

Charlotte Department of Transportation (CDOT)

Land Development Rezoning and Traffic Impact Study Review Process

Contents

CDOT's Role.....	1
CDOT's Rezoning Review Process	1
Traffic Impact Studies	2
<i>When is a Traffic Impact Study Required?</i>	2
<i>Notification of Need for Traffic Impact Studies (TIS)</i>	2
<i>TIS Requirements/Meetings</i>	3
<i>Traffic Impact Study Area</i>	3
<i>Internal Trip Capture</i>	3
<i>Pass By Trips</i>	3
<i>TIS Review Schedule</i>	4
<i>TIS Submittal Deadlines</i>	4
Mitigation of Traffic Impacts	5
NCDOT Review Coordination.....	5
<i>Rezoning Process</i>	5
<i>Driveway Permit Process</i>	6
Attachment 1: CDOT's Site Plan Review Comments.....	7

Rezoning and Traffic Impact Study Review Process

CDOT's Role

Charlotte continues to grow rapidly as the hub of the metropolitan region. To meet the quality of life challenges of this growth, the Charlotte City Council adopted the **Transportation Action Plan** (TAP) to support the City's **Centers and Corridors Growth Strategy**. CDOT's role is to implement the plans and policies adopted by City Council in a way that integrates transportation and land use planning, provides transportation choices and promotes quality urban design.

Rezoning property provides a means to either implement adopted land use plans or meet market demand for real estate development. The Charlotte-Mecklenburg Planning Commission (CMPC) administers the City's rezoning process for property within the City and its extraterritorial jurisdiction (ETJ). CDOT works in concert with the CMPC to provide a quality review of all development proposals.

Proposals to rezone property often spark community opposition. The concern is typically that more intensive development will worsen traffic congestion and impact mobility. CDOT's role in the rezoning process is to work with the CMPC to address those concerns as part of the review team.

CDOT's Rezoning Review Process

CDOT staff evaluates how proposed developments will affect transportation operations and safety. We also ensure that new development is well connected to the community and is accessible by walking, bicycling, public transit and motorized vehicles. Staff considers a number of items during its review including those listed in Attachment 1.

We encourage those seeking to rezone land to meet with CDOT staff well in advance of finalizing site plans and submitting rezoning petitions. This is particularly important for larger rezoning petitions that need a traffic study. Staff is available to discuss any issues related to access, transportation or conditional site plans prior to submittal of rezoning petitions.

The CDOT staff member assigned to review your rezoning petition also will review your subdivision, urban district and building/driveway permit plans. Having one staff member handle your project helps it move smoothly through each step of the permitting process.

Staff from CDOT and CMPC visit each proposed rezoning site and discuss related transportation/land use issues prior to preparing review comments. This close communication allows us to reach consensus early in the process. CDOT provides copies of its site plan review comments to petitioners and their land planning and transportation consultants and the CMPC.

CDOT's review comments fall into three categories: items that are critical to our support of the petition, those that we want the petitioner to seriously consider and those that will aid the petitioner in subsequent land development permitting phases.

Site plan characteristics that are critical to our support include:

- Access
- Bicycle accommodation
- Connectivity
- Pedestrian and transit features
- Regulatory requirements
- Safety
- Transportation improvements

We include CMPC staff in any meetings we have with petitioners on development and site plan issues.

CDOT staff attends the City Council's Zoning Hearing and the Zoning Committee's meeting each month to respond to questions or concerns.

Traffic Impact Studies (TIS)

The fear of negative traffic impacts is one of the most frequent reasons Charlotte residents give for opposing rezoning petitions. CMPC and the City Council want to know about traffic issues as well. That is why CDOT works with developers to prepare traffic impact studies as part of the rezoning petition process. Traffic studies are used to:

- Identify the development's transportation impacts
- Determine off-site mitigation needed to overcome the transportation impacts
- Identify whether phasing the development would be appropriate
- Determine access design that should be incorporated into the site plan

When is a TIS Required?

The City requires any site development that generates 2,500 or more vehicular trips per weekday to prepare a TIS. A study also will be required when a development:

- Affects a location with a high vehicle crash history
- Takes place at a high congestion location ($v/c > 1$)
- Creates the fourth leg of an existing signalized intersection
- Exacerbates an already difficult situation such as at a railroad crossing, fire station access, school access, etc.

Developments that would generate 2,500 daily trips:

- 260 houses
- 370 apartments
- 225,000 sq ft offices
- 21,500 sq ft retail

We ask developers to update their TIS when:

- The proposed development's land use mix changes
- Access to the site changes
- Other significant changes have occurred in the surrounding area
- A previous study is more than two years old

Notification of Need for TIS

CDOT will notify petitioners of the need for a TIS within three days of submitting a Rezoning Application.

TIS Requirements/Meetings

CDOT's *Site Traffic Impact Analysis Report Guidelines* aids the petitioner's traffic consultant in the preparation of the TIS. The traffic consultant should meet with CDOT staff prior to beginning a traffic study to discuss the following:

- Intersections in the study area of influence for analysis
- Study Methodology
- Trip generation, internal trips and pass-by trips
- Trip distribution
- Trip assignment
- CDOT/NCDOT intersection and roadway projects planned or under construction
- Bicycle, pedestrian and transit access opportunities
- Approved developments in the area
- Background traffic growth rate/horizon year

Although most communication is accomplished by e-mail, other meetings often are necessary with the petitioner/consultant to discuss a variety of issues including:

- Review/approval of final trip generation, internal trips, pass-by trips and trip distribution/assignments prior to traffic consultant beginning the computerized traffic analysis
- Impact identification and mitigation approaches

TIS Area. CDOT staff works with the developer's traffic engineer to define a study area based on the size of the proposed development, its location and the likely impact to intersections in its vicinity. Study areas include the following intersection types:

- The site's proposed access locations
- The next signalized intersections in all directions from the site's proposed access
- Other signalized intersections where the development is likely to reduce the vehicle level of service at the intersection

Internal Trip Capture. CDOT uses the Institute of Transportation Engineer's (ITE) *Trip Generation Handbook* for calculating internal trip capture. These guidelines apply to large mixed use and multiple use developments designed to reduce vehicle trips between land uses and lower the impact to surrounding thoroughfares. Typically these developments have well connected internal streets and sidewalks.

Pass-by Trips. Pass-by trips result when vehicles already traveling to a particular purpose/destination stop at the proposed use as an incidental trip purpose (such as stopping for gas on the way to work). CDOT considers pass-by trips under the following conditions:

- 20% maximum of daily trips generated by the proposed development
- 35% maximum (with documentation) of PM peak hour trips generated by the proposed development
- Shopping center/retail uses only

In many circumstances pass-by trip volumes result in an unreasonable and disproportionate share of the adjacent thoroughfare traffic volume. Therefore, CDOT places limits on the number of

pass-by trips that can be claimed. Although CDOT will consider each development/location on a case-by-case basis, the number of pass-by trips generally will be limited to 2% of the adjacent thoroughfare volume in the p.m. peak hour. Practically, this means that 1 of every 50 vehicles traveling on the adjacent street(s) will decide to access the proposed development.

TIS Review Schedule

The schedule for reviewing traffic studies and settling on appropriate mitigation measures depends on the size of the development and the need for study revisions. The table below indicates the approximate time CDOT staff needs to review a study and develop a mitigation strategy for rezoning after the petitioner provides sufficient information.

	Development Traffic Affecting:		
	1 to 5 intersections	6 to 10 intersections	≥ 11 intersections
Information/approval of input parameters	3-5 working days	5 – 10 working days	10 – 15 working days
TIS draft/review comments	2 weeks	3 weeks	4 weeks
TIS revised draft/review comments	1 – 2 weeks	2 – 3 weeks	3+ weeks
Technical memorandums (case-by-case basis)	3 – 5 working days	5+ working days	5+ working days
Mitigating improvements-meetings with developer & consultant	1 week (min)	2 weeks (min)	2 weeks +

Total traffic study review/lead time ranges from 4 to 13+ weeks depending on size and complexity of the development and its surrounding conditions.

Traffic Impact Study Submittal Deadlines

The Planning Commission and Zoning Committee asked that CMPC/CDOT staff evaluate the process for submitting traffic studies, identifying impacts and deciding on measures to mitigate the transportation impacts of a proposed development. At its April 4, 2005 meeting, the CMPC approved the following recommendations:

- Traffic study submittals (including re-submittals addressing CDOT comments) and reviews, identification of impacts, and discussions between CDOT and the petitioner/developer concerning mitigation measures should take place a minimum of four weeks prior to the Public Hearing. If not, then staff will ask Council to defer the petition.
- Include a list of transportation impacts/mitigation improvements in the pre-hearing staff analysis.
- Any comments from the public or petitioner concerning the traffic study and/or mitigation measures must be submitted in writing to CMPC/CDOT staff no later than one week prior to the Zoning Committee meeting.

An implementation date for this process change has not been set by CMPC staff.

Until this process change is implemented, CDOT will continue to ask the Zoning Committee to defer consideration of a petition if:

- There is inadequate time to review the traffic study
- CDOT and the traffic consultant do not agree on the traffic impacts
- CDOT and the traffic consultant/petitioner have not met to discuss the improvements necessary to mitigate the development's traffic impacts

Mitigation of Traffic Impacts

TIS's demonstrate how proposed projects will change the performance of surrounding intersections. We measure the affect of the development on the volume-to-capacity (v/c) ratios of intersections. We ask developers to mitigate (or compensate for) impacts when developments would add more than the thresholds listed below to the weekday peak hour v/c ratio of nearby intersections.

Existing V/C	Threshold increase in v/c that triggers mitigation
0.00 – 0.60	0.10
0.61 – 0.70	0.07
0.71 – 0.80	0.05
0.81 – 0.90	0.03
0.91 – 1.00 +	0.02

Mitigation usually takes the form of adding traffic lanes to offset the traffic produced by new developments. Measures might also include additional street connections to help disperse the development's traffic. It is the developers' responsibility to install traffic signals, controllers and interconnect cables needed to accommodate the development's site traffic. Generally CDOT does not accept timing adjustments or phasing changes to existing signals for mitigation. Case-by-case exceptions may be granted by the City's Chief Traffic Engineer.

For mitigation purposes, CDOT counts traffic that would be generated by development shown in the rezoning petition without regard to traffic that could be generated if vacant land were developed under existing zoning. This accounts for deficiencies in the roadway system that would result from new development.

The petitioner/developer is expected to construct transportation improvements to mitigate the development's impact. Improvements are to be built according to the City's Land Development Standards before the City will issue certificates of occupancy or accept streets for maintenance.

CDOT/NCDOT Review Coordination for Developments Accessing State Roads

Rezoning Process

NCDOT does not have a formal role in the City's rezoning process. Instead, NCDOT requires traffic studies as part of their driveway permit process (see below). NCDOT TIS requirements and processes differ from CDOT's. NCDOT may require mitigation measures beyond those that developers commit to implement through the rezoning process.

Staffs from CDOT and NCDOT discuss each rezoning petition/site plan during monthly meetings. These meetings foster understanding of how access issues and mitigation measures affect state roads. Although CDOT collaborates with NCDOT on rezoning cases, **it is the responsibility of the petitioner/developer to contact NCDOT to discuss access and traffic impact issues on state roads.**

Driveway Permit Process

Both a City and NCDOT driveway permit are required for developments seeking access to state maintained roads. NCDOT's *Policy on Street and Driveway Access* indicates that whenever there is a conflict between state and local requirements that the more restrictive applies. The policy requires the local jurisdiction to review the requested access first and sign the access permit application indicating that the access/site plan meets all local standards/requirements. We are knowledgeable of the NCDOT's requirements, maintain good working relationships and communicate regularly with NCDOT staff.

CDOT's Development Services Division assigns each plan's reviewer to a specific portion of the City/ETJ for continuity of review. This minimizes the potential for changes to plans by NCDOT following CDOT's review of access/driveway permit site plans.

CDOT's Site Plan Review Comments
Transportation Issues

Site Plan Review/Regulatory requirements

1. Access (*Driveway Regulations*)
2. Subdivision and thoroughfare street design
3. Internal circulation - vehicular and pedestrian
4. Safety
5. Compliance with other Ordinance and Zoning District requirements with respect to transportation
6. Coordination with NCDOT

Best Practices

1. Walkability
2. Pedestrian oriented design
3. Transit oriented design
4. Urban design
5. Design/provisions for bicycles

Transportation Impacts

1. Traffic impact studies
2. Evaluation of impacts
3. Determination of mitigation improvements
4. Maintaining or improving bicycle and pedestrian levels of service
5. Development phase requirements

Compliance with Adopted Policies and Plans

1. Integration of land use/transportation - smart growth
2. General development policies
3. Connectivity – vehicular and pedestrian
4. Urban Street Design Guidelines (when adopted)

Compatibility/Compliance with Adopted Transportation Plans and Funded Projects

1. Thoroughfare Plan
2. Major Collector Street Plan
3. Capital Improvement Program
4. NCDOT Transportation Improvement Program (TIP)
5. Sidewalk Program
6. Bicycle Plan