

FACILITY TYPE & CONTROL OF ACCESS DEFINITIONS



AUGUST 2005

INTRODUCTION

The NCDOT Facility Types and Control of Access Definitions document was prepared to create a set of easy to understand and consistent definitions for all roadways for NCDOT and its partners to use in the planning, design, and operations processes. The definitions are primarily based on the function of the roadway, level of mobility and access, and whether the facility has traffic signals, driveways, and/or medians. These definitions were developed from a committee comprised of members from the Federal Highway Administration and the following NCDOT branches: Traffic Engineering, Highway Design, Project Development, and Transportation Planning. The North Carolina Board of Transportation adopted these definitions on September 2, 2004 as a part of the Statewide Transportation Plan.

The facility type definitions are identical to those used in a Comprehensive Transportation Plan (CTP), with the exception of Thoroughfares. In a CTP, Thoroughfares are further broken down to Major Thoroughfares and Minor Thoroughfares. In this document, both Major and Minor Thoroughfares fall into the general Thoroughfares description.

The first section this document provides descriptions of the different facility types with examples as they exist at the time this document was created. The facility types are listed in order of the level of mobility provided (highest to lowest). This is followed by the definitions of the different types of control of access and a comparison chart. The second section of this document provides illustrative examples that show various elements of each of the different facility types. These illustrations are not drawn to any particular scale.

This document was revised in August 2005 in order to simplify the facility type definitions. The original Expressway Type I and Type II definitions were consolidated into one Expressway definition. Similarly, the Boulevard Type I and Type II definitions were consolidated into one Boulevard definition.

An electronic version of this document is available at
http://www.ncdot.org/doh/preconstruct/tpb/shc/pdf/NCDOT_Facility_Types.pdf (Acrobat Reader required).

Document Prepared by:
NCDOT-Transportation Planning Branch
Systems Planning Unit
Attn: David S. Wasserman, P.E.
1554 Mail Service Center
Raleigh, NC 27699-1554
(919) 715-5482 ext. 380

Illustrative Examples Prepared by:
NCDOT-Highway Design Branch
Visualization Unit
Raleigh, NC 27699-1582
(919) 250-4016

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

FACILITY TYPES

Listed in Order of Mobility Function

Adopted by the North Carolina Board of Transportation
September 2, 2004

Freeways



US 74 in Waynesville



US 264 east of I-95 (Wilson Bypass)



I-40/85 in Orange County



US 64 in Rocky Mount

- **Functional Purpose:** High Mobility, Low Access
- **AASHTO Design Classification:** Interstate or Freeway
- **Posted Speed Limit:** 55 mph or greater
- **Control of Access:** Full
- **Traffic Signals:** Not Allowed
- **Driveways:** Not Allowed
- **Cross-Section:** Minimum 4 Lanes with a Median
- **Connections:** Provided only at Interchanges; All Cross Streets are Grade-Separated
- **Median Crossovers:** Public-use Crossovers Not Allowed; U-turn Median Openings for Use by Authorized Vehicles Only when Need is Justified
- **Examples:** I-40, I-95, US 64 between Rocky Mount and Williamston, US 52 between Lexington and Mount Airy, US 70 between Kinston and New Bern, US 74 near Waynesville, US 264 east of I-95 (Wilson Bypass), US 1 between Raleigh and Sanford

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

FACILITY TYPES

Listed in Order of Mobility Function

Adopted by the North Carolina Board of Transportation
September 2, 2004

Expressways



US 221 (Marion Bypass)



US 117 north of I-40



US 74 west of Waynesville



US 64 in Apex

- **Functional Purpose:** High Mobility, Low to Moderate Access
- **AASHTO Design Classification:** Arterial
- **Posted Speed Limit:** 45 mph to 60 mph
- **Control of Access:** Limited or Partial
- **Traffic Signals:** Not Allowed
- **Driveways:**
 - Limited Control of Access -** Not Allowed
 - Partial Control of Access -** One Driveway Connection per Parcel; Consolidate and/or Share Driveways and Limit Access to Connecting Streets or Service Roads; Restrict to Right-in/Right-out
- **Cross-Section:** Minimum 4 Lanes with a Median
- **Connections:** Provided only at Interchanges for Major Cross Streets and At-Grade Intersections for Minor Cross Streets; Use of Acceleration and Deceleration Lanes for At-Grade Intersections
- **Median Crossovers:** Allowed; Alternatives to All-Movement Crossovers Encouraged; Minimum Spacing between All-Movement Crossovers is 2000 feet (posted speed limit of greater than 45 mph) or 1200 feet (posted speed limit of 45 mph or less)
- **Examples:** *US 221 (Marion Bypass), US 220 in Rockingham County, US 321 south of Lenoir, US 117 north of I-40; US 74 (Independence Blvd) just east of I-277 in Charlotte, US 74 west of Waynesville, US 29 in Guilford County, US 301 north of Wilson, US 64 in Apex*

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

FACILITY TYPES

Listed in Order of Mobility Function

Adopted by the North Carolina Board of Transportation
September 2, 2004

Boulevards



US 70 east of Clayton



NC 24 (Harris Boulevard) in Charlotte



US 74 near Ranger



Cary Parkway

- **Functional Purpose:** Moderate Mobility, Low to Moderate Access
- **AASHTO Design Classification:** Arterial or Collector
- **Posted Speed Limit:** 30 mph to 55 mph
- **Control of Access:** Limited, Partial, or None
- **Traffic Signals:** Allowed
- **Driveways:**
 - Limited Control of Access - Not Allowed**
 - Partial Control of Access - One Driveway Connection per Parcel; Consolidate and/or Share Driveways and Limit Access to Connecting Streets or Service Roads; Restrict to Right-in/Right-out**
- **Cross-Section:** Minimum 2 Lanes with a Median
- **Connections:** At-Grade Intersections for Major and Minor Cross Streets (Occasional Interchange at Major Crossing); Use of Acceleration and Deceleration Lanes
- **Median Crossovers:** Allowed; Minimum Spacing between All-Movement Crossovers is 2000 feet (posted speed limit of greater than 45 mph) or 1200 feet (posted speed limit of 45 mph or less)
- **Examples:** US 70 between Clayton and Smithfield, NC 55 (Holly Springs Bypass), NC 11 (Kenansville Bypass), NC 87 (Elizabethtown Bypass), US 158 (Murfreesboro Bypass), US 70 near Havelock, NC 24 (Harris Boulevard) in Charlotte, US 1 (Capital Blvd) in Raleigh, US 74 through Monroe, US 117 south of Goldsboro, US 70 east of Goldsboro, Cary Parkway, NC 132 (College Road) in Wilmington, Lochmere Drive in Cary, US 74 in Ranger

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

FACILITY TYPES

Listed in Order of Mobility Function

Adopted by the North Carolina Board of Transportation
September 2, 2004

Thoroughfares



Old Concord Road in Charlotte



Hillsborough Street in Raleigh



Shamrock Road in Charlotte



Trinity Road in Raleigh

- **Functional Purpose:** Moderate to Low Mobility, High Access
- **AASHTO Design Classification:** Collector or Local
- **Posted Speed Limit:** 25 mph to 55 mph
- **Control of Access:** None
- **Traffic Signals:** Allowed
- **Driveways:** Allowed with Full Movements; Consolidate or Share Connections, if possible
- **Cross-Section:** Minimum 2 Lanes; No Median; Includes All Facilities with a Two Way Left Turn Lane
- **Connections:** Primarily At-Grade Intersections
- **Median Crossovers:** Not Applicable
- **Examples:** *Old Concord Road in Charlotte, Hillsborough Street in Raleigh, Shamrock Road in Charlotte, Trinity Road in Raleigh*

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

CONTROL OF ACCESS DEFINITIONS

Listed in Order of Mobility Function

Adopted by the North Carolina Board of Transportation
September 2, 2004

Full Control of Access

Connections to a facility provided only via ramps at interchanges. All cross-streets are grade-separated. No private driveway connections allowed. A control of access fence is placed along the entire length of the facility and at a minimum of 1000 feet beyond the ramp intersections on the Y lines (minor facility) at interchanges (if possible).

Limited Control of Access

Connections to a facility provided only via ramps at interchanges (major crossings) and at-grade intersections (minor crossings and service roads). No private driveway connections allowed. A control of access fence is placed along the entire length of the facility, except at intersections, and at a minimum of 1000 feet beyond the ramp intersections on the Y lines (minor facility) at interchanges (if possible).

Partial Control of Access

Connections to a facility provided via ramps at interchanges, at-grade intersections, and private driveways. Private driveway connections are normally defined as a maximum of one connection per parcel. One connection is defined as one ingress and one egress point. The use of shared or consolidated connections is highly encouraged. Connections may be restricted or prohibited if alternate access is available through other adjacent public facilities. A control of access fence is placed along the entire length of the facility, except at intersections and driveways, and at a minimum of 1000 feet beyond the ramp terminals on the minor facility at interchanges (if possible).

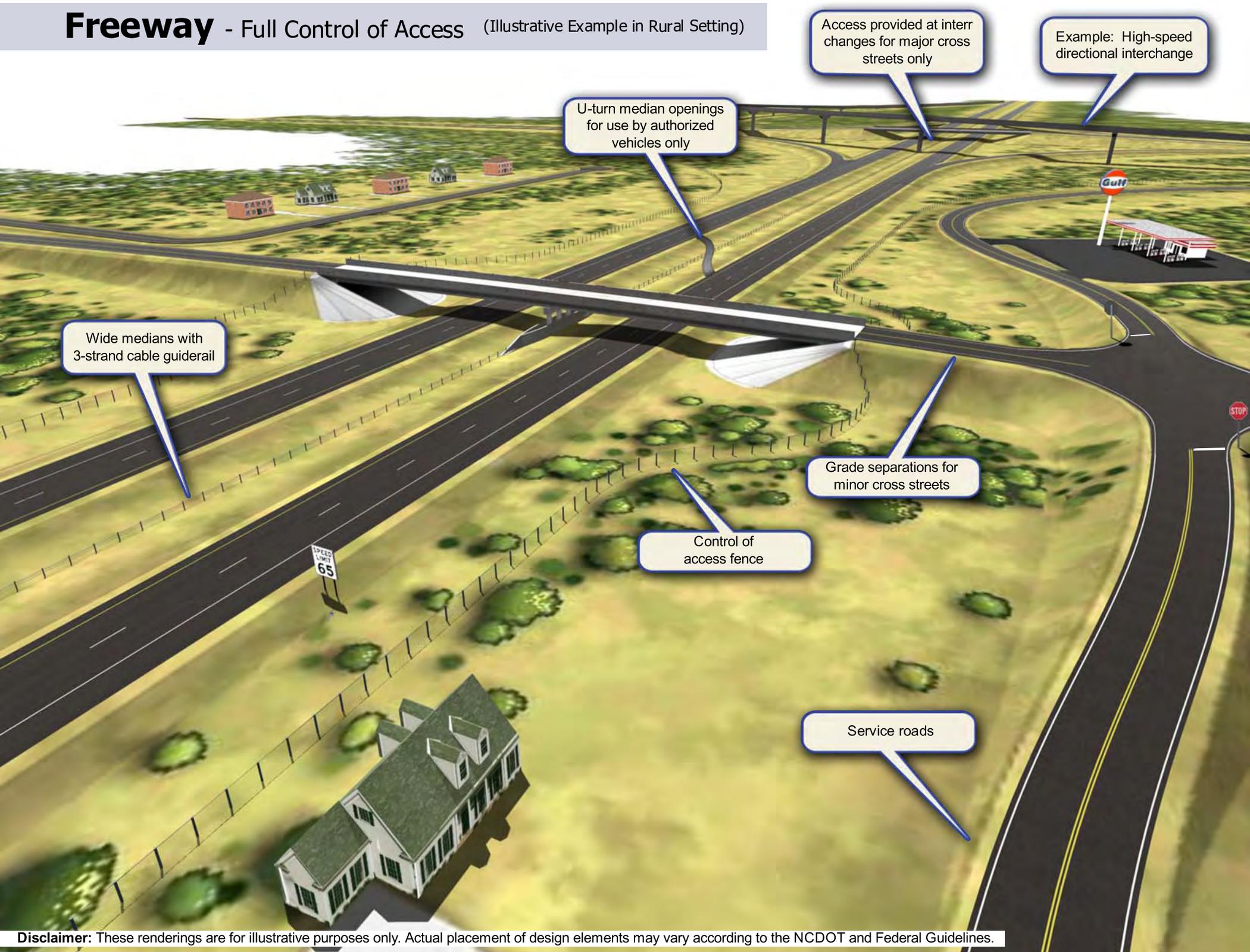
No Control of Access

Connections to a facility provided via ramps at interchanges, at-grade intersections, and private driveways. No physical restrictions, i.e., a control of access fence, exist. Normally, private driveway connections are defined as one connection per parcel. Additional connections may be considered if they are justified and if such connections do not negatively impact traffic operations and public safety.

NCDOT FACILITY TYPES COMPARISON CHART

	Freeways	Expressways	Boulevards	Thoroughfares
Functional Purpose	High Mobility, Low Access	High Mobility, Low to Moderate Access	Moderate Mobility, Low to Moderate Access	Moderate to Low Mobility, High Access
AASHTO Design Classification	Interstate or Freeway	Arterial	Arterial or Collector	Collector or Local
Posted Speed Limit	55 mph or greater	45 mph to 60 mph	30 mph to 55 mph	25mph to 55 mph
Control of Access	Full	Limited or Partial	Limited or Partial	None
Traffic Signals	Not Allowed	Not Allowed	Allowed	Allowed
Driveways	Not Allowed	Limited Control of Access - Not Allowed Partial Control of Access - One Driveway Connection per Parcel; Consolidate and/or Share Driveways and Limit Access to Connecting Streets or Service Roads; Restrict to Right-in/Right-out	Limited Control of Access - Not Allowed Partial Control of Access - One Driveway Connection per Parcel; Consolidate and/or Share Driveways and Limit Access to Connecting Streets or Service Roads; Restrict to Right-in/Right-out	Allowed with Full Movements; Consolidate or Share Connections, if possible
Cross-Section	Minimum 4 Lanes with a Median	Minimum 4 Lanes with a Median	Minimum 2 Lanes with a Median	Minimum 2 Lanes; No Median; Includes Facilities with Two Way Left Turn Lane
Connections	Provided only at Interchanges; All Cross Streets are Grade-Separated	Provided only at Interchanges for Major Cross Streets and At-Grade Intersections for Minor Cross Streets; Use of Acceleration and Deceleration Lanes for At-Grade Intersections	At-Grade Intersections for most Major and Minor Cross Streets (Occasional Interchange at Major Crossing); Use of Acceleration and Deceleration Lanes	Primarily At-Grade Intersections
Median Crossovers	Public-use Crossovers Not Allowed; U-turn Median Openings for Use by Authorized Vehicles Only when Need is Justified	Allowed; Alternatives to All-Movement Crossovers Encouraged; Minimum Spacing between All-Movement Crossovers is 2000 feet (posted speed limit of greater than 45 mph) or 1200 feet (posted speed limit of 45 mph or less)	Allowed; Minimum Spacing between All-Movement Crossovers is 2000 feet (posted speed limit of greater than 45 mph) or 1200 feet (posted speed limit of 45 mph or less)	Not Applicable

Freeway - Full Control of Access (Illustrative Example in Rural Setting)



Access provided at interchanges for major cross streets only

Example: High-speed directional interchange

U-turn median openings for use by authorized vehicles only

Wide medians with 3-strand cable guiderail

Grade separations for minor cross streets

Control of access fence

Service roads

Freeway - Full Control of Access (Illustrative Example in Urban Setting)

Access provided at interchanges for major cross-streets only
Example: Single Point Urban Interchange

Grade separations at minor cross-streets

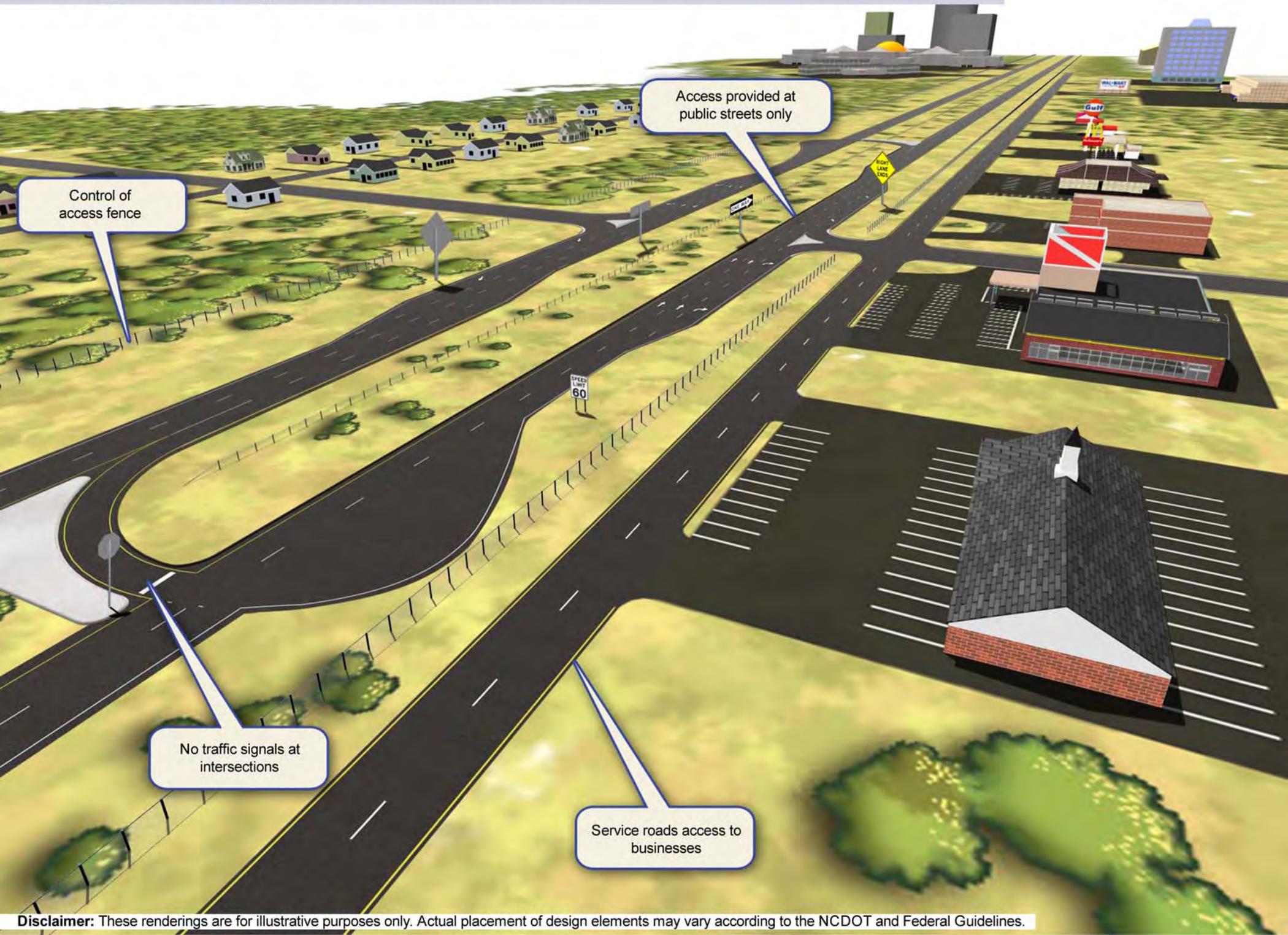
Concrete barrier

Control of access fence

SPEED LIMIT 65

Expressway - Limited Control of Access

(Illustrative Example in Urban Setting)



Control of access fence

Access provided at public streets only

No traffic signals at intersections

Service roads access to businesses

Expressway - Partial Control of Access

(Illustrative Example in Rural Setting)

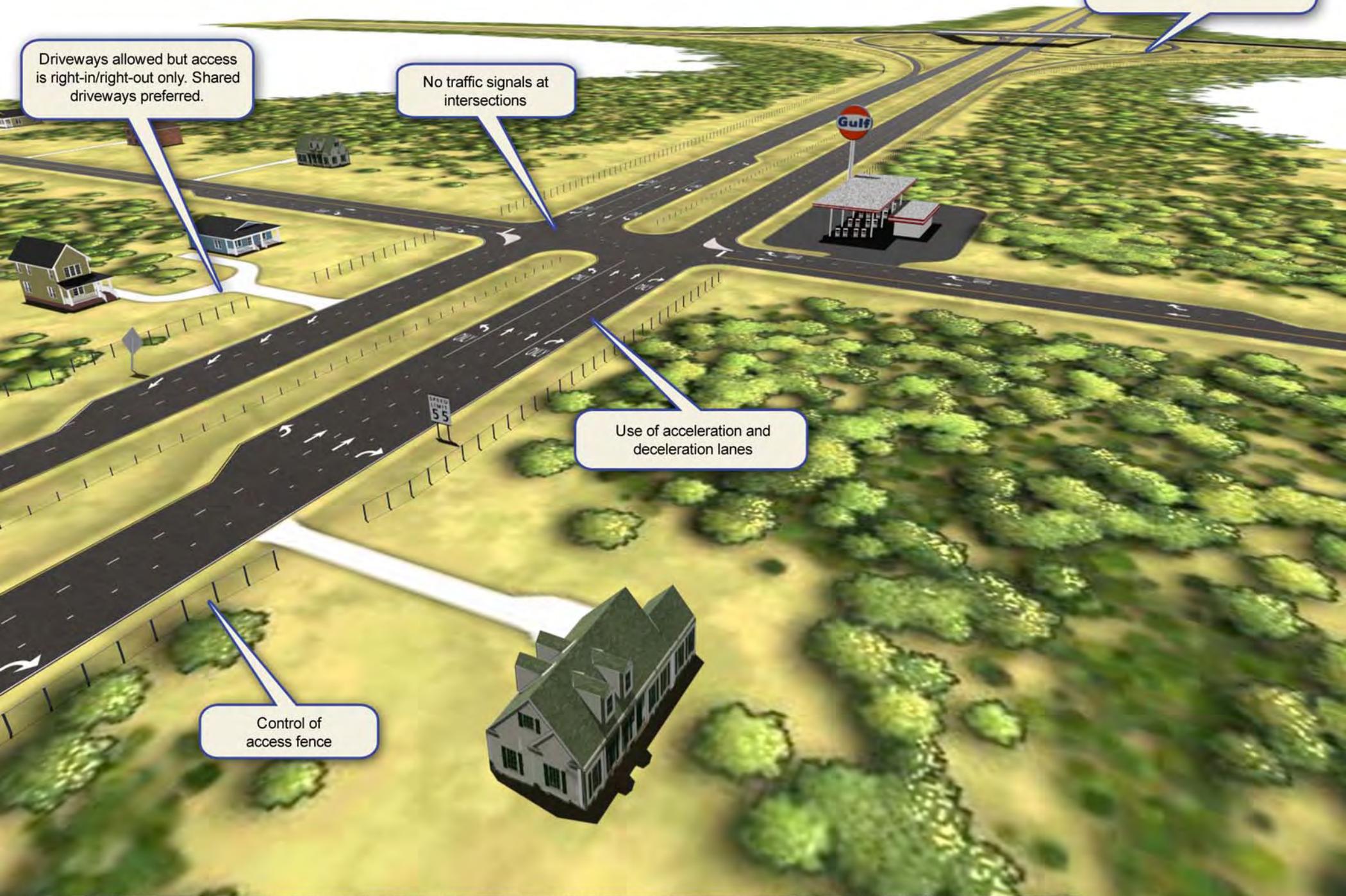
Access provided at interchanges for major cross streets, at-grade intersections for minor cross streets

Driveways allowed but access is right-in/right-out only. Shared driveways preferred.

No traffic signals at intersections

Use of acceleration and deceleration lanes

Control of access fence



Boulevard - Limited Control of Access

(Illustrative Example in Rural Setting)

Access provided at public streets only.

Use of medians

Use of traffic signals

Control of access fence



Boulevard - Partial Control of Access

(Illustrative Example in Urban Setting)



Traffic signals at intersections

Private driveway access allowed. Right-in and right-out only.

Thoroughfare - No Control of Access (Illustrative Example in Urban Setting)



Traffic signals at intersections

Center turn lane

Thoroughfare - No Control of Access (Illustrative Example in Rural Setting)



Center turn lane

REFERENCES

1. American Association of State Highway and Transportation Officials (AASHTO), *A Policy on Geometric Design of Highways and Streets*, 4th Edition, 2001
2. North Carolina Department of Transportation (NCDOT), *Design Manual*, 2002
3. North Carolina Department of Transportation (NCDOT), *Policy on Street and Driveway Access to North Carolina Highways*, 2003
4. North Carolina Department of Transportation (NCDOT), *Median Crossover Guidelines*, 2004