FORSYTH COUNTY
BOARD OF COMMISSIONERS

MEETING DATE: _________________ AGENDA ITEM NUMBER: ____________

SUBJECT:-

A. Public Hearing on Zoning Text Amendment proposed by the City-County Planning Board staff to amend Chapter B "Other Development Standards" and Chapter D "Subdivision Regulations" of the Unified Development Ordinances to establish new standards for sidewalks, improved street interconnectivity, cul-de-sac lengths, and street trees (UDO-142).

B. Approval of Ordinance

COUNTY MANAGER’S RECOMMENDATION OR COMMENTS:-

SUMMARY OF INFORMATION:-

See attached staff report.

After consideration, the Planning Board recommended approval of the rezoning text amendment.

ATTACHMENTS:- __X__ YES __ NO

SIGNATURE: _____________________________ DATE: ________________
**ACTION REQUEST FORM**

**DATE:** September 30, 2005  
**TO:** The Honorable Mayor and City Council  
**FROM:** A. Paul Norby, AICP, Director of Planning

### COUNCIL ACTION REQUEST:

Request for Public Hearing on Zoning Text Amendment proposed by the City-County Planning Board staff

### SUMMARY OF INFORMATION:

Zoning Text Amendment proposed by the City-County Planning Board staff to amend Chapter B "Other Development Standards" and Chapter D "Subdivision Regulations" of the *Unified Development Ordinances* to establish new standards for sidewalks, improved street interconnectivity, cul-de-sac lengths, and street trees (UDO-142).

### PLANNING BOARD ACTION:

- **MOTION ON PETITION:** APPROVAL  
- **FOR:** UNANIMOUS  
- **AGAINST:** NONE  
- **SITE PLAN ACTION:** NOT REQUIRED

UDO 142 September 2005
STAFF REPORT

DOCKET #: UDO-142
STAFF: Glenn Simmons

REQUEST

Zoning text amendment proposed by the City-County Planning Board to amend Chapter B, Article III “Other Development Standards” and Chapter D “Subdivision Regulations” of the Unified Development Ordinances (UDO) to modify Street Standards for Major Subdivisions and for other development as it occurs in places other than subdivisions.

BACKGROUND

In accordance with the Legacy Comprehensive Plan and the Winston-Salem City Council’s Strategic Plan, new street standards have been proposed to address various issues, deficiencies, and opportunities associated with the current UDO Street Standards located in Chapter D Subdivision Regulations. The revised standards are proposed for adoption by both the City of Winston-Salem and the Forsyth County Board of County Commissioners.

One of the main considerations of this text amendment is to improve internal and external street connectivity. Cul-de-sac dominated neighborhoods often thwart the efficient delivery of vital public services and overload adjoining arterial streets with unsafe and unnecessary traffic congestion. While still allowing cul-de-sacs, the proposed street standards are intended to limit the number and length of dead end streets.

The proposed street standards are also intended to promote more neighborhood-friendly and walkable streets by requiring the installation of a basic sidewalk network, and street trees as a routine component of subdivision development. Such provisions acknowledge potential for conflicts with underground utilities and other service delivery requirements and propose measures to accommodate the needs of both in an aesthetically attractive, efficient and well-coordinated manner. The ordinance revision also establishes standards for the installation of sidewalks as part of all new non-residential and multi-family developments where they are contiguous to streets identified for sidewalks in the proposed Winston-Salem Urban Area Sidewalk and Pedestrian Facilities Plan.

Lastly, the proposed standards are intended to provide greater design flexibility to accommodate unique site development situations. For example, the current City standard is for all streets to be built with curb and gutter cross-sections, however there may be limited circumstances where ribbon streets are more appropriate in context with the proposed density of new development or the non-curb and gutter context of existing development. The proposed standards enable such flexibility.
While the attached UDO text amendment is intended to codify specific development improvements such as sidewalks, street trees, and street interconnectivity, a companion set of revised engineering policy standards, *(Winston-Salem Infrastructure Development Standards)* is also being drafted for approval by the Assistant City Manager for Public Works. Such technical policy standards, separate from UDO standards, are intended to improve the capability of new public streets to conform to more challenging terrain features often associated with infill development, and to enhance the traffic-calming preferences of residential neighborhoods. By contrast, current engineering standards may require streets to be excessively wide and straight, are generally more costly to build and maintain, promote faster than desired vehicular traffic, and are generally out of character with the expectations of residential neighborhood occupants and visitors. Together, the proposed UDO text amendment and the companion engineering policy changes are intended to provide greater development flexibility, appropriate street design, enhanced pedestrian and vehicular functionality, and improved community safety and aesthetics.

**ANALYSIS**

Over the years many new residential subdivisions and other types of developments have been built under the current UDO Subdivision Regulations and engineering street standards, otherwise known as the Subdivision Guidelines. Most subdivisions have been built in a conventional fashion, but with a trend toward smaller lot sizes and more cul-de-sac streets. Today, few new residential developments are built with public sidewalks and street trees. While a desire to deliver a housing product at the lowest possible cost with the value focused on the house itself appears to be driving this trend, many new subdivisions developed under the current standards appear to be out of character with increasing community expectations for improved pedestrian connections, street trees, and traffic calmed streets.

Planning staff recognizes that some of the recommended improvements may appear to conflict with one another, i.e. special care must be taken to ensure compatibility between street trees, underground utilities, street lights, and sidewalks. Also, traffic calmed streets must not impede the efficient delivery of emergency or other services. Fortunately, however, many of the proposed changes are complementary to both the developer’s objective to produce a competitive, cost-efficient product and the broader community’s aspirations for safer, more efficient and livable residential neighborhoods and commercial developments. It was in this context that Planning staff worked with other City Departments, the local Home Builders Association, civil engineers, utility providers, and neighborhood advocates to form a Streets Standards Committee to bring forward the following recommendations for the Boards’ consideration. The following is a summary of the Committee’s findings and specific street standards recommendations.

**Engineered Street Standards**

As stated previously, current street standards may be considered excessive in certain residential neighborhood contexts. Extra-wide streets and broad curve radii, although intended to facilitate improved traffic flow and safety, can sometimes work against neighborhood concerns for pedestrian safety by unintentionally promoting higher vehicular speeds. Presently, City Subdivision Guidelines specify two types of streets: *local residential* streets and *residential collector / non-residential* streets. *Local residential* streets and *Residential Collector* streets...
have 25 mph and 35 mph minimum design speeds respectively. In addition to encouraging faster vehicular speeds such requirements often make it more difficult to layout streets in accordance with challenging terrain features. This has resulted in more clearing of existing vegetation as well as other site impacts such as increased storm water runoff which may be lessened with more flexible standards. This is particularly true of infill sites, which may have been previously left undeveloped due to steep slopes, floodplains or various other development constraints.

Unfortunately, this matter has been compounded by the tendency of various emergency and service delivery vehicles to increase in size over the years in response to larger suburban-style streets which have been engineered to accommodate wider vehicles with longer wheel bases and wider turning radii. Typically such vehicles are more cost-efficient than larger numbers of smaller vehicles and often reflect large capital investments by governments. These investments make it difficult to radically change development standards which may require significantly smaller vehicles to serve the public’s need for emergency and other basic municipal services.

Alternatively, this UDO text amendment identifies five roadway classifications which allow for somewhat narrower streets and tighter curve radii in accordance the companion set of engineering policy changes. Such streets will still accommodate larger service vehicles, while at the same time permitting slower design speeds, which inherently promotes greater vehicular and pedestrian safety and less site disturbance. Cul-de-sac streets are proposed to be a maximum of 800 feet in length. Staff notes that terrain constraints may still justify longer cul-de-sac lengths as allowed in the current UDO. Local residential streets, typically carrying fewer than 1,000 vehicles per day (vpd), are proposed to allow a 20 mph design speed. Collector streets are proposed to accommodate 1,000 to 3,000 vpd. Minor Thoroughfares proposed to accommodate 3,000 -10,000 vpd., may require turn lanes at designated intersections or major driveways. Collector and higher level streets must be built with conventional curb and gutter, whereas local streets and cul-de-sacs may utilize “valley” curb and gutter to accommodate flexibility in residential driveway connections. While the engineering specifics of such streets are not codified as part of this text amendment, they are referenced as part of the revised Winston-Salem Infrastructure Development Standards.

Lastly, the proposed street standards would allow for publicly maintained alleys if they are a minimum of 16 ft wide. Such Alleys would qualify for Powell Bill maintenance funding as a formal part of the City’s network of publicly maintained streets. Currently, the City does not recognize alleys for public maintenance. Staff believes that publicly maintained alleys may encourage more Traditional Neighborhood Developments (TND) and other neo-traditional designs which are advocated in Legacy especially in mixed use, urbanized, or infill situations.

**Internal and External Street Connectivity**

Currently the UDO requires streets in new subdivisions to be connected to existing external streets in adjoining, previously developed subdivisions. New subdivisions are also required to provide stub street connections to adjoining, undeveloped properties. The purpose of these requirements is to create a “capillary” network of public streets to facilitate emergency and other basic services such as mail delivery, refuse collection, school bus routing and other transportation
functions. In addition to making neighborhoods more accessible, external connections also disperse and reduce traffic congestion on arterial streets by giving short distance, neighborhood-to-neighborhood traffic an alternative to getting out on the arterial street.

For many of the same reasons, logical networks of internal street connections within subdivisions are also important. Although Planning staff encourages such internal connections, the UDO does not specifically regulate them. Consequently, and counter to the objective of improved connectivity, newer subdivisions are trending toward an emphasis on disconnected cul-de-sac streets. As a remedy, this text amendment proposes to establish a street connectivity index to standardize and improve internal and external street connectivity. Essentially, the connectivity index is a ratio of the number of street links (road sections between intersections and cul-de-sacs) divided by the number of street nodes (intersections and cul-de-sac heads). The resulting street index number thereby becomes an objective measure of a subdivision’s connectivity. For example, a perfect grid network of streets has a connectivity index number of two, whereby the total number of links is twice the number of nodes. By contrast a subdivision consisting of cul-de-sacs only has a connectivity index of one. This text amendment proposes to establish a connectivity index of 1.2. This is based on staff’s review of other jurisdictions in North Carolina which have similar street index provisions and an examination of various, previously approved subdivisions in Forsyth County which generally exhibit minimally desired street interconnectivity. An index of 1.2 acknowledges the flexibility to create some cul-de-sacs in accordance with market needs and topographic features of the site while still providing important internal and external connections.

Cul-de-sac Limits

Where cul-de-sacs are proposed in accordance with the street connectivity index standard, this text amendment calls for cul-de-sacs to be limited to a maximum length of 800 feet in lieu of the current 1,200 foot limit. Alternatively, cul-de-sacs may exceed 800 feet if a cul-de-sac does not serve more than fifteen lots. This provision acknowledges that longer cul-de-sacs may be more acceptable in rural areas or larger lot subdivisions and makes allowances for such situations. Consistent with current regulations, exceptions may be granted by the Planning Board based on topographic or other physical hardships imposed by the site.

Sidewalks

A key consideration of this text amendment is the requirement for sidewalks to be constructed as a standard component of new commercial and multifamily developments and new residential subdivisions. Particularly with the prospect of growing traffic volumes, appropriately located sidewalks offer a number of health and safety benefits which create lasting value in the residential neighborhoods and commercial developments they serve. By physically separating pedestrians from vehicular traffic, sidewalks offer a substantial measure of safety and complement objectives for improved street interconnectivity. Sidewalks also promote improved health through increased physical activity of walking and become, in themselves, an alternative means of transportation which helps lessen problems of traffic congestion and air pollution. Staff notes that the Forsyth County Environmental Affairs office and local health officials support the construction of new sidewalks. Further, staff notes that the livability, “neighborliness”, and

UDO 142 September 2005
associated market appeal of many older neighborhoods is based on existing networks of sidewalks and interconnected streets which facilitate slower vehicular speeds and pedestrian safety. Most comparably sized North Carolina communities have now adopted requirements for sidewalks.

While the Streets Standards Committee debated the specifics of a sidewalk standard with respect to the location and extent of sidewalks, all agreed that some sort of sidewalk standard for new development was appropriate and worthy of implementation. Ultimately, the Committee agreed a new standard should be adopted that requires a minimum of a sidewalk on one side of each new street of a new residential subdivision. Additionally, sidewalks shall be required on both sides of all new minor thoroughfare and higher level streets within a new subdivision. As drafted this text amendment also permits measures for alternative compliance to allow required sidewalks to be located in some other configuration if the alternative layout fulfills the intent “as well as or better than would strict compliance”. Approval of any such alternative would be through the Planning Board or appropriate Elected Board review. Staff notes that sidewalks are also proposed to be required at locations where new subdivisions and non-residential development abuts streets identified for sidewalks in the proposed Winston-Salem Urban Area Sidewalk and Pedestrian Facilities Plan.

Further, proposed engineering technical standards (Winston-Salem Infrastructure Development Standards) supports a reduction in the standard curb/corner radius to a minimum of fifteen feet for local streets and twenty feet for a local collector. This reduction from typically broader radii will minimize the length of street pavement a pedestrian must cross at intersections, but will not interfere with the capability of larger emergency and service vehicles to make necessary turns. Such tighter curb/corner radii are typical of many older neighborhoods and contribute to the pedestrian scale, character and safety of residential streets.

**Street Trees and Underground Utilities**

Street trees and underground utilities are also defining elements of neighborhood character. In addition to providing shade and being aesthetically attractive, street trees typically define spatial zones which separate vehicular functions from pedestrian activities and provide private front yard spaces. Street trees have also been shown to have a calming effect on vehicular traffic by visually narrowing the perceived height and width of the travel corridor. This causes the driver to feel as though they are driving within a more confined, tunnel-like space and subsequently encourages the driver to slow down.

Unfortunately, street trees can sometimes interfere with other functional street elements such as curbside refuse collection, sidewalks and underground utilities if not properly planned. Because of potential conflicts Planning staff recommends that street trees be planted in a manner which eliminates or substantially minimizes such conflicts. From Planning Staff’s review of other major North Carolina municipalities which either require or allow street trees within public rights-of-way, staff recommends street trees be located within a relatively broad (6 1/2 foot wide) planting strip between the required sidewalk and the curb edge. In this manner adequate sight distance and separation of trees from other potential conflicts can maintained. Alternatively, the proposed ordinance permits required street trees to be located outside the right-of-way in the private front.
yard spaces. In either case, underground utilities and above ground structures must be coordinated through approved plans not to create significant conflicts with service delivery or other municipal requirements. This amendment calls for street trees to be planted at a minimum rate of one street tree per lot within all new residential subdivisions. While this text amendment does not specifically set dimensional standards, the companion *Winston-Salem Infrastructure Development Standards* will call for a minimum 6 1/2 foot wide planting strip between any required sidewalk and curb edge or a minimum of ten feet outside the right-of-way.

**Curb and Gutter and Ribbon Streets**

The current standard is that all new public streets be built with either conventional 30 inch wide curb and gutter or 30 inch wide “valley” curb and gutter. While this standard is appropriate for most applications, unique circumstances may warrant exceptions. For example, publicly maintained alleys (as previously described) may not need to be constructed with curb and gutter. Additionally, new streets located among previously constructed streets which were constructed without curb and gutter may not need to be constructed with curb and gutter. In such contexts, a short section of curb and gutter may be out of character with the existing conditions and not provide any additional benefit. Particularly related to storm drainage and other functional concerns, curb and gutter in those situations may be more costly and problematic than useful. In such instances ribbon streets must be approved by the Assistant City Manager for Public Works.

Provisions also allow for lower density developments of one unit per acre or less either inside or outside the City of Winston-Salem to be constructed without curb and gutter in accordance with NCDOT or City of Winston-Salem standards.

**Applicability to Legacy Growth Management Areas**

The proposal outlined here would apply these standards in the City and County jurisdictions with the exception of the Rural Growth Management Area. In the Rural area, streets would be required to meet NCDOT minimum standards. Because the Comprehensive Plan exists in order to anticipate and direct growth in an orderly fashion, applying these standards in all other growth management areas is a means of creating a more consistent level of infrastructure across the area that will be ultimately developed at least to suburban levels of intensity.

**Conclusion**

Staff believes these street standard revisions are important implementation measures of *Legacy* that will make our community more livable, and promote the health, safety, and welfare of our citizens.

**RECOMMENDATION**

Staff recommends **APPROVAL**.
PUBLIC HEARING - September 8, 2005

Glenn Simmons presented the staff report.

FOR:

Melynda Dunnigan, 1875 Mallard Lakes Drive, Winston-Salem, NC 27106
• I'm representing the Winston-Salem Neighborhood Alliance.
• We support this ordinance.
• We definitely agree with the motivation behind the ordinance which is to provide a more walkable, livable community. This will go a long way toward accomplishing that goal.
• We are in agreement with the sidewalk provisions although we would have preferred to see sidewalks on both sides of the street rather than just one.
• We think the street tree requirement is a very good addition.
• The narrower streets and public alleyways will help with traffic issues in neighborhoods.
• We have one concern about connectivity index. We talked with Mr. Simmons about that. Our concern is that there be some flexibility for extenuating circumstances, particularly when making a connection would lead to cut-through situations.

Jill Hinkly Noble, P. O. Box 20901, Winston-Salem, NC 27120
• I work for Forsyth County Department of Health in education and I support the sidewalk standards.
• I understand the committee worked long and hard to come up with these standards and that sidewalks are valuable real estate.
• Sidewalks are an answer to many questions: quality of life questions, long-term health questions and questions about how we can build community.
• People in businesses considering our community will look and see if we have sidewalks in our new neighborhoods.
• Sidewalks are an expense, but they are a great investment in our future.
• Many Americans struggle with obesity, heart disease, osteoporosis, and obesity. These are a few diseases that are preventable and/or treatable with increased physical activity. Exercise is a prescription for good health. A sidewalk running through your neighborhood is an easy way to fill that prescription.
• Most of us really don't want to send our kids and grandkids into the street to walk to school or to a friends house, but getting them to walk is what they need from us.
• Sidewalks help us know our neighbors and build community. They also make mailing a letter or buying some milk something we can do without using our cars.
• Our air quality in Forsyth County is suffering from all the miles we are putting on our cars.
• The most new cases of asthma are in children ages birth through five years of age. Let's invest in life and support building sidewalks.

Lynne Mitchell, 1270 Foxhall Drive, Winston-Salem, NC 27106
• I served on the streets standards committee.
• First, thank you to the staff for all the support. It was a very long process. It was a very diverse group and I think this is a good document for the community with diverse input from the community.
• I'm also here representing public health. This is a cross roads for our community.
• Private streets should also be held to these standards. They often become public streets.

Anna Stewart, 2511 Roberson Court, Winston-Salem, NC  27105
• Here to support the sidewalks because this summer my 17-year-old son was hit by a car in a residential area that did not have sidewalks. Having sidewalks would likely have prevented this accident.
• Thank you.

AGAINST:  None

WORK SESSION

During discussion by the Planning Board, the following points were made:

1. Whose liability are those trees?
2. If trees can be planted either in the right-of-way or out of the right-of-way, how are they aligned? Staff responded that when the development is approved, tree location would be specified. So all trees within a subdivision would be placed either within or without the right-of-way.
3. Types and sizes of trees to be planted are indicated at the end of the ordinance.
4. Power lines often destroy trees appearance.
5. If a developer can save trees, do they still have to plant a tree per lot? Glenn Simmons: According to this ordinance, yes, because you're looking for a uniform street-tree planting.
7. The City of Winston-Salem Infrastructure Development Standards is a revision of our current Subdivision Guidelines. The goal is to have it ready within a couple of months after this is adopted.
8. Sunset provision should be included.
9. Wording for subdivisions not being approved by the Planning Board should be subdivisions not requiring approval by the Planning Board or an elected body.
10. If a building is only 2,000-3,000 square feet or a parking lot is extremely small, and the owner wants to make an addition, adding sidewalks along the entire length of his/her property could be cost prohibitive. What is the bottom threshold?
11. First statement about sidewalks, walkways, greenway easements. Sufficient to serve both existing "and projected pedestrian, transit and cyclist needs" shall be indicated. That seems kind of open ended. What do we mean by projected? Should we say "on the adopted sidewalk plan" or whatever the reference is?
12. Example of area outside Legacy middle growth management area?
13. Who do you give the "payment in lieu of" to?
14. Could we have the plans which are reference in here to look at during work session?

MOTION: Carol Eickmeyer moved continuance of the zoning text amendment to September 22, 2005.
SECOND: Jerry Clark
WORK SESSION - September 22, 2005

During discussion by the Planning Board, the following points were made:

Glenn Simmons presented an update on the proposed street standards revisions text amendment.

The Planning Board discussed the amendment, with emphasis being placed on the street tree provision and payment-in-lieu.

Clarence Lambe:  I am going to vote for it but I think street trees is not a good provision. I don't think that meets the goal and it places an undue burden on the property owner to accept responsibility for maintenance and liability. It is close enough to the street to fall into the street.

Arnold King:  I'm going to vote for it, but I question the street tree provision. It's sort of a back-door way to start planting more trees in Winston-Salem.

MOTION:  Carol Eickmeyer moved approval of the zoning text amendment with the following changes:

For further clarification, the following wording shall be added to the end of the heading of Section 3-13(C)(2)(g): " approved under Section 4 of the UDO"

Regarding Payment-In-Lieu, the following wording shall be added: "If the sidewalk is not built within five years, the public works department shall determine whether to build a sidewalk without the planned street improvement, delay installation pending a scheduled street improvement which has been delayed, or build sidewalk in the vicinity of the site where it can be feasibly constructed."

The Section reference shall be corrected to Section 3-13 and a grammatical change shall be made concerning the 10,000 square foot addition which triggers the sidewalk provisions.

SECOND:  Dara Folan
VOTE:

FOR:  Clark, Curtis, Eickmeyer, Folan, King, Lambe, Mullican, Smith
AGAINST:  None
EXCUSED:  None
Glynis Jordan noted that there has been a lot of very hard work on this text amendment from HomeBuilders, Realtors, other City Departments and Planning, but Glenn Simmons has taken almost the entire burden of seeing this through. He has done a great job.

Written comments submitted by Planning Board members:

Carol Eickmeyer: I voted for this ordinance because it is a complete approach to street-scaping - it includes pavement, sidewalks and trees - all things that are important to both the function and appearance of our roads. I would have been disappointed if the sidewalk standards had been further diluted and tree planting had been removed because doing so would have taken away the opportunity to have good planning for all of the community. I live in Ardmore, which was once the most distant suburb of Winston-Salem. As part of our research project, I've looked at a lot of pictures of the early days in Ardmore where the streets were mud, sidewalks were rare and trees were mere sticks. Ardmore as a mature neighborhood would be more desirable today if the planners of the day had anticipated the need for adequate infrastructure: standard width streets, sidewalks, rights of way and trees. UDO 142 sets up standards that will make this community more functional and livable both today and into the future.

Arnold King: I voted in support of UDO-142 by adding a new subsection "3-13 Street Standards Governing Vehicle and Pedestrian Circulation." These revisions to our street standards address many important issues such as sidewalks, bicycle facilities, private streets, street widths, cul-de-sacs, alleys, street connectivity, etc. I would recommend, however, that the last paragraph - 3-13 (C)(2)(g) - be deleted from this text amendment. This item deals with "Street Trees for New Residential Subdivisions." This would seem to be more appropriately addressed when we work on a "tree" ordinance for the city as opposed to a section dealing with "vehicle and pedestrian circulation." The premise of this section is to plant "street trees" although most discussion has indicated that the results is going to be "one tree per lot" that is actually planted on the lot as opposed to being planted in the right-of-way. If someone wanted to know the requirements for planting trees in Winston-Salem, I don't believe that they would think that the place to look in the UDO would the section dealing with street standards and sidewalks. I am also concerned about the liability issues involved with trees in the rights-of-way. As I have pointed out several times during discussions, the Town of Kernersville is having to defend itself in a lawsuit as the result of a tree in the right-of-way that fell on an automobile and killed an individual. If the City Council adopts this ordinance, or any other ordinance, requiring trees in the rights-of-way, then they need to be aware of the liability that the City is undertaking and the additional cost to the City for maintenance of these trees. I am not opposed to trees, but feel that the current paragraph in this text amendment is not the appropriate way to address tree plantings in the City. I would not anticipate the "tree ordinance" dealing with cul-de-sacs and street connectivity - so I don't understand why the "street standards ordinance" gets into the subject of trees. We can deal with trees - both street trees and trees on residential and commercial lots - when we adopt a formal tree ordinance. This ordinance deals with street standards. Save the discussion on trees
or the tree ordinance. I also have some problems with the "payment in lieu" section of the text amendment in that I believe the City should either use the money for sidewalks within a reasonable length of time or refund the money to the developer. Again, I supported the text amendment because the majority of the text amendment is good policy.

A. Paul Norby, AICP
Director of Planning
UDO-142
AN ORDINANCE AMENDING CHAPTER B OF
THE UNIFIED DEVELOPMENT ORDINANCES
REGARDING STREET STANDARDS

Be it resolved, by the @, that the Unified Development Ordinances (UDO) is hereby amended as follows:

Section 1. Chapter B, Article III- OTHER DEVELOPMENT STANDARDS is hereby amended by adding a new subsection 3-13 as follows:

3-13 STREET STANDARDS GOVERNING VEHICLE AND PEDESTRIAN CIRCULATION

(A) Pedestrian Transit and Bicycle Mobility

(1) General

(a) Sidewalk, walkway, on-road improvements, greenway easements, and trail systems sufficient to serve both existing and projected pedestrian, transit, and cyclist needs shall be indicated on all site and subdivision plans approved by the Planning Board or Elected Body. Such systems may include sidewalks along public or private streets, wide outside travel lanes, bike lanes on roadways, and walkways and trails in alternative locations as appropriate. Design, location, dimensions, dedications, easements, and reservations shall conform to applicable jurisdictional policies and adopted plans for sidewalks, bicycle routes, greenways and trails. Such plans include the Winston-Salem Urban Area Sidewalk and Pedestrian Facilities Plan; the Winston-Salem Urban Area Comprehensive Bicycle Master Plan; the Greenway Plan, Winston-Salem and Forsyth County; and the Winston-Salem Urban Area Thoroughfare Plan.

(b) Walkways and trails shall be designed to maximize the safety of users and the security of adjoining properties with respect to location, visibility, and landscaping.

(2) Sidewalk Requirement for Planning Board or Elected Body Approvals

(a) Single family residential and non-residential subdivisions, Planning Board Review items, and Special Use District Zoning items in Winston-Salem and unincorporated areas of Forsyth County identified as outside Legacy Rural Growth Management Area.

(i) Unless the Planning Board or Elected Body approves an alternate walkway location, a conventional sidewalk shall be provided within the right-of-way along all new public streets with required curb and gutter as shown in the table below in accordance with the Winston-Salem Infrastructure Development Standards or NCDOT standards as applicable.
Sidewalks shall also be required along existing streets where subdivisions, Planning Board Review items, or Special Use District Zoning items abut streets proposed for sidewalks as identified in the adopted Winston-Salem Urban Area Sidewalk and Pedestrian Facilities Plan.

Except for sidewalks as required on approved site plans, additional sidewalks in accordance with this section shall not be required for properties with vested site plans in accordance with Chapter B, Article I, Section 1-5.2 Vested Rights.

Exemptions
Sidewalks are not required in locations where curb and gutter is not required for new public streets.

Alternate Requirement

A pedestrian walkway may be provided outside the right-of-way within a public access easement when the Planning Board or Elected Body determines the walkway will have the same functionality as a conventional sidewalk required in Section 3-13 (A)(2) above.

A pedestrian walkway may be provided outside the right-of-way within a public access easement when the Planning Board or Elected Body determines that the construction of a conventional sidewalk within the right-of-way is impractical due to impending road widening or other physical limitations.

A developer may propose a sidewalk layout which varies from the strict application of the provisions of Section 3-13 (A)(2) above in order to accommodate the unique character of the site or to utilize innovative design. Alternative compliance may be granted by the Planning Board or Elected Body only upon a finding that the proposed alternative fulfills the intent of sidewalks to provide a logical and functional pedestrian network as well as or better than would strict compliance with the requirements of this ordinance.
Sidewalk Requirements for Nonresidential Developments and Other Multifamily Developments not requiring approval by the Planning Board or Elected Body

(a) Sidewalks shall be required for all nonresidential developments and multifamily developments not subject to approval by the Planning Board or Elected Body and where located along streets identified on the adopted Winston-Salem Urban Area Sidewalk and Pedestrian Facilities Plan, subject to the following criteria or exceptions.

(i) Sidewalks shall be required along the entire frontage of the property under the following circumstances:

[A] New construction sites.

[B] On existing developed zoning lots, construction of 10,000 sf or more gross square feet in new buildings or additions of 10,000 sf or more gross square feet to existing buildings on existing developed zoning lots.

[C] In all situations where sidewalks are required the developer shall be obligated to build no more than one (1) linear foot of sidewalk per ten (10) square feet of gross building area. The location of sidewalks shall be determined through the construction permitting process in accordance with the adopted Winston-Salem Urban Area Sidewalk and Pedestrian Facilities Plan.

(ii) Sidewalks shall only be required on streets which have existing curb and gutter paving or where the subject street is being widened with curb and gutter as required by the approval of a driveway permit. Construction of the sidewalk shall be approved by the Engineering Division of the City of Winston-Salem Public Works Department prior to the issuance of occupancy permits.

(iii) Exceptions and exemptions:

[A] Sidewalk requirements maybe located either totally or partially within a public easement outside the right-of-way, or may be waived altogether, if the Assistant City Manager for Public Works or designee determines that sidewalk construction either within or outside the right-of-way is impractical due to physical limitations if the site.

[B] Sidewalks shall not be required for any interior up-fit of existing buildings that does not involve any new outside construction meeting the requirements in this section.

[C] Phased projects not covering the entire zoning lot shall only be required to construct sidewalks through the frontage of the site development or construction on the zoning lot.
provided phasing is logical with respect to the viability of future development as determined by the City-County Inspections Division.

[D] Sidewalk construction shall not be required if the street meets the provisions of Section 3-13 (A)(6), Payment In-Lieu, as determined by the Engineering Division of the City of Winston-Salem Public Works Department. This determination shall be made prior to the issuance of building permits. If a payment in-lieu determination is made, the payment shall be made to the City of Winston-Salem prior to the issuance of occupancy permits. If other construction in the vicinity or a combination of sidewalk and alternative walkway is approved, the construction shall be completed and approved by the Engineering Division of the City of Winston-Salem Public Works Department prior to the issuance of occupancy permits.

(4) Standards for Bicycle and Pedestrian Facilities for Planning Board or Elected Body Approvals

(a) Any required bicycle and pedestrian facilities in accordance with the adopted Winston-Salem Urban Area Sidewalk and Pedestrian Facilities Plan and/or the Winston-Salem Urban Area Comprehensive Bicycle master Plan shall be clearly marked using NC DOT standard markings, or shall be based on the Manual on Uniform Traffic Control Devices.

(b) Adjacent existing public greenways shall be connected to bicycle and pedestrian facilities on the site.

(c) Bicycle and pedestrian connections shall be made to any existing or proposed off-site bicycle or pedestrian facilities contiguous to the site.

(5) Dimensions and Locations

(a) Sidewalks

(i) In general, sidewalks shall be a minimum of five (5) feet in width and shall be constructed of concrete as per the City Public Works Department or NCDOT construction standards unless another material is approved by the Assistant City Manager for Public Works or designee.

(ii) For conventional sidewalks approved by the Planning Board or other approving authority, sufficient right-of-way shall be dedicated to ensure that on roads with curb and gutter, a planting strip can be constructed in accordance with the City of Winston-Salem Infrastructure Development Guidelines. Where street trees are installed between the sidewalk and the curb edge, additional planting strip width shall be required in accordance with City of
Winston-Salem Infrastructure Development Standards. If a sidewalk must be placed adjacent to the back of curb due to topographic constraints or other hardships as approved by the Assistant City Manager for Public Works, or designee, the width of the sidewalk shall be increased in accordance with City of Winston-Salem Infrastructure Development Standards.

(iii) Sidewalks on nonresidential developments and other multifamily developments not subject to approval by the Planning Board or other approving authority may be installed directly behind the curb if sufficient right-of-way does not exist in accordance with (ii) above.

(b) Bicycle Facilities Approved by the Planning Board
Either wide outside travel lanes or bicycle lanes, as determined by the Assistant City Manager for Public Works, or designee, or NC DOT, shall be part of any road improvement made on roadways which are indicated as bicycle routes on the approved Winston-Salem Urban Area Comprehensive Bicycle Master Plan.

(6) Payment In-Lieu
When the Engineering Division of the City of Winston-Salem Public Works Department determines that the construction of a required conventional sidewalk or alternative walkway is unfeasible due to special circumstances, including but not limited to: existing ribbon pavement, impending road widening, significant street trees, utility problems, grade problems or other construction difficulties, the City of Winston-Salem shall require either, (1) a payment in-lieu of sidewalk construction; (2) construction of sidewalks in the general vicinity of the project site; or (3) a combination of a conventional sidewalk, alternative walkway, or payment of a fee in-lieu. Payment in-lieu shall only be required in cases where a sidewalk is likely to be built within five (5) years from the date of plan approval. For payment in-lieu, the cost of the sidewalk construction shall be approved by the Engineering Division of the City of Winston-Salem Public Works Department and the payment for the sidewalk construction shall be made to the City of Winston-Salem prior to the issuance of occupancy permits or recording of final plats whichever is applicable. If the sidewalk is not built within five (5) years, the City of Winston-Salem Engineering Division shall determine whether to construct the sidewalk without the planned street improvement, delay installation further to coincide with a scheduled street improvement which has been delayed, or construct the sidewalk in the vicinity of the site where it can be feasibly constructed.

(B) Ingress and Egress Requirements

(1) General
Upon completion, all public and private streets, utilities, and drainage infrastructure shall be certified and the record construction drawings and certifications shall be submitted and accepted by the Engineering Division of the City of Winston-Salem Public Works Department.

(2) Dedicated and Publicly Maintained Streets

Dedicated and publicly maintained streets shall be required for developments in all zoning districts except as described in Section 3-13 (B)(2). An unlimited number of building permits may be conditionally issued for land parcels adjacent to a public street that is not maintained by either the City of Winston-Salem or NC DOT. However, no occupancy permits shall be issued unless the street has been completed or substantially constructed in accordance with Section 4(H), “Platting Requirements” including posting of an appropriate surety to the satisfaction of the Assistant City Manager of Public Works, NC DOT, or appropriate designees. For streets outside the corporate limits of the City of Winston-Salem, the applicant shall request NC DOT maintenance as soon as the NC DOT occupancy requirement is met, and not more than twice the minimum number of units required for maintenance by the NC DOT may be issued Certificates of Occupancy prior to acceptance for maintenance by NC DOT.

(3) Other forms of Access

No building shall be erected or enlarged on a parcel in any zoning district unless such parcel abuts upon or has access to a publicly-accepted and maintained street, except in the following circumstances:

(a) Private Streets or Roads

Such streets shall be designed and constructed according to City of Winston-Salem Public Works standards.

(i) Residential

[A] For single family residences in accordance with subdivisions approved as a Minor Subdivision.

[B] For an approved multifamily development not requiring publicly maintained streets.

[C] For an approved Planned Residential Development (PRD) not requiring publicly maintained streets as deemed appropriate by the Planning Board. With the exception of Growth Management Areas 1 and 2, all private streets within an approved PRD shall be constructed and designed as per all public street dimensional and construction method standards. Within Growth Management Areas 1 and 2, the Planning Board, in consultation with the Assistant City Manager for Public Works, or designee, may
waive the dimensional requirements in order to facilitate appropriately designed in-fill development as per the goals and objectives of Legacy. Such waiver shall be in writing and shall specifically state the item to be waived.

(ii) Non-residential
For any non-residential development in a non-residential zoning district

(4) Acceptance by the City of Winston-Salem of Private Streets

Prior to the acceptance by the City of Winston-Salem, any private street not constructed and maintained to public standards shall be improved to City of Winston-Salem standards by the petitioner to the satisfaction of the Assistant City Manager of Public Works.

(C) Streets

(1) Street Design
Within any proposed subdivision, the proposed street design (layout) shall be coordinated with the existing and planned street system of the surrounding area with respect to location, alignment, and cross-section. Street design shall satisfy the minimum requirements of the City of Winston-Salem Infrastructure Development Guidelines or NC DOT as applicable. The following street standards may be modified or varied by the approving authority in order to accommodate unique conditions.

(a) Right-of-Way
(i) A proposed right-of-way shall be of sufficient width to accommodate the required cross section of the roadway. In no case shall the proposed right-of-way be less than the currently adopted standards unless the approving authority determines that special circumstances exists which make the dedication or reservation of the full right-of-way unnecessary or impractical.

(ii) Right-of-way shall be dedicated and/or reserved and improvements installed to City of Winston-Salem or NC DOT standards for each class of street as follows:

[A] Proposed Freeways with defined rights-of-way approved by the NC DOT and the Federal Highway Administration shall have the entire right-of-way reserved for future acquisition and improvement by the public.

[B] All Other Public Streets
[1] New streets. The right-of-way required to accommodate the proposed development shall be dedicated, with the remainder reserved. The
applicant shall be required to install improvements sufficient to service traffic demands of the proposed development.

[2] Existing Streets. The applicant shall dedicate or reserve additional right-of-way and install improvements as required to serve the proposed development. Other improvements shall be installed according to Winston-Salem Infrastructure Development Guidelines or NC DOT standards as applicable.

(b) Street Widths
Proposed street widths and other design elements shall be in accordance with the Winston-Salem Infrastructure Development Standards or NC DOT standards as applicable.

(c) Grades and Curves
Proposed streets shall be designed in accordance with Winston-Salem Infrastructure Development Guidelines or NC DOT standards as applicable.

(d) Curb and Gutter
(i) Single Family Residential Subdivisions located within the City of Winston-Salem and Single Family Residential Subdivisions located in unincorporated areas of Forsyth County in Legacy Growth Management Areas other than the Rural Growth Management Area shall be constructed with thirty (30) inch wide standard or valley curb and gutter in accordance with Winston-Salem Infrastructure Development Guidelines or NC DOT standards as applicable.

(ii) Exceptions
[A] Single Family Residential Subdivisions located outside of the City of Winston-Salem corporate limits and further identified as located within the Legacy Rural Growth Management Area in unincorporated areas of Forsyth County may use conventional ribbon pavement in accordance with NC DOT standards.

[B] Single Family Residential Subdivisions located within the City of Winston-Salem or in unincorporated areas of Forsyth County may use conventional ribbon pavement, according to NC DOT standards, provided no single lot in the subdivision is less than one (1) acre in size.

[C] Single Family Residential Subdivisions located within the City of Winston-Salem or within unincorporated areas of the county, where a pattern of existing ribbon streets makes
new curb and gutter streets impracticable with the approval of the Assistant City Manager for Public Works, or designee, or appropriate municipal authority, or NCDOT.

(e) Intersections
(i) Street intersections shall be as nearly at right angles as possible with no intersection angle less than the minimum established by the Assistant City Manager for Public Works, or designee, or NCDOT, as applicable.

(ii) Offset intersections shall be avoided. Intersections on residential streets which cannot be aligned shall be separated by a minimum distance determined by the Assistant City Manager for Public Works, or designee, or NC DOT, as applicable. For higher level streets, this distance shall be determined after considering possible signalization, necessary storage, and sight distance, as well as other design constraints.

(iii) Adequate sight distances shall be provided at all intersections between streets and at driveway intersections with streets in accordance with Winston-Salem Infrastructure Development Guidelines or NC DOT standards as applicable.

(iv) Property lines at corners of all intersecting streets shall be platted in accordance with Winston-Salem Infrastructure Development Guidelines or NC DOT standards as applicable.

(f) Sight Triangles
Sight triangles for corner lots and driveways shall be shown on recorded plats in accordance with Winston-Salem Infrastructure Development Guidelines or NC DOT standards as applicable.

(g) Cul-de-sac Streets
Except in unusual circumstances such as terrain constrains or other hardships, cul-de-sac streets shall not be longer than 800 feet and shall be terminated by a circular right-of-way or an approved alternative turnaround in accordance with Winston-Salem Infrastructure Development Guidelines or NC DOT standards as applicable.

(i) The length of cul-de-sac streets shall be measured from the centerline of the bulb to the edge of pavement of the nearest through street intersection.

(ii) Cul-de-sac may be longer than 800 feet where the number of lots served by a cul-de-sac is fifteen (15) lots or fewer.

(h) Unless exempted below, stub streets shall be required on each side of a development to allow for future interconnectivity to adjacent tracts of land when they develop. Depending on the length of a side, more than one stub
street may be required. Stub streets shall be located in places where topography and other features on and off the site will be conducive to future street extension. Stub streets shall not be required on sides where terrain features or existing development would make a future connection prohibitive.

(i) Alleys
Alleys may be required along the rear lot line of commercial or industrial property, along the rear lot line of lots fronting on thoroughfares, or where the lots are less than fifty (50) feet wide. Alley widths shall be established by their proposed use.

(j) Prohibition of Reserve Strips Controlling Access
The reservation of private property strips of too narrow a depth to permit development as a means of prohibiting access to public ways shall not be permitted.

(k) Frontage Roads and Marginal Access Streets
Where a subdivision abuts or contains a controlled or limited access street or thoroughfare, whether existing or proposed, a marginal access street or frontage road may be required.

(2) Street Connectivity Requirements

An interconnected street system is necessary in order to promote orderly and safe development, ensure that streets function in an interdependent manner, provide adequate access for emergency and service vehicles, allow for alternate transportation routes, disperse traffic and thereby lessen traffic congestion, and provide continuous and comprehensible traffic routes.

(a) Connectivity Defined
Connectivity shall be defined by the ratio of links to nodes in any subdivision.

(i) The connectivity ratio shall be the number of street lengths divided by the number of nodes or end links, including cul-de-sac heads.

(ii) A link shall be any portion of a street, other than an alley, defined by a node at either end. Stub-outs to adjacent property shall be considered links. For the purpose of determining the number of links in a development, boulevards, median–divided roadways, and divided entrances shall be treated the same as conventional two-way roadways.

(iii) A node shall be the terminus of a street or the intersection of two or more streets.

[A] Any location where a street name changes (as reviewed and
approved by the Director of Planning) shall be considered a node.

[B] A divided entrance shall only count as a single node.

(b) Required Ratio

(i) The street network for any subdivision with internal roads or access to any public road shall achieve a connectivity index of not less than 1.2, measured within the subdivision.

(ii) Street links and nodes along a minor thoroughfare or higher classification street providing access to a proposed subdivision shall not be considered in computing the connectivity ratio.

(iii) The Connectivity Index requirement of 1.2 may be waived by the Approving Authority upon a finding that there is no practical alternative due to significant topographic constraints, existing development patterns, or other substantial physical limitation.

(c) External Access Required

All subdivisions shall be designed to have interconnecting streets to adjoining developed and undeveloped properties outside the subdivision for a consistent development pattern. Interconnecting streets to adjacent public streets shall be required only where such adjacent streets have a minimum pavement width of eighteen (18) feet, or where the developer or the jurisdictional entity improves said streets to a minimum width of eighteen (18) feet. If a new subdivision would potentially connect to a street less than eighteen (18) feet in width, the Planning Board will consider technical input prior to deciding whether a connection is required. The technical input would include recommendations from the Director of Transportation concerning whether the additional traffic would create a safety or operational problem on the existing street system or nearby intersections. Additionally, a street connection shall not be required if the Director of Transportation determines that the connection would result in the traffic-carrying capacity of the street being exceeded. Additional traffic alone is not a criterion for disallowing said connections. A street connection is not required where a planned or funded roadway would result in a severed connection in the future, or where a connected street would not serve a practical value due to an existing transportation facility (limited access highway or railroad) which would prevent the continuation of the street. In cases where major streams or other physical barriers must be crossed to provide for interconnecting streets exemptions from this regulation shall be based on the length, costs, and construction difficulties of connecting streets and shall be decided by the Planning Board.

(d) Street Names
Street names shall not duplicate nor closely approximate existing street names within the City of Winston-Salem or Forsyth County. Extensions of existing, named streets shall bear the existing street name. A complete list of previously used names shall be maintained by Planning staff. Street names shall be approved by the Planning staff and shall be shown on the preliminary subdivision plat. To change the street names after preliminary or construction plan approval, a request must be submitted to the Planning staff. Application requirements include a fee established by the Planning Board.

(e) Street Sign and Markers

(i) Standard street name signs shall be installed at the corner of all streets intersections, including private streets. The size, design, materials, location, and installation of the signs shall be in accordance with City Public Works Department or NCDOT standards, as applicable.

(ii) Signs denoting the beginning and ending of public maintenance shall also be erected and maintained on private streets.

(f) Street Lights

Street lighting, as required for traffic safety and property security, may be required to be installed in conformance with City Public Works Department or NCDOT policies, as applicable. The design, materials, location, and installation shall conform to all applicable City Public Works Department or NCDOT standards, and applicable public utility standards, including appropriate separation from street trees.

(g) Street trees for new Residential Subdivisions approved under Chapter D, Section 4 MAJOR SUBDIVISIONS of the UDO

A minimum of one (1) deciduous, Large Variety Tree as specified under Chapter B, Section 3-4, LANDSCAPE STANDARDS, or as otherwise permitted or restricted by the City Director of Vegetation Management, shall be planted per lot prior to the issuance of a Certificate of Occupancy. For cul-de-sac, local residential, and collector streets having sidewalks, trees may be planted between the curb edge and the sidewalk a minimum distance of four (4) feet away from the back of curb. In all instances required street trees shall be planted in a manner not to conflict with safety or functional operations of the street in accordance with Winston-Salem Infrastructure Development Standards. Required Street Trees shall be a minimum of ten (10) feet high at installation and shall have a caliper of at least two (2) inches measured six (6) inches above ground.

Section 2. Section 4 (B)(1) “Streets and Roads” is hereby deleted in its entirety from UDO Chapter D Subdivision Regulations. The following sections are hereby renumbered.

Section 3. This ordinance shall be effective January 1, 2006 except sidewalk requirements
along streets identified in the Winston-Salem Urban Area Sidewalk and Pedestrian Facilities Plan which requires a separate adoption of said plan by the Elected Body.