



UNIFIED DEVELOPMENT ORDINANCE

*Required New Street  
Improvements &  
Standards*

# Meeting Protocols

- CLT Development Center staff will narrate the presentations. Today's presenter is Jake Carpenter with the Charlotte Department of Transportation.
- Please enter any question or comment in the **Chat**. We will be answering questions during and at the end of the presentation. Also, at the end of the session, if time allows, we will answer any additional questions through **Chat**
- If a question cannot be answered, we will so note and follow up with a response posted on the website and reviewed at the next session



# Mission Statement for UDO University

- ◀ The purpose of the UDO University is to acquaint attendees with the City of Charlotte's requirement and processes affiliated with the currently adopted Unified Development Ordinance (UDO). Comments made at the UDO University sessions are intended to provide guidance and are nonbinding on the formal review of the development plans.

# UDO University

- 10 Sessions
- Registration required for each session. To register online, [CharlotteUDO.org](http://CharlotteUDO.org) on the UDO University tab
- Sessions will be on Friday's at 1:00 to 2:30. All session are virtual via Zoom and will be recorded and posted on the Charlotte UDO website
- Facilitated by various agencies in the CLT Development Center
- Each session will be built upon information provided in previous sessions. Reminder all sessions are recorded and can be found at the UDO website under the UDO University tab.

Session Title ▲	Date/Time ▲
An Overview of the Charlotte UDO	Friday, 1/13/23 1:00 p.m. - 2:30 p.m.
Zoning Districts in the UDO	Friday, 1/20/23 1:00 p.m. - 2:30 p.m.
Tree Protection Article of the UDO	Friday, 1/27/23 1:00 p.m. - 2:30 p.m.
Subdivision, Network and Access, and Other Infrastructure	Friday, 2/3/23 1:00 p.m. - 2:30 p.m.

Neighborhood Zoning Districts	Friday, 2/10/23 1:00 p.m. - 2:30 p.m.
An Overview of the UDO Administration	Friday, 2/17/23 1:00 p.m. - 2:30 p.m.
Stormwater Standards in the UDO	Friday, 2/24/23 1:00 p.m. - 2:30 p.m.
Parking, Landscaping and Screening, and Open Space	Friday, 3/3/23 1:00 p.m. - 2:30 p.m.

Required New Street/Improvements and Standards	Friday, 3/10/23 1:00 p.m. - 2:30 p.m.
Residential Permitting	Friday, 3/17/23 1:00 p.m. - 2:30 p.m.

# Meeting Purpose

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- Introduction to the Streets Manual purpose and content
- Overview of street types within the UDO and their context within the Charlotte Streets Map
- Cover the standards for driveway design and access management
- Summary of the new Comprehensive Transportation Review process and included assessments
- How the UDO provides guidance on required new streets and when and how existing streets are required to be upgraded
- Standards for street design in the UDO

# What is SSI?

## • Subdivisions

- “Subject to” – New streets, traditional greenfield development
- “Not subject to” – Infill development, exemptions

## • Streets

- Street network and block design
- Curb and gutter
- Amenity Zone / Planting Strip
- Sidewalk / Shared-Use Path
- Off-Street Public Path

## • Infrastructure

- Pieces above, but also:
  - Drainage
  - Water Supply
  - Wastewater Sewer



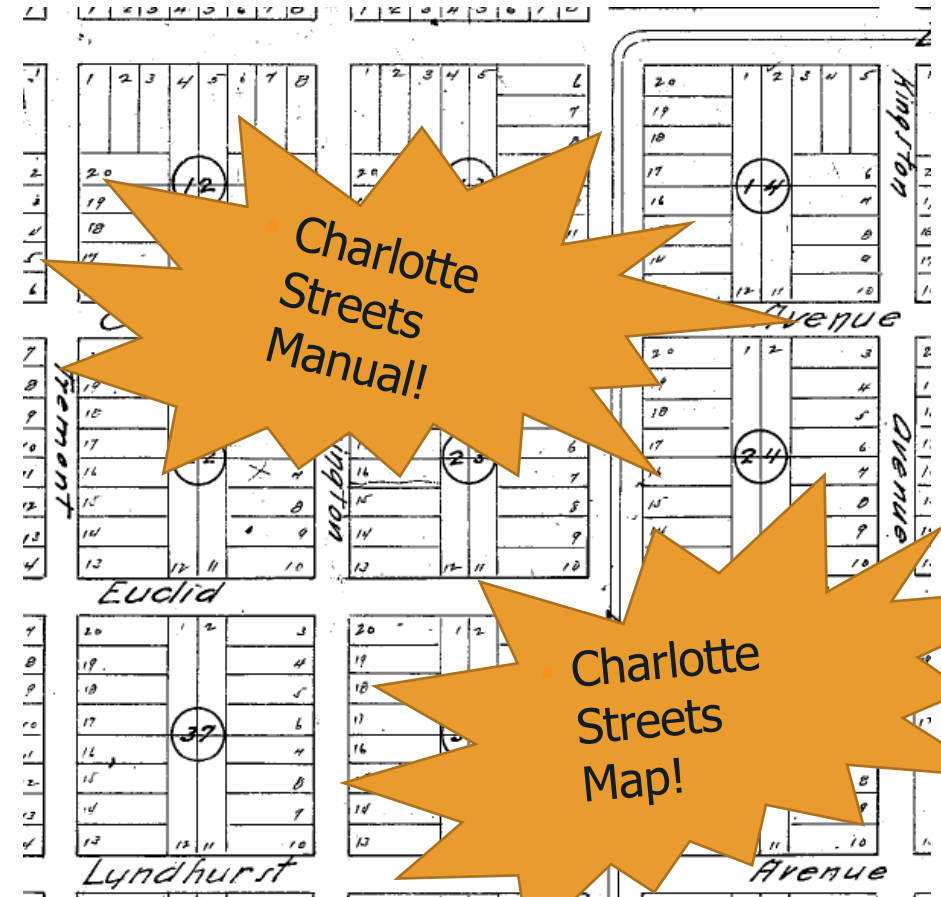
# Consolidated Infrastructure Requirements





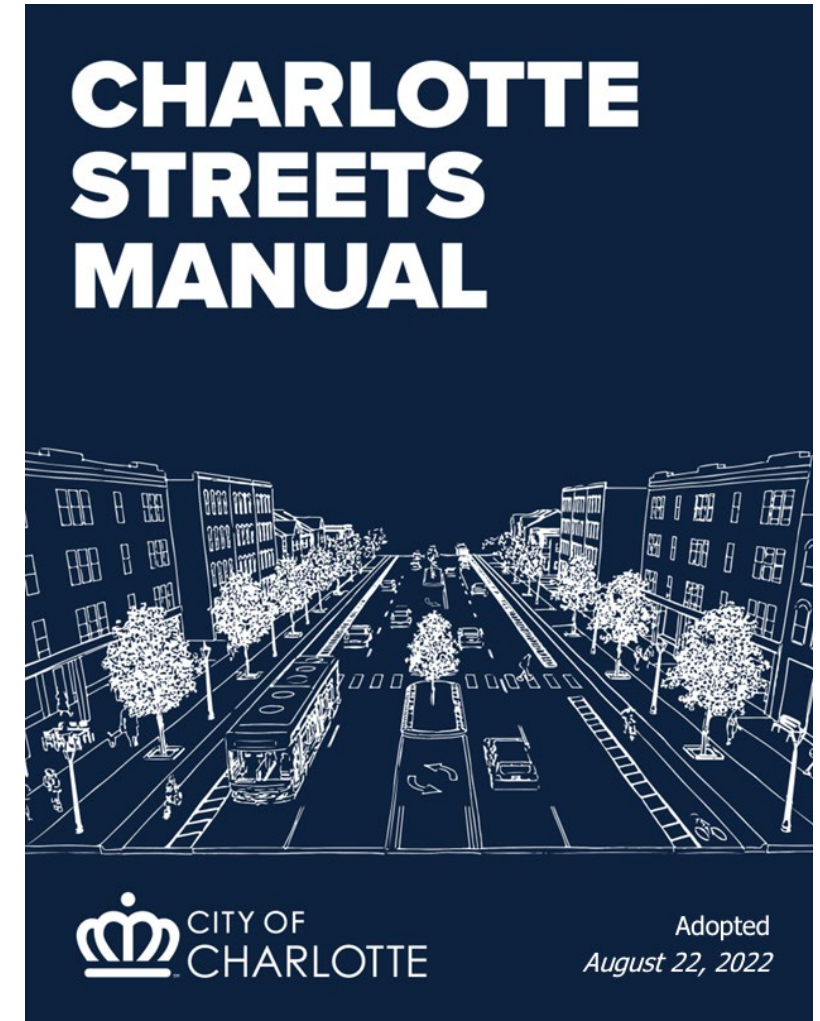
# Session 8 – SSI Articles

- **Article 29:** Introduction to Subdivision, Streets, & Other Infrastructure
- **Article 30:** Subdivision
- **Article 31:** Network, Cross-Access, & Driveway Regulations
- **Article 32:** Required New Streets & Transportation Improvements
- **Article 33:** Standards for Streets, Off-Street Public Paths, & Cross-Access
- **Article 34:** Other Infrastructure



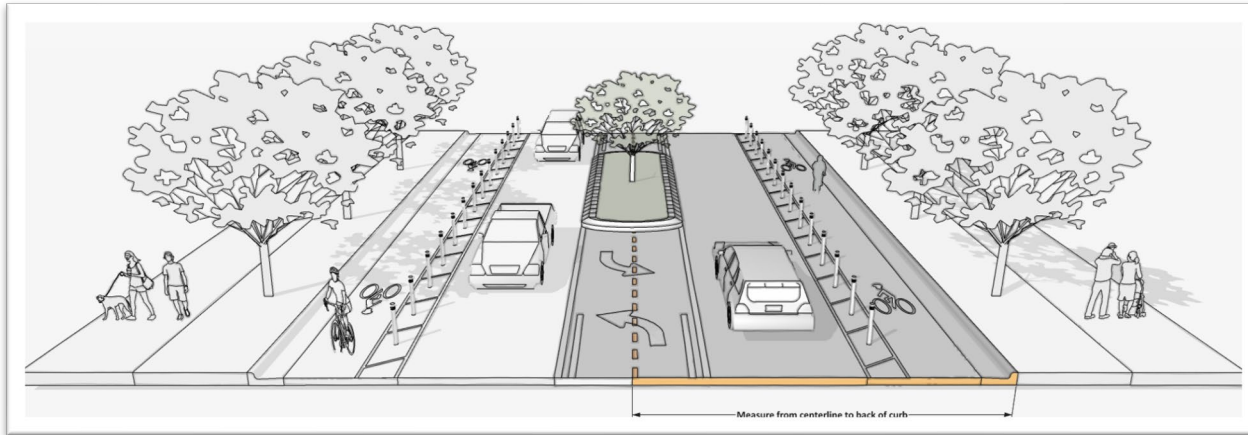
# Streets Manual – Supports UDO

- Three Components:
  - Streets Map
  - Access Management & Driveway Design
  - Comprehensive Transportation Review



# Section 1.1: Streets Map

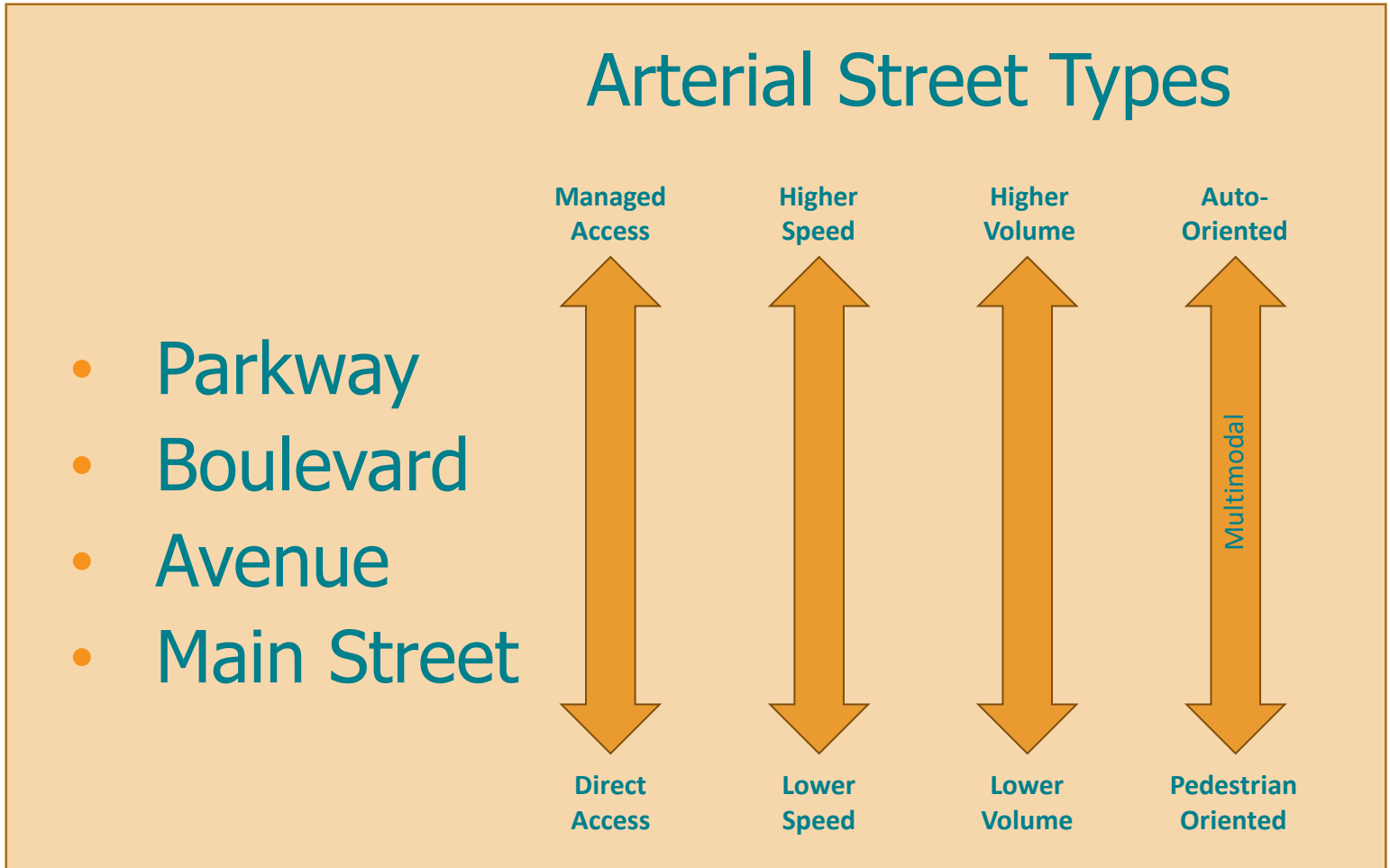
- Existing and future public street network
- Type, design, and location of streets



# Section 1.2.B: Streets Map Street Type Summary

- Arterials

- Shown on Streets Map: Location + Cross-Section
- Arterial Street Type Standards



# Section 1.2.B: Streets Map Street Type Summary

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- Limited Access

- Shown on Streets Map: Location Only
- Federal/State Design and Access

- Collector

- Shown on Streets Map: Location Only
- CLDSM Design Standards

- Local

- Shown on Streets Map: Any street not mapped
- CLDSM Design Standards

# Section 1.2.B: Streets Map Street Type Summary

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- Uptown Streets
  - Shown on Streets Map: Location and Future Curb Line
  - Design: UDO Tables 33-3 and 33-6

- Special Facilities
  - On-Street Greenways
  - Location and/or Cross-Section
  - Arterial Street Type Standards/CLDSM Design Standards

# Section 1.2.E: Arterial Cross-Section Standards

- General standards as noted in Table 1.3
- Refer to Streets Map for specifics for your street
- Future back of curb from centerline of existing street

Component	Parkway	Boulevard	Avenue	Main Street
Future Back of Curb Placement (from which setbacks are measured in most UDO districts)	N/A	<b>Refer to Streets Map:</b> Varies by street and based on Arterial Street Type Cross-Section Standards (measured from centerline of street)		
Number of Travel Lanes (11 feet)	4 to 6	4 to 6	2 to 6	2
Center Space (minimum dimension)	Varies	17 feet	11 feet	-
Curb and Gutter (2.5 feet)	Varies	Required	Required	Required
<b>Bicycle Facilities</b>				
Shared Roadway	-	-	-	Required
Bike Lane (5 feet)	-	-	Required based on context	-
Buffered/Separated Bike Lane (8 feet)	-	Required based on context	Required based on context	-
<b>On-Street Parking</b>				
7 feet from face of curb	-	-	Permitted/required based on context	Required
<b>Streetscape &amp; Pedestrian Facilities</b>				
Amenity Zone/Planting Strip Determination	Planting Strip	Planting Strip	Varies (apply standards in Section 33.3; Table 33-5 of the UDO, unless specified on Streets Map)	Amenity Zone
Amenity Zone/Planting Strip Dimension	Varies	8 feet		8 feet
Sidewalk (Lower-intensity Place Types: <i>Neighborhood 1, Commercial, Manufacturing &amp; Logistics, Campus (IC-1, OFC Zoning Districts), Parks and Preserves</i> )	-	6 feet		10 feet
Sidewalk (Higher-intensity Place Types: <i>Neighborhood Center, Community Activity Center, Regional Activity Center, Innovation Mixed Use, Campus (IC-2 Zoning District), Neighborhood 2</i> )	-	8 feet		10 feet
<b>Shared Facilities</b>				
Shared-use path (12 feet)	Required based on context			-
Greenway On-Street (16 feet on one side)	Required as necessary based on adopted City and County Greenway Plans (including on Collector and Local Street designations)			

# Section 2: Access Management & Driveway Design

- Codifies and replaces driveway access management and design requirements found in the old Draft CDOT Driveway Manual
- Driveway Plan approval required as a result of Commercial or Subdivision Process, or for changes of use for substandard driveways





# Section 2.2.A: Access Guidelines

- By Street Type:
  - Preferred Access Location
  - Access Amount/Spacing
  - Access Restrictions
- Listed by typical outcomes
- CDOT will apply guidance and consider site specific conditions
- If requesting exception from standard the designer must demonstrate reasoning

Table 2.1 Access Guidelines			
	Preferred Access Location	Access Amount/Spacing	Access Restrictions
<b>Parkway</b>	<i>Priority order:</i> <ol style="list-style-type: none"> <li>1. Side or parallel street</li> <li>2. New street</li> <li>3. Shared driveway</li> <li>4. Individual driveway typically not allowed</li> </ol>	<i>Amount:</i> <ol style="list-style-type: none"> <li>1. Typically, access amount pre-determined by NCDOT</li> <li>2. Additional access considered on a case-by-case basis</li> </ol> <i>Spacing:</i> <ol style="list-style-type: none"> <li>1. Typically, access spacing pre-determined by NCDOT</li> </ol>	<ol style="list-style-type: none"> <li>1. Full movement considered for signalized street intersections</li> <li>2. Typically, less than full movement for non-signalized street access</li> <li>3. Additional restrictions per 2.2.B and 2.2.C</li> </ol>
<b>Boulevard</b>	<i>Priority order:</i> <ol style="list-style-type: none"> <li>1. Side or parallel street</li> <li>2. New street</li> <li>3. Shared driveway and/or</li> <li>4. Cross-access</li> <li>5. Individual driveway</li> </ol>	<i>Amount:</i> <ol style="list-style-type: none"> <li>1. Typically, one access point</li> <li>2. Additional access based on new street requirements (UDO Article 31)</li> </ol> <i>Spacing:</i> <ol style="list-style-type: none"> <li>1. Access spacing based on preferred block length (UDO Table 31-1)</li> </ol>	<ol style="list-style-type: none"> <li>1. Full movement considered for street and shared driveway/cross-access</li> <li>2. Typically, less than full movement for individual driveways</li> <li>3. Additional restrictions per 2.2.B and 2.2.C</li> </ol>
<b>Avenue</b>	<i>Priority order:</i> <ol style="list-style-type: none"> <li>1. Side street</li> <li>2. New street</li> <li>3. Shared driveway and/or</li> <li>4. Cross-access</li> <li>5. Individual driveway</li> </ol>	<i>Amount:</i> <ol style="list-style-type: none"> <li>1. Typically, one access point</li> <li>2. Additional access based on new street requirements (UDO Article 31)</li> <li>3. Additional access considered if there's a significant case that site's circulation/operations will not work with a single access point</li> </ol> <i>Spacing:</i> <ol style="list-style-type: none"> <li>1. Access spacing based on half the preferred block length (UDO Table 31-1)</li> </ol>	<ol style="list-style-type: none"> <li>1. Typically, full movement on 2+ Avenues</li> <li>2. Typically, less than full movement on 4+ and 6+ Avenues</li> <li>3. Additional restrictions per 2.2.B and 2.2.C</li> </ol>
<b>Main Street</b>	<i>Priority order:</i> <ol style="list-style-type: none"> <li>1. Side street</li> <li>2. Cross-access</li> <li>3. Individual driveway typically not allowed</li> </ol>	<i>Amount:</i> <ol style="list-style-type: none"> <li>1. Typically, no direct access point (to ensure high-quality pedestrian access)</li> <li>2. Direct access considered if no side street or cross-access is possible</li> </ol> <i>Spacing:</i> <ol style="list-style-type: none"> <li>1. Access spacing based on preferred block length (UDO Table 31-1)</li> </ol>	<ol style="list-style-type: none"> <li>1. Restrictions per 2.2.B and 2.2.C</li> </ol>
<b>Collector &amp; Local Streets</b>	<i>Priority order:</i> <ol style="list-style-type: none"> <li>1. Shared driveway and/or cross-access (encouraged)</li> <li>2. Individual driveway</li> </ol>	<i>Amount:</i> <ol style="list-style-type: none"> <li>1. Typically, one access point</li> <li>2. Additional access if the site meets all applicable access requirements per 2.2.B and 2.2.C</li> </ol> <i>Spacing:</i> <ol style="list-style-type: none"> <li>3. Minimal spacing requirements (see 2.2.B)</li> <li>4. Less frequent spacing in higher intensity contexts (for pedestrian safety)</li> </ol>	<ol style="list-style-type: none"> <li>1. Typically, full movement</li> <li>2. Restrictions per 2.2.B and 2.2.C</li> </ol>

# Section 2.2.B: Driveway Location



- Signalized Intersections – Restricted access within 200' (UDO 31.3)
- Unsignalized Intersections evaluated according to UDO 31.3
- Adjacent Driveways – 50' minimum (non-median divided) / 20' minimum (median-divided)
- Property Lines – 10' minimum, more if adjacent driveway within 10'

# Section 2.2.C: Access Restrictions & Mitigations



- UDO 31.3 lists common restrictions, CDOT final determination
- Restricted access typically raised concrete median
- “Pork Chop” only restrictions not approved

# Section 2.2.D: Supporting Transportation Infrastructure

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- City has the authority to require turn lanes for private development
- Left-Turn Lanes
  - >50 left turns from arterial
  - CTR
- Right-Turn Lanes
  - CTR
  - Signalized intersections, or appropriate place types (Trucks)
- Traffic Signals – signal agreement required for new/modified signals

# Section 2.3.A: Driveway Design Criteria

- Driveway Type: Refer to CLDSM & context in Table 2.2
- CDOT may require different standard type
- Designer may submit differing standard with supporting reasons

Driveway Type (CLDSM)	Description / Intent	General Parameters
<b>Type I</b> (10.24 A,B,C; 10.25 A, C; 10.27.A)	Driveways designed for low turning volumes and slow turning speeds. Typically used for lower density residential development, including single-family residences, townhomes, duplexes, and triplexes.	<ul style="list-style-type: none"> <li>• Generally used on Locals and Collectors</li> <li>• May apply on Arterials</li> <li>• Recommended width 16'-20'</li> </ul>
<b>Type II</b> (10.24 A, B, C; 10.25 B, D)	Driveway with flares. Designed for higher turning volumes, but relatively slow turning speeds, to support moderate to high pedestrian activity.	<ul style="list-style-type: none"> <li>• Generally used on streets with speed limits of <math>\leq 35</math> mph</li> <li>• Typically &lt;500 daily vehicle trips</li> <li>• Recommended width 26'-30'</li> </ul>
<b>Type II Modified</b> (10.25 E)	Driveway with small radii. Designed for higher turning volumes and somewhat higher speeds to balance ingress/egress in moderate to high pedestrian areas.	<ul style="list-style-type: none"> <li>• Generally used on streets with speed limits &gt;35 mph</li> <li>• Higher trip generating sites (typically ~500 daily vehicle trips).</li> <li>• Recommended width 26'-30'</li> </ul>
<b>Type III</b> (10.28)	Street-type driveway serving as: <ul style="list-style-type: none"> <li>• primary shared access for multiple developments,</li> <li>• access primarily for truck traffic, or</li> <li>• the fourth leg to a signalized intersection.</li> </ul>	<ul style="list-style-type: none"> <li>• Generally used on arterials</li> <li>• Higher trip generation developments (typically ~2,500 daily trips)</li> <li>• Typically, one ingress and two egress lanes</li> <li>• Recommended width 35-40'</li> </ul>
<b>Type IV</b> (10.25F)	Street-type driveway designed to accommodate high truck activity where no curb and gutter exists.	<ul style="list-style-type: none"> <li>• Used on a variety of street types</li> <li>• Recommended width 35'-40'</li> </ul>

# Section 2.3.B: Additional Design Guidelines

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1. Convenience / Gas Station Guidance
2. Gated Entrances – CDOT Approved
3. Channelization & Internal Driveway Access Minimums
  - 50' Commercial->Public Street
  - 100' Large Shopping Centers/High Density Mixed-Use
  - 200' at signalized intersection
4. Driveway Alignment – UDO 31.3
5. Schools – MSTA calculator, CTR potentially required
6. Residential Driveways – Subdivision (or) Individual Parcel – Drainage impacts reviewed, Type 1 Driveways, Contact development services

# Section 2.3.B: Additional Design Guidelines (cont.)

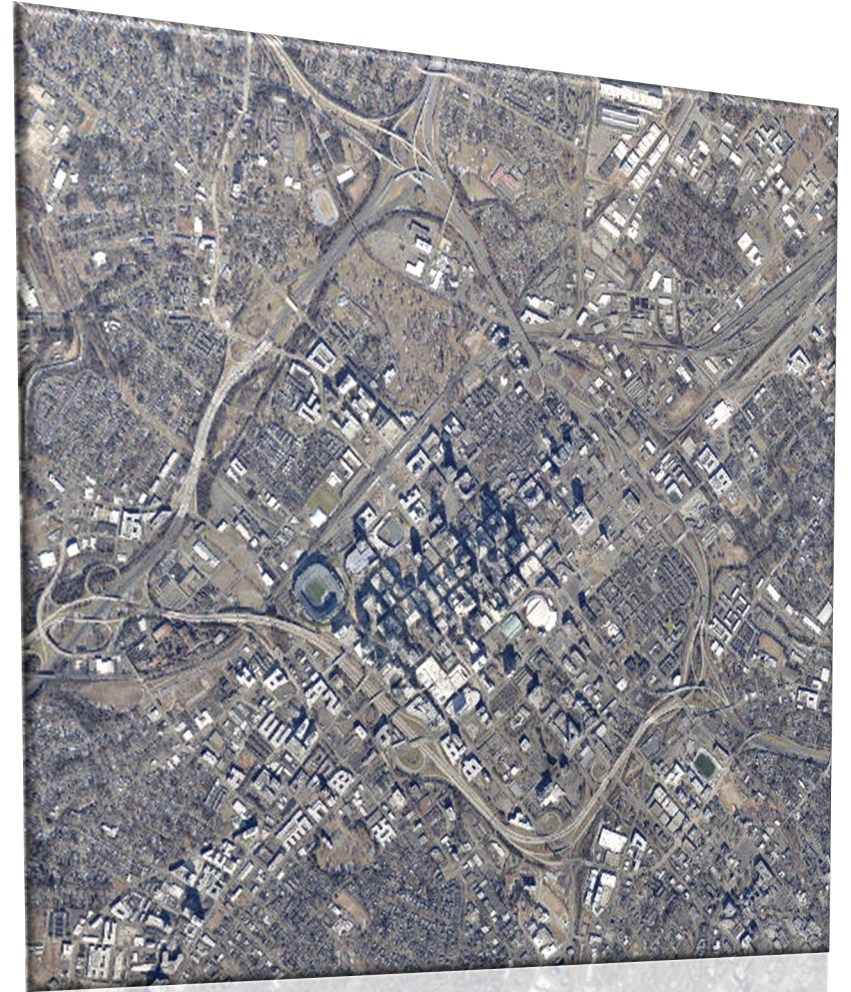
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7. Sight Distance – refer to CDOT Sight Distance Policy (Updated policy in review, to be posted prior to June 1)
8. Permanent pavement Markings & Signage
  - Conform to MUTCD, CDOT's Pavement Marking Standards, located and maintained per approved site plan
9. Construction-Related Traffic Control
  - Conform to MUTCD, CDOT WATCH, and located and maintained per approved plans

# Section 2.4: Special Provisions for Uptown Streets

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- Tryon Street Mall access restrictions and service time/day restrictions
- Trade Street access restrictions
- Brevard Street parking facility access





# Section 3: Comprehensive Transportation Review

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- New City of Charlotte Policy
- Applies to Rezoning **AND** By-Right Development
- 3 Types of Assessments
  - Multimodal Assessment
  - Transportation Demand Management Assessment
  - Traffic Impact Study

CTRR

# Section 3.2.A: CTR Assessments & Thresholds

- Thresholds based on generated trips from development AND zoning district
- Low Intensity vs Medium/High Intensity Districts
- MMA & TDM – 3 Tiers

Table 3.1 Comprehensive Transportation Review Thresholds									
		Multimodal Assessment			Transportation Demand Management Assessment (TDM)			Traffic Impact Study (TIS)	
		Intent Identify pedestrian mitigations			Intent Identify vehicle trip reduction strategies			Intent Identify vehicle trip mitigations	
		Multimodal Mitigation			TDM Mitigation			Traffic Impact Study	
Zoning Districts	Land Use	Tier 1 (Mitigation Points:3)	Tier 2 (Mitigation Points:6)	Tier 3 (Mitigation Points:9)	Tier 1 (Mitigation Points: NA)	Tier 2 (Mitigation Points: NA)	Tier 3 (Mitigation Points: NA)	Threshold	Additional Conditions
Net New Trip Thresholds: <b>Low Intensity Development</b> (based on zoning districts)									
N1 Districts N2-A N2-B MHP ML-1 ML-2 IC-1 OFC N2-C IC-2 CG CR	Residential	≥ 750 daily trips	≥ 1,500 daily trips	≥ 2,000 daily trips	Not Required			≥ 1,500 daily trips or ≥ 150 peak hour trips	Regardless of threshold, a TIS may be required if any of the following conditions exist.  1. Impacts a location with a high vehicle or multimodal crash history.  2. Occurs at a high congestion location.  3. Creates the fourth leg of or otherwise modifies an existing signalized intersection.  4. Impacts a unique access situation, such as a railroad crossing, fire station access location, etc.
	Commercial	≥1,000 daily trips	≥1,250 daily trips	≥1,500 daily trips					
	Office	≥100 peak-hour	≥125 peak-hour	≥150 peak-hour					
	Industrial	≥1,000 daily trips	≥1,250 daily trips	≥1,500 daily trips					
	Mixed Used <sup>1</sup>	≥1,000 daily trips	≥ 1,500 daily trips	≥ 2,000 daily trips					
Net New Trip Thresholds: <b>Medium to High Intensity Development</b> (based on zoning districts)									
Zoning Districts	Land Use	Tier 1 (Mitigation Points:5)	Tier 2 (Mitigation Points:9)	Tier 3 (Mitigation Points:14)	Tier 1 (Mitigation Points:2)	Tier 2 (Mitigation Points:4)	Tier 3 (Mitigation Points:6)	Threshold	
IMU NC CAC-1 CAC-2 TOD-UC TOD-NC TOD-CC TOD-TR RAC UC UE	Residential	≥ 350 daily trips	≥750 daily trips	≥1,100 daily trips	≥350 daily trips	≥ 750 daily trips	≥ 1,100 daily trips	≥ 2,000 daily trips or ≥ 200 peak hour trips  (after 30% trip reduction for TDM)	Thresholds are based on ITE Suburban classification. CDOT may allow other classifications.
	Commercial	≥1,000 daily trips	≥1,250 daily trips	≥1,500 daily trips	≥1,000 daily trips	≥1,250 daily trips	≥1,500 daily trips		
	Office	≥100 peak-hour	≥125 peak-hour	≥150 peak-hour	≥100 peak hour	≥125 peak hour	≥150 peak hour		
	Industrial	≥1,000 daily trips	≥1,250 daily trips	≥1,500 daily trips	≥1,000 daily trips	≥1,250 daily trips	≥1,500 daily trips		
	Mixed Used <sup>1</sup>	≥1,000 daily trips	≥ 1,250 daily trips	≥ 1,500 daily trips	≥1,000 daily trips	≥1,250 daily trips	≥1,500 daily trips		

# Section 3.2.A: CTR Assessments & Thresholds

- Example:
  - Multimodal Assessment
  - Low Intensity Zoning District
  - Office use
  - >125 peak hour trips
  - = Tier 2 (6 Mitigation Points)

**Table 3.1 Comprehensive T**

		Multimodal Assessment			
		Intent			
		Identify pedestrian mitigations			
		Multimodal Mitigation			
Zoning Districts	Land Use	Tier 1 (Mitigation Points:3)	Tier 2 (Mitigation Points:6)	Tier 3 (Mitigation Points:9)	(M
Net New Trip Thresholds: <b>Low Intensity Development</b> (based on zoning districts)					
N1 Districts	Residential	≥ 750 daily trips	≥ 1,500 daily trips	≥ 2,000 daily trips	
	N2-A N2-B MHP	Commercial	≥1,000 daily trips	≥1,250 daily trips	≥1,500 daily trips
ML-1 ML-2 IC-1 OFC		Office	≥100 peak-hour	≥125 peak-hour	≥150 peak-hour
N2-C IC-2 CG CR	Industrial	≥1,000 daily trips	≥1,250 daily trips	≥1,500 daily trips	
	Mixed Used <sup>1</sup>	≥1,000 daily trips	≥ 1,500 daily trips	≥ 2,000 daily trips	

# Section 3.2.A: CTR Assessments & Thresholds

## Example 2:

- TDM Assessment
- High Intensity Zoning District
- Residential use
- > 1,100 daily trips
- = Tier 3 (6 Mitigation Points)

		Multimodal Assessment			Transportation Demand Management Assessment (TDM)		
		Intent Identify pedestrian mitigations			Intent Identify vehicle trip reduction strategies		
		Multimodal Mitigation			TDM Mitigation		
Zoning Districts	Land Use	Tier 1 (Mitigation Points:3)	Tier 2 (Mitigation Points:6)	Tier 3 (Mitigation Points:9)	Tier 1 (Mitigation Points: NA)	Tier 2 (Mitigation Points: NA)	Tier 3 (Mitigation Points: NA)
Net New Trip Thresholds: <b>Low Intensity Development</b> (based on zoning districts)							
N1 Districts N2-A N2-B MHP ML-1 ML-2 IC-1 OFC N2-C IC-2 CG CR	Residential	≥ 750 daily trips	≥ 1,500 daily trips	≥ 2,000 daily trips	Not Required		
	Commercial	≥1,000 daily trips	≥1,250 daily trips	≥1,500 daily trips			
	Office	≥100 peak-hour	≥125 peak-hour	≥150 peak-hour			
	Industrial	≥1,000 daily trips	≥1,250 daily trips	≥1,500 daily trips			
	Mixed Used <sup>1</sup>	≥1,000 daily trips	≥ 1,500 daily trips	≥ 2,000 daily trips			
Net New Trip Thresholds: <b>Medium to High Intensity Development</b> (based on zoning districts)							
Zoning Districts	Land Use	Tier 1 (Mitigation Points:5)	Tier 2 (Mitigation Points:9)	Tier 3 (Mitigation Points:14)	Tier 1 (Mitigation Points:2)	Tier 2 (Mitigation Points:4)	Tier 3 (Mitigation Points:6)
IML NC CAC-1 CAC-2 TOD-UC	Residential	≥ 350 daily trips	≥750 daily trips	≥1,100 daily trips	≥350 daily trips	≥ 750 daily trips	≥ 1,100 daily trips
	Commercial	≥1,000 daily trips	≥1,250 daily trips	≥1,500 daily trips	≥1,000 daily trips	≥1,250 daily trips	≥1,500 daily trips

# Section 3.2.A: CTR Assessments & Thresholds

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- Traffic Study Thresholds
  - Low Intensity - >1,500 daily, >1150 peak
  - High Intensity - >2,000 daily, >200 peak
    - High intensity thresholds after 30% reduction for TDM
  - CDOT may require TIS if under thresholds
    - Location with high crash history
    - High congestion location
    - 4<sup>th</sup> Leg/modifies traffic signal
    - Unique access situation (near rail, fire station, etc)

# Section 3.2.B: CTR Scoping & Review

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- Process applies when above TIS threshold
  - 10 day scope review, 10 day revised scope review
  - 20 day TIS review, 10 day TIS revision review
- Scope not required for standalone MA / TDM assessment
  - Include assessments/mitigation measures on construction plans/rezoning plans
  - Use supplemental guidance in the CTR Process Summary Guide

# Section 3.2.C: CTR Mitigations

- Table 3.3 & 3.4 provide menu of options
- Choose options until required points are met
- TDM includes both programmatic and physical mitigations

Programmatic Strategies	Mitigation Points
<b>Education, Marketing and Outreach</b> - Provide employees and/or tenants TDM education packets with information about non-SOV travel options including specific transit and bicycle routes.	1
<b>Transit Fare Subsidy</b> - Provide contributions or incentives equivalent to 50% of the adult-fare cost of a CATS Express Monthly pass for each employee/resident, at least once annually. New employees/residents should be offered the subsidy upon hire/move-in if the annual request deadline has passed.	1
<b>Joy Rides Membership</b> - For sites within 1,000 feet of an existing or planned Joy Rides station, offer annual Charlotte Joy Rides bike share membership to employees and/or residents annually.	1

# Section 3.5: Traffic Impact Study (TIS)

TIS required when thresholds met and MAY be required if:

- Development land use mix changes
- Access to the site changes
- Previous TIS more than 2 years old
- Other changes to surrounding area
- TIS methodology & requirements updated and similar to NCDOT Traffic Study – NC P.E.
- MA/TDM – Other qualified professional

<b>Background Growth Rate</b>
<ul style="list-style-type: none"><li>• Must be based on historic AADT and growth rates measured along the study corridors.</li><li>• If no data are available, a fixed 2% rate will be applied, unless CDOT determines a different rate based on developments near the site. CDOT staff will approve the list of nearby projects to be included in the analysis.</li></ul>
<b>Existing Trip Reduction</b>
<ul style="list-style-type: none"><li>• Projects may deduct existing trips from the total proposed development trip generation when: 1) existing site land uses were active over the prior year, 2) peak hour characteristics are similar, 3) there are documented vehicle counts collected over the prior year (CDOT may allow ITE Trip Generation to determine existing trips, on a case-by-case basis).</li><li>• Trip credits cannot be used for sites that have been closed/dormant for more than one year.</li></ul>
<b>Internal Capture</b>
<ul style="list-style-type: none"><li>• Use <a href="#">NCDOT Congestion Management Capacity Analysis Guidance</a> (or latest guidance) for internal capture.</li><li>• Use <a href="#">NCHRP 684 Enhancing Internal Trip Capture Estimation for Mixed-Use Developments</a> (or latest national guidance) to calculate the rate.</li><li>• Apply the internal capture reduction before the pass-by trips are calculated.</li></ul>
<b>Pass-By Trips</b>
<ul style="list-style-type: none"><li>• Use maximum peak hour trip rates prescribed in NCDOT Congestion Management's "Rate versus Equation" table (or latest guidance).</li><li>• CDOT may consider a higher pass-by discount, with appropriate documentation.</li></ul>
<b>Trip Distribution</b>
<ul style="list-style-type: none"><li>• Projects proposed to be built in phases must use actual phasing time forecasts for full project build-out.</li><li>• Provide exhibits showing trip distribution percentages based on existing and future traffic patterns, locations of population/employment.</li></ul>
<b>Turning Movement Counts (TMC)</b>
<ul style="list-style-type: none"><li>• Required for all vehicles, bicycles, pedestrians, and trucks at all study area intersections.</li><li>• Must be collected in 15-minute increments and for industry-standard days and times:<ul style="list-style-type: none"><li>a. 6:30-9:30 AM and 4:00-7:00 PM on a typical Tuesday, Wednesday, or Thursday,</li><li>b. when public schools in session,</li><li>c. weather not a factor, and</li><li>d. non-holiday weeks.</li></ul></li><li>• CDOT may require additional analysis periods based on project location and proposed uses:<ul style="list-style-type: none"><li>a. Saturday peak periods for developments with significant retail uses (typically, 11:00 AM to 2:00 PM),</li><li>b. Sunday peak periods for projects including or adjacent to church uses,</li><li>c. weekday evening game-day peak periods for projects adjacent to major sporting facilities.</li></ul></li><li>• If site is currently in use, count all existing driveways and report the TMC data as existing site trips in the trip generation summary table.</li><li>• For TMCs more than one (1) year old, but less than two (2) years old, apply a growth rate, to be determined by CDOT.</li></ul>
<b>Other</b>
<ul style="list-style-type: none"><li>• Utilize the most recent version of ITE Trip Generation guidelines and methods for trip generation.</li></ul>



# Article 32: Required New Streets & Transportation Improvements

- 32.1 Comprehensive Transportation Review -> Streets Manual
- 32.2 Transportation Adjustments – List of Adjustment Authority

Standard	Eligible for Adjustment	Deciding Authority
Cross-Access	Section 31.2	CDOT Director <sup>1</sup>
Rapid Transit Corridor Reservation	Section 32.3	CATS <sup>2</sup> Director <sup>1</sup>
Bus Stop and Amenity Installation Requirements	Section 32.4	CATS Director <sup>3</sup>
Requirements for New Streets	Section 32.5.A.2	Planning Director <sup>3</sup>
Required Off-Street Public Paths Installation	Section 32.6.A.2	Planning Director <sup>3</sup>
Installation of New Curb and Gutter	Section 32.7.A and Section 32.7.C.1	CDOT Director <sup>1,5</sup>
Relocation of Existing Curb and Gutter	Section 32.7.A and Section 32.7.C.3	CDOT Director <sup>1</sup>
Sidewalk and Amenity Zone/Planting Strip Installation <sup>4</sup>	Section 32.7.A, Section 32.7.D.1, and Section 32.7.D.2	Planning Director <sup>3</sup>
Uptown Streetscape - Amenity Zone Elements, Pavers, and Pedestrian Lighting	Section 33.4	Planning Director <sup>3</sup>

<sup>1</sup> In consultation with the Planning Director

<sup>2</sup> Charlotte Area Transit System (CATS)

<sup>3</sup> In consultation with the CDOT Director

<sup>4</sup> The perimeter tree planting requirements of Article 20 shall apply and shall not be adjusted.

<sup>5</sup> Eligible adjustments for the installation of curb and gutter for Uptown Streets to be made in consultation with the Planning Director.

# Article 32.3: Rapid Transit Corridor Preservation

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- Adopted MTC Rapid Transit Corridors must be preserved with development projects
- Cannot construct new building/partial building within transit reservation area
- Can put surface parking, open space, recreational areas on interim basis – must get City approval
- Except for UC Zoning and TOD Zoning – reservation area will expire after 18 months

# Article 32.4: Bus Stop and Amenity Requirements

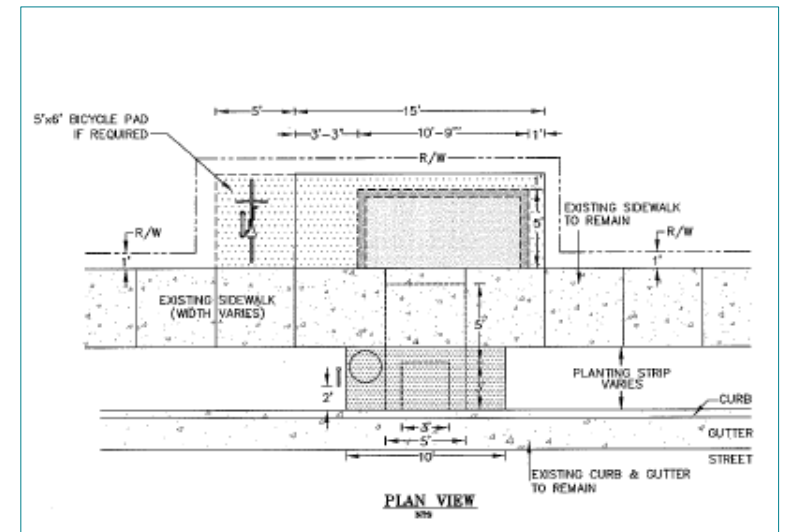
Purpose: Maintain and improve access to CATS for development located along bus routes

- Existing CATS Bus Stops and Amenities
  - Update to Americans with Disabilities Act (ADA) standards, if necessary
- New CATS Bus Stops and Amenities
  - Applicable to new nonresidential, mixed-use, multi-family, or townhouse development, if:
    - Located along bus route as indicated on an MTC-adopted Transit Service Plan, and
    - CTR Multimodal Assessment is triggered
  - Not required if an existing stop is within a walking distance of 1,320 feet and located on same side of street



# Article 32.4: Bus Stop and Amenity Requirements

- New CATS bus stops and amenities must be designed to CATS Bus Stop Standards
- Private Bus Stops and Amenities
  - Reviewed and approved by CATS
- Non-CATS Bus Stops and Amenities
  - Behind minimum setback line, no negative impacts to public safety, meet all sight distance requirements
- Exceptions
  - Steep slopes in excess of 15%
  - Intersection or driveway sight distance conflicts
  - Unsafe conditions for transit system, motor vehicles, or pedestrians



# Article 32.5 Required New Streets

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- New street required when:
  - Subdivision via Article 30.3.A.
  - Construction of new principal structure
- Right-of-Way reservation for new limited access roads and arterials:
  - Agency shall have 18 months from LD approval to enter into contract to purchase or start condemnation
  - After 18 months – area free of reservation
  - May dedicate at any time during reservation period
    - Dedication allows minimum lot size reduction in N1 by 10%

# Article 32.5 Required New Streets

- Main Streets – Shown on Streets Map
  - May be proposed if requirements met
- Collectors – Required to be constructed and ROW dedicated when on Streets Map
  - Collector required if intersects with arterial and:
    - >1 lot / acre
    - More than 125 lots
    - More than 125 dwelling units
    - Serves a collector function



Dimension to Future Back of Curb

Required Streetscape

# Article 32.5 Required New Streets

- Local Streets
  - If required by Article 31 (or) if other proposed public street
  - If allowed to be private, must have public access easement
- Sight Distance – Must meet AASHTO and Streets Manual

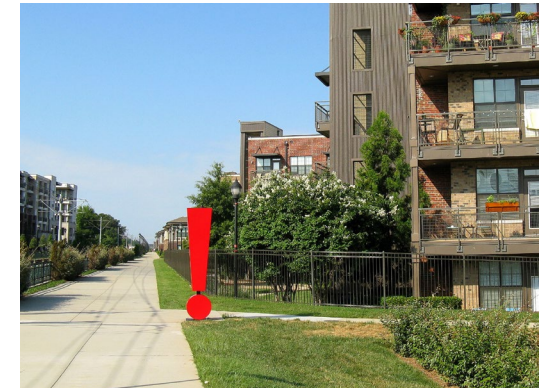


Dimension to Future Back of Curb

Required Streetscape

# Article 32.6 Required Off-Street Public Paths

- Public pedestrian and/or bike connections
  - Transit Trail
  - Greenway Trail
  - Off-Street Trail Connection
- Required:
  - For new subdivision (subject to subdivision regulations)
  - For new principal structure, except for new single-family, duplex, triplex, or quadraplex





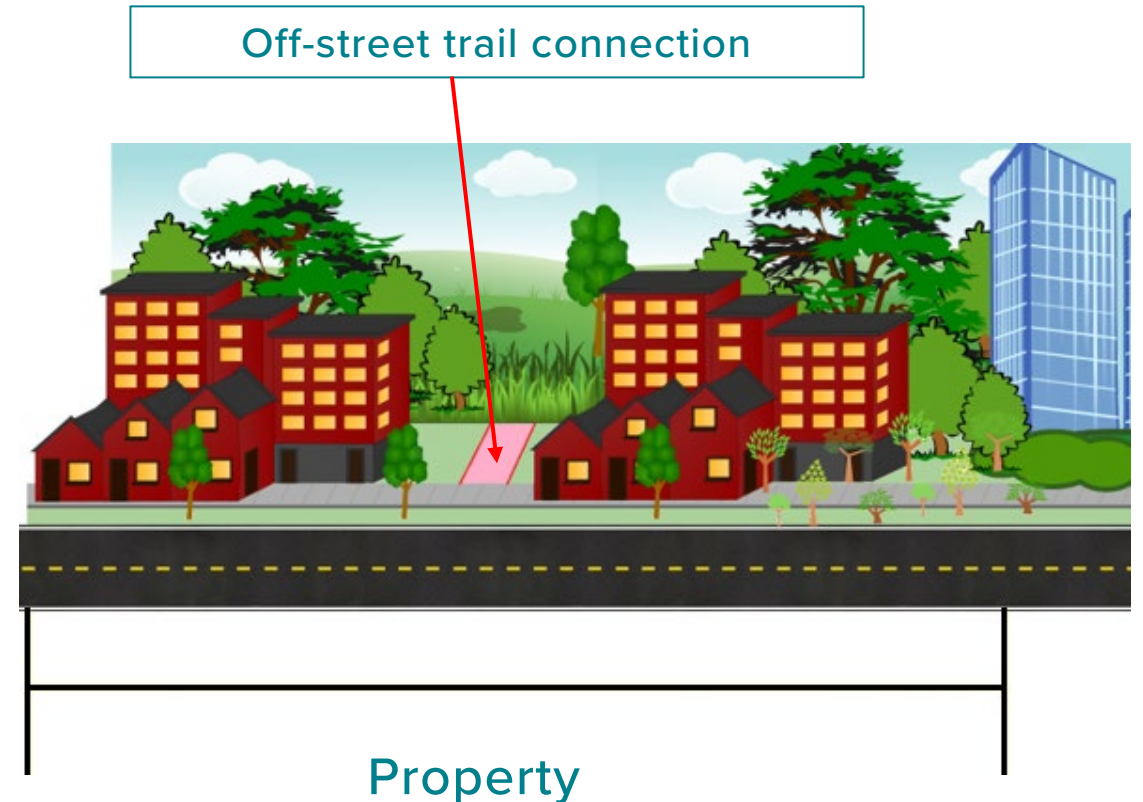
# Article 32.6 Required Off-Street Public Paths

- **Transit Trail**
  - 18-month reservation when identified on Council-adopted transit trail plan
  - Begins upon land development approval
- **Greenway Trail**
  - 18-month reservation when identified on adopted Mecklenburg County Greenway Master Plan
  - Begins upon land development approval
  - Dedication bonus: If land dedicated, rather than reserved, counts toward minimum open space requirement



# Article 32.6 Required Off-Street Public Paths

- Off-Street Trail Connections
  - Connects public or network-required private street and a park or off-street public path
- Required:
  - If property between a public or network-required private street and either a park or off-street public path, and
  - If property has boundaries along a public or network-required private street greater than or equal to preferred block length
- Connection requires public access easement and may be combined with other required access
- Flexibility for applicable agency having jurisdiction over park or off-street public path



# Article 32.7 Improvements to Existing Streets

## 32.7.C NEW Curb and Gutter is required

### WHEN:

- CTR requires
- Subdivision 30.3.A.
- New Principal Structure (Except residential development on N1-A through N1-E)
- Principal Expansion of 10% (Except residential structure on N1-A through N1-E)
- Existing 5,000 s.f. gfa structure changes use categories (or) changes use to a transportation-intensive use within same category

Table 32-2: Transportation-Intensive Uses for Each Use Category

Commercial	Transportation
Amusement Facility - Indoor Hotel/Motel Live Performance Venue - Indoor Micro-Production of Alcohol Nightclub Restaurant/Bar Retail Goods Establishment	Passenger Terminal Public Transit Facility
	Open Space & Recreation
	Private Recreation Club Public Park
	Institutional/Government
	Community Center Place of Worship

# Article 32.7 Improvements to Existing Streets

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- **EXCEPTION to new curb and gutter installation are possible WHEN:**
  - Cumulative built-upon area will be less than 25% of parcel area
  - A fee is accepted by a funded CIP project to cover the cost of new curb and gutter installation
  - NCDOT street with NCDOT determination

# Article 32.7 Improvements to Existing Streets

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- **RELOCATING curb and gutter is required WHEN:**

- CTR requires
- New turn lane requires
- Exception for on-street waste collection has been approved

- Subdivision approval
- New Principal Structure (Except residential development on N1-A through N1-E)
- Principal Expansion of 50% or 5,000 s.f. (Except residential structure on N1-A through N1-E)

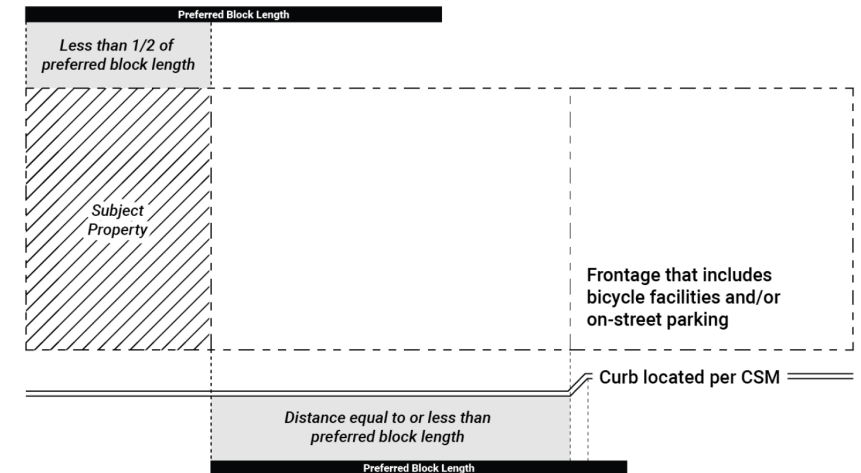
Exceptions Apply

# Article 32.7 Improvements to Existing Streets

## EXCEPTIONS to RELOCATING curb and gutter are allowed

### WHEN:

- Place Types N2, NC, CAC, RAC, IM-U, Zoned IC-2 or RC-1
  - Arterial Streets** – Frontage is less than half the preferred block length, **unless**:
    - Frontage is within preferred block length from curb per Streets Map
    - Frontage is within preferred block length from frontage with bicycle facilities and/or on-street parking if these facilities are required



- Collector and Local Streets**
  - Higher thresholds

# Article 32.7 Improvements to Existing Streets

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- **EXCEPTIONS to RELOCATING curb and gutter are allowed WHEN:**

- Place Types N1, Commercial, Manufacturing & Logistics, Parks and Preserves, or Zoned IC-1 or OFC
  - **Arterial Streets**
    - Frontage is less than half the preferred block length
    - Frontage is more than full preferred block length from curb per Streets Map
    - Frontage includes existing bicycle facilities and/or on-street parking, if required
  - **Collector & Local Streets** – Always exempt, but parking prohibited if there is not adequate space

# Article 32.7 Improvements to Existing Streets

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- **Other EXCEPTIONS to RELOCATING curb and gutter are allowed WHEN:**

- Cross-section elements can be safely and functionally provided in interim (CDOT Director)
- Funded CIP project accepts fee
- Heritage tree preservation – only if transportation facilities can be modified to safely function (Planning Director, CDOT Director)
- Stormwater impacts that cause disproportionate impacts (CDOT Director, Stormwater Director)
- Topographical constraints, unusual site-specific conditions, significant utility constraints (high voltage transmission lines) cause infeasibility (CDOT Director)



# Article 32.7 Improvements to Existing Streets

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## 32.7.D NEW Streetscape is required WHEN:

- CTR requires
- Subdivision 30.3.A.
- Curb and gutter, new or relocation, required
- New principal structure
- Existing 1,500 s.f. structure changes use category that increases trips (or) changes to transportation-intensive use within same category that increases trips
- Existing building expands by 1,000 s.f.

- Additional parking added that requires new sidewalk for pedestrian connection between parking area and principal use
- New or expansion of outdoor dining by 1,000 s.f.

\*N1 excepted unless part of subdivision approval

# Article 32.7 Improvements to Existing Streets

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## 32.7.D EXISTING Streetscape updating is required **WHEN:**

- CTR requires
- Subdivision 30.3.A.
- Curb and gutter, new or relocation, required
- New principal structure

### **Additional triggers for upgrading substandard streetscape required **WHEN:****

- Sidewalks: 2' or more less than required width
- Amenity zone/planting strip: less than 6' in width

Listed in 32.7.D.2.b

# Article 32.7 Improvements to Existing Streets

- 32.7.D.3. Streetscape Modifications for Tree Preservation

Order of Prioritization:

Sidewalk between trees and building



Sidewalk between curb and trees, with substandard planting strip



Sidewalk at back of curb, with additional foot of width added



# Article 32.7 Improvements to Existing Streets

## 32.7.D.4. Constrained Space

Table 32-3: Constrained Space Division When Sidewalk Required		
Amount of Space Available	Sidewalk	Remaining Space
Less than 4'	Not required	Hardscape, or planted with grass or groundcover
Less than 8' but 4' or greater	Entire space required to be sidewalk	All sidewalk required
Less than 10' but 8' or greater	Minimum sidewalk width required per Table 34-4	Remaining space can be hardscape, or planted with grass or groundcover

Table 32-4: Constrained Space Division When Shared-Use Path Required		
Amount of Space Available	Shared-Use Path	Remaining Space
Less than 4'	Not required	Hardscape, or planted with grass or groundcover
Less than 8' but 4' or greater	Entire space required to be sidewalk, instead of shared-use path	All sidewalk required
Less than 13' but 8' or greater	8' shared-use path required	Remaining space can be hardscape, or planted with grass or groundcover
Less than 16' but 13' or greater	8' shared-use path required	Remaining space to be amenity zone or planting strip.

# Article 32.7 Improvements to Existing Streets

## 32.8. Existing Unimproved Rights-Of-Way

- Guidance for access from residential lots along unimproved right-of-way
- Access may be graded through existing right-of-way to access the lot
- Access drive to existing street may be constructed of gravel, asphalt, or concrete
- May construct the street section, but not required



# Article 33: Standards for Streets, Off-Street Public Paths, & Cross-Access

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- 33.1. Technical Standards

- A.** Charlotte Land Development Standards Manual (CLDSM)
- B.** Charlotte-Mecklenburg Storm Water Design Manual
- C.** Charlotte Water, Water and Sewer Design and Construction Standards
- D.** Other city code, state, or federal regulations

- 33.2. Charlotte Streets map

- Location of existing and planned future arterial and collector streets
- Shared-use paths along local streets
- Standards for existing facilities

# Article 33.3 Street Design

## 33.3.A. Table 33-1 Standards listed for each of the following:

- New Street Location/Classification
- Existing Street Classification
- Future Back of Curb Location
- Curb and Gutter
- Right-of-Way Width

	Street Classification						
	Limited Access	Arterials			Collector	Local	Uptown Streets
		Parkway	Avenue/Blvd	Main Street			
<b>New Street – Location and Classification</b>	Streets Map	Streets Map	Streets Map	Streets Map or Sec. 33.5.D	Streets Map or Sec. 33.5.E	If not shown on Streets Map as Limited Access, Arterial, or Collector, or if not established as new Main Street or Collector, then classified as Local; Table 33-2 determines the required local street type	Streets Map
<b>Existing Street – Classification</b>	Streets Map	Streets Map	Streets Map	Streets Map	Streets Map		Streets Map
<b>Future Back of Curb Location</b>	N/A	N/A	Streets Map	Streets Map	CLDSM	CLDSM	Streets Map
<b>Curb and Gutter</b>	N/A	N/A	Standard curb and gutter per CLDSM	Standard curb and gutter per CLDSM	Standard curb and gutter per CLDSM; In the N1-A, N1-B, or N1-C Zoning Districts, may be standard or valley gutter	Standard curb and gutter per CLDSM; In the Neighborhood 1 Zoning Districts, may be standard or valley gutter	See Table 33-6

	Street Classification						
	Limited Access	Arterials			Collector	Local	Uptown Streets
		Parkway	Avenue/Blvd	Main Street			
<b>Right-of-Way Width Measurement</b>	Streets Map	Streets Map	Streets Map <sup>1</sup>	Streets Map <sup>1</sup>	CLDSM <sup>1</sup>	CLDSM <sup>1,2</sup>	Measured to the setback location per Streets Map classification and Table 33-6

# Article 33.3 Street Design

## 33.3.B. Local Street Matrix:

- Table 33-2 - CLDSM cross-section based on place type
- Conditions that allow some flexibility for certain place types based on parking

**Table 33-2: Local Street Matrix**

Local Street Types	Place Type									
	Neighborhood 1	Neighborhood 2	Neighborhood Center	Community Activity Center	Regional Activity Center	Commercial	Campus	Innovation Mixed-Use	Manufacturing and Logistics	Parks and Preserves
Residential Medium	Allowed for N1-A, N1-B, N1-C, and N1-D Zoning Districts	Allowed for Condition 1								
Residential Wide	Required unless zoned N1-A, N1-B, N1-C, or N1-D Zoning District	Required unless Condition 1								
Office/Commercial Narrow						Allowed for Condition 2	Allowed for Condition 2 for OFC Zoning District			Allowed for Condition 2
Office/Commercial Wide			Required	Required	Required	Required unless Condition 2	Required unless Condition 2 and zoned OFC Zoning District	Required		Required unless Condition 2
Industrial									Required	

**CONDITIONS**

**Condition 1** – The developer can reasonably demonstrate to the Planning Department, in consultation with the Charlotte Department of Transportation (CDOT), that alternative provisions can be made to ensure adequate on-site parking.

**Condition 2** – The developer can reasonably demonstrate to the Planning Department, in consultation with CDOT, that the anticipated long-term development will not create parking demand on the street.

**NOTE:** While a common design for parking and streetscape on both sides of a local street is preferred, there may be instances where opposite sides of a local street contain different Place Types. In such instances, the Planning Department, in consultation with CDOT, may approve the design of each side of the local street separately regarding the parking and streetscape so long as the resulting corridor operates in a functional and cohesive manner.

New partial streets shall be constructed to the standards of the required local street cross-section per this table not including streetscape on the incomplete portion of the partial street.



# Article 33.3 Street Design

## 33.3.C. Streetscape Reference:

- Table 33-3 – Lists where to find standards for
  - Sidewalk / Shared-Use Path Dimension
  - Amenity Zone / Planting Strip required
  - Amenity Zone / Planting Strip Dimension

Table 33-3: Streetscape Reference							
	Street Classification						
	Limited Access	Arterials			Collector	Local	Uptown Streets
		Parkway	Avenue/Blvd	Main Street			
<b>Sidewalk/ Shared-Use Path Dimension</b>	N/A; Unless indicated on Streets Map <sup>1</sup>	Streets Map <sup>1</sup>	Streets Map	Streets Map	See Table 33-4, unless a Shared-Use Path shown on Streets Map	See Table 33-4, unless a Shared-Use Path shown on Streets Map	See Table 33-6
<b>Required Amenity Zone or Required Planting Strip<sup>2</sup></b>	Planting Strip <sup>3</sup>	Planting Strip <sup>3</sup>	Streets Map <sup>4</sup>	Streets Map	See Table 33-5	See Table 33-5	Amenity Zone
<b>Required Amenity Zone or Required Planting Strip Dimension</b>	8 feet <sup>5</sup>						See Table 33-6 <sup>5</sup>

<sup>1</sup> Any pedestrian facilities on Limited Access roads and Parkways will be in the form of a shared-use path located either in a sidewalk utility easement outside the right-of-way or, with NCDOT approval, at the back of the right-of-way.

<sup>2</sup> Where the area between the sidewalk and the back of curb is three feet or more than the required minimum width of an amenity zone, grass or groundcover is permitted in the area that exceeds the required minimum width. If the area between the sidewalk and the back of curb is three feet or less than the required minimum width of an amenity zone, the amenity zone shall extend to the back of curb.

<sup>3</sup> Location of trees may be required to be outside the clear zone for North Carolina Department of Transportation (NCDOT) facilities.

<sup>4</sup> If the Charlotte Streets Map requires an amenity zone, a planting strip is permitted instead of an amenity zone for the TOD-TR Zoning District.

<sup>5</sup> If the Chief Urban Forester determines that planting trees in the required planting strip or amenity zone is not feasible due to shallow depth of existing underground utilities, the required trees may be relocated behind the sidewalk. In that case, a minimum four foot planting strip, planted with grass or groundcover, shall be retained for collector and local streets. A minimum eight foot planting strip planted with grass or groundcover shall be retained for arterials.

# Article 33.3 Street Design

## 33.3.D. Sidewalk Dimensions for Local and Collector Streets by Place Type (Table 33-4)

## 33.3.E. Amenity Zone vs Planting Strip Requirements for Local and Collector Streets by Place Type (Table 33-45)

Place Type	Sidewalk - 6 feet	Sidewalk - 8 feet
Neighborhood 1	Collector & Local	
Neighborhood 2		Collector & Local
Neighborhood Center		Collector & Local
Community Activity Center		Collector & Local
Regional Activity Center		Collector & Local
Commercial	Collector & Local	
Campus	Collector & Local, if zoned the OFC or IC-1 Zoning Districts	Collector & Local for all other zoning districts
Innovation Mixed-Use		Collector & Local
Manufacturing and Logistics	Collector & Local	
Parks and Preserves	Collector & Local, for all zoning districts not listed to the right	Collector & Local, if zoned a Neighborhood Commercial Zoning District, Community Activity Center Zoning District, Regional Activity Center Zoning District, Innovation Mixed-Use Zoning District, or IC-2 or RC-1 Zoning Districts

Place Type	Amenity Zone	Planting Strip <sup>3</sup>
Neighborhood 1 <sup>1</sup>	Allowed instead of a planting strip	Required
Neighborhood 2 if zoned N2-A, N2-B <sup>1</sup> Zoning Districts	Allowed instead of a planting strip	Required
Neighborhood 2 if zoned N2-C Zoning District	Required when abutting on-street parking	Allowed when not abutting on-street parking
Neighborhood Center	Required when abutting on-street parking	Allowed when not abutting on-street parking
Community Activity Center <sup>2</sup>	Required when abutting on-street parking	Allowed when not abutting on-street parking
Regional Activity Center <sup>2</sup>	Required when abutting on-street parking	Allowed when not abutting on-street parking
Commercial	Required when abutting on-street parking	Allowed when not abutting on-street parking
Campus if zoned IC-1, OFC <sup>1</sup> Zoning Districts	Allowed instead of a planting strip	Required
Campus if zoned IC-2 or RC-1 Zoning District	Required when abutting on-street parking	Allowed when not abutting on-street parking
Innovation Mixed-Use	Required when abutting on-street parking	Allowed when not abutting on-street parking
Manufacturing and Logistics <sup>1</sup>	Allowed instead of a planting strip	Required
Parks and Preserves <sup>1</sup>	Allowed instead of a planting strip	Required

<sup>1</sup> Planting strips are the standard requirement for these Place Types. Amenity zones may be allowed if the Chief Urban Forester, in consultation with the CDOT Director and Planning Director, determines installation of an amenity zone supports the listed urban forest characteristics for the corresponding Place Type while also supporting other key interests (transportation, sidewalks, etc.)

<sup>2</sup> Planting strips are permitted instead of an amenity zone in the TOD-TR Zoning District.

<sup>3</sup> Planting strips are permitted for any zoning district located within the Water Supply Watershed Protection Areas per Article 23.

# Article 33.4 Uptown Streetscape Design

- Sidewalk / SUP dimensions
- Amenity Zone dimensions
- Amenity Zone elements
- Paver requirements
- Pedestrian lighting
- Curb and gutter

**Table 33-6: Uptown Streetscape Design Elements**

	Uptown Street Classifications				
	Uptown Signature Street	Linear Park	Uptown Primary	Uptown Secondary	Tryon Street <sup>1</sup>
<b>Sidewalk/ Shared-Use Path Dimension</b>	12'	12'	10'	8'	12'
<b>Required Amenity Zone Dimension</b>	9.5'	9.5'	8'	8'	9.5'
<b>Amenity Zone Elements</b>	Tree Grates <sup>2</sup>	Planter no more than 16' in width	Tree Grates <sup>2</sup>	Tree Grates	Tree Grates <sup>2</sup>
<b>Pavers</b>	CLDSM <sup>3</sup>	CLDSM <sup>3</sup>	CLDSM <sup>3</sup>	CLDSM <sup>3</sup>	Tryon Street Mall Streetscape Guidelines
<b>Pedestrian Lighting<sup>4</sup></b>	Required-Open Deluxe Acorn with 60'-80' spacing <sup>4</sup>	Required-Open Deluxe Acorn with 60'-80' spacing <sup>4</sup>	Required-Open Deluxe Acorn with 60'-80' spacing <sup>4</sup>	Required-Open Deluxe Acorn with 60'-80' spacing <sup>4</sup>	Required to match existing
<b>Curb and Gutter</b>	Granite Curb	Granite Curb	Standard per CLDSM	Standard per CLDSM	Required to match existing

<sup>1</sup> Tryon Street (within Uptown) shall follow existing Tryon Street Mall Streetscape Guidelines for amenity zone elements, pavers, lighting, and curb design but shall otherwise be classified as an Uptown Signature Street.

<sup>2</sup> Utilities are required in Tree Grates.

<sup>3</sup> Concrete paver blocks in herringbone are permitted under encroachment agreement from applicable agency.

<sup>4</sup> Pedestrian lighting spacing is based on proximity to trees and street lighting, as determined by CDOT. Typically, where trees are spaced 40' apart, provide lighting at 80' spacing, alternating between pedestrian lighting and street lighting. Where trees are spaced 30' apart, provide lighting at 60' spacing with one street light for every two pedestrian lights.

# Article 33.5 Off-Street Public Paths

## 33.5.A Transit Trail

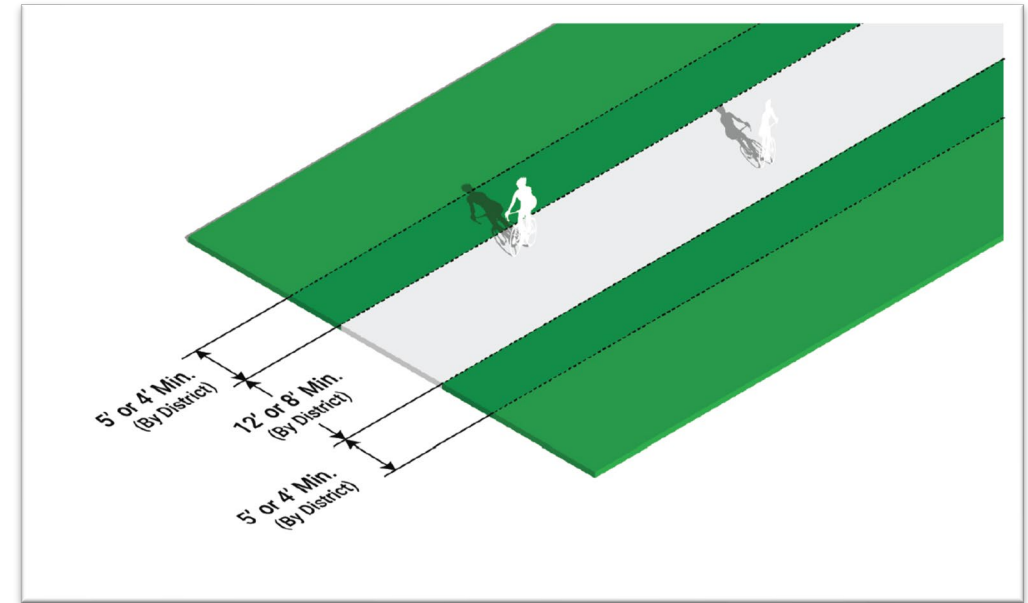
- Minimum width based on Council-adopted transit trail plan
- No additional tree planting required (unless on transit plan)

## 33.5.B Connections to Off-Street Public Paths or Parks

- Minimum width of 12'

## 33.5.C Pedestrian and Bicycle Connection

- Width depends on place type / zoning
  - 12' with 5' structure clear zone (or)
  - 8' with 4' structure clear zone



# Article 33.6 Cross-Access

- Requirements for when Cross-Access is required are located in Article 31.2
- Design requires a minimum 20' wide two-way paved connection

