdivisions, business districts, apartment complexes, mixed use buildings.

OVERLAY ZONES

Place overlays, also called special districts, are intended to accommodate and create special design considerations for specific areas with a unique character or identity. Two of the most common overlays for rural areas are listed below.

CAMPUS OVERLAY

The campus overlay can be applied to a set of buildings all owned or maintained by a single agency, where many visitors or employees arrive on the campus and then may visit multiple buildings in or around the campus in a single day. Walking and biking mode share in and around campuses is often higher than other parts of town. Examples include college campuses, medical campuses, and government complexes.

MAIN STREET OVERLAY

The main street overlay can be applied to traditional business districts. Buildings in these districts are usually zoned for commercial or mixed use, with wide sidewalks, no setbacks, and on-street parking. These districts sometimes have a chamber of commerce that will coordinate unique signage and street furniture to identify the business district and set it apart from other community areas. Often, a Main Street business district will be surrounded by relatively higher intensity land uses.

SUMMARY OF LAND USE INTENSITIES AND COMMON ATTRIBUTES IN RURAL AREAS

Roadway type	Vehicle Capacity	Design Speed	Mode Separation	Level of connectivity
Boulevard	High	High	High	Town to town
Avenue	Medium	Medium	Medium	Cross town
Street	Low	Low	Low	Neighborhood

ROADWAY TYPOLOGY

The roadway typology will help to determine appropriate modal facilities and allocation of right-of-way. To select a roadway typology, review the existing conditions: functional classification, modal accommodations and context zones.

The roadway typologies described here provide mobility for all modes of transportation, with a greater focus on the most vulnerable users; pedestrians and cyclists. They are meant to broaden the design process by going beyond traditional design considerations such as traffic volume and vehicle speed in order to ensure the creation of Complete Streets. Designers should recognize the need for greater flexibility in applying design criteria, based on context and the need to create a safe environment for all roadway users.

MODAL PRIORITIZATION

Modal prioritization provides an alternative to traditional methods of roadway design optimization measures, such as vehicular capacity and Level of Service (LOS). Modal priority guidelines can assist the application of engineering judgment to design decisions.

All modes should be considered in a Complete Street. However, many Complete Streets will require retrofitting the existing roadway network and force designers to address trade-offs between competing priorities. Each mode can be assigned a different priority on each corridor, based on the context zone, street typology and desired outcomes.

This guide recommends prioritizing the most vulnerable roadway users when designing roads to support safety, public health, modeshift, and to increase trip capacity. In areas with higher intensity uses and buildings closer together, the pedestrian should be prioritized, and in areas with lower intensity uses, and buildings farther apart, the bicyclist should be prioritized.

The following are basic design considerations for each mode.



WALKING

Pedestrians are the most vulnerable roadway users and require the most separation from motorized traffic. Sidewalks within the right-of-way should be at least 5 feet wide, paved and separated from the travelway by a buffer of at least 5 feet. This width meets national standards for accessibility and will reasonably accommodate two people walking side by side or passing one another. Pedestrians may also be accommodated on multi-use paths shared with bicyclists if the path is at least 8 feet wide, or on paved shoulders in areas with few pedestrian trips.

Sidewalks intended for pedestrian transportation should always be designed parallel to the roadway to allow for the most direct pedestrian trip.



BICYCLING

Bicycling and designing for bicycle travel has evolved significantly since bikeways were first included to modern transportation design, in the 1970s. Some cyclists feel safe comfortable sharing the road with cars, while others prefer separation.

On low speed, low volume roadways, bicyclists can share the road with cars without requiring physical separation from motorized traffic. On moderate speed, moderate volume roads, bicyclists prefer a marked or painted separation such as a 5 feet wide bike lane or 6-7 feet wide buffered bike lane with 4-5 feet marked for through bicycle travel, and a painted buffer separating the cyclists from traffic and/or on-street parking. On higher speed, higher volume roadways, safe cycling requires physically separated bikeways, either designed as a barrier protected bike lane using on-street parking and/or curbs to separate motorized and bike traffic, or an 8-10 feet multi-use path shared with pedestrian. In areas with low intensity development patterns, a 4 foot paved shoulder (without rumble strips) can accommodate bike travel. Although these areas may include faster vehicle speeds, lower traffic volume will make it possible for motorists to pass cyclists safely.



AUTO

Motor vehicles are an essential part of the Complete Streets network, but they should not be the only mode considered in network optimization. Car travel lanes should be 10-11 feet wide, and as narrow as 9 feet in low volume, low speed development patterns. On designated truck routes and in industrial areas with a high share of freight traffic, travel lanes should be 12 feet. Wide vehicle lanes (13 feet or greater) with moderate vehicle speeds and traffic volumes may be re-stripped to include shared lane markings or bike lanes.



TRANSIT

Larger towns in rural areas may have a bus system. Because all transit trips begin and end with walking, and many bus riders will need to cross the street to reach their destination, or on their return trip, bus routes are likely to have a higher number of pedestrians present. Design consideration on bus routes include a wider travel lane 11 feet and shelter, bench and signage placement that does not interfere with pedestrian travel. In denser areas, space for a bus bump out in the parking lane or pull off into the buffer zone may be appropriate.



OTHER MODES

FREIGHT

Freight traffic, especially large trucks require additional travel lane width. On designated truck routes, at least one travel lane should be 12 feet wide.

FARM EQUIPMENT

Farm equipment travels slowly and may be wider than a typical automobile. On roadways where farm equipment is expected frequently, consider including 8 feet wide shoulders, or include pull offs to allow faster moving traffic to pass the farm equipment.

HORSES

Horse and buggy is a culturally distinct mode of travel in select rural areas. Typical carriages are 6 feet wide and require 8 feet of travelway. Consider a paved or aggregate shoulder to accommodate horse-powered travel.

Land Use Context + Development Pattern Intensity + Roadway = Cross Section

DEVELOPING THE CROSS SECTION

The cross section is an illustration of right-of way allocations and lane configurations for a roadway . Follow the steps listed below to build a cross section using the design principles outlined in this guide, follow the steps listed below. . Right-of-way tables and sample cross sections have been included in the back of this chapter to illustrate ideal conditions for building Complete Streets in rural communities.

1 STEP 1: IDENTIFY LAND USE CONTEXT

Visit the project site and observe the types of buildings, size of buildings, and uses for the buildings. Research the existing zoning and long-range plans that may influence buildings and uses along the corridor. Decide which land use description is most appropriate for the project area: residential, commercial, industrial, open space, or overlay.

2 STEP 2: IDENTIFY DEVELOPMENT PATTERN INTENSITY

Use a map of the town along with your observations and research of existing and planned conditions within the study area to select development pattern intensity. Decide which land use pattern is most appropriate for the project area: low, medium, or high intensity.

3 STEP 3: SELECT ROADWAY TYPOLOGY

Consider the current uses and travel patterns along the corridor as well as future plans and development to select a roadway typology. Decide which street typology is most appropriate for current and planned roadway operations: boulevard, avenue, or street typology. Locate the right-of-way table for this roadway typology.

4 STEP 4: SELECT A CROSS SECTION

Using the right-of-way table for your selected roadway typology, find the row that corresponds to your land use and intensity. Use the dimensions within that row as your baseline for an ideal cross section. Find the corresponding illustration for this cross section to visualize the ideal condition.

5 STEP 5: NOTE MODAL PRIORITY

Each row in the right-of-way table has a default modal priority. This guides which modes of travel should be considered first when designing the roadway. Modal priority can be used to guide tradeoffs in the design process.

6 STEP 6: ADJUST CROSS SECTION FOR ON THE GROUND CONDITIONS

The ideal cross section may not always be achievable given your project type and other factors. Refer to section 3.A for information on how project types impact opportunities for accommodating different modes.

7 STEP 7: CONSIDER HOW TO POPULATE THE CROSS SECTION

In addition to the sample cross sections provided in back of this chapter, details about how each travel mode can be accommodated through facilities and amenities that meet the needs of each mode can be found in Complete Streets, Complete Networks Chapters 3, Geometrics: Components for Assembling Complete Streets and Chapter 4, Amenities: Components for Assembling Complete Streets.

Every project is an opportunity to improve safety and access for people on foot, on bike, or using transit. Even though not all project types allow for the construction of ideal conditions for Complete Streets, small-scale improvements can make a significant difference for people using the roadway.

BOULEVARD

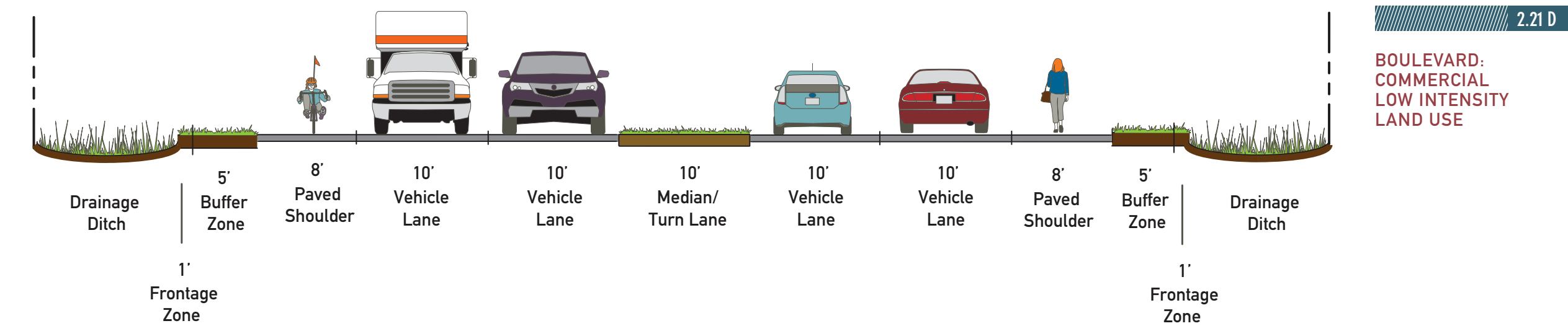
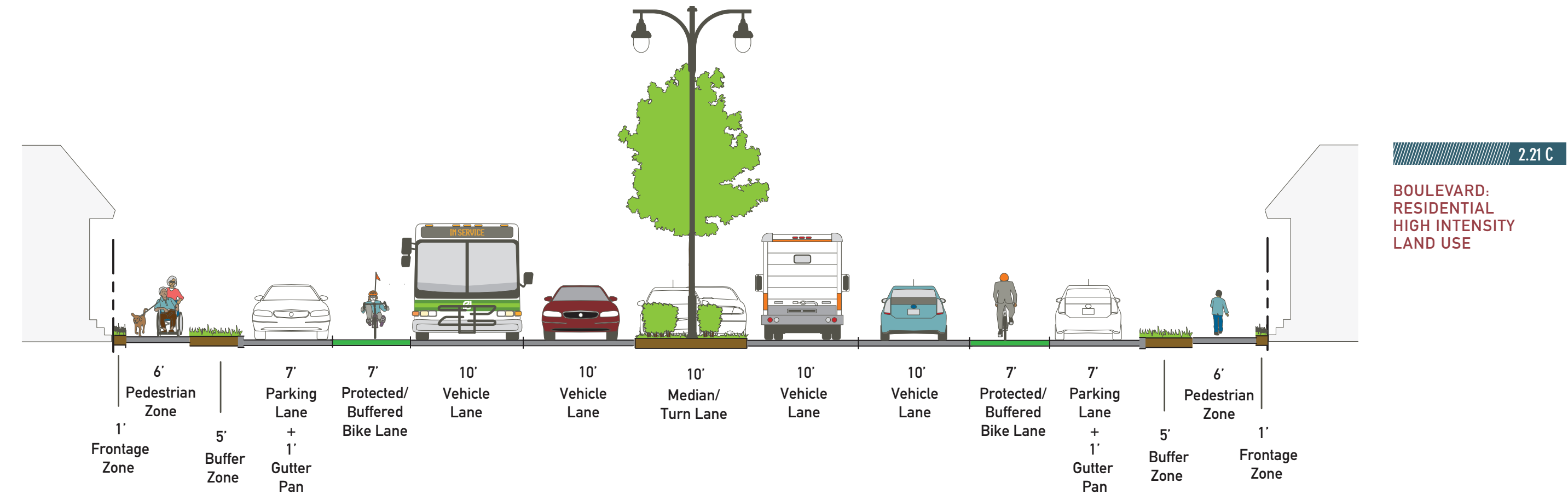
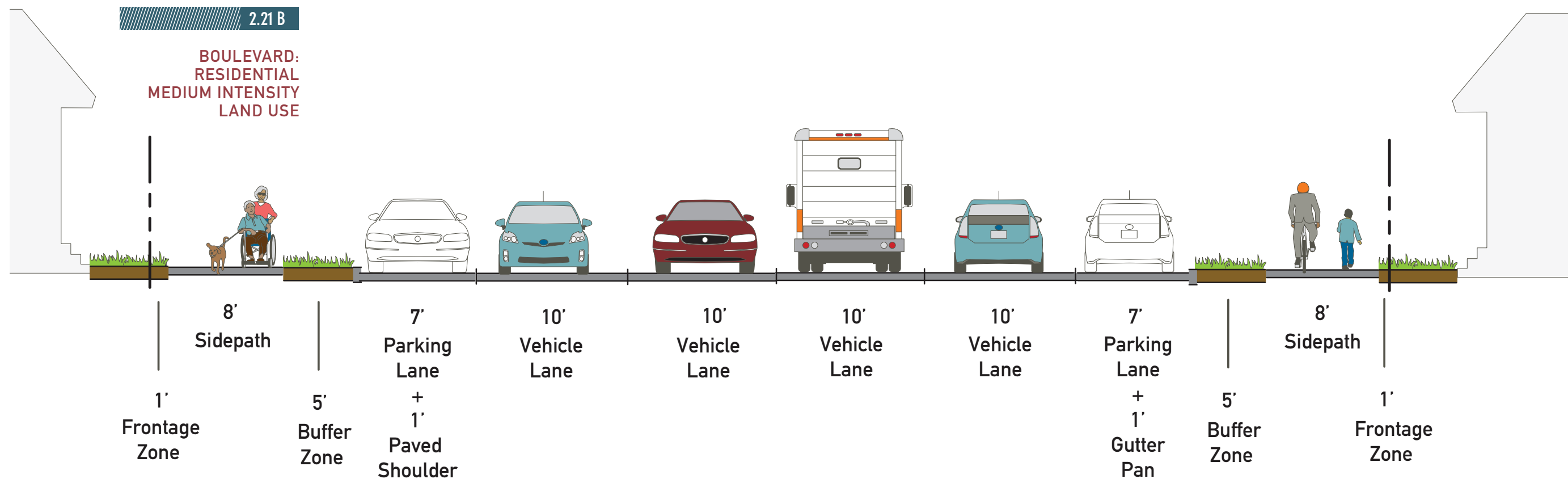
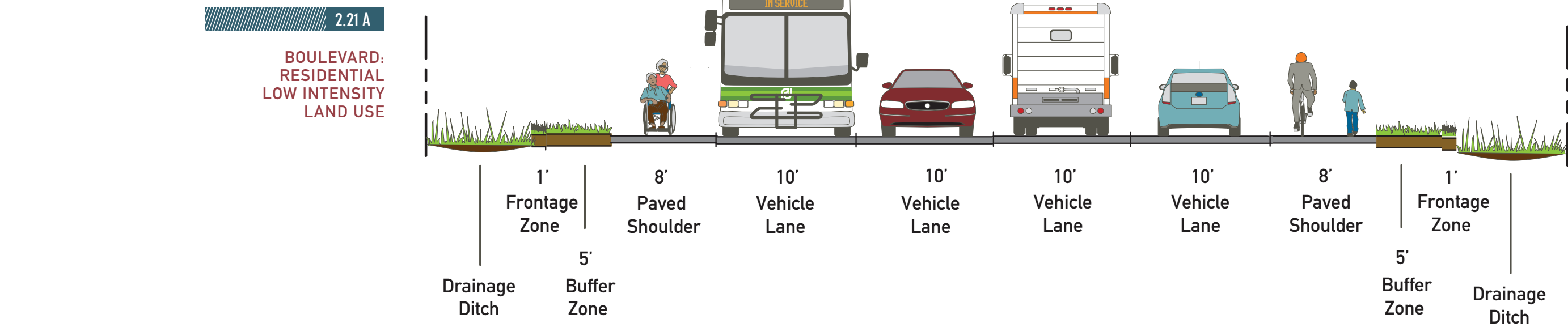
A boulevard is a roadway designed for higher vehicle capacity and moderate speed, traversing an urbanized area. Due to higher speed and traffic volumes, greater separation between motorized and non-motorized traffic is needed. In areas with a high intensity development pattern, a sidepath, protected bike lane, and/or sidewalk with an extra wide buffer zone are appropriate. In areas with a lower intensity development pattern, where there are fewer bike and pedestrian trips, a wider shoulder is appropriate. Boulevards often have relatively few pedestrian and bike trips, but in areas with sprawling or disconnected roadway networks, they are usually the most direct or only route between two destinations. To promote community access and safety, boulevards merit accommodations for all types of travel modes.



FIGURE 5.19 BOULEVARD Morris, IL

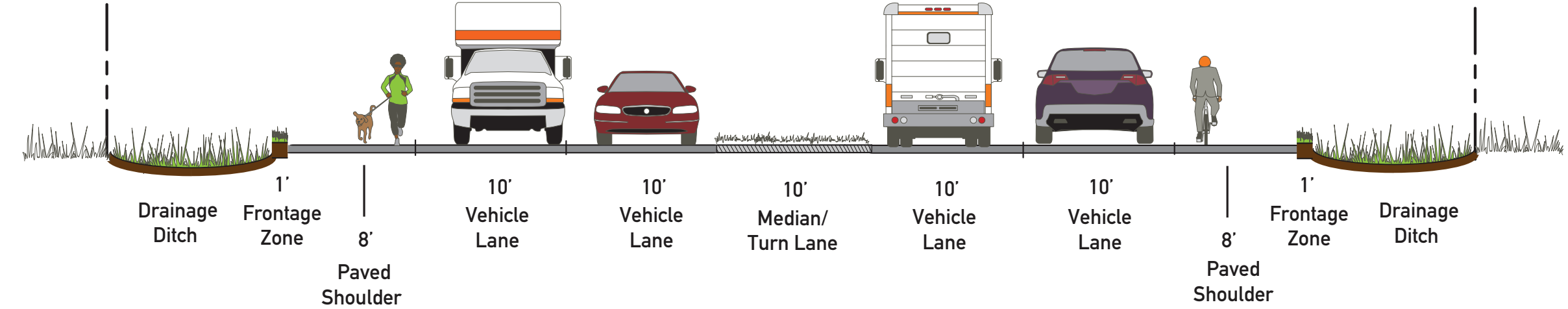
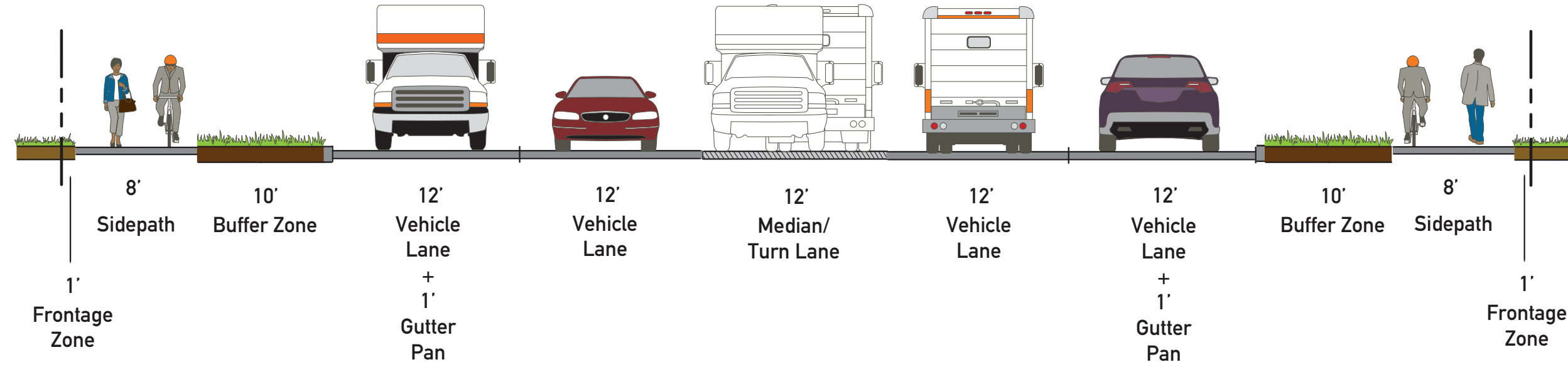
FIGURE 5.20 BOULEVARD Momence, IL

BOULEVARD		Mode Priority					Pedestrian Realm					Travelway							Totals For Each Realm						
		Mode Priority					Drainage Ditch	Frontage	Pedestrian Zone	Buffer Zone	Curb Zone/Shoulder		Parking Lanes (Width)	Bikeway (Width)	Bikeway Type	Vehicle Lane (Width)	Vehicle Lanes	Median / Turn Lane (Width)	Pedestrian Realm Total		Travel Way Realm Total		Total Public ROW		drainage?
		First	Second	Third	Fourth	Other Considerations	Yes/No	min	min	min	Curb/Shoulder	Gutter Pan	min	min		min			min	max	min	max	min	max	
Land Use	Intensity																								
Residential	1	Bike	Walk	Transit	Auto	farm equipment, horses	Yes	1	0	5	8	0	0	0	Paved Shoulder	10	4	0	12		56		68		
	2	Walk	Bike	Transit	Auto	farm equipment, horses	Maybe	1	8	5	0.5	1	7	0	Sidepath	10	4	0	28		55		83		
	3	Walk	Bike	Transit	Auto	farm equipment, horses	No	1	6	5	0.5	1	7	7	Buffered or Protected Bike Lane	10	4	10	24		79		103		
Commercial	1	Bike	Walk	Transit	Auto	freight, farm equipment, horses	Yes	1	0	5	8	0	0	0	Paved Shoulder	10	4	10	12		66		78		
	2	Walk	Bike	Transit	Auto	freight, farm equipment, horses	No	1	8	5	0.5	1	7	0	Sidepath	10	4	10	28		65		93		
	3	Walk	Bike	Transit	Auto	freight, farm equipment, horses	No	1	8	5	0.5	1	7	7	Buffered or Protected Bike Lane	10	4	10	28		79		107		
Industrial	1	Bike	Walk	Auto	Transit	freight, farm equipment, horses	Yes	1	0	5	8	0	0	0	Paved Shoulder	12	4	0	12		64		76		
	2	Bike	Walk	Auto	Transit	freight, farm equipment, horses	Yes	1	5	5	4	0	0	0	Paved Shoulder	12	4	12	22		68		90		
	3	Walk	Bike	Auto	Transit	freight, farm equipment, horses	No	1	8	10	0.5	1	0	0	Sidepath	12	4	12	38		63		101		
Open Space	1	Bike	Walk	Transit	Auto	farm equipment, horses	Yes	1	0	0	4	0	0	0	Paved Shoulder	10	4	0	2		48		50		
	2	Bike	Walk	Transit	Auto	farm equipment, horses	Yes	1	0	0	8	0	0	0	Paved Shoulder	10	4	10	2		66		68		
	3	Walk	Bike	Transit	Auto	farm equipment, horses	No	1	8	10	0.5	1	0	0	Sidepath	10	4	10	38		53		91		
Overlays																									
Campus		Walk	Bike	Transit	Auto	Scooter, skateboard,	No	1	10	5	0.5	1	0	8	Buffered or Protected Bike Lanes	10	4	10	32		69		101		
Main Street		Walk	Bike	Transit	Auto	freight	No	2	8	10	0.5	1	7	8	Buffered or Protected Bike Lanes	10	4	10	40		85		125		



2.21 I

BOULEVARD:
INDUSTRIAL
HIGH INTENSITY
LAND USE

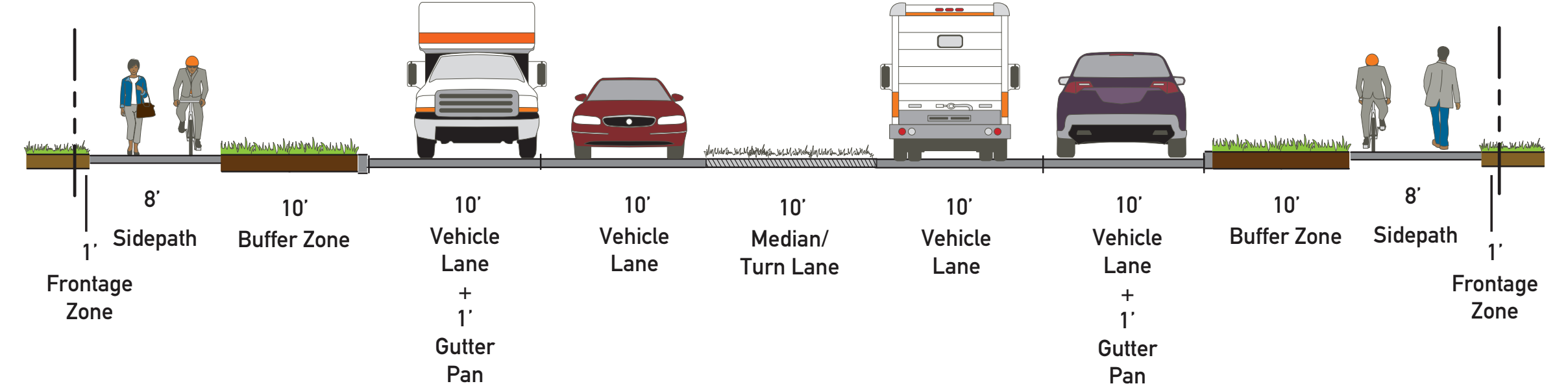
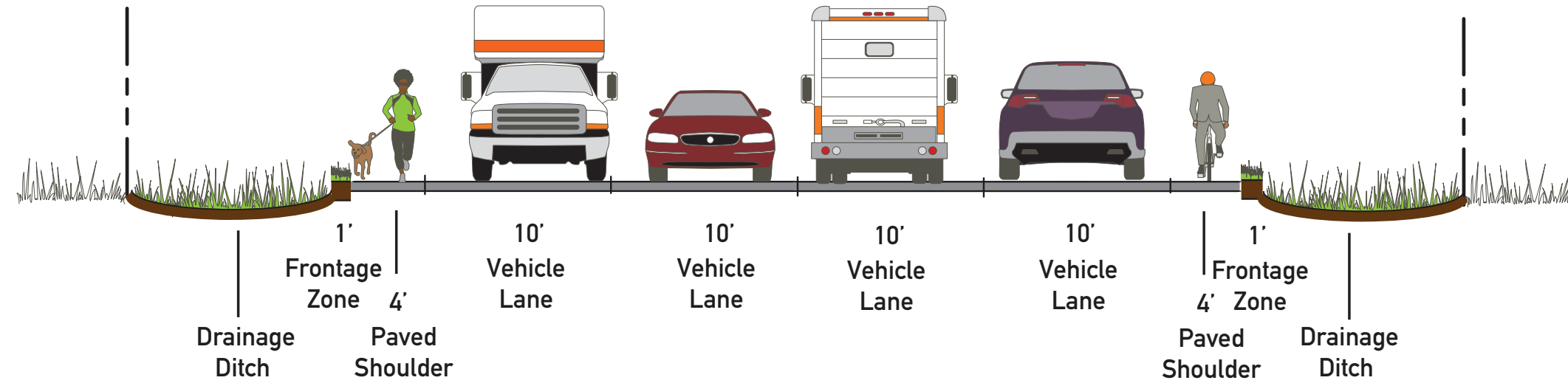


2.21 K

BOULEVARD:
OPEN SPACE
MEDIUM INTENSITY
LAND USE

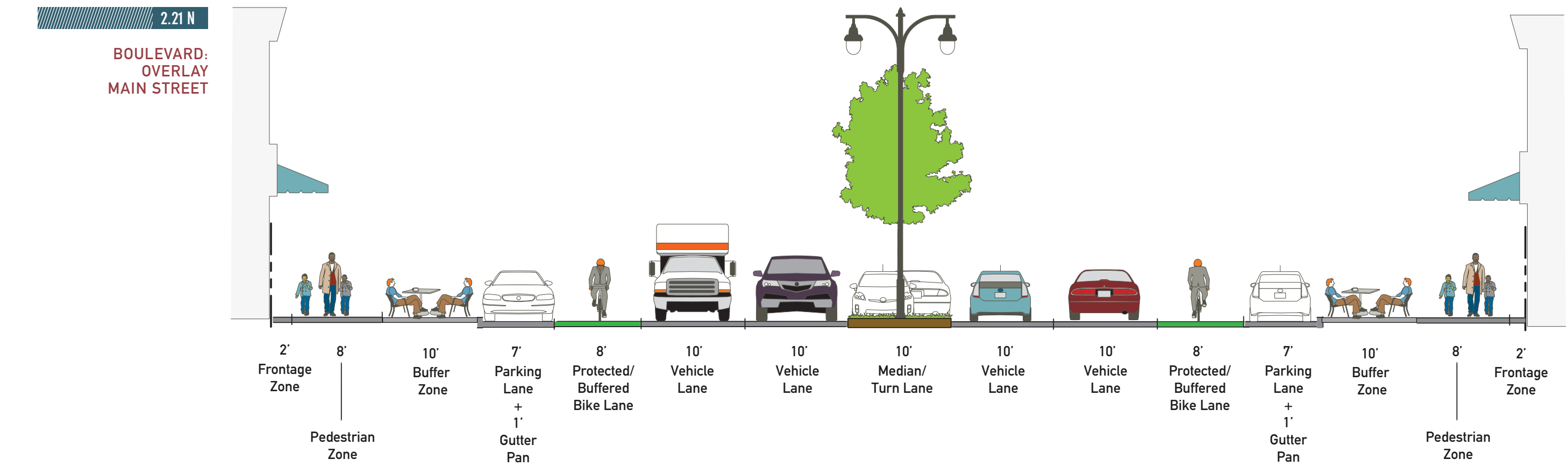
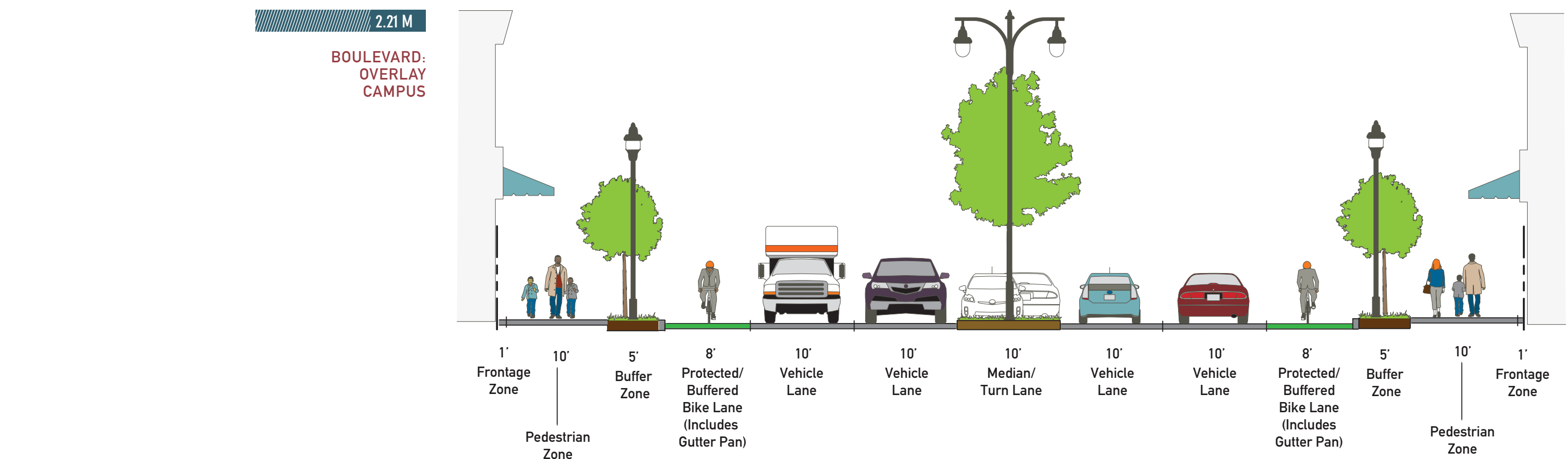
2.21 J

BOULEVARD:
OPEN SPACE
LOW INTENSITY
LAND USE



2.21 L

BOULEVARD:
OPEN SPACE
HIGH INTENSITY
LAND USE



AVENUE

An avenue is a roadway of moderate to high vehicular capacity and low to moderate speed. Delineation between motorized and non-motorized traffic is needed. In higher intensity development patterns, on-street parking, traditional or buffered bike lanes, and sidewalk with some buffer from the travelway is appropriate. In areas with lower intensity development patterns, a paved shoulder may be appropriate.



FIGURE 5.22
AVENUE
Manteno, IL

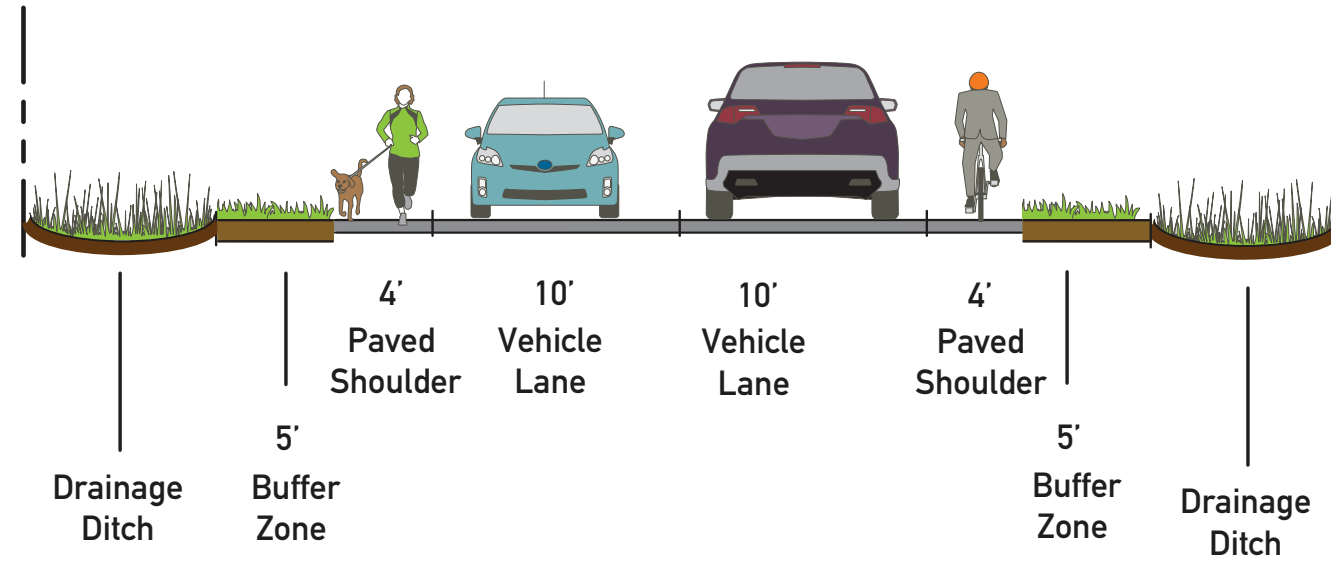
FIGURE 5.23
AVENUE
Dwight, IL

FIGURE 5.24
AVENUE
Lowell, IN

AVENUE		Mode Priority					Pedestrian Realm					Travelway							Totals For Each Realm							
		Mode Priority					Drainage Ditch	Frontage	Pedestrian Zone	Buffer Zone	Curb Zone/Shoulder		Parking Lanes (Width)	Bikeway (Width)	Bikeway Type	Vehicle Lane (Width)	Vehicle Lanes	Median / Turn Lane (Width)	Pedestrian Realm Total		Travel Way Realm Total		Total Public ROW		drianage?	
		First	Second	Third	Fourth	Other Considerations	Yes/No	min	min	min	Curb/Shoulder	Gutter Pan	min	min		min			min	max	min	max	min	max		
Land Use	Intensity																									
Residential	1	Bike	Walk	Transit	Auto	farm equipment, horses	Yes	0	0	5	4	0	0	0	Paved Shoulder	10	2	0	10		28		38			
	2	Walk	Bike	Transit	Auto	farm equipment, horses	Maybe	1	5	5	0.5	1	7	5	Bike Lanes	10	2	0	22		45		67			
	3	Walk	Bike	Transit	Auto	farm equipment, horses	No	1	6	5	0.5	1	7	5	Bike Lanes	10	2	0	24		45		69			
Commercial	1	Bike	Walk	Transit	Auto	freight, farm equipment, horses	Yes	1	0	5	4	0	0	0	Paved Shoulder	10	2	0	12		28		40			
	2	Walk	Bike	Transit	Auto	freight, farm equipment, horses	No	1	8	5	0.5	1	0	0	Sidepath	11	2	10	28		35		63			
	3	Walk	Bike	Transit	Auto	freight, farm equipment, horses	No	1	8	5	0.5	1	7	7	Buffered or Protected Bike Lanes	10	2	10	28		61		89			
Industrial	1	Bike	Walk	Auto	Transit	freight, farm equipment, horses	Yes	1	0	5	10	0	0	0	Paved Shoulder	12	2	0	12		44		56			
	2	Bike	Walk	Auto	Transit	freight, farm equipment, horses	No	1	8	5	0	0	0	0	Sidepath	12	2	12	28		36		64			
	3	Walk	Bike	Auto	Transit	freight, farm equipment, horses	No	1	5	5	0.5	1	0	7	Buffered or Protected Bike Lanes	12	2	12	22		51		73			
Open Space	1	Bike	Walk	Transit	Auto	farm equipment, horses	Yes	1	0	5	4	0	0	5	Bike Lanes	10	2	0	12		38		50			
	2	Bike	Walk	Transit	Auto	farm equipment, horses	No	1	5	5	0	0	7	5	Bike Lanes	10	2	0	22		44		66			
	3	Walk	Bike	Transit	Auto	farm equipment, horses	No	1	5	10	0.5	1	7	6	Bike Lanes	10	2	0	32		47		79			
Overlays																										
Campus		Walk	Bike	Transit	Auto	Scooter, skateboard,	No	1	10	5	0.5	1	0	7	Buffered or Protected Bike Lanes	10	2	0	32		37		69			
Main Street		Walk	Bike	Transit	Auto	freight	No	2	8	5	0.5	1	7	5	Bike Lanes	10	2	10	30		55		85			

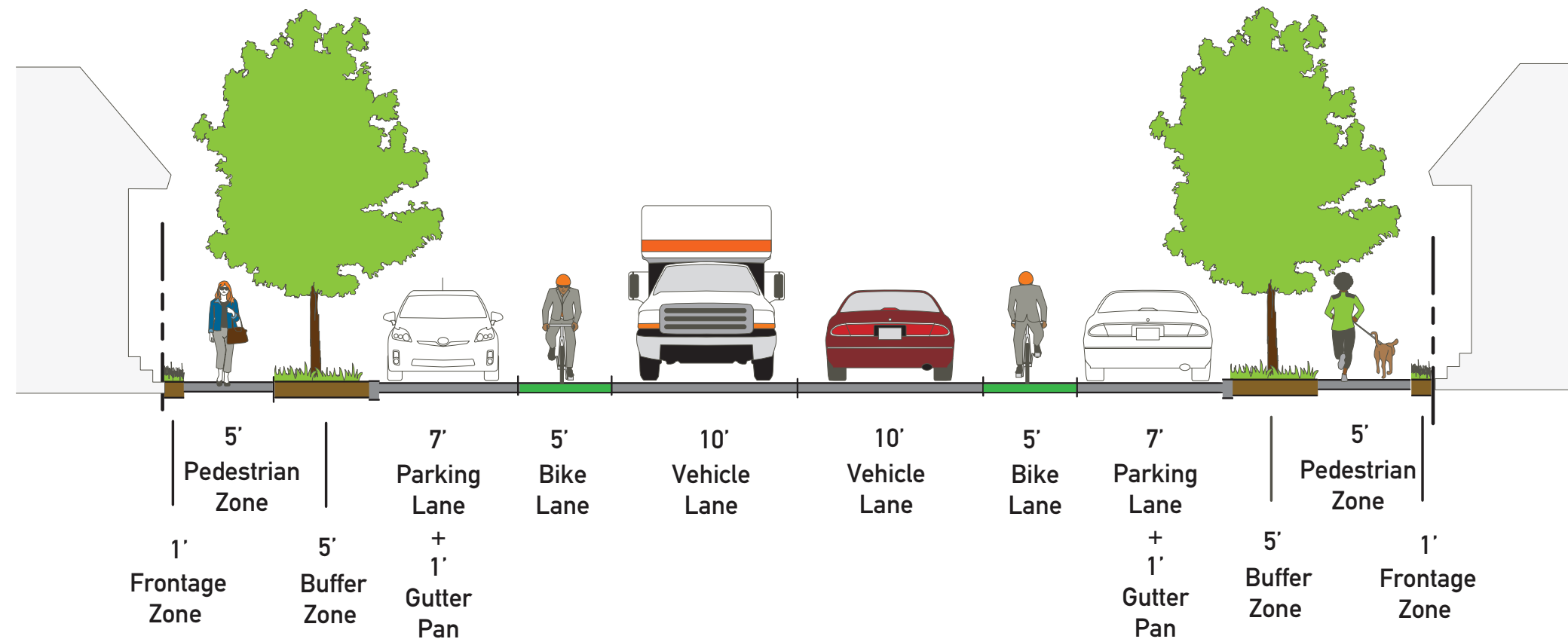
2.25 A

AVENUE:
RESIDENTIAL
LOW INTENSITY
LAND USE



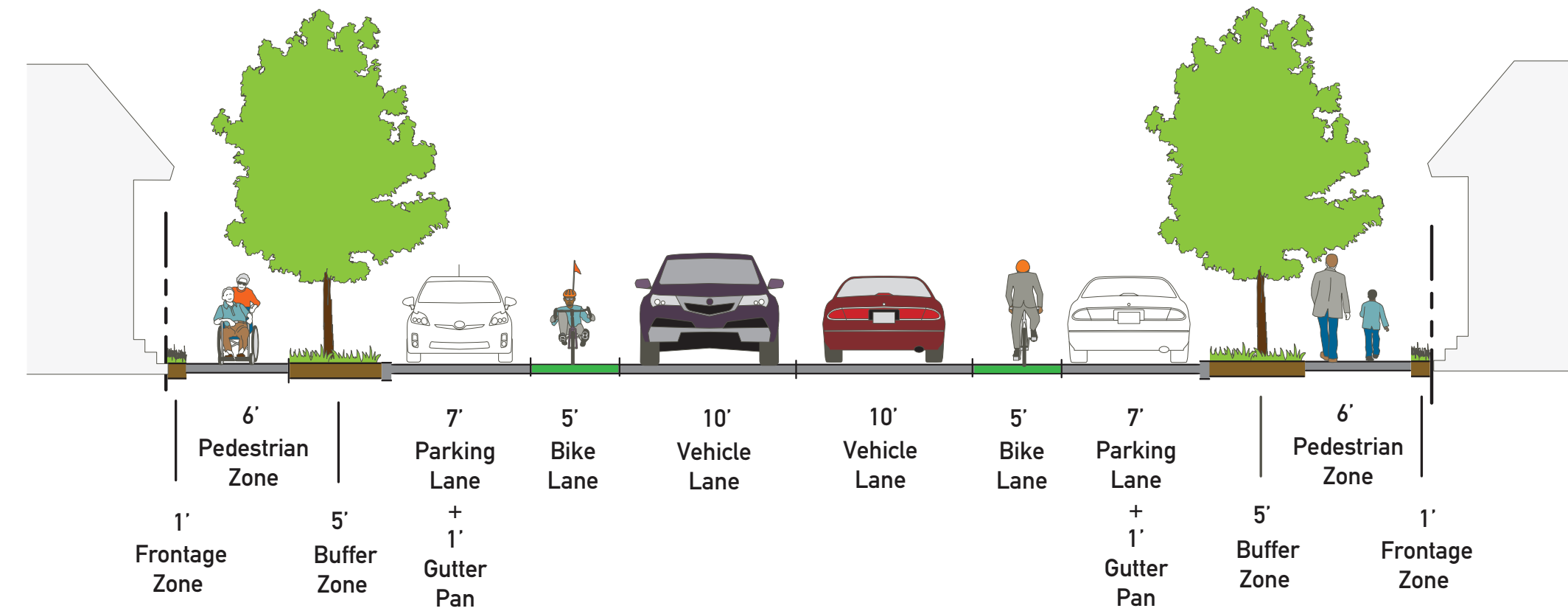
2.25 B

AVENUE:
RESIDENTIAL
MEDIUM INTENSITY
LAND USE



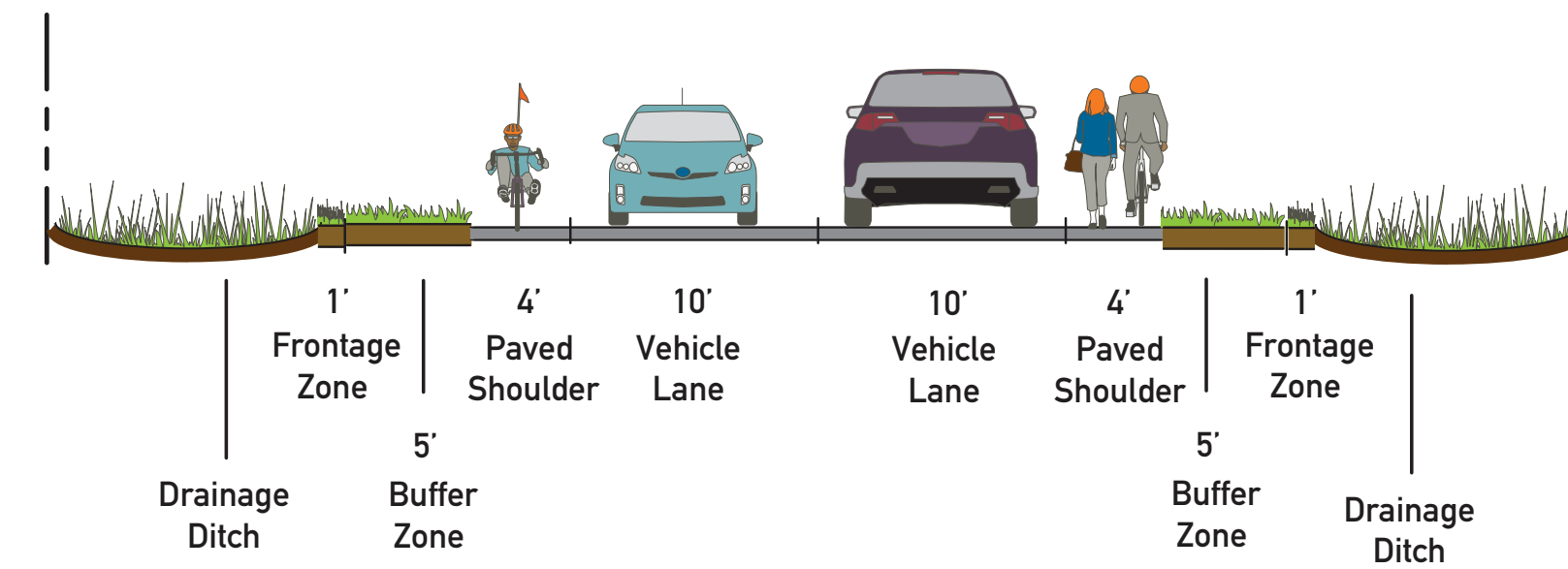
2.25 C

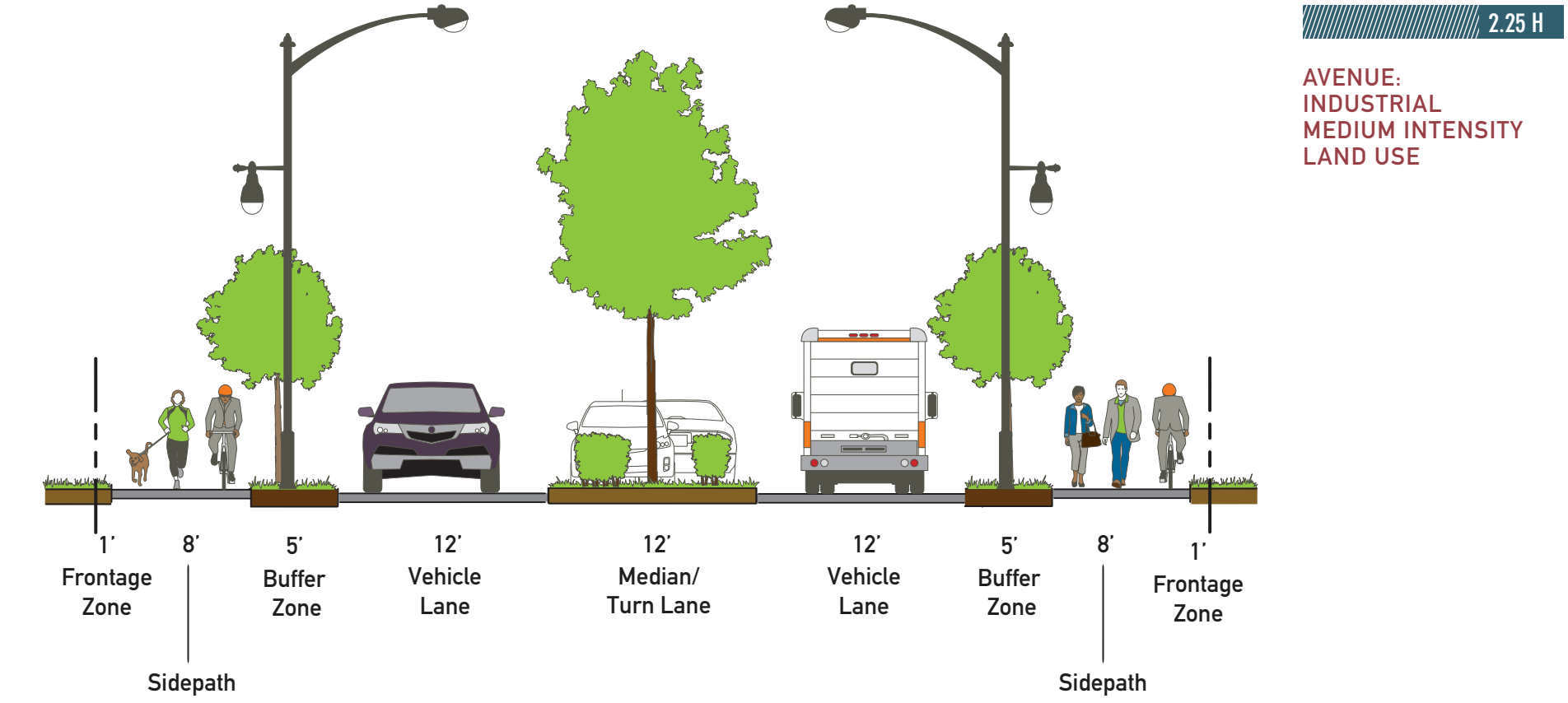
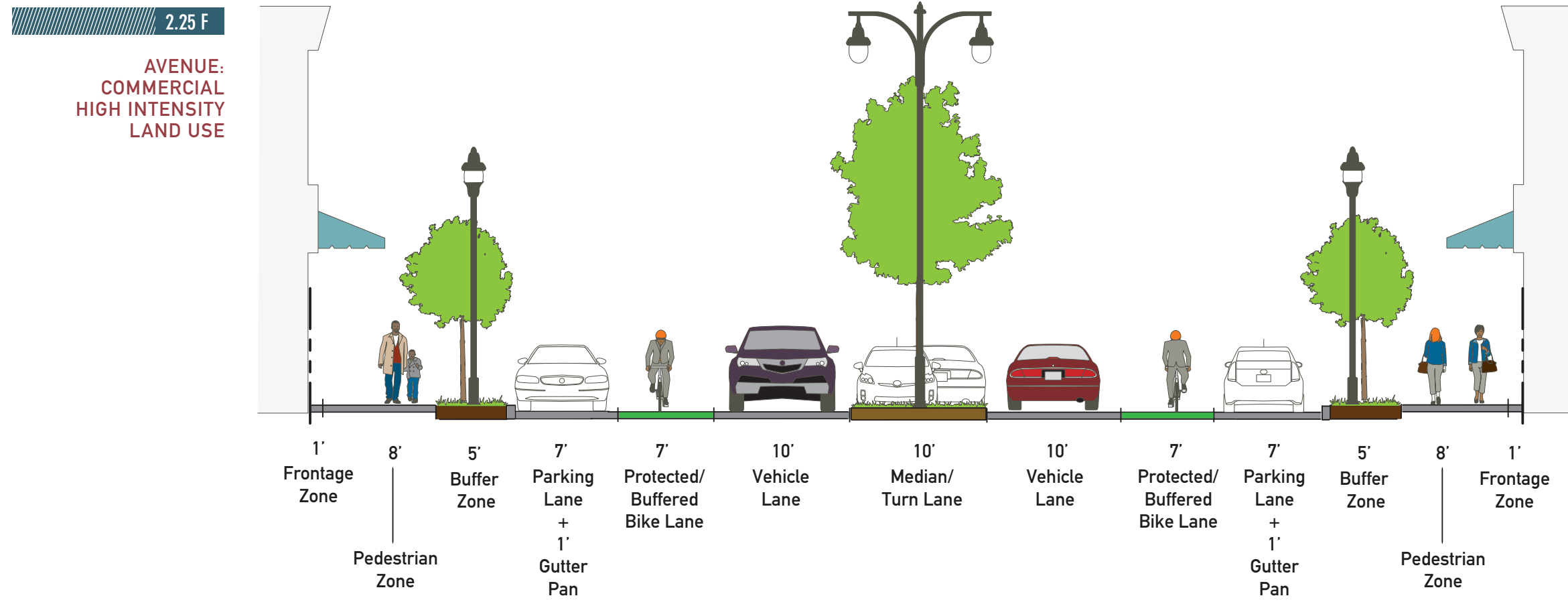
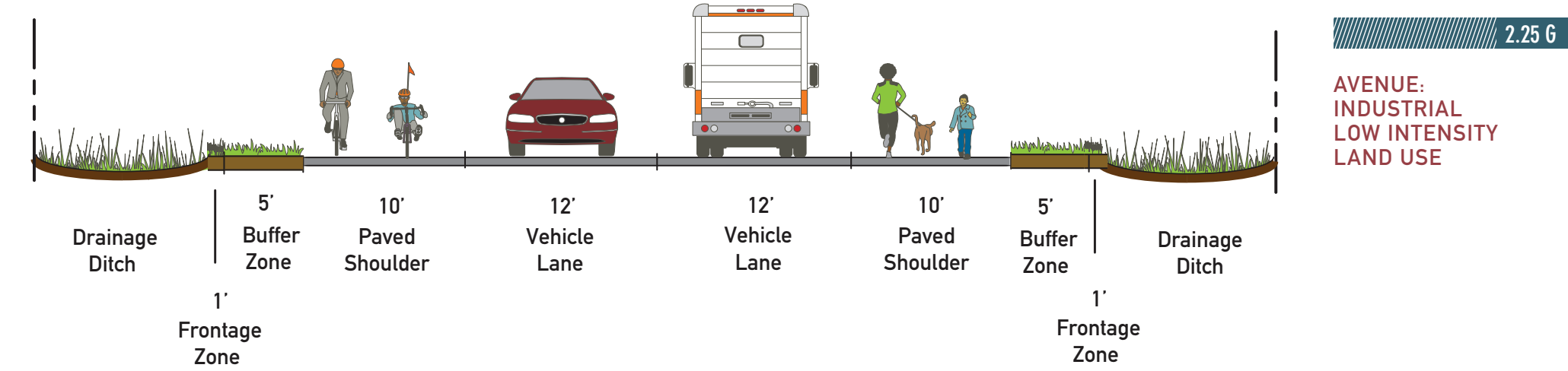
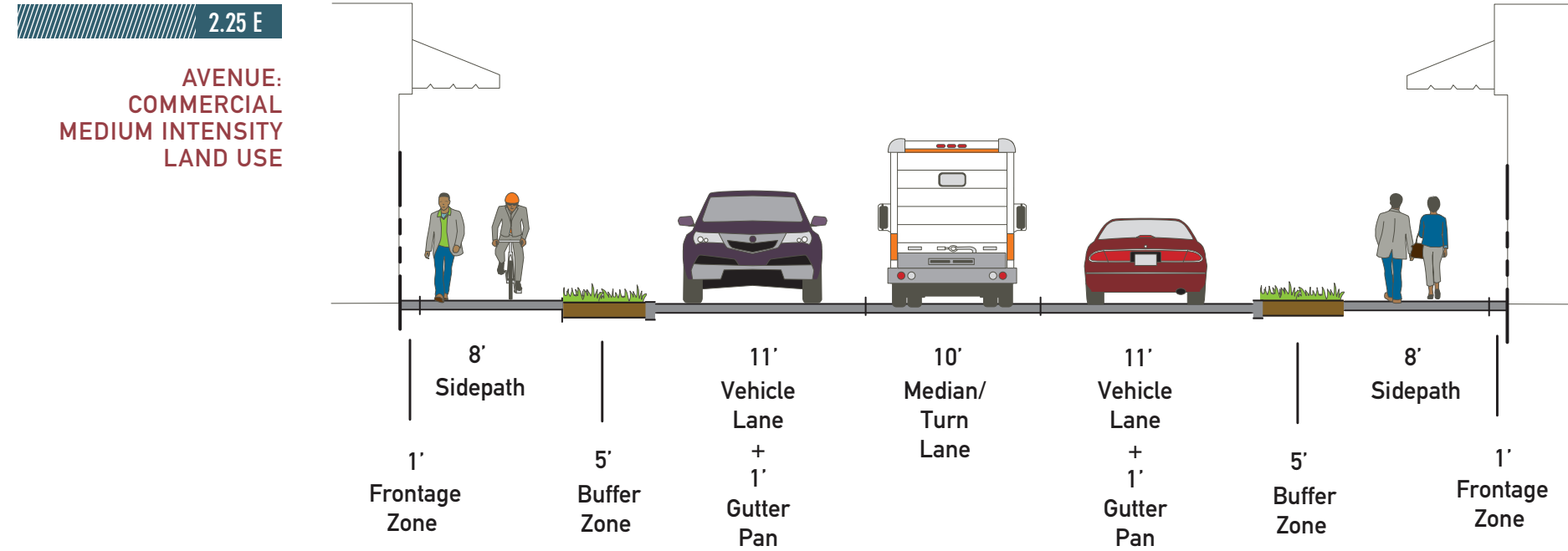
AVENUE:
RESIDENTIAL
HIGH INTENSITY
LAND USE



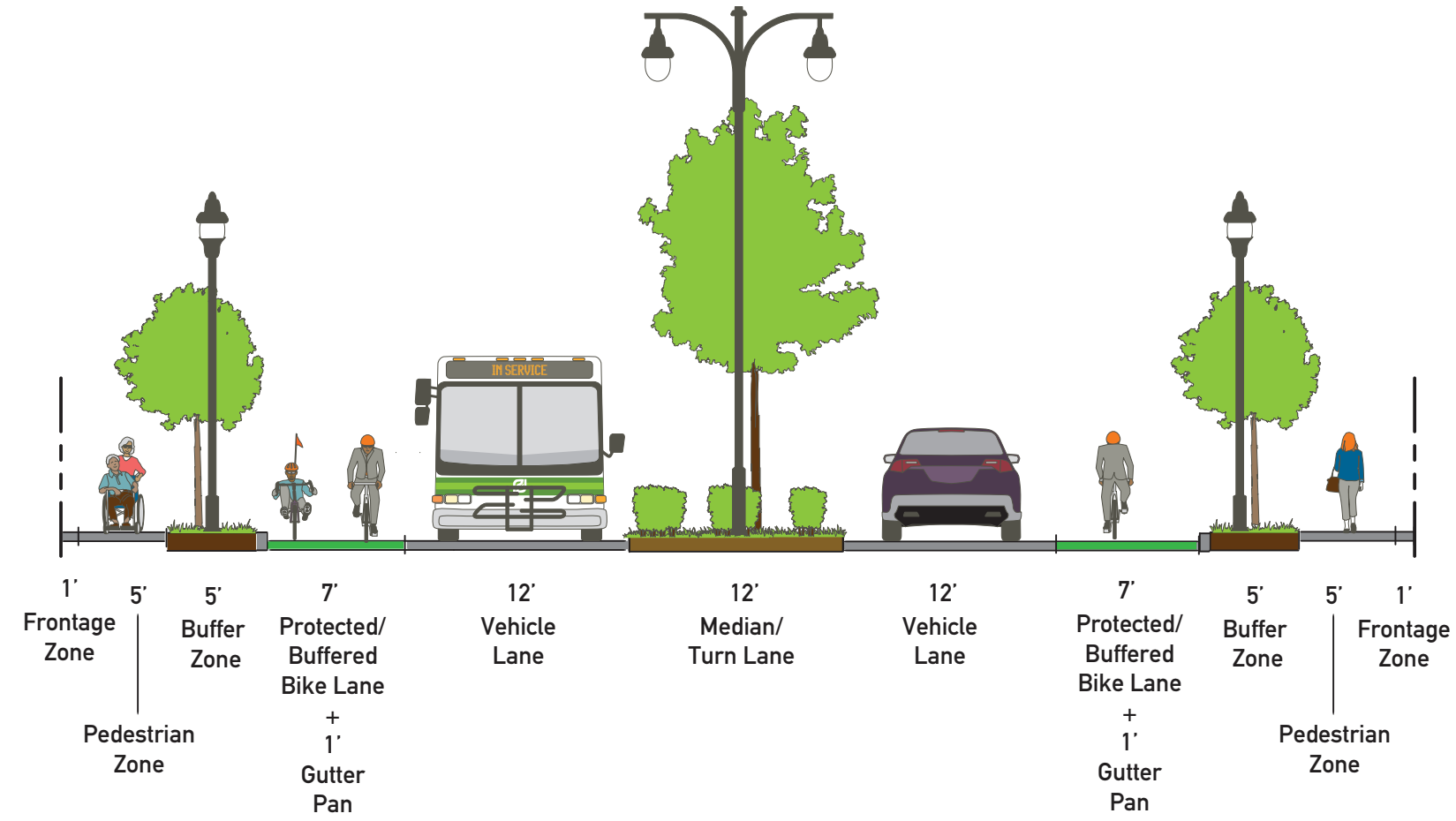
2.25 D

AVENUE:
COMMERCIAL
LOW INTENSITY
LAND USE

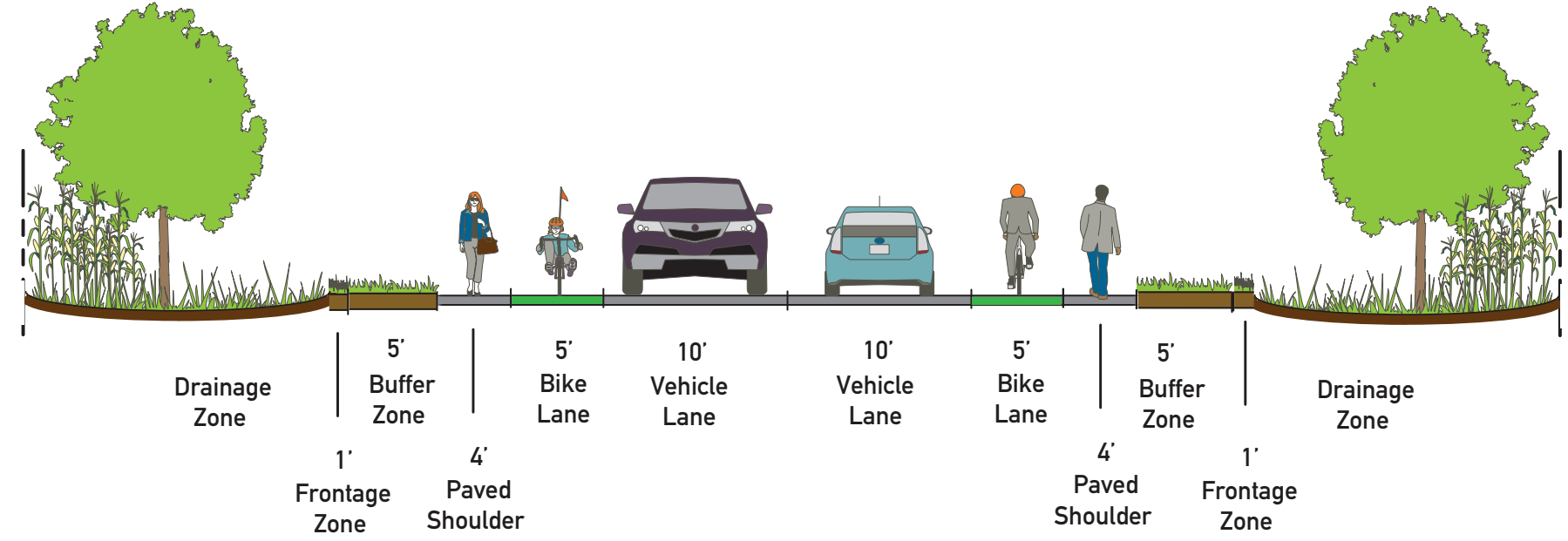




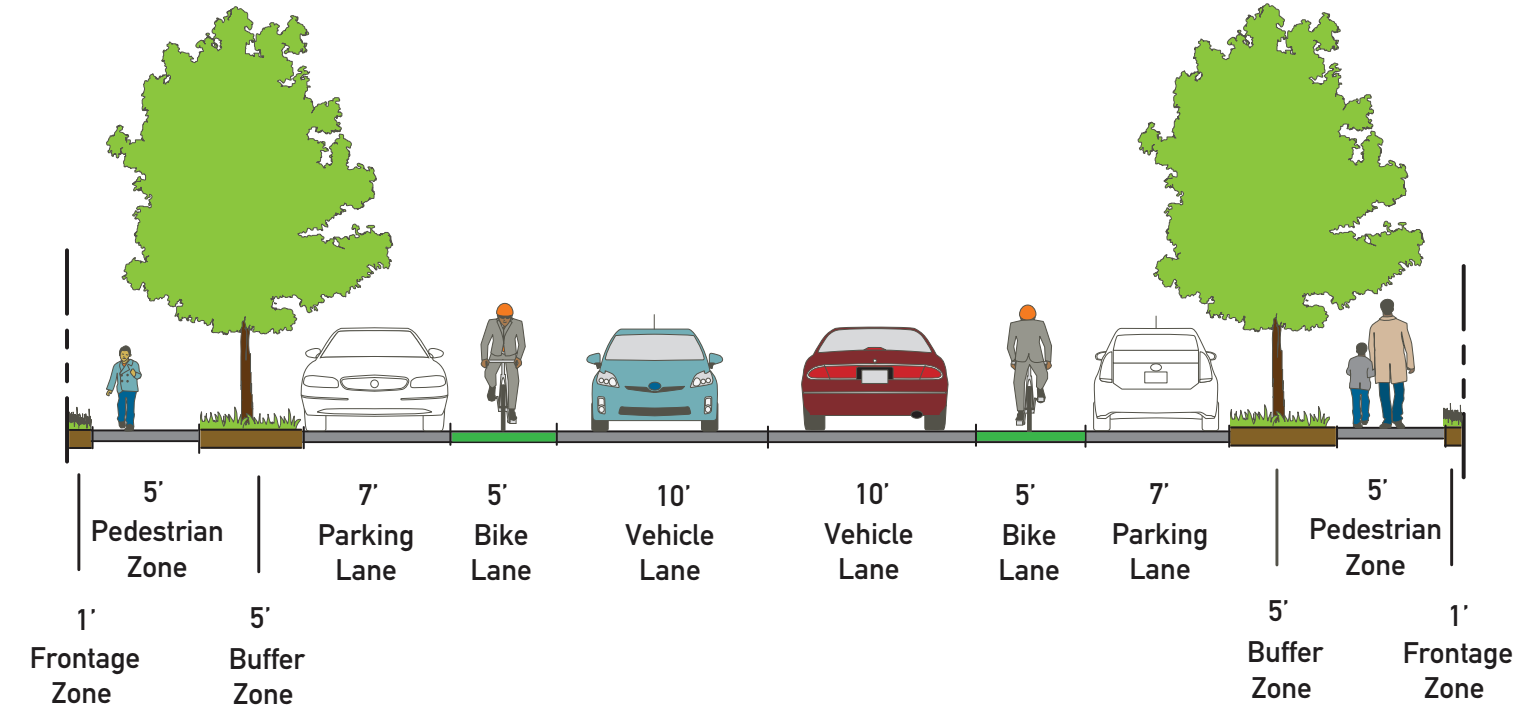
2.25 I
 AVENUE:
 INDUSTRIAL
 HIGH INTENSITY
 LAND USE



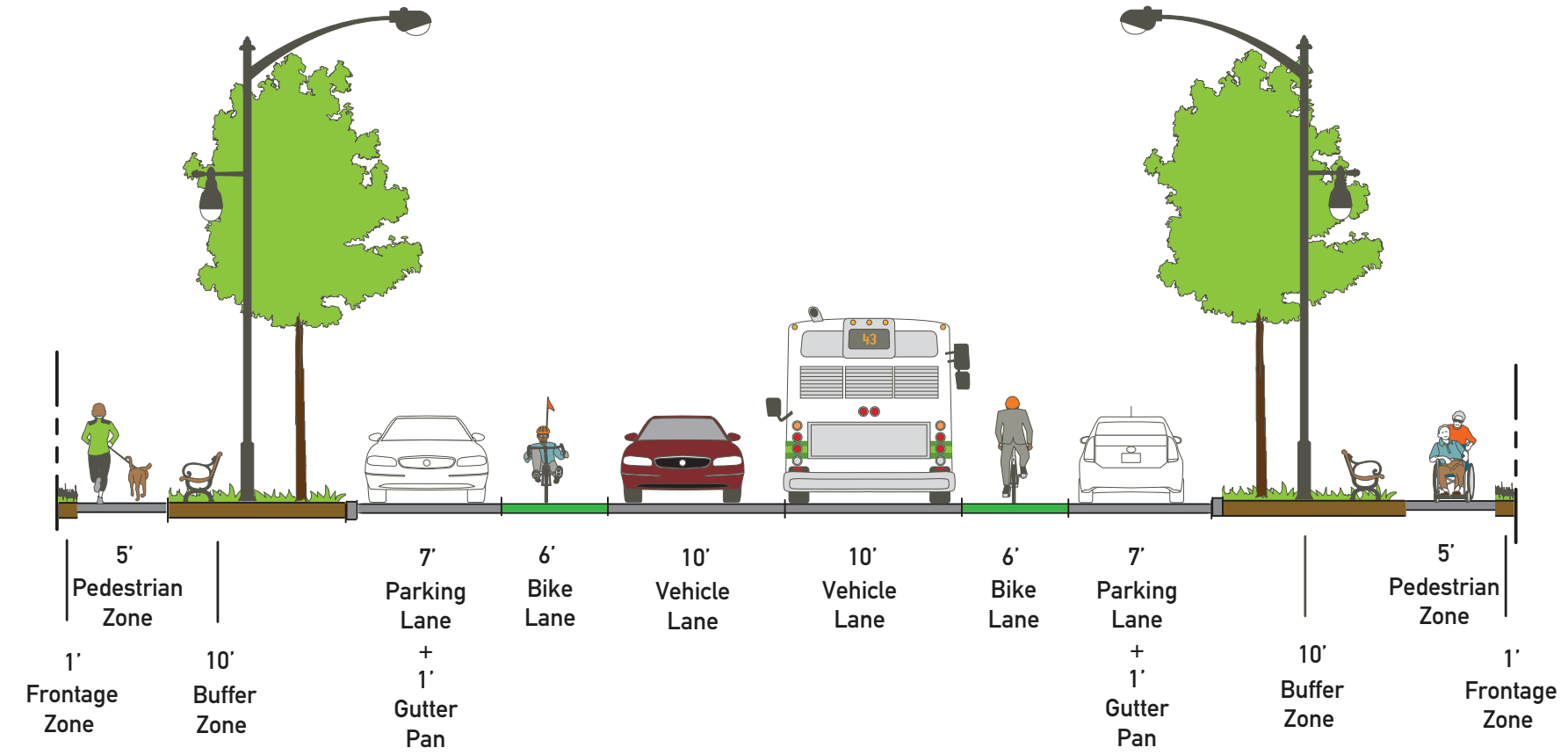
2.25 J
 AVENUE:
 OPEN SPACE
 LOW INTENSITY
 LAND USE

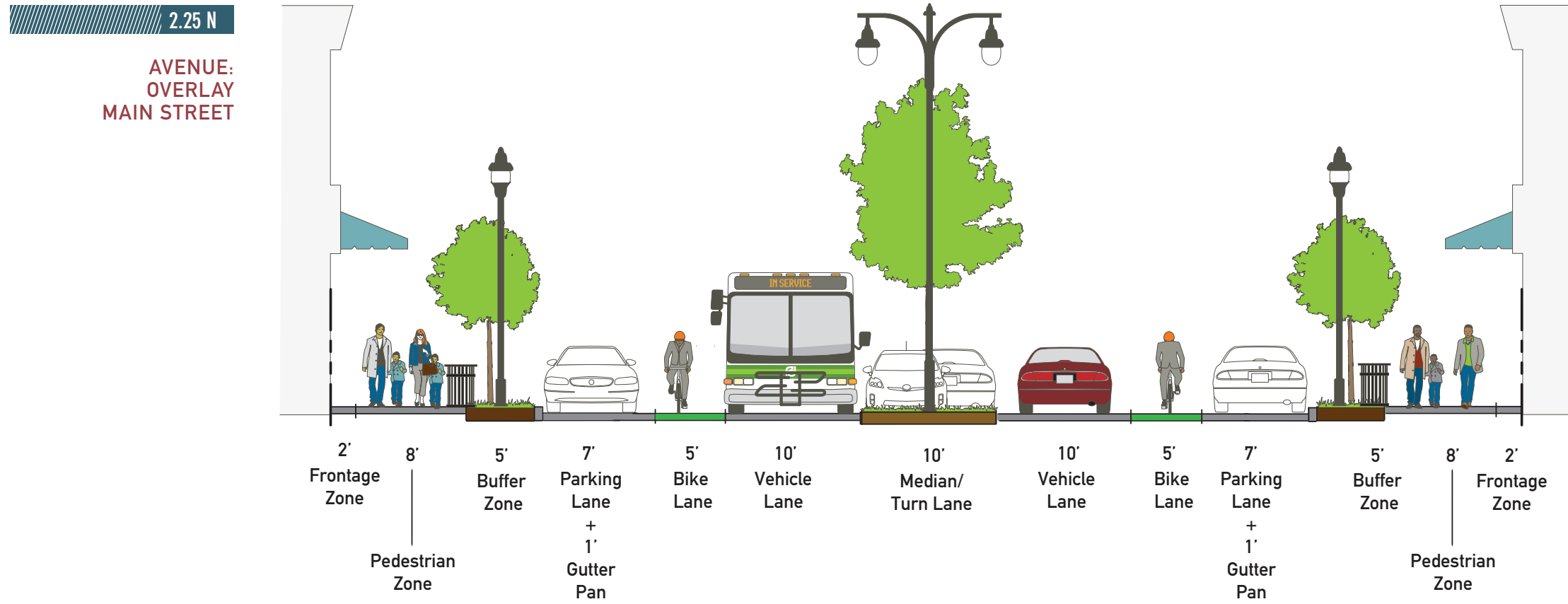
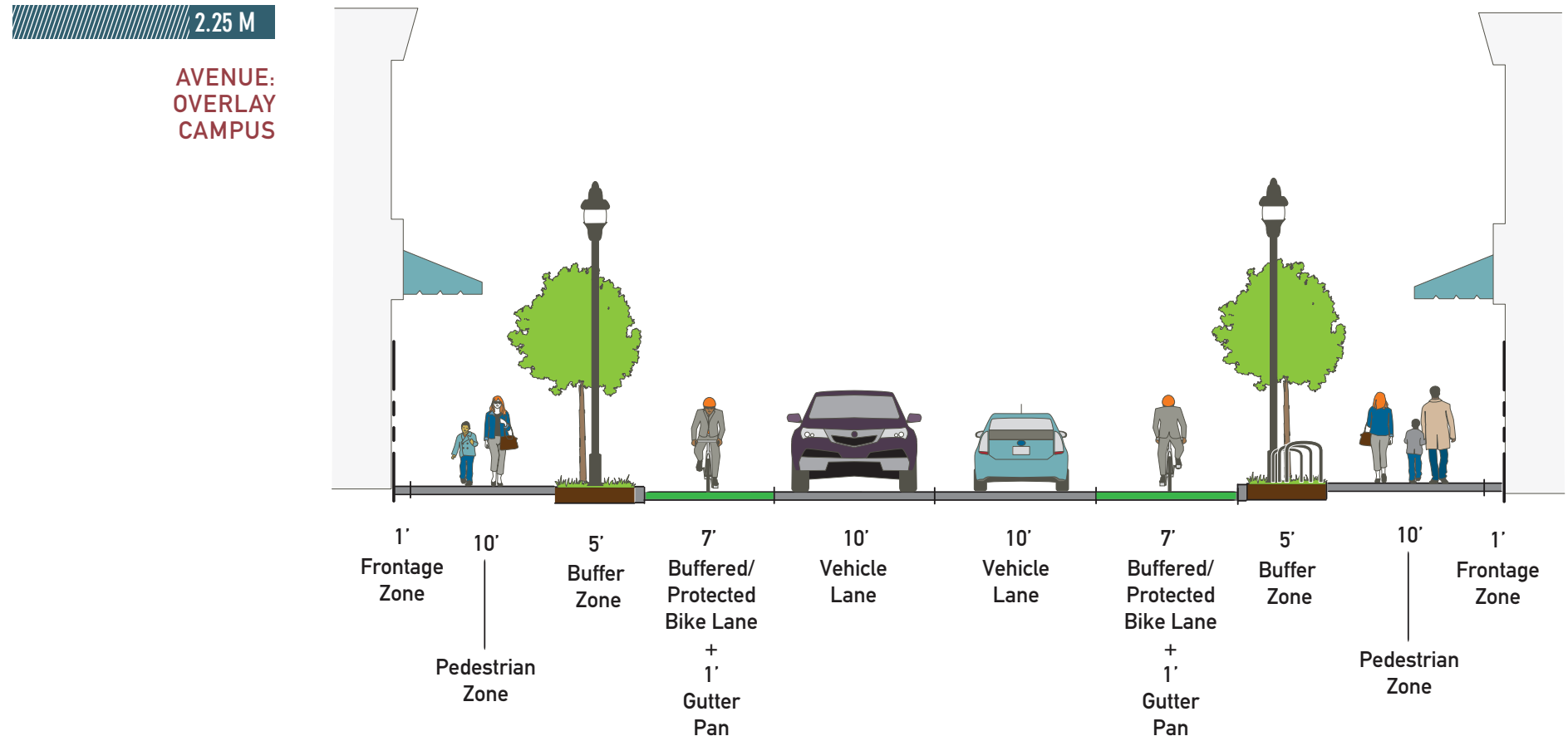


2.25 K
 AVENUE:
 OPEN SPACE
 MEDIUM INTENSITY
 LAND USE



2.25 L
 AVENUE:
 OPEN SPACE
 HIGH INTENSITY
 LAND USE





STREET

A street is a roadway with relatively few vehicle trips and low speeds. Adult cyclists may feel comfortable biking on this type of roadway without and special facilities. However, bike route signage and shared lane or bike boulevard markings can enhance roadway safety. In higher intensity development patterns, pedestrians will need sidewalk, but in lower intensity development, with very low vehicle speeds and volumes, pedestrians may share the road with other modes of travel.

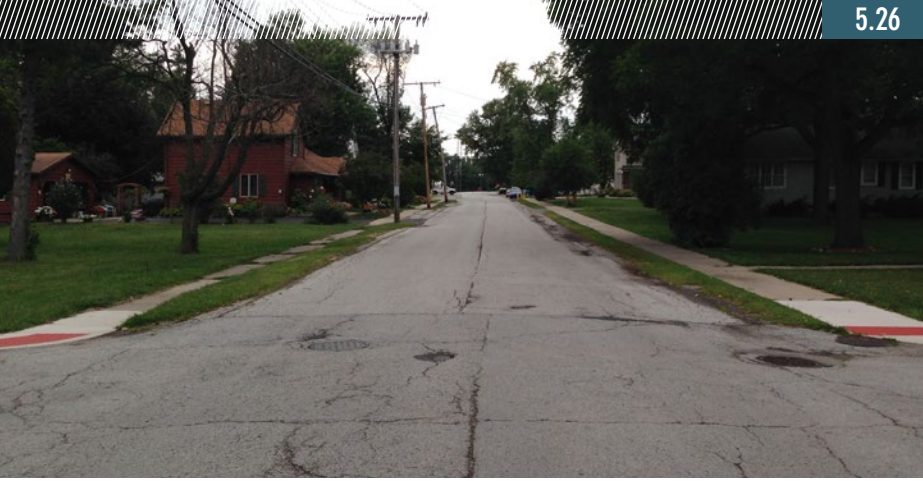


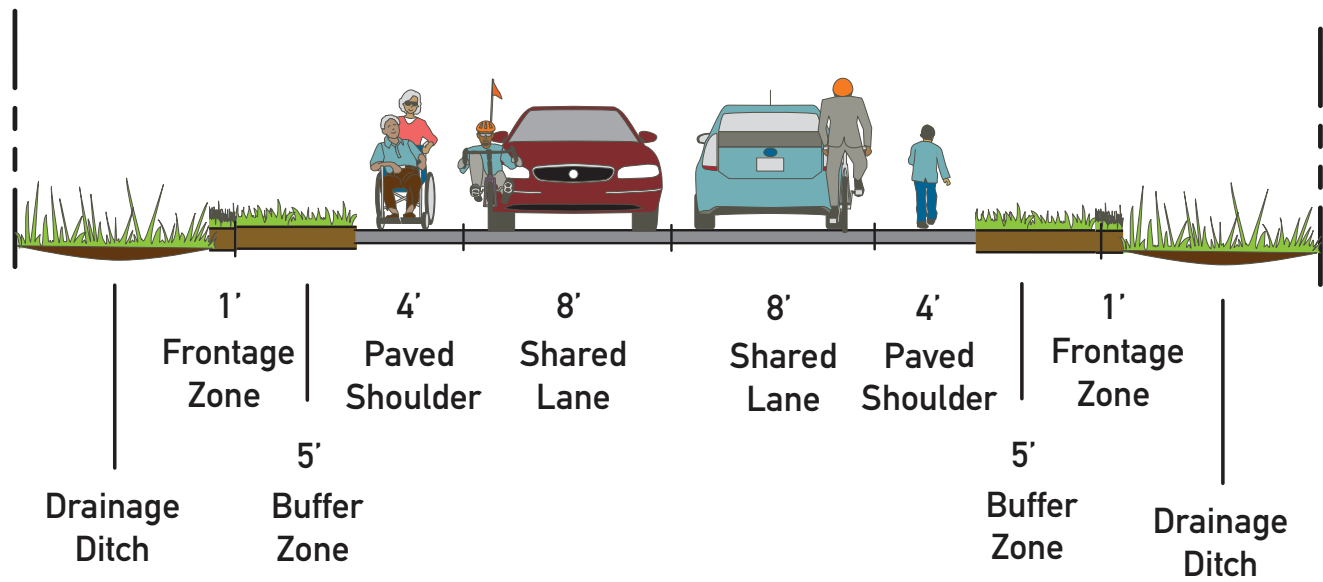
FIGURE 5.26
STREET
Lowell, IL

FIGURE 5.27
STREET
Grant Park, IL

STREET		Mode Priority					Pedestrian Realm						Travelway							Totals For Each Realm								
		Mode Priority					Drainage Ditch	Frontage	Pedestrian Zone	Buffer Zone	Curb Zone/Shoulder		Parking Lanes (Width)	Bikeway (Width)	Bikeway Type		Vehicle Lane (Width)	Vehicle Lanes (Count)	Median / Turn Lane (Width)	Pedestrian Realm Total		Travel Way Realm Total		Total Public ROW				
		First	Second	Third	Fourth	Other Mode Considerations	Yes/No	min	min	min	Curb/Shoulder	Gutter Pan	min	min		min		min	max	min	max	min	max					
Land Use	Intensity																											
Residential	1	Bike	Walk	Auto	Transit	farm equipment, horses	Yes	1	0	5	4	0	0	0	Shared Lane	8	2		12		24		36					
	2	Walk	Bike	Auto	Transit	farm equipment, horses	No	1	5	5	0.5	1	7	0	Shared Lane	9	2		22		33		55					
	3	Walk	Bike	Auto	Transit	farm equipment, horses	No	1	6	5	0.5	1	7	0	Shared Lane	10	2		24		35		59					
Commercial	1	Bike	Walk	Transit	Auto	freight, farm equipment, horses	Yes	1	0	0	4	0	0	0	Shared Lane	10	2		2		28		30					
	2	Walk	Bike	Transit	Auto	freight, farm equipment, horses	No	1	5	5	0.5	1	0	0	Shared Lane	10	2		22		23		45					
	3	Walk	Bike	Transit	Auto	freight, farm equipment, horses	No	2	8	5	0.5	1	7	5	Bike Lanes	10	2		30		45		75					
Industrial	1	Bike	Walk	Transit	Auto	freight, farm equipment, horses	Yes	1	0	5	0	0	0	0	Shared Lane	12	2		12		24		36					
	2	Walk	Bike	Transit	Auto	freight, farm equipment, horses	No	1	0	5	4	0	0	0	Shared Lane	12	2		12		32		44					
	3	Walk	Bike	Transit	Auto	freight, farm equipment, horses	No	2	5	5	4	0	0	5	Bike Lanes	12	2		24		42		66					
Open Space	1	Bike	Walk	Transit	Auto	farm equipment, horses	Yes	1	0	5	0	0	0	0	Shared Lane	10	2		12		20		32					
	2	Bike	Walk	Transit	Auto	farm equipment, horses	Yes	1	0	5	4	0	0	0	Shared Lane	10	2		12		28		40					
	3	Walk	Bike	Transit	Auto	farm equipment, horses	No	1	5	5	0.5	1	7	5	Bike Lanes	10	2		22		47		69					
Overlays																							0		0		0	
Campus		Walk	Bike	Transit	Auto	Scooter, skateboard	No	1	8	5	0.5	1	0	5	Bike Lanes	10	2		28		33		61					
Main Street		Walk	Bike	Transit	Auto	freight	No	2	8	5	0.5	1	7	5	Bike Lanes	10	2		30		45		75					

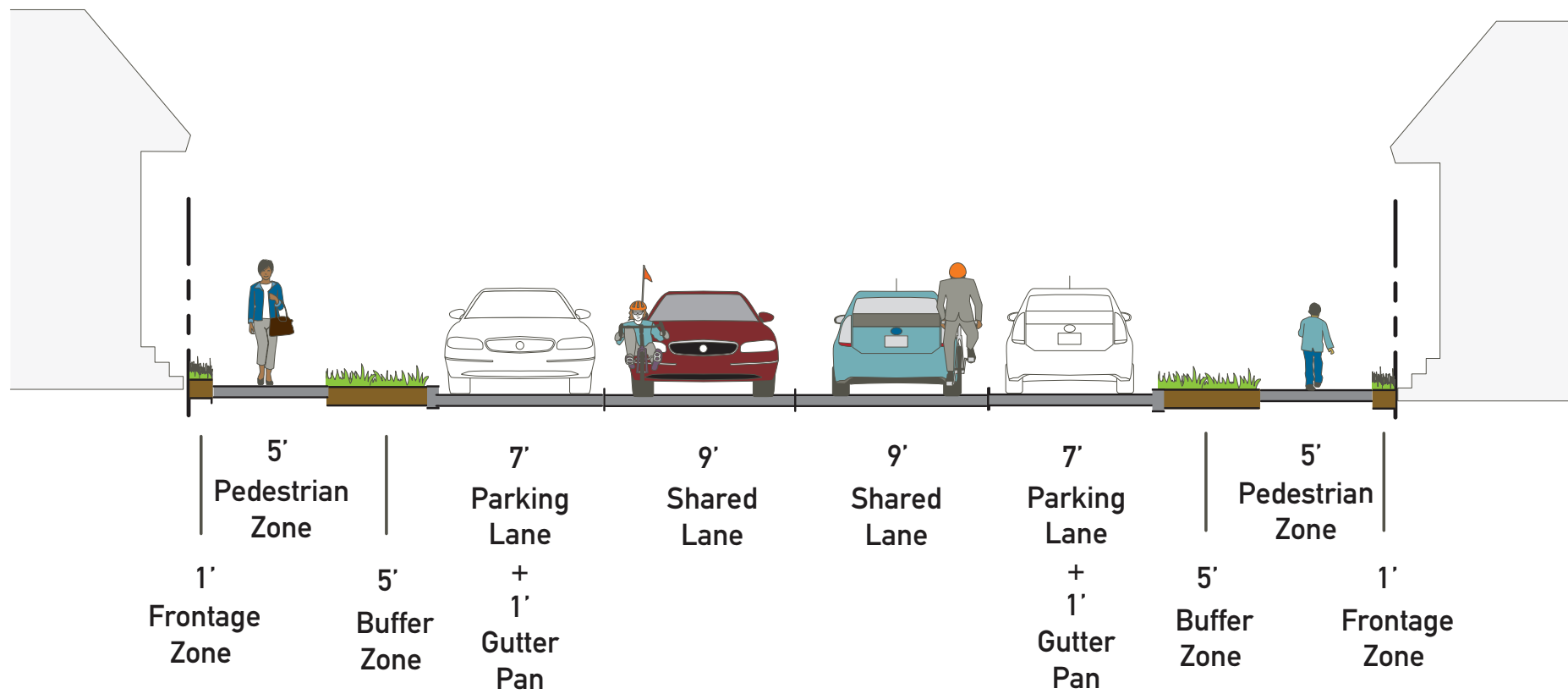
2.28 A

STREET:
RESIDENTIAL
LOW INTENSITY
LAND USE



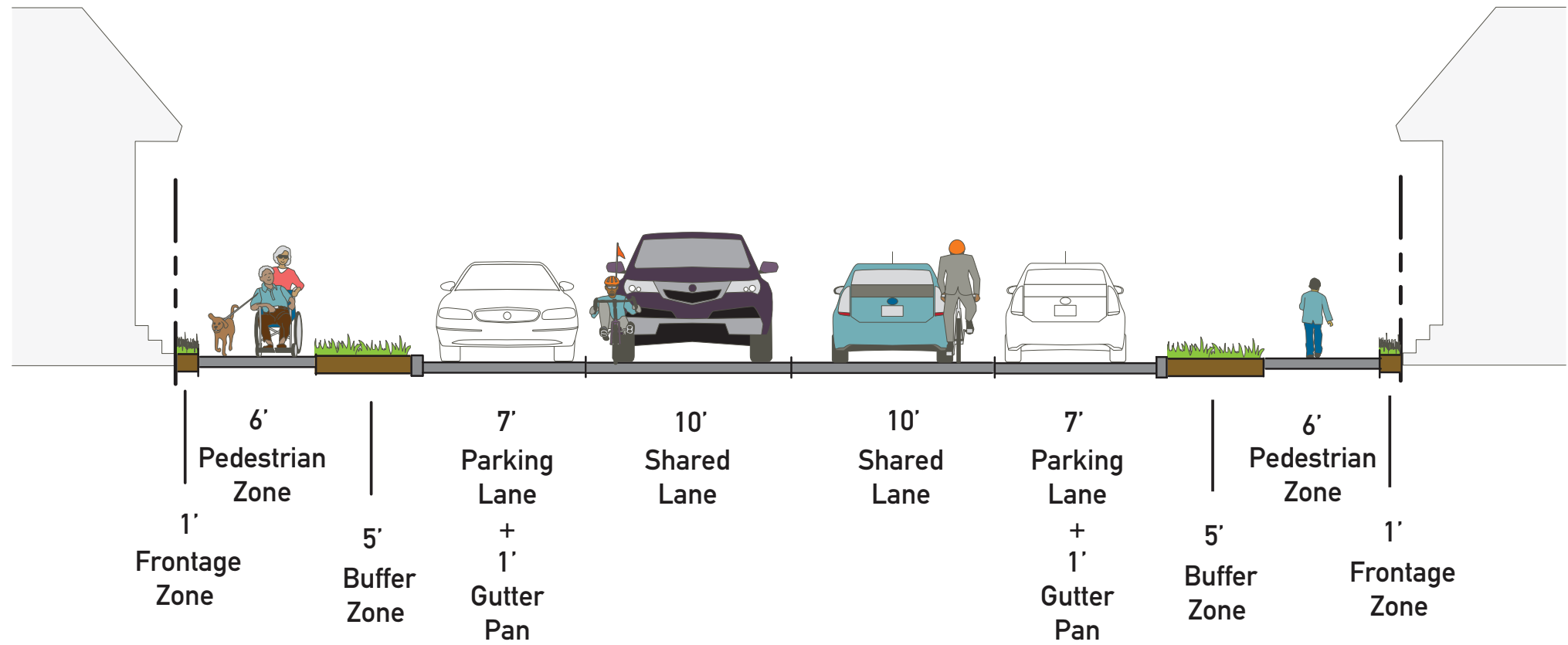
2.28 B

STREET:
RESIDENTIAL
MEDIUM INTENSITY
LAND USE



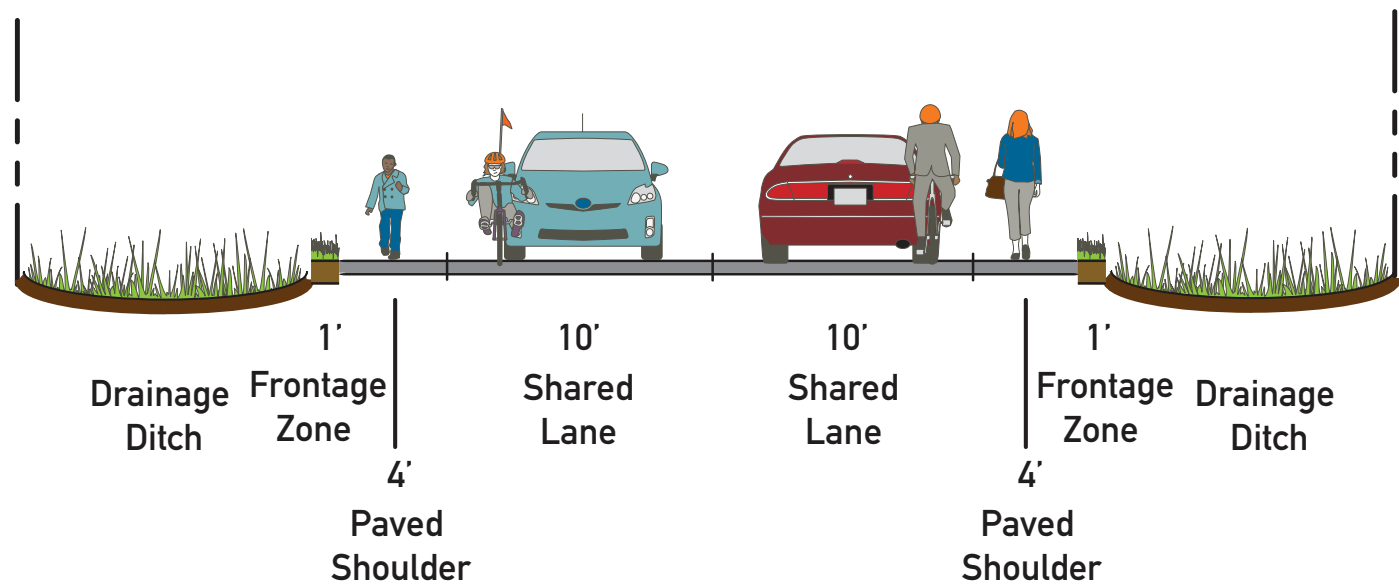
2.28 C

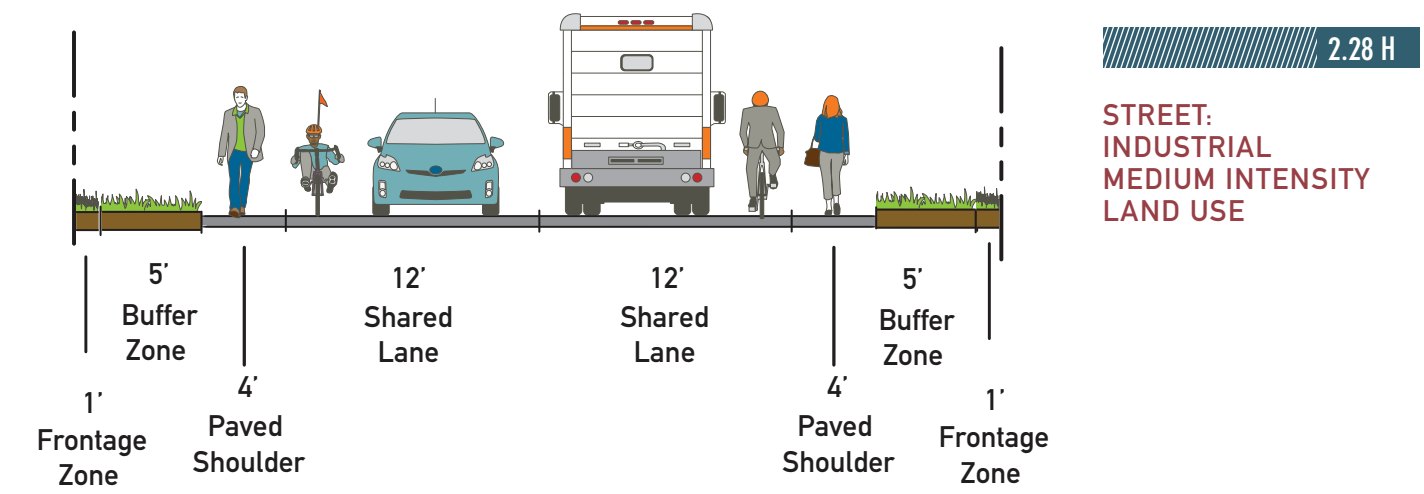
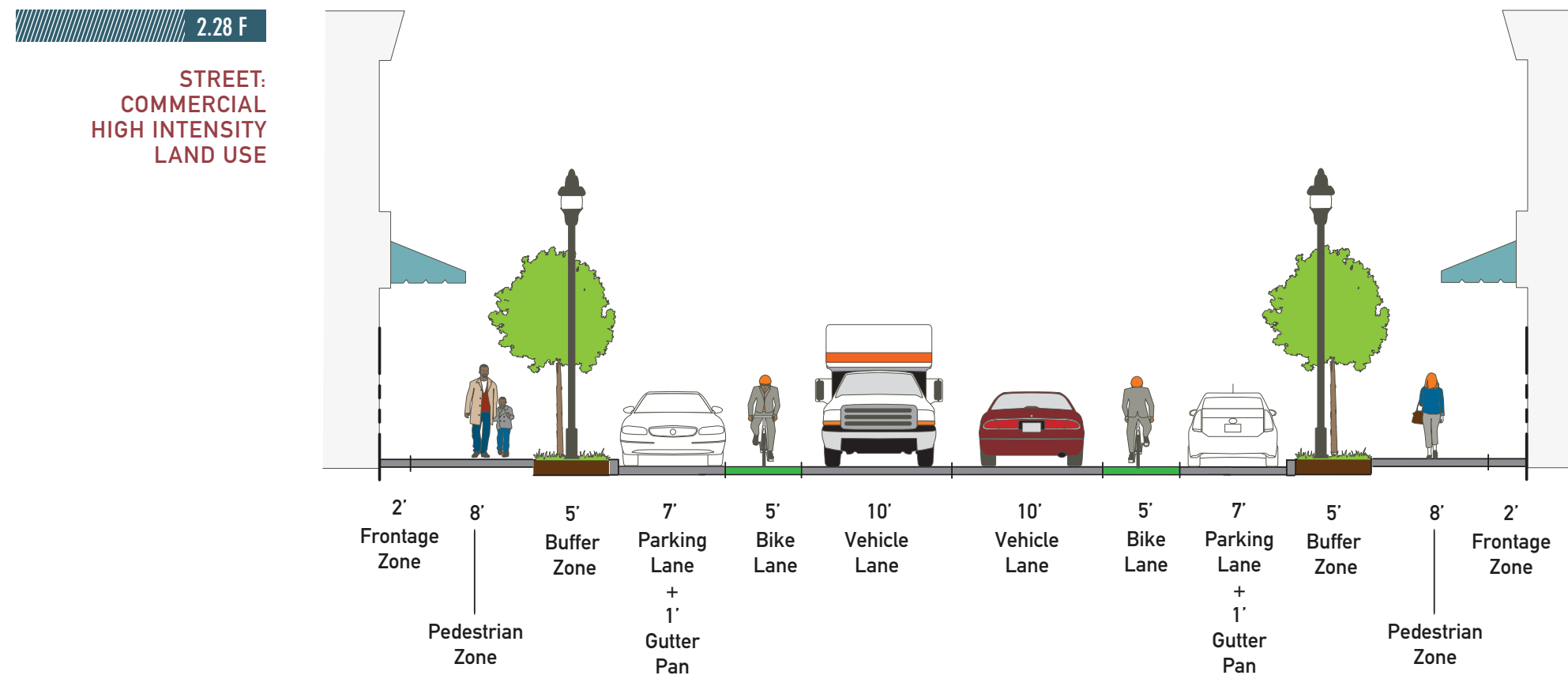
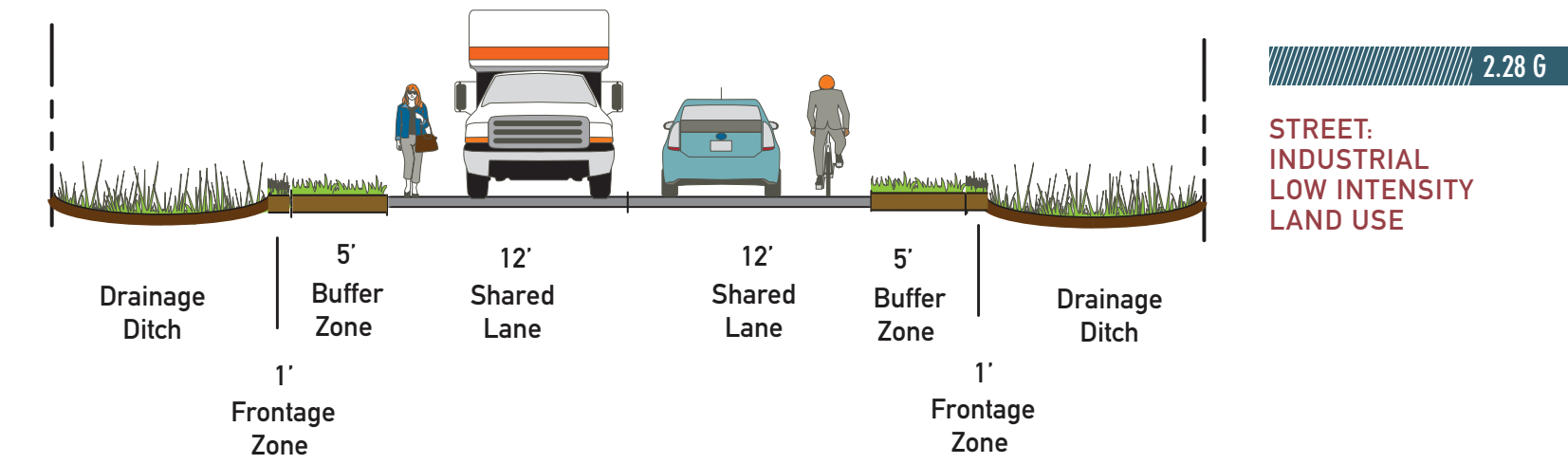
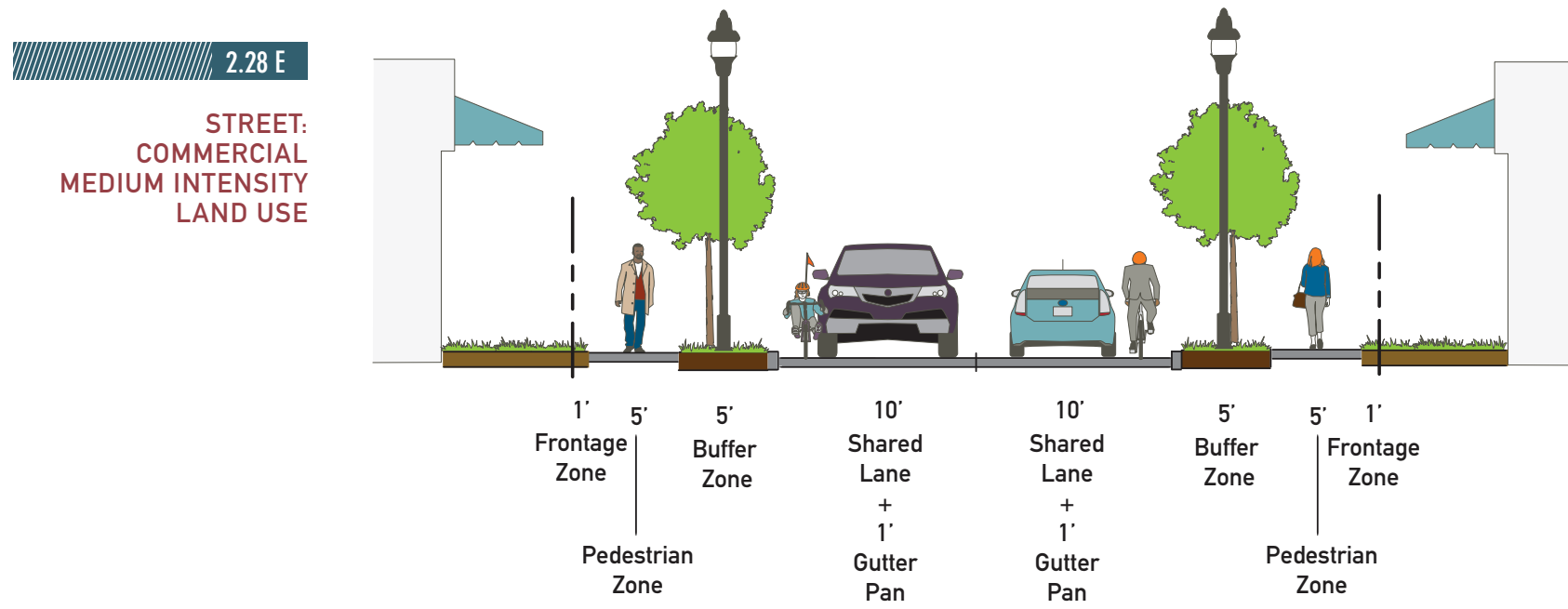
STREET:
RESIDENTIAL
HIGH INTENSITY
LAND USE

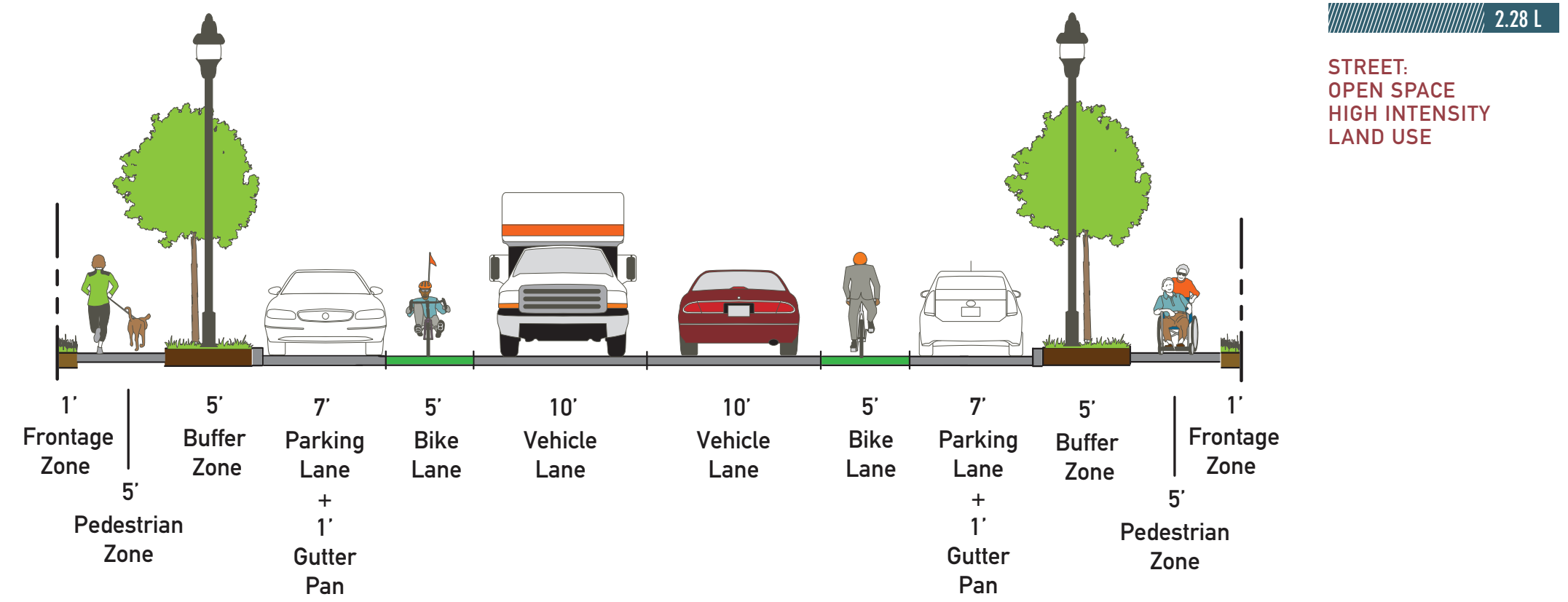
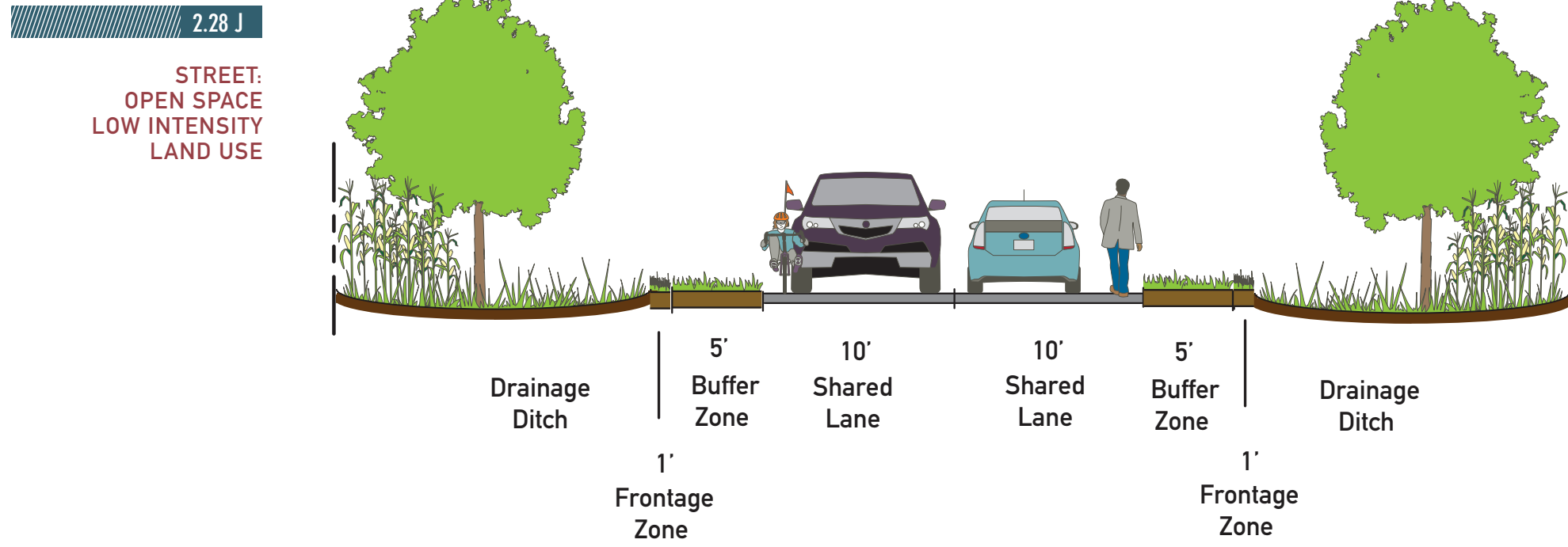
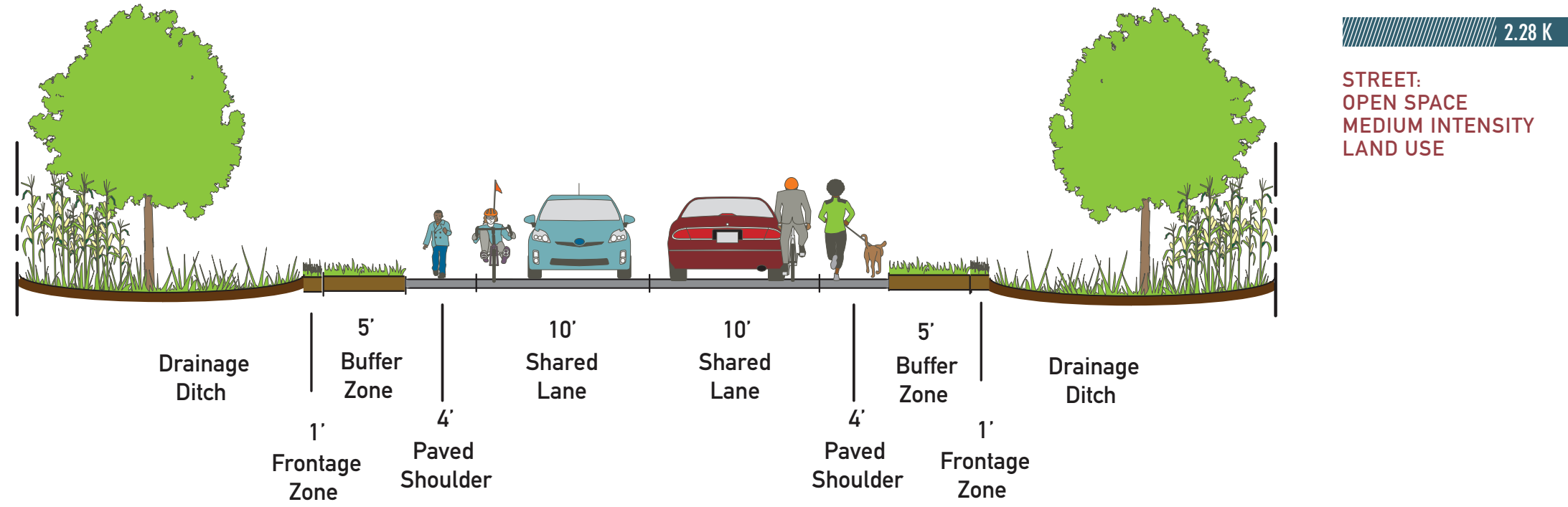
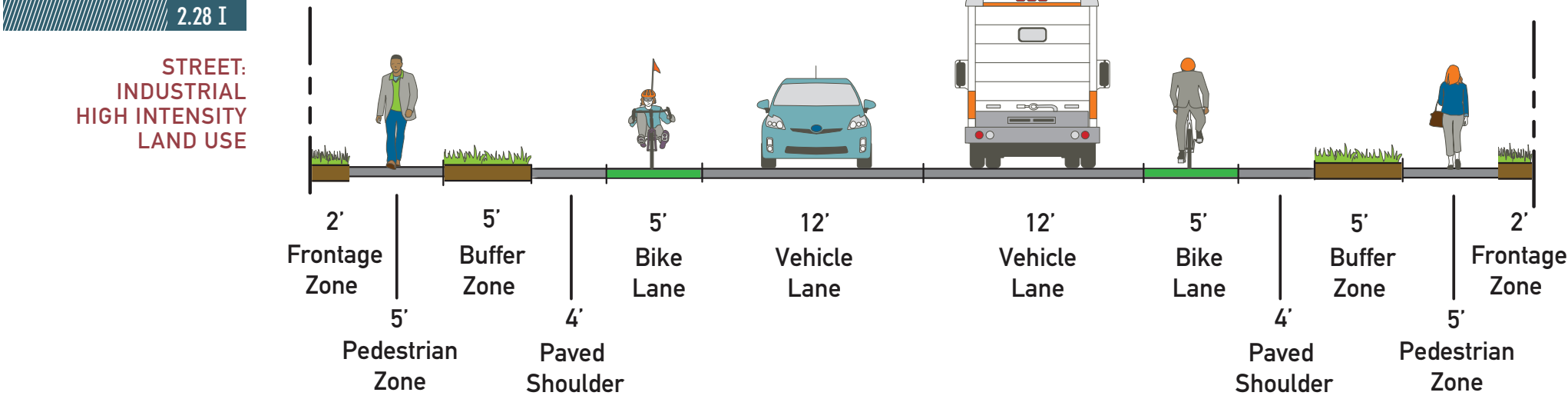


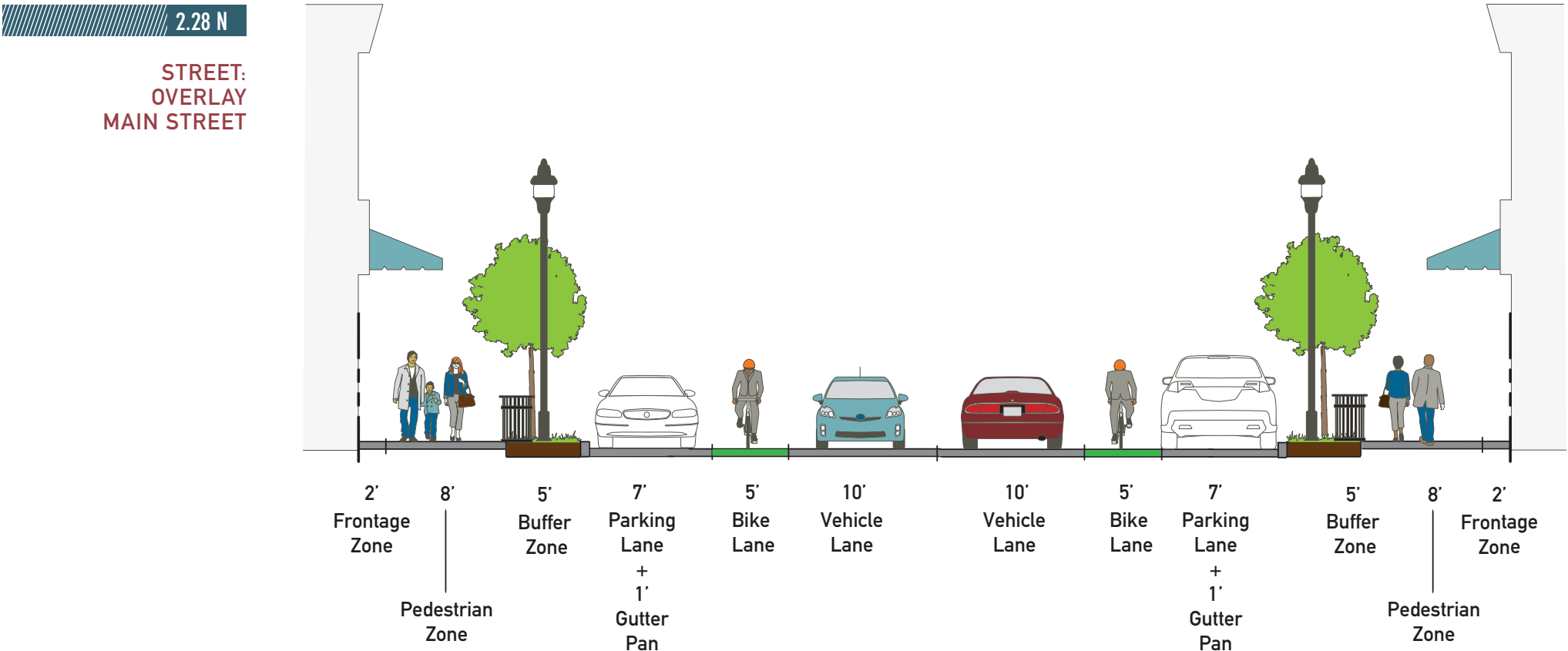
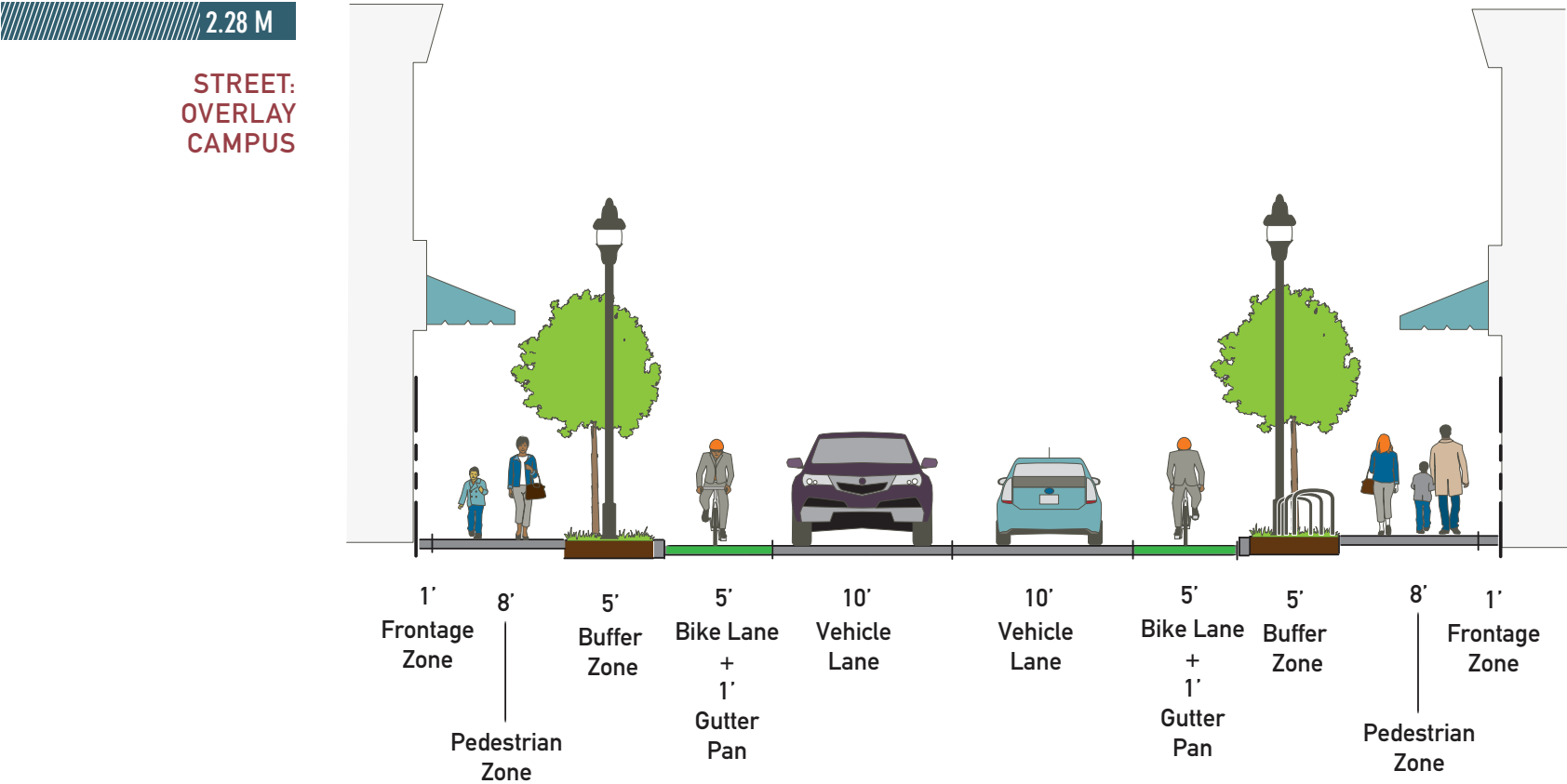
2.28 D

STREET:
COMMERCIAL
LOW INTENSITY
LAND USE









IMPROVING OPTIONS FOR BIKING, WALKING, AND TRANSIT ACCESS

