

AN ORDINANCE AMENDING THE LAND USE ORDINANCE PROVISIONS RELATING  
TO VILLAGE MIXED-USE AND OFFICE/ASSEMBLY DEVELOPMENTS

THE BOARD OF ALDERMEN OF THE TOWN OF CARRBORO ORDAINS:

Section 1. The section references contained in this ordinance are to chapter 15 of the Carrboro Town Code, the Carrboro Land Use Ordinance.

Section 2. The opening paragraph of Subsection 15-176.2 is amended to read as follows:

In a village mixed use development, a maximum of ten percent of the total gross acreage of the tract, or five acres, whichever is less, may be used for purposes permissible in the B-3T or OA districts, subject to any conditions or limitations (including limitations on the types of permissible uses) contained in the remaining provisions of this section, ~~or the conditional use permit that authorizes the development in question.~~ *Notwithstanding the foregoing, the Board of Aldermen may, in approving a Master Plan for the development, impose greater use limitations on the development than those imposed by the regulations of this chapter applicable to the B-3T or OA districts, or allow the developer to deviate from the use limitations imposed by the other provisions of this section. The developer shall be required to identify and justify all deviations from Section 15-176.2 and the rest of Chapter 15.*

Section 3. Subsection 15-176.2(a)(1) is amended to read as follows:

Within the portion of the tract developed for commercial purposes, the regulations (other than use regulations, which are governed by the provisions immediately above) applicable to property zoned B-3T shall apply ~~except as otherwise provided in this section or as otherwise allowed by the Board of Aldermen in the approval of the Master Plan or conditional use permit for this development.~~ *subject to the remaining provisions of this section. Notwithstanding the foregoing, the Board of Aldermen may, in approving a Master Plan for the development, allow or require the developer to deviate from the provisions of this section or this chapter (other than use regulations, which are governed by the provisions immediately above) that would otherwise be applicable to the development. The developer shall be required to identify and justify all deviations from Section 15-176.2 and the rest of Chapter 15.*

(1)

Section 4. The opening paragraph of Subsection 15-176.2(b) is amended to read as follows:

Portions of the tract not developed in accordance with the provisions of subsection (a) above may be developed in accordance with the provisions of this chapter applicable to property that is zoned R-10, except as those provisions are modified by the provisions of

~~this section, or the Master Plan or conditions imposed by the Board of Aldermen in the issuance of the conditional use permit.~~ *Notwithstanding the foregoing, the Board of Aldermen may, in approving a Master Plan for the development, allow or require the developer to deviate from the provisions of this section or this chapter that would otherwise be applicable to the development. The developer shall be required to identify and justify all deviations from Section 15-176.2 and the rest of Chapter 15.*  
(b)

Section 5. Section 15-15 is amended by adding a new definition (92.1) to read as follows:

(92.1) *RESIDENCE, PRIMARY WITH ACCESSORY DETACHED DWELLING. A residential use in which there is located on the same lot a primary, single family residence and a second dwelling that is detached from the primary residence but that may be attached to another accessory building such as a garage, and which second dwelling unit comprises not more than fifty percent of the gross floor area of the primary residence nor more than a total of 750 square feet, exclusive of garage.*

Section 6. The first sentence of Subsection 15-182(b) is rewritten to read as follows:  
“Two-family conversions, primary residences with an accessory apartment, *and primary residences with an accessory detached dwelling* shall be allowed only on lots having at least 150% of the minimum square footage required [under subsection (a)] for one dwelling unit on a lot in such district.”

Section 7. Subsection 15-176.2(b)(1) is amended by adding a new subsection “c” to read as follows:

- c. *[Alternative 1] When a lot is developed as a primary residence with an accessory detached dwelling, the accessory dwelling shall be permissible in addition to the number of dwelling units otherwise authorized under this section.*  
*[Alternative 2]. When a lot is developed as a primary residence with an accessory detached dwelling, the accessory dwelling shall be counted only as a half dwelling unit for purposes of determining the number of dwelling units permissible within the entire tract.*

Section 8. Subsection 15-176.2(f)(3)(g) is amended by adding a sentence at the end of this subsection, so that it reads as follows:

- g. The build-up line specifies a cornice height that establishes the prominent visual dimension of a building and defines its proportion in relation to the street. It should vary, with no more than sixty (60) consecutive feet of the build-up line having a similar cornice or roofline, and be between one and ~~two~~ *three* and one-half stories in height. A two-story build-up line can range from 20 to 25 feet above average

ground level. *A three-story build-up line can range from 30 to 35 feet above average ground level.*

Section 9. Subsection 15-176.2 (f)(4)(b) is amended to read as follows:

- b. Maximum height regulations are ~~35~~ 49 feet and ~~two~~ *three* and a half stories.

Section 10. Subsection 15-176.2 (f)(4)(f)(1) is amended to read as follows:

1. Be constructed of brick or concrete ~~with brick borders~~ in such a way that they do not impede accessibility.

Section 11. Subsections 15-176.2 (f)(4)(g) (1) and (2) ~~is~~ **are** amended to read as follows:

1. At least one trash can **and one recycling receptacle** of approved design in each block;
2. Public benches of approved design at bus stops, green spaces, and at intervals of no greater than ~~50~~ 200 feet **along both sides of ~~on~~ each block and at lesser intervals and/or in required clusters, as appropriate (i.e. high-activity areas due to the nature of surrounding uses).**

Section 12. Subsection 15-176.2 (f)(4)(m) is amended to read as follows:

- m. Materials in the exterior of *at least one-half of the* buildings surrounding the greens shall be limited to a diversity of brick textures and colors, with wood being subject to the review of the Appearance Commission and the approval of the permit-issuing authority. Awnings are encouraged. Commercial grade windows and doors shall be used, with wood encouraged and other materials being subject to the review of the Appearance Commission and the approval of the permit-issuing authority.

Section 13. Subsection 15-176.2 (f)(5)(b) and (c) are amended to read as follows:

- b. The minimum lot width at the building line shall be 40 feet unless *the Board of Aldermen has also approved the development as an architecturally integrated subdivision as described in Section 15-187.*
- c. Variations in the principal building position and orientation shall be encouraged, but the following minimum standards shall be observed: Front yard: 15 feet minimum (but 8 feet to front porches or steps) and 25 feet maximum; Rear yard: 30 feet minimum for principal buildings and 5

feet for accessory buildings; Side yard: 20-foot separation for principal buildings, with no side yard less than 5 feet *unless the Board of Aldermen has also approved the development as an architecturally integrated subdivision as described in Section 15-187.*

Section 14. Subsection 15-176.2 (f)(5)(d) is amended to read as follows:

- d. The ~~total maximum~~ impervious coverage shall be ~~50~~ 65 percent ~~on each lot for all of the lots in this use area.~~ *Impervious surface area may be increased above 50 percent so long as all additional stormwater volume is retained on site and no discharge is allowed. Allocation to each lot shall be indicated on the conditional use permit plans and must be finalized at the time a final plat is recorded. For multi-phase projects, the final allocation shall be by phase. No further reallocation of impervious surface coverage for lots in this use area shall be allowed after the final plat has been recorded.*

Section 15. Subsection 15-176.2 (f)(5)(g) (4) and (5) are amended by adding a new phrase at the end of the subsection to read as follows:

4. Exterior fire-exit stairs are prohibited on any side of ADUs *Accessory Detached Dwellings* except at their rear, *except in cases when the ADD is located above a garage.*
5. All off-street parking for ADUs *Accessory Detached Dwellings* shall be located to the side or rear, *as viewed from the street.* ~~and shall be visually screened from adjoining properties and from all streets.~~

Section 16. Subsection 15-176.2 (f)(8)(b) is amended by adding a new sentence at the end of this subsection to read as follows:

- b. Shade trees shall be provided along each side of all streets, public or private, existing or proposed. Shade trees shall also be massed at critical points, such as at focal points along a curve in the roadway. In locations where healthy and mature shade trees currently exist, the requirements or new trees may be waived or modified. *Section 15-315 of this Chapter notwithstanding, the developer shall either plant or retain sufficient trees so that, between the paved portion of the street and a line running parallel to and twenty-five feet from the center line of the street, there is for every forty feet of street frontage at least an average of one deciduous tree that has or will have when fully mature a trunk at least twelve inches in diameter. Trees may be placed uniformly.*

Section 17. Subsection 15-177 (a)(2), (3) (6) and (7) are amended to read as follows:

- (a) The following standards are recommended for all subdivisions of 5 or more units and shall pertain to ~~90%~~ 50% of the dwelling units in the subdivision.

(2) Roofs shall be as follows:

- a. Main roof pitch – ~~40~~ 8/12 to 12/12
- b. Lower roof pitches – 3/12 to 4-5/12
- c. Roofs shall have a minimum overhang of sixteen (16) inches on all eaves and gables.

(3) Clapboard or shingle siding shall have a four ~~and a half~~ to five and a half-inch exposure.

(6) Any chimney must be located within the body of the house unless *it is an all-masonry chimney.*

(7) Garage doors shall be nine (9) feet wide or under. Door shall not face the street *unless the garage is placed at least 10 feet behind the principal dwelling.*

Section 18. Subsection 15-291 (g) (Table of Parking Requirements) is amended by adding the following in appropriate numerical order:

<u>USE</u>	<u>PARKING REQUIREMENT</u>
32.000	<i>2 spaces per single-family dwelling unit plus one space per accessory dwelling unit or room rented out in each dwelling unit (see Accessory Uses, Section 15-150). An average of 1.5 spaces per each multifamily dwelling unit. A minimum of one off-street space shall be provided for each dwelling unit. On-street parking and space provided within enclosed or partially enclosed garages may be counted toward fulfillment of parking requirements beyond the off-street minimum.</i>

*1 space per 400 square feet of gross floor area used for commercial purposes in the "storefront use area".*

*Shared parking shall be allowed and shall be calculated as follows: the sum of the parking places for any two uses is divided by the ratios below to yield the shared parking required.*

*Residential and Lodging: 1.1*

*Residential and Civic Use or Church Use: 1.1*

*Residential and Office Use: 1.4*

*Residential and Retail: 1.2*

*Lodging and Civic Use or Church Use: 1.3*

USE	PARKING REQUIREMENT
	<i>Lodging and Office: 1.7</i>
	<i>Lodging and Retail: 1.1</i>
	<i>Civic Use or Church Use and Office Use: 1.7</i>
	<i>Civic Use or Church Use and Retail Use: 1.3</i>
	<i>Office Use and Retail Use: 1.2</i>

Alternative Section 18. Section 15-176.2 (f) (4) (e) is amended by the addition of a new subsection that reads as follows:

5. The permit-issuing authority may allow shared use of parking.

New Section 19 (need to renumber the remainder). Section 15-176.2 (f) (7) (is amended by the addition of a new subsection (e) that reads as follows:

- (e) *The permit-issuing authority may allow on-street parking spaces along the front property line (except where there are driveway cuts) to be counted toward the minimum number of parking spaces required for the use on that lot.*

Section 19. Article XIV is amended by the addition of a new section 15-220.1 Design Standards for Village Mixed Use Developments that reads as follows:

- (a) *Village mixed use developments may be designed in accordance with the North Carolina Department of Transportation Traditional Neighborhood Development (TND) Guidelines, August 2000. Where specific NCDOT TND design guidelines have been established, these ~~shall~~ may supercede any related street design standards contained in this Ordinance, as well as standards and guidelines for utilities, landscaping, and similar considerations. In the absence of TND specific design guidelines, the existing standards, criteria, guidelines or policies shall be applied.*
- (b) *For purposes of implementing the NCDOT TND Guidelines, a village mixed use development shall be deemed to be a "classic" TND.*

Section 20. Article X Section 15-146 (Table of Permissible Uses) is amended by revising the permit requirements associated with use classifications 2.110 2.120, 2.210, 2.220, and 2.230 by inserting a "ZC" under the column for the O/A (Office/Assembly) zoning district.

Section 21. Article IX, Sections 15-136 (10) Office Assembly and 15-136 (11) are amended by the addition of new subsections that read as follows:

- (e) *Not more than 25 percent of the total building gross floor constructed within the proposed district may be used for uses permissible within this district that fall within the 2.000 classification.*
- c. 1. *Not more than 25 percent of the total building gross floor constructed within the proposed district may be used for uses permissible within this district that fall within the 2.000 classification*

Section 22. Article XI, Subsection 15-176.2 (f) (5) (g) is amended by replacing the terms “Accessory dwelling unit” and “ADU” with “Accessory Detached Dwelling” and “ADD” throughout.

Section 23. Article XI, Subsection 15-176.2 (f)(5)(g) (3) is amended to read as follows:

- 3. The gross floor area in the ADD shall not exceed 750 square feet.

Section 24. All provisions of any town ordinance in conflict with this ordinance are repealed.

Section 25. This ordinance shall become effective upon adoption.

The foregoing ordinance, having been submitted to a vote, received the following vote and was duly adopted this \_\_\_\_ day of \_\_\_\_\_, 2002

Ayes:

Noes:

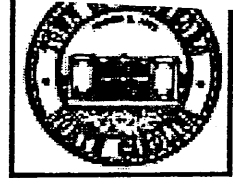
Absent or Excused:





## TOWN OF CARRBORO

## LAND USE ORDINANCE AMENDMENT REQUEST



To the Board of Aldermen, the Planning Board, and the Appearance Commission,  
as appropriate, of the Town of Carrboro:

I (we), the undersigned do hereby respectfully make application and petition the  
Board of Aldermen to amend the Land Use Ordinance. In support of this application, the  
following facts are shown:

- 1) The Land Use Ordinance, at present, would allow (description/quote, page and  
number of section in question):

*Village Mixed Use developments and  
Architecturally Integrated Subdivisions.  
Please see attached.*

- 2) The proposed amendment to the Land Use Ordinance would allow (describe briefly  
intended change):

*More workable, refined and  
authentic implementation of  
The intent of The VMU ordinance.*

- 3) State the reasons for the proposed amendment:

*Please see attached.*

SIGNATURE :

*Robert Chapman III*

applicant

{print}

ADDRESS :

*Winmore Land Management, LLC  
310 1/2 West Franklin St. Chapel Hill, NC 27514*

TELEPHONE NUMBER :

*(919) 929-0336*

*Winmore Land Management, LLC*

November 21, 2001

## Review Draft Only

### MEMO

To: Carrboro Staff, Orange County Staff

From: Robert L. Chapman, Philip Szostak, and Herman F. Greene, Partners

Subject: Draft Text Amendments

---

Winmore Land Management intends to seek several amendments to the Town of Carrboro Land Use Ordinance. We understand that in deciding whether to adopt a proposed amendment to this chapter, the central issue before the Carrboro Board of Aldermen is whether a proposed amendment advances the public health, safety or welfare. We strongly believe that all of the proposed amendments meet these criteria.

Our first proposed amendment may, in and of itself, be adequate. It seeks to clarify that the that the Board of Aldermen has broad authority to approve a Village Mixed Use Master Plan that may vary from various specific requirements found in ordinance and that, in the event of conflicts, the approved plan shall take precedence.

We would appreciate your comments and suggestions before we formally submit our text amendment proposals.

Pertinent sections of the code as well as preceding section and paragraph titles are provided for reference. Proposed deletions are indicated by ~~striketrough~~. Proposed additions are underlined.

The following information is provided in accordance with Section 15-321 of the ordinance:

- (1) Name, address, and phone number of the applicant.

Winmore Land Management, LLC  
310 1/2 West Franklin Street  
Chapel Hill, NC 27514

Phone: 929-0336

- (2) A description of the land affected by the amendment if a change in zoning district classification is proposed.

Does not apply.

- (3) Stamped envelopes containing the names and addresses of all those to whom notice of the public hearing must be sent as provided in Section 15-323.

To be addressed after the Carrboro planning staff has reviewed the proposed amendments.

- (4) A description of the proposed map change or a summary of the specific objective of any proposed change in the text of this chapter.

A summary of the all of specific objective s follows each proposed text change.

- (5) A concise statement of the reasons why the petitioner believes the proposed amendment would be in the public interest.

A statement of the reasons why an amendment is in the public interest follows each proposed text change.

**1. Proposed amendments to Article XI, Supplementary Use Regulations; Part II, Miscellaneous Supplementary Use Provisions; Section 15-176.2 Village Mixed Use Developments:**

- (a) In a village mixed use development, a maximum of ten percent of the total gross acreage of the tract, or five acres, whichever is less, may be used for purposes permissible in the B-3T or OA districts, subject to any conditions or limitations (including limitations on the

types of permissible uses) contained in the remaining provisions of this section, except as those provisions are modified by the approved Master Plan, or the conditional use permit that authorizes the development in question.

- (b) Portions of the tract not developed in accordance with the provisions of subsection (a) above may be developed in accordance with the provisions of this chapter applicable to property that is zoned R-10, except as those provisions are modified by the provisions of this section or as such provisions are modified by the provisions of the approved Master Plan or conditions imposed by the Board of Aldermen in the issuance of the conditional use permit.

**Specific objective of this proposed text change:**

- To clarify the authority of the Board of Aldermen to modify, in and through an approved Master Plan, the applicability the following to a Village Mixed Use project:
  - B-3T or OA district permissible purposes
  - Provisions applicable to property that is zoned R-10
  - Other provisions of Section 15-176.2 Village Mixed Use Developments.

**Why this amendment is in the public interest:**

- It allows the Board of Aldermen to approve an integrated Village Mixed Use project based on its overall Master Plan and to modify or omit provisions that it deems inconsistent, unnecessary, or counterproductive.

**2. Proposed amendment to Town of Carrboro Land Use Ordinance, Article II, Basic Definitions and Interpretations, Section 15-15, Definitions:**

(92) Residence, Primary With Accessory Apartment.

- (a) \_\_\_\_\_ A residential use having the external appearance of a single-family residence but in which there is located a second dwelling unit that comprises not more than twenty-five percent of the gross floor area of the building nor more than a total of 750 square feet.

(b) A detached or attached accessory dwelling unit ("ADU") such as a residential use located above an attached or detached garage of a single-family residence in which there is located a second dwelling unit that comprises not more than 900 heated square feet.

**Specific objective of this proposed text change:**

- To include accessory dwelling units in the Basic Definitions and Interpretations,
- To include garage apartments in the Basic Definitions and Interpretations.

**Why this amendment is in the public interest:**

- It makes the Basic Definitions and Interpretations section more complete.

**3. Proposed amendment to Article XI, Supplementary Use Regulations; Part II, Miscellaneous Supplementary Use Provisions; Section 15-176.2 Village Mixed Use Developments:**

(b) Portions of the tract not developed in accordance with the provisions of subsection (a) above may be developed in accordance with the provisions of this chapter applicable to property that is zoned R-10, except as those provisions are modified by the provisions of this section or the Master Plan or conditions imposed by the Board of Aldermen in the issuance of the conditional use permit.

(1) The number of dwelling units permissible within the entire tract shall be determined in accordance with the provisions of Section 15-182.3 (as adjusted by density bonuses awarded for providing affordable housing under Section 15-182.4), subject to the following:

b. All dwelling units constructed above commercial uses in commercial areas (e.g. a second story apartment located above a first floor retail store or office) shall be permissible *in addition* to the

number of dwelling units otherwise authorized under this section.

- c. Accessory dwelling units (ADUs) shall be permissible *in addition* to the number of dwelling units otherwise authorized under this section.

**Specific objective of this proposed text change:**

- To encourage the construction of flexible use accessory buildings. Usually these will be garages with finished heated habitable space above.

**Why this amendment is in the public interest:**

- One ADU per lot under 10 acres is allowed. Constructing ADUs will result in more efficient land use. To encourage these accessory buildings to be built, we need to ensure that they are not counted as separate units (either full-units or half-units) and deducted from the total number of permissible dwelling units.
- Uses for these accessory buildings to evolve over time. Over time, these units will serve a variety of purposes including rental garage apartment, home office, guest room, in-law apartment or “granny flat,” and as the primary residents grow older, a place for a care-giver to live.
- Fewer vehicle miles traveled when used as home office.
- Encourage non-institutionalization of elderly.
- Income from rental unit contributes to affordability
- Borrowing from the experience of other traditional neighborhood developments, we believe that these accessory units also play an important role in providing security – “eyes on the street” – along the alleys
- Alleys become “the kid’s realm” as shown by The Alley Cats Club at Southern Village. Apartments/home offices/guest rooms above the garages make the alleys safer.

4. **Proposed amendment to Article XI, Supplementary Use Regulations; Part II, Miscellaneous Supplementary Use Provisions; Section 15-176.2 Village Mixed Use Developments:**

(f) Village Mixed Use Developments shall meet the following objectives with regard to land use arrangement and design criteria:

(3) Block Design

g. The build-up line specifies a cornice height that establishes the prominent visual dimension of a building and defines its proportion in relation to the street. It should vary, with no more than sixty (60) consecutive feet of the build-up line having a similar cornice or roofline, and be between one and ~~two~~ three and one-half stories in height. A two-story build-up line can range from 20 to 25 feet above average ground level. A three-story build-up line can range from 30 to 35 feet above average ground level.

**Specific objective of this proposed text change:**

- To increase the permissible height range of the build-up line to between one and three and one-half stories in height.
- To establish a three-story build-up line range.

**Why this amendment is in the public interest:**

Please see our statement that follows Item 4, proposed amendment to Article XI; Part II, ; Section 15-176.2(f)(4)b.

5. **Proposed amendment to Article XI, Supplementary Use Regulations; Part II, Miscellaneous Supplementary Use Provisions; Section 15-176.2 Village Mixed Use Developments:**

(f) Village Mixed Use Developments shall meet the following objectives with regard to land use arrangement and design criteria:

## (4) Storefront and Townhouse use Area Design Components

- b. Maximum height regulations are ~~35~~ 49 feet and two three and a half stories.

**Specific objective of this proposed text change:**

- To increase the permissible height range buildings in the Storefront and Townhouse use Area from 35 feet and two and a half stories to 49 feet and three and a half stories.

**Why this amendment is in the public interest:**

- Permitting three and a half story buildings in the town center allows three story apartment buildings or two and a half story apartments or commercial space above commercial or retail space on the ground floor.
- Permitting and a half three story buildings in the town center allows two and a half stories of commercial use over a retail ground floor.
- The change will permit more efficient land use and bring more people to the town center to support retail.
- Taller buildings are appropriate when they enfront a broader town square because they create an attractive sense of spatial enclosure. To preserve the visual dimension and define its proportion in relation to the street, historical precedents indicate that good definition is achieved when the height to width ratio does not exceed 6 to 1. Accepting this standard, ideally, a 49 ft. tall building could enfront a square up to 294 ft. wide, building front to building front. This works well with a 30,000 sq. ft. square (173.2 ft. by 173.2 ft.) With sidewalks, diagonal parking, curbs, and pavement totaling 58 ft. on both sides, we would end up with a pleasing 289 ft., 5.9:1 building-front-to-building-front ratio.

6. **Proposed amendment to Article XI, Supplementary Use Regulations; Part II, Miscellaneous Supplementary Use Provisions; Section 15-176.2 Village Mixed Use Developments:**

- (f) Village Mixed Use Developments shall meet the following objectives with regard to land use arrangement and design criteria:



(4) Storefront and Townhouse use Area Design Components

f. All public sidewalks and walkways shall:

1. Be constructed of brick or concrete with ~~brick borders~~ in such a way that they do not impede accessibility.

**Specific objective of this proposed text change:**

To eliminate the requirement that concrete sidewalks and walkways have brick borders within the Storefront and Townhouse use Area

**Why this amendment is in the public interest:**

- Although occasionally seen, brick borders of concrete sidewalks was not typically within the vernacular tradition of those who built authentic town centers across North Carolina.
- Concrete sidewalks and walkways have brick borders are costly, and, given a choice, limited funds might be better utilized for other improvements.

7. **Proposed amendment to Article XI, Supplementary Use Regulations; Part II, Miscellaneous Supplementary Use Provisions; Section 15-176.2 Village Mixed Use Developments:**

(f) Village Mixed Use Developments shall meet the following objectives with regard to land use arrangement and design criteria:

(4) Storefront and Townhouse use Area Design Components

g. All storefront and townhouse use areas shall contain the following:

2. Public benches of approved design at bus stops, green spaces, and at intervals of no greater than ~~50-200~~ feet on each block; and

**Specific objective of this proposed text change:**

- To reduce the number of required public benches.

**Why this amendment is in the public interest:**

- It reduces landscape clutter.
- It allows design flexibility.
- It allows limited landscape resources to be allocated more effectively.

**8. Proposed amendment to Article XI, Supplementary Use Regulations; Part II, Miscellaneous Supplementary Use Provisions; Section 15-176.2 Village Mixed Use Developments:**

- (f) Village Mixed Use Developments shall meet the following objectives with regard to land use arrangement and design criteria:

(4) Storefront and Townhouse use Area Design Components

- m. Materials in the exterior of at least one-half of the buildings surrounding the greens shall be limited to a diversity of brick textures and colors, with wood being subject to the review of the Appearance Commission and the approval of the permit-issuing authority. Awnings are encouraged. Commercial grade windows and doors shall be used, with wood encouraged and other materials being subject to the review of the Appearance Commission and the approval of the permit-issuing authority.

**Specific objective of this proposed text change:**

- To allow up to one-half of the buildings facing the green to utilize sidings other than brick.

**Why this amendment is in the public interest:**

- To allow visual interest and diversity.

- Many delightful town squares and village greens are enfronted by buildings with variety of siding types other than brick or wood. Cement plank, masonry, stucco, and stone should be a design option.
9. **Proposed amendment to Article XI, Supplementary Use Regulations; Part II, Miscellaneous Supplementary Use Provisions; Section 15-176.2 Village Mixed Use Developments:**

(f) Village Mixed Use Developments shall meet the following objectives with regard to land use arrangement and design criteria:

(5) Residential uses within the single family detached residential use area shall conform to the following requirements:

- b. The minimum lot width at the building line shall be 40 feet unless the Board of Aldermen has also approved the development as an architecturally integrated subdivision as described in Section 15-187;
- c. Variations in the principal building position and orientation shall be encouraged, but the following minimum standards shall be observed: Front yard: 15 feet minimum (but 8 feet to front porches or steps) and 25 feet maximum; Rear yard: 30 feet minimum for principal buildings and 5 feet for accessory buildings; Side yard: 20-foot separation for principal buildings, with no side yard less than 5 feet unless the Board of Aldermen has also approved the development as an architecturally integrated subdivision as described in Section 15-187.

**Specific objective of this proposed text change:**

- To make it clear that if a Village Mixed Use development that is also designated an architecturally integrated subdivision, in which case the developer may, in accordance with the provisions of Section 15-187

Architecturally Integrated Subdivisions, “create lots and construct buildings without regard to any minimum lot size or setback restrictions except that:

- (1) Lot boundary setback requirements shall apply where and to the extent that the subdivided tract abuts land that is not part of the subdivision; and
- (2) Each lot shall be of sufficient size and dimensions that it can support the structure proposed to be located on it, consistent with all other applicable requirements of this chapter.”

**Why this amendment is in the public interest:**

- To avoid ambiguity and possible confusion in interpretation.

**10. Proposed amendment to Article XI, Supplementary Use Regulations; Part II, Miscellaneous Supplementary Use Provisions; Section 15-176.2 Village Mixed Use Developments:**

- (f) Village Mixed Use Developments shall meet the following objectives with regard to land use arrangement and design criteria:
  - (5) Residential uses within the single family detached residential use area shall conform to the following requirements:
    - d. The maximum impervious coverage shall be ~~50~~65 percent on each lot.

**Specific objective of this proposed text change:**

- To allow smaller lots in the single family detached residential use area by allowing an increase in the impervious area.

**Why this amendment is in the public interest:**

- It will contribute to the creation of affordable housing by allowing smaller lots.
- Smaller lots mean less use of lawn products such as chemical fertilizers, pesticides and herbicides.
- It is possible to mow a small lot with a human powered push mower, saving on consumption of petroleum, reducing noise pollution, and promoting physical fitness.
- Smaller lots mean more efficient land use, reducing sprawl and, in aggregate, helping to reduce vehicle miles traveled.
- Smaller lots mean more rooftops within walking distance of neighborhood retail uses, making neighborhood retail more sustainable.

11. **Proposed amendment to Article XI, Supplementary Use Regulations; Part II, Miscellaneous Supplementary Use Provisions; Section 15-176.2 Village Mixed Use Developments:**

(f) Village Mixed Use Developments shall meet the following objectives with regard to land use arrangement and design criteria:

(5) Residential uses within the single family detached residential use area shall conform to the following requirements:

g. Accessory dwelling units shall be architecturally integrated as follows:

2. There shall be a maximum of one accessory dwelling unit (ADU) per lot of less than ten (10) acres, Section 15-182(b) notwithstanding.

**Specific objective of this proposed text change:**

- To make it clear that the requirement of Section 15-182(2) that “an accessory apartment shall be allowed only on lots having at least 150% of the minimum square footage required ... for one dwelling unit on a lot ...” does not apply.

**Why this amendment is in the public interest:**

- It ensures that all residents, not just those living on larger lots, have the opportunity to construct an accessory dwelling unit.
- Please see paragraph 2. above for additional reasons why encouragement of ADUs is in the public interest.

**12. Proposed amendment to Article XI, Supplementary Use Regulations; Part II, Miscellaneous Supplementary Use Provisions; Section 15-176.2 Village Mixed Use Developments:**

(f) Village Mixed Use Developments shall meet the following objectives with regard to land use arrangement and design criteria:

(5) Residential uses within the single family detached residential use area shall conform to the following requirements:

g. Accessory dwelling units shall be architecturally integrated as follows:

4. Exterior fire-exit stairs are prohibited on any side of ADUs except at their rear, except in cases when the ADU is located above a garage.
5. All off-street parking for ADUs shall be located to the side or rear, as viewed from the street. ~~and shall be visually screened from adjoining properties and from all streets.~~

**Specific objective of this proposed text change:**

- To allow exterior fire stairs on the sides or front of ADUs, when the ADU is a garage apartment.
- To clarify that the side or rear of an ADU is as viewed from the street.

- To eliminate the requirement for visual screening of parking for ADUs.

**Why this amendment is in the public interest:**

- Alley loaded garages often have their garage doors on the rear, i.e. facing the alley. Placing the stairs on the rear of a rear loaded garage apartment, as seen from the street, is impractical.
- The slope of the property should be taken into account when locating stairs, to reduce the number of steps, and to reduce cost.
- Screening of parking for ADUs may well be appropriate in many circumstances, however in others it would add to the visual clutter, particularly in an alleyway where good sight lines contribute to security.

**13. Proposed amendment to Article XI, Supplementary Use Regulations; Part II, Miscellaneous Supplementary Use Provisions; Section 15-176.2 Village Mixed Use Developments:**

- (f) Village Mixed Use Developments shall meet the following objectives with regard to land use arrangement and design criteria:

(8) Landscaping

- b. Shade trees shall be provided along each side of all streets, public or private, existing or proposed. Shade trees shall also be massed at critical points, such as at focal points along a curve in the roadway. In locations where healthy and mature shade trees currently exist, the requirements or new trees may be waived or modified. Section 15-315 of this Chapter notwithstanding, the developer shall either plant or retain sufficient trees so that, between the paved portion of the street and a line running parallel to and twenty-five feet from the center line of the street, there is for every forty feet of street frontage at least an average of one deciduous tree that has or will have when fully mature a trunk at

least twelve inches in diameter. Trees may be placed *uniformly*.

**Specific objective of this proposed text change:**

- To eliminate potential conflicts between the intent of the requirements in Section 15-176.2(f)(8)b. for Village Mixed Use Developments and the requirements in Section 15-315 Required Trees Along Dedicated Streets.
- To stipulate that street trees along the side of all streets be planted adjacent to the street within an area commonly known as the street tree planter strip between the curb and the sidewalk.
- To require that trees be placed no less an average of forty feet apart.
- To allow street trees to be uniformly spaced.

**Why this amendment is in the public interest:**

- A row of street trees within the planter provides isolation and protection for walkers on the sidewalk, increasing safety and promoting walking.
- Street trees providing shade on the street reduces the urban heat island effect. They also reduce the need for air conditioning in cars, thus reducing gasoline consumption.
- A formal allee of street trees is esthetically pleasing and harkens back to many of our country's most desirable neighborhoods including those designed by Frederick Law Ohlmstead and his sons and by John Nolen.

**14. Proposed amendment to Article XI, Supplementary Use Regulations; Part II, Miscellaneous Supplementary Use Provisions; Section 15-177 Architectural Standards for Major Subdivisions**

- (a) The following standards are recommended for all subdivisions of 5 or more units and shall pertain to ~~90%~~50% of the dwelling units in the subdivision.

- (2) Roofs shall be as follows:



- a. Main roof pitch – 408/12 to 12/12
  - b. Lower roof pitches – 3/12 to 4 5/12
  - c. Roofs shall have a minimum overhang of sixteen (16) inches on all eaves and gables.
- (3) Clapboard or shingle siding shall have a four-and-a-half to five and a half-inch exposure.
  - (6) Any chimney must be located within the body of the house. unless it is an all-masonry chimney.
  - (7) Garage doors shall be nine (9) feet wide or under. Door shall not face the street unless the garage is placed at least 10 feet behind the principal dwelling.

**Specific objective of this proposed text change:**

- To change permissible roof pitches.
- To allow narrower widths in clapboard or shingle siding.
- To allow all-masonry chimneys that are not located within the body of the house.
- To allow street facing garages if the garage is at least 10 feet behind the house.

**Why this amendment is in the public interest:**

- To allow more authentic, diverse, interesting and practical architectural solutions.

**15. Proposed amendment to Article XVIII, Parking; Section 15-291, Number of Parking Spaces Required.**

**(g) Table of Parking Requirements**

<u>USE</u>	<u>PARKING REQUIREMENT</u>
<u>32.000</u>	<u>2 spaces per single-family dwelling unit plus one space per accessory dwelling unit or room rented out in each dwelling unit (see Accessory Uses, Section 15-150). An average of 1.5 spaces per each multifamily dwelling unit. A</u>

USEPARKING REQUIREMENT

minimum of one off-street space shall be provided for each dwelling unit. On-street parking and space provided within enclosed or partially enclosed garages may be counted toward fulfillment of parking requirements beyond the off-street minimum.

1 space per 400 square feet of gross floor area used for commercial purposes in the "storefront use area".

Shared parking shall be allowed and shall be calculated as follows: the sum of the parking places for any two uses is divided by the ratios below to yield the shared parking required.

Residential and Lodging: 1.1

Residential and Civic Use or Church Use: 1.1

Residential and Office Use: 1.4

Residential and Retail: 1.2

Lodging and Civic Use or Church Use: 1.3

Lodging and Office: 1.7

Lodging and Retail: 1.1

Civic Use or Church Use and Office Use: 1.7

Civic Use or Church Use and Retail Use: 1.3

Office Use and Retail Use: 1.2

**Specific objective of this proposed text change:**

- To add use 32.000 Village Mixed Use to the Table of Parking Requirements.
- To provide more efficient parking, so less land is allocated to car storage. More efficient land use can help minimize the expansion of our urban area and limit sprawl.
- To keep our water cleaner by reducing impervious surfaces, reducing storm water runoff, and reducing pollutants from dripping oil, radiator coolant and brake linings.
- To reduce "heat island" effects.

- To save unnecessary expense. In an average parking lot, each stall can cost between \$2,500 and \$4,000 to construct. Each space in a parking structure can cost between \$10,000 and \$15,000 each. Each parking space not built saves money. These savings can be used for other, more important community improvements.
- To reinforce our new urbanist community design that discourages short car trips and encourages walking.

**Why this amendment is in the public interest:**

- With the space saved by using our existing parking lots most efficiently, we can devote larger areas to landscaping, naturescaping and bio-swale passive drainage systems. Sprawl spreads conventional low density development across the countryside, increasing vehicle miles traveled and increasing America's dependence on foreign oil.
- Water pollution has well-documented negative effects on public health and safety, including destruction of aquatic habitat. Pollutants which enter the aquatic environment can move up the "food chain."
- "Heat island" effects require increased cooling and thus increases energy consumption, again causing increasing dependence on non-sustainable resources such as nuclear power and non-renewable energy such as coal and imported oil.
- These savings can be used for other, more important community improvements, including creation of affordable housing.
- Short trips Visitors and residents are more likely to find it convenient to walk to nearby services. If it is uncomfortable to walk between destinations, people may drive their cars very short distances from parking lot to parking lot to avoid this pedestrian-unfriendly experience. Short car trips with many stops and starts produce more air pollution mile for mile than longer trips.

**Additional text amendments that may be required:**

- Under Section 15-176.2(1), within the portion of the tract developed for commercial purposes, the regulations (other than use regulations ...) applicable to

property zoned B-3T shall apply except as otherwise provided in this section or as otherwise allowed by the Board of Aldermen in the approval of the Master Plan or conditional use permit for the development. B-3-T has a 7,500 sq. ft. minimum lot size for residential purposes. If a flex house or townhouse is considered residential, we will need to seek a text amendment eliminating the minimum lot size requirement.

- We may seek text amendments of the Radius at Street Intersections provisions that require in Standard Diagram No. 4 a 20 ft curb radius and No. 5. A 25 ft. curb radius and where streets intersect at less than right angles, a greater radius may be required, if so recommended by our traffic engineering consultant.
- We may need to seek amendments to the requirements relating to of the Sight Distances at Intersections provisions if so recommended by our traffic engineering consultant.
- We intend to suggest several amendments to the Vernacular Standards such as the additional of more Craftsman style column types.

*Winmore Land Management, LLC*

December 19, 2001

MEMO

To: Carrboro Staff, Orange County Staff

From: Robert L. Chapman, Philip Szostak, and Herman F. Greene, Partners

Subject: Supplemental Draft Text Amendments

---

This letter supplements our previous submission, dated November 20, 2001.

**16. Proposed amendment to Article XIV, new Section 15-220, Design Standards for Village Mixed Use Developments.**

- (a) Village mixed use developments may be designed in accordance with the North Carolina Department of Transportation Traditional Neighborhood Development (TND) Guidelines, August 2000. Where specific NCDOT TND design guidelines have been established, these shall supercede any related design standards contained in this Ordinance, as well as standards and guidelines for utilities, landscaping, and similar considerations. In the absence of TND specific design guidelines, the existing standards, criteria, guidelines or policies shall be applied.
- (b) For purposes of implementing the NCDOT TND Guidelines, a village mixed use development shall be deemed to be a "classic" TND.

**Specific objective of this proposed text change:**

- To allow village mixed use developments to be designed in accordance with accepted TND guidelines adopted by NCDOT rather than the more conventional subdivision street standards required under the current Ordinance.

**Why this amendment is in the public interest:**

- For a village mixed use development to be truly walkable, street characteristics need to be designed to be pedestrian friendly. The NCDOT standards are designed to be pedestrian friendly by discouraging speed, primarily through on-

street parking, narrower streets and increased “ side friction” , and reduced curb radii.

- To the extent that conventional suburban street patterns encourage speed, they invite more traffic. Traffic volume is the most significant, and negative, influence on the “ sociability” of a street — the informal contacts that develop into social networks and are at the root of feelings of belonging and security, prime factors in resident satisfaction.
- In addition to enhancing sociability, pedestrian friendly design enhances safety, particularly for children. TND design approaches show consistently a lower rate of accidents and a higher level of perceived security.
- A reduced radius shortens the pedestrian crossing distance, improves visibility between pedestrians and motorists, reduces the speed at which motorists can turn, and may add parking spaces to the street.
- According to *Street Design Guidelines for Healthy Neighborhoods* by Dan Burden, Sacramento: Center for Livable Communities, 1999: “ Because conventional neighborhoods are laid out with a strong street heirarchy, they tend to concentrate traffic into collectors and arterial streets ... Healthy neighborhoods disperse traffic, making this hierarchy irrelevant. ... Healthy or traditional neighborhoods are less dependent on road hierarchy. They purposefully have narrow streets, short blocks, many connections, sidewalks, and landscaping. ... As a result of layout, connectivity, route choices and strong support for walking, children are often able to reach schools and other destinations by themselves, which reduces the number of daily car trips. Well designed traditional neighborhoods are therefore considered ‘sustainable’ development.”

Other sources: *Making Streets that Work*, City of Seattle, Design Commission; *Learning from Suburbia: Residential Street Pattern Design*, Canadian Mortgage and Housing Corporation.

**DIVISION OF HIGHWAYS  
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION  
TRADITIONAL NEIGHBORHOOD DEVELOPMENT (TND)  
GUIDELINES**

August 2000



**DAVID McCOY  
SECRETARY OF THE DEPARTMENT OF TRANSPORTATION  
TELEPHONE (919) 7322520  
RALEIGH, NORTH CAROLINA**

**LEN A. SANDERSON, P.E.  
STATE HIGHWAY ADMINISTRATOR  
TELEPHONE (919) 7337384  
RALEIGH, NORTH CAROLINA**

**J. D. GOINS, P.E.  
CHIEF ENGINEER - OPERATIONS  
TELEPHONE (919) 7337621  
RALEIGH, NORTH CAROLINA**

# TABLE OF CONTENTS

	PAGE
TND Defined .....	1
Intent.....	1
Design Guidelines.....	2
Relationship to NCDOT Standards.....	2
Design Speed.....	2
Street Types and Widths.....	2
Stopping Sight Distance .....	2
Vertical Curve Design .....	3
Centerline Radii.....	3
Curb Radii.....	3
Curb Construction.....	3
Pavement Design .....	3
Sidewalks and Pedestrians .....	4
Bicyclists .....	4
Transit.....	4
On-Street Parking.....	4
Planting Strips and Street Trees .....	4
Utilities.....	4
Lighting.....	5
Resolution of Conflicts.....	5
Administrative Review Criteria .....	5
Criteria Purpose .....	5
TND Review Criteria for NCDOT District Engineers.....	5
1. Size.....	5
2. Composition .....	5
3. Density and Intensity.....	6
4. Street Pattern .....	6
5. Block Length.....	6
6. Rights-of-Way .....	6
7. Relationship of Buildings to Street.....	6
8. Sidewalks .....	6
9. Pedestrian Street Crossings .....	7
10. On-Street Parking.....	7
11. Curb Cuts.....	7
12. Highways and Large Through Corridors.....	7
Policies .....	7
Application Requirements for TNDs .....	8
Review and Approval Process.....	8
TND Committee.....	9
FIGURE 1: Lane Configuration.....	10
FIGURE 2: Street Configuration.....	10
FIGURE 3: Avenue with Parking Configuration .....	11
FIGURE 4: Main Street without Median Configuration.....	11
FIGURE 5: Boulevard Configuration .....	12
FIGURE 6: Parkway Configuration.....	12
Division of Highways Division Engineers.....	13
Division of Highways District Offices.....	15
District Map.....	21



## Appendix A

FIGURE 7: Trail Configuration

FIGURE 8: Alley Configuration

Cover illustration graphics are protected by copyright and used with  
permission of the following New Urbanist firms:

Village of Cheshire, NC – C.S. Ragan, LLC  
Vermillion, NC – Bowman Development Group  
Cedar Park, TX – Land Design Studios, Town Planners  
Southern Village, NC – Bryan Properties

## TRADITIONAL NEIGHBORHOOD DEVELOPMENT STREET DESIGN GUIDELINES

*Neither the Administrative Review Criteria nor any other portion of these Guidelines are intended to authorize, regulate or prescribe land uses or to supercede development regulations. These criteria provide a tool to NCDOT personnel for reviewing Traditional Neighborhood Developments that fall within the definition and intent of these Guidelines. In areas where City or County governments have a site plan approval process for development plans, local officials shall review the proposed project prior to its submittal to NCDOT. If the intent of the project is to request that the roadways within the subdivision be taken onto the state maintenance system, coordination between the developer, local government and DOT is strongly encouraged during the review and approval process.*

**TND DEFINED:** A Traditional Neighborhood Development (TND) is a human scale, walkable community with moderate to high residential densities and a mixed use core. Compared with conventional suburban developments, TNDs have a higher potential to increase modal split by encouraging and accommodating alternate transportation modes. TNDs also have a higher potential for capturing internal trips, thus reducing vehicle miles traveled.

A dense network of narrow streets with reduced curb radii is fundamental to TND design. This network serves to both slow and disperse vehicular traffic and provide a pedestrian friendly atmosphere. Such alternate guidelines are encouraged by NCDOT when the overall design ensures that non-vehicular travel is to be afforded every practical accommodation that does not adversely affect safety considerations. The overall function, comfort and safety of a multi-purpose or "shared" street are more important than its vehicular efficiency alone.

TNDs have a high proportion of interconnected streets, sidewalks and paths. Streets and rights-of ways are shared between vehicles (moving and parked), bicycles and pedestrians. The dense network of TND streets functions in an interdependent manner, providing continuous routes that enhance non-vehicular travel. Most TND streets are designed to minimize through traffic by the design of the street and the location of land uses. Streets are designed to only be as wide as needed to accommodate the usual vehicular mix for that street while providing adequate access for moving vans, garbage trucks, fire engines and school buses.

**INTENT:** That the development encourage walking and biking, enhance transit service opportunities, and improve traffic safety through promoting low speed, cautious driving while fully accommodating the needs of pedestrians and bicyclists.

That such developments should have the potential to reduce the number of external vehicle trips, and thus vehicle miles traveled, by 15% or more through provision of commercial, recreational and other resident-oriented destinations within a walkable community.

That traffic impacts, both on-site and off-site, should be minimized.

## DESIGN GUIDELINES.

**Relationship to NCDOT Standards** – Where TND specific design guidelines have been established, these shall supercede any related design standards contained in “Subdivision Roads Minimum Construction Standards,” as well as standards and guidelines for utilities, landscaping and similar considerations. In the absence of TND specific design guidelines, the existing standards, criteria, guidelines or policies shall be applied.

**Design Speed** – Design speed should closely match the street type, vehicle use and the proposed speed limit. The majority of street types are “streets” and “lanes,” which provide direct access to housing and which have a desired upper limit of actual vehicle speeds of approximately 20 mph.

**Street types and widths** – Dimensions provided in the graphic examples are from curb face to curb face. The specific dimension of each street element is as follows:

Street Type	Lane	Parking	Bicycle*	Gutter	Median Gutter
Lane	8'	8'	na	1'	na
Street	9'	6'	na	2'	na
Avenue	11'	6'	6'	2'	1'
Main Street	11'	6'	6'	2'	1' na
Boulevard	11'	6'	6'	2'	1'
Parkway	12'	na	na	2'na	1'na

\* bicycle lanes are optional if alternate routes to the same destination are provided

Designers must recognize the implications of shared street space and an interconnected street network. The most frequent and numerous users of TND street networks are motorists, bicyclists and pedestrians. Use by oversized vehicles, such as delivery trucks, moving vans, school buses and fire trucks, is generally infrequent, particularly on residential streets and lanes. A street should be no wider than the minimum width needed to accommodate the usual vehicular mix desired for that street. On a properly designed TND street the occasional oversized vehicle may cross the centerline of a street when making a right turn.

A properly designed street network should provide at least two routes of access to any property within the TND. A high level of accessibility is offered to emergency vehicles by an interconnected TND network. The framework of main streets and avenues should provide appropriate service area routing for school buses and transit vehicles. Designers should coordinate with and involve all appropriate parties to ensure that oversized and emergency vehicles are accommodated while facilitating the needs of the most frequent users.

**Stopping Sight Distances** - Minimum stopping distances should conform to the design speed for the particular street and the stopping distances required for wet pavement conditions, as follows:

20 mph	125 feet
25 mph	150 feet
30 mph	200 feet

These sight distances should be provided by both vertical and horizontal alignment. Where grades vary from level conditions, stopping sight distances can be decreased for uphill grades and must be increased for downhill grades.

**Vertical Curve Design** – K values for vertical curve design should be consistent with design speed. Maximum centerline grades should also be consistent with design standards.

**Centerline Radii** – The criteria for minimum centerline radius for design speeds of 25 mph and less (no superelevation) are:

20 mph	90 feet
25 mph	175 feet

**Curb Radii** – For design speeds of 20 mph the criteria for curb radius is 15 feet. Some intersections on avenues, main streets and boulevards may require curb radius of up to 25 feet. With larger curb radii sidewalks may be set back 6 to 10 feet from curbs and on-street parking may be restricted 30 feet back from the intersection on each street.

**Intersection sight triangles** – The minimum sight triangle for stop conditions at street intersections shall be 70 feet along the major road right of way and 10 feet along the minor road right of way. The intersection sight triangle shall be permanent right of way. This may be reduced for lower design speeds on lanes and streets.

**Curb construction.** All curbed streets shall be built in accordance with NCDOT requirements for vertical curb and gutter construction. As noted under "Street types and widths" above, most gutters are anticipated to be 2 feet in width. Gutters for lanes and street medians are anticipated to be 1 feet.

**Pavement Design** - When the developer proposes to construct alleys, the facility should meet locally approved design criteria. Where alleys are to be unpaved, a minimum paved apron of at least 50 feet from edge of pavement shall be required at the tie in with any paved facility. Lanes, Streets, Boulevards, and Parkways shall meet the pavement design criteria established in the "Subdivision Roads Minimum Construction Standards."

**Sidewalks and Pedestrians** – Minimum width for a sidewalk is 5 feet. Sidewalks which directly abut curbing shall be a minimum of 6 feet. Sidewalks may need up to an additional 2 feet of width if they directly abut fences, walls and buildings. Within commercial areas and places with high pedestrian volumes, sidewalks should be sized and surfaced appropriately for anticipated pedestrian traffic volumes and to meet or exceed ADA guidelines.

**Bicyclists** – On lower volume streets bicyclists should be considered a normal part of the vehicle mix on the street. On higher volume streets bicyclists should be accommodated with 6 feet wide bike lanes, but separate routes for less experienced bicyclists may be considered as well. Routing bicyclists within and through TNDs may include signage and striping, including changing the color of the entire bike lane, as appropriate.

**Transit** – TND design should be inherently compatible with transit. Transit should be addressed wherever it is present and should be appropriately planned where it may not yet exist. Transit services are typically provided within core areas and along avenues, main streets and higher-capacity roads. Due to size and interconnected street pattern, residents often do not need to walk more than ¼ mile to the nearest transit stop.

**On-street Parking** – “Informal parking” refers to parking that is allowed along lanes and residential streets, but is not designated or marked as parking areas. On-street parking along major streets should be signed, marked or otherwise clearly designated.

**Planting Strips and Street Trees** – Planting strips, located between the curb and sidewalk parallel with the street, shall be 6 feet or more in width. Care should be used to ensure that larger planting strips do not push pedestrian crossing areas back from intersections by requiring a larger curb radius. On streets with design speeds of 20 mph or less, or on streets with on-street parking, small street trees may be planted within 3 feet of the back of curb and should generally be planted along the centerline of the planting strip. Within commercial areas and other sidewalks with high pedestrian volumes, grated tree wells may be used in lieu of planting strips. To maintain sight lines, trees and other objects should be restricted from corners for distances of 30 feet on all sides. Along all planting strips the area between 2 feet and 7 feet above ground shall be maintained as a clear zone to preserve sight lines and accommodate pedestrians.

**Utilities** – All utility installations within rights-of-way shall be consistent with NCDOT's current Utility Policy. For residential subdivision streets, herein defined as “lanes” and “streets,” and residential collector streets, herein defined as “avenues” and “main streets,” underground utilities may cross under or run longitudinally under the pavement, provided future utility stub-outs are installed prior to paving. For all other streets and highways, underground utilities may cross under but may not run longitudinally under the pavement, except in unusual situations approved by the Division Engineer.

For installations outside of rights-of-way, utilities (either above or underground) may be located in alleyways. If utilities are not to be placed in alleyways the developer should consider providing a 5 foot (minimum) utility easement behind the sidewalk.

**Lighting** – As a general rule, more and shorter lights are preferred to fewer, taller, high-intensity lights. The scale of lighting fixtures and the illumination provided must be appropriate for both pedestrian and vehicular movements.

**Resolution of Conflicts** – Whenever the reviewer, after due consideration of all relevant factors, determines that an irreconcilable conflict exists among vehicular and non-vehicular users of a TND street space, that conflict should be resolved in favor of the non-vehicular users, unless the public safety will truly be jeopardized by the decision.

## **ADMINISTRATIVE REVIEW CRITERIA.**

**CRITERIA PURPOSE.** The criteria help outline a “classic” TND. The purpose of these criteria is to provide a guide to a District Engineer when determining whether a proposed development may thus be designed according to TND guidelines rather than conventional subdivision street standards. Failing to meet all of the criteria does not imply that a proposed development is not a TND. However, proposals not fitting the “classic” criteria may require additional review as is described in the “Review and Approval Process” section.

## **TND REVIEW CRITERIA FOR NCDOT DISTRICT ENGINEERS.**

1. **SIZE:** A TND should be designed at a walkable scale – considered to be approximately a 5 to 10 minute walk from core to edge, or a ¼ to 1/3 mile maximum distance. All or most residential development must fall within this range. The proposed development should be a minimum of 40 acres and a maximum of 125 acres.
2. **COMPOSITION:** There is a discernable community center or core area. The proposed development must have a mixture of residential and non-residential land uses, with at least 10% of the developed area consisting of non-residential uses. Most non-residential uses are located within the community core area. Within the core area, a minimum of 15% of floor area must be devoted to commercial uses oriented towards TND residents. Elementary schools are an important community element. Public structures, such as schools, churches and civic buildings, and public open spaces, such as squares, parks, playgrounds and greenways, shall be integrated into the neighborhood pattern.

3. **DENSITY AND INTENSITY:** Residential densities, lot sizes and housing types may be varied, but the average gross density of the developed area should be at least 8 units per acre. Higher densities, often involving multi-family or attached dwelling units, are generally proposed in, adjacent to or within close proximity to the core area. Lower densities, usually detached single family dwellings, are generally located towards the edges.

Non-residential development intensities should be sufficient to encourage and promote pedestrian access. Development intensities of non-residential buildings should generally be such that buildings emphasize street frontages, sidewalks and paths, and transit stops. Regardless, the intensity of non-residential development should be compatible with and reflective of surrounding residential development patterns.

4. **STREET PATTERN:** All or most streets within the proposed network must be part of a dense, interconnected pattern. TND streets should connect with adjacent street networks as much as possible. The degree of interconnectivity should be assessed by its ability to permit multiple routes, to diffuse traffic and to shorten walking distances. Most TND streets are designed to minimize through traffic. Streets are relatively narrow and often shaded by rows of trees. Alleys may be used to provide site access. Larger vehicular corridors are usually, although not exclusively, found within the core area and near the perimeter of the proposed development.
5. **BLOCK LENGTH:** All or most low speed, low volume streets should have short block lengths of between 250 and 500 feet. Exceptions may be needed due to topography, environmental protection, preservation of cultural resources, and similar considerations.
6. **RIGHTS-OF-WAY:** Within a TND, the right-of-way is an important design element of the public space or "streetscape." The right-of-way width should be the minimum needed to accommodate the street, median, planting strips, sidewalks, utilities, and maintenance considerations. The right-of-way width should be appropriate for adjacent land uses and building types. Planting strips between curb and sidewalk may be used to provide sufficient space for street trees. Use of alleys and other alternate access or easements for utilities and maintenance vehicles should be taken into account when determining sizes of rights-of-way.
7. **RELATIONSHIP OF BUILDINGS TO STREET:** Buildings are oriented toward the street. Buildings within the core area are placed close to the street. All lots and sites must have pedestrian connections and the core area must be fully accessible to pedestrians. Parking lots and garages rarely face the street. Off-street parking may be located to the side or behind buildings but not in front of buildings or in such a manner as to interfere with pedestrian access.
8. **SIDEWALKS:** To comply with the Americans with Disabilities Act, sidewalks are a minimum of 5 feet wide and should be wider in commercial or higher intensity areas, when directly abutting curbs without a planting strip or parked cars, or when adjacent to walls or other built elements which reduce usable width. Sidewalks should be on both sides of the street. Wherever possible, there should be a continuous pedestrian network adjacent to the streets. Curb cuts should be minimized to reduce conflicts with pedestrians.

9. **PEDESTRIAN STREET CROSSINGS:** Street crossings must not be longer than are actually necessary. The needs of pedestrians should be balanced with the needs of vehicular traffic. Mid-block crossings, bulb-outs, raised crosswalks and similar techniques are commonly used to accommodate pedestrians when appropriate for traffic conditions and site specific situations.
10. **ON-STREET PARKING:** Many streets have on-street parking. On-street parking is a common traffic calming element of a TND, in that it slows vehicular traffic while providing a buffer between street and sidewalk.
11. **CURB CUTS.** Curb cuts should be minimized to reduce effects on on-street parking, conflicts with pedestrians and cyclists, and interruptions of traffic flow.
12. **HIGHWAYS AND LARGE THROUGH CORRIDORS:** The proposed development cannot be penetrated by arterial highways, major collector roads and other corridors with peak hourly traffic flows of 1,200 vehicles, or average daily traffic volumes of 15,000 or more vehicles. Such corridors can only be located at the edge of a TND.

#### **POLICIES.**

- NCDOT will not accept alleys onto the state system. However, these features are encouraged as appropriate and desirable elements of a walkable community. Construction and maintenance of alleys will be the responsibility of the property owners' association or comparable individual, group or local government that has responsibility for other common assets.
- NCDOT, consistent with current policies, will not install street trees or median plantings or construct sidewalks or bike paths, nor will the Department maintain trees, plantings, sidewalks, bike paths or similar features within the right-of-way. However, these landscape features are recognized for their traffic calming, aesthetic and environmental benefits. Installation and construction of such features is the responsibility of the developer. Maintenance of such right-of-way features will be the responsibility of the property owners' association or comparable individual, group or local government that has responsibility for other common assets.
- Vertical curb and gutter construction is preferred throughout the entire development. Vertical curb and gutter construction is required within the community core, in all areas where densities are 6 units per acre or greater, and where sidewalks on both sides of the street are proposed. Alternative construction will be considered in low density areas, where sidewalks on one side of the street are proposed, or within water supply watersheds and similar environmentally sensitive areas, or preserved open space and natural areas.



**APPLICATION REQUIREMENTS FOR TNDs.** In addition to all materials noted in the "Application Requirements" section of "Subdivision Roads – Minimum Construction Standards," a developer must provide to the District Engineer a preliminary site plan and supplemental documents, as needed, for review and approval. The preliminary site plan must include the following additional information:

1. The use, approximate size, and location of all buildings and structures.
2. All proposed land uses and the densities of dwelling units.
3. Proposed on- and off-street parking and circulation plan showing the location and arrangement of parking zones or parking spaces, along with all driveways connecting with adjacent streets and highways.
4. The proposed location, use, improvements, ownership and manner of maintenance of common open space areas.
5. In the case of proposals which call for phased development, a schedule showing the time period proposed, the type and square feet of non-residential land uses, and the number of and density of dwelling units for each phase.

**REVIEW AND APPROVAL PROCESS.** A TND subdivision proposal should embody the elements of the "Intent" and "TND Defined" sections to the greatest extent possible. When a proposed TND subdivision plat is submitted to the District Engineer for review, the engineer will use the "TND Review Criteria for District Engineers" to determine if the proposed development may be reviewed according to the "TND Subdivision Street Design Guidelines."

If the proposed development meets all of the "Criteria," or if most "Criteria" are met and the Division Engineer finds that the design fulfills the "Intent" and "TND Defined" elements, the proposed subdivision plat and all associated information, including the District Engineer's comments on the plan, will be forwarded to the TND Committee for review. The TND Committee will also review appeals if the District Engineer and Developer cannot come to an understanding on the nature of the proposed development.

While the Committee will try to seek consensus whenever possible, decisions will be determined by simply majority vote. The TND Committee's determination is final.

During review of the proposed development by the TND Committee, the Committee will assess whether or not the proposal fulfills the intent and definitions established for these Guidelines, as well as how well the criteria are met. The Committee may find that some proposals which do not fully match all criteria may still be TNDs. These findings shall be based on meeting the intent and definition and providing the essential functions of a TND. All determinations shall be fully documented as to the reasons for approval or disapproval, and all determinations shall establish precedents for future development review.

If the proposed development is found to be a TND, the developer may choose for the project to be developed in compliance with the TND guidelines established by NCDOT. Upon submittal

for final subdivision plat review, the District Engineer will review the plans for compliance with TND guidelines as part of the regular subdivision review process.

The proposed TND subdivision must meet all applicable local and state requirements. Whenever a local government establishes a higher standard than the subdivision review criteria contained in these Guidelines, the subdivision must be designed according to the more restrictive local standards. This does not, however, imply that NCDOT is obligated to approve a design that is so restrictive as to create unsafe or difficult driving conditions. If any element of these Guidelines is more restrictive than local requirements, NCDOT will be as flexible and as open to local requirements and design context as possible. However, NCDOT is not authorized to approve any design that does not fulfill the "Intent" and "TND Defined" sections of these Guidelines.

Design guidelines established for TNDs will remain separate and apart from the standards for conventional subdivisions as defined in "Subdivision Roads – Minimum Construction Standards." TND and conventional development concepts shall not be combined within the same development.

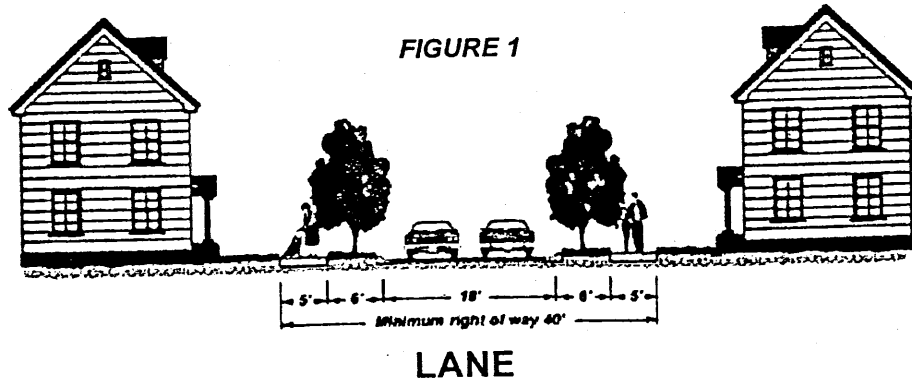
**TND COMMITTEE:** The TND Committee will have one representative from each of the following:

- Chief Engineer's Office – Operations (committee chair)
- Chief Engineer's Office – Secondary Roads
- Roadway Design
- Traffic Engineering
- Bicycle & Pedestrian Division (program manager or planner)
- Public Transportation Division (planner or transportation consultant)
- Office of Planning & Environment (planner or landscape architect)

The reviewing Division Engineer, or their designee, will be part of the review and approval process for subdivision proposals. Persons with additional expertise, both from NCDOT and from other state agencies, may assist the Committee on an as-needed basis.

The Committee shall initiate its review of a proposed TND within two weeks of its submittal to the Committee and shall have a response within 30 calendar days. The Committee will meet on an as-needed basis. The Committee may, at the discretion of the chair, meet periodically to review and refine the Guidelines, Criteria, or other elements related to TNDs.

The Committee shall provide reference and educational materials to District Engineers related to TNDs. The Committee is responsible for maintaining and disseminating a list of available and appropriate resources to interested developers, other public agencies, local governments, and the public.



**Purpose:** Provides access to single-family homes.

**Features**

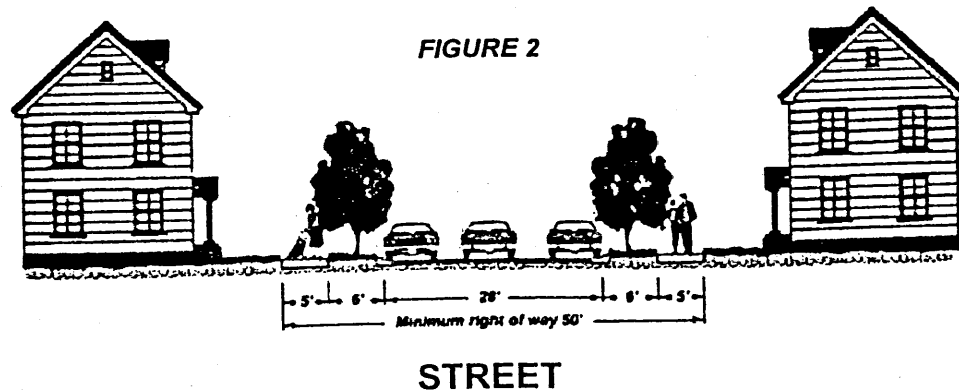
- Street width 18' with curb and gutter and informal parking designated on street
- Planting strips 6'
- Sidewalks 5' on each side
- Design speed 20 mph
- Posted speed 20 mph
- Requires a 40' right of way
- Drainage - curb and gutter

**Features**

- Generally two to six blocks long

**Building and Land Use**

- Residential - primarily single family homes



**Purpose:** Provides access to housing

**Features**

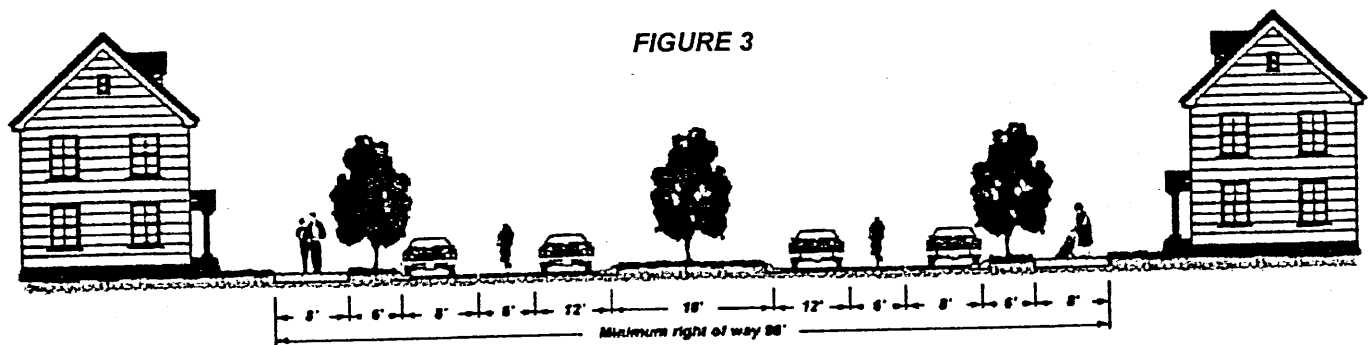
- Street width 28' with curb and gutter and informal parking
- Planting strips 6'
- Sidewalks 5' on each side
- Design speed 20 mph
- Posted speed 20 mph
- Requires a 50' right of way
- Drainage - curb and gutter

**Features**

- Generally two to six blocks long

**Building and Land Use**

- Residential - many residential types



### AVENUE WITH PARKING

**Purpose:** Avenues are short distance, medium speed connectors between neighborhoods and core areas. As such, they are used in both residential and commercial areas, often terminating at prominent buildings or plazas. Avenues may also circulate around squares or neighborhood parks.

#### Features

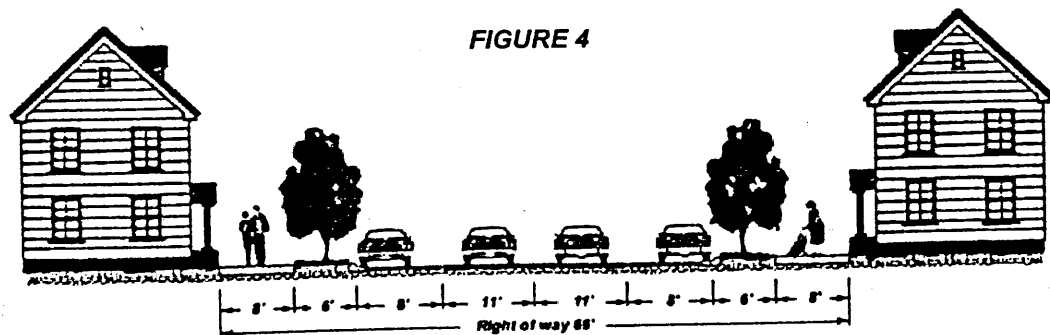
- Street width 26' on both sides of median with on-street parking, 18' if no parking or curb and gutter
- Median width 18' (minimum)
- Travel lanes 12'
- Maximum 2 travel lanes
- Bike lanes and planting strips 6'
- Sidewalks 8' on each side
- Design speed 30 mph (maximum)

#### Features

- Posted speed 25 - 30 mph
- Requires a 98' right of way
- Drainage - curb and gutter

#### Building and Land Use

- Mixed residential and commercial use



### MAIN STREET WITHOUT MEDIAN

**Purpose:** Main streets provide low-speed access to neighborhood, commercial, and high density residential areas

#### Features

- Travel lanes 11' with striped parking
- Maximum 2 travel lanes
- Planting wells 6' - landscaped median optional (minimum 18')
- Sidewalks minimum of 8' each side
- Design speed 25 mph (maximum)
- Posted speed 20 - 25 mph
- Requires a 66' right of way

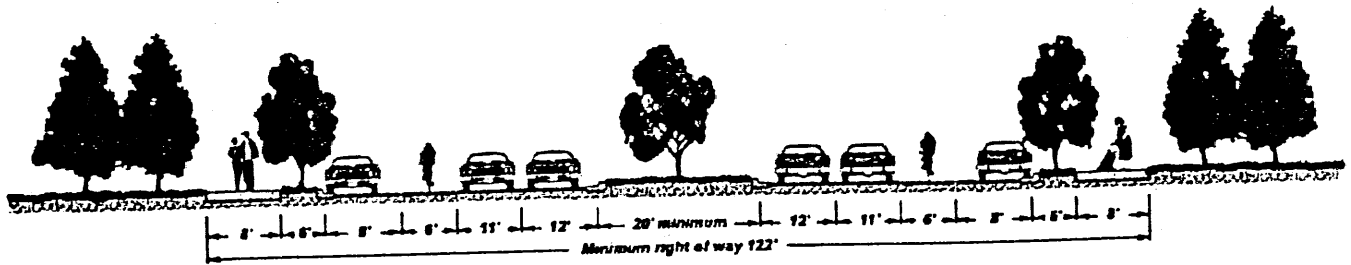
#### Features

- Drainage - curb and gutter
- Includes bulbouts at intersections and mid-block crossings
- Bike lanes optional but preferred (minimum 6')

#### Building and Land Use

- Commercial and mixed use
- High density residential

FIGURE 5



## BOULEVARD

**Purpose:** Provides multi-lane access to commercial and mixed-use buildings, and carries regional traffic.

### Features

- Lanes 11' with striped parking and bike lanes
- Maximum 4 travel lanes
- Planting wells 6 - 11'
- Sidewalks 8' on each side
- Design speed 40 mph (maximum)
- Posted speed 30 - 35 mph

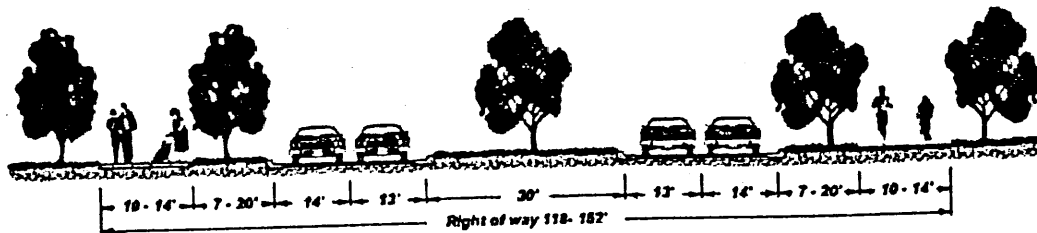
### Features

- Requires a 122' right of way
- Drainage - curb and gutter

### Building and Land Use

- Commercial and mixed use

FIGURE 6



## PARKWAY

**Purpose:** Parkway bring people into town, or pass traffic through natural areas. Parkway are not designed for development. When the parkway enters town, it becomes a boulevard.

### Features

- Travel lanes 11 - 12'
- Median width 30'
- Design speed 50 mph (maximum)
- Posted speed 45 mph (maximum)
- Requires a 118' right of way (minimum)
- Drainage - swales allowed, or curb and gutter
- Multi-use trails 10 - 14'
- Planting strips 7 - 20'
- Bike lane not adjacent to travel lane

### Features

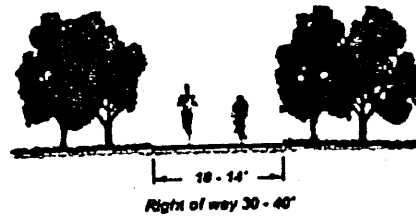
- 6' minimum paved shoulder on high - speed parkway (greater than 45 mph: typical section has shoulder with ditches)

### Building and Land Use

- Parkway are designed to be on the edge of towns, nature preserves, or agricultural areas
- Multi-use trails may be on either or both sides

Provided for informational use only

**FIGURE 7**



## TRAIL

**Purpose:** Provides non-motorized access throughout the neighborhood.  
 [Note: Not to be accepted onto the state system]

### Features

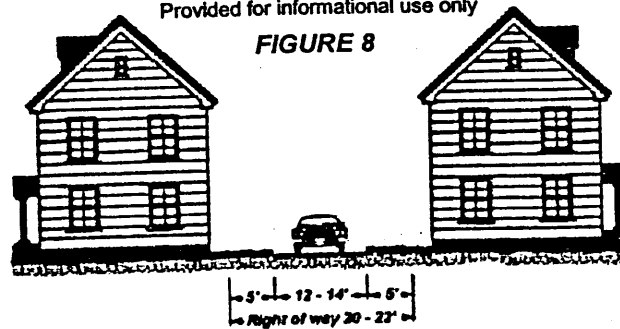
- Shade trees recommended
- Trail width 10—14'
- Stopping sight distance 125'
- Clear zone 3—6'

### Building and Land Use

- Link to make connections between homes, parks, schools, and shopping districts

Provided for informational use only

**FIGURE 8**



## Alleys

**Purpose:** Although part of the interconnected street system, alleys provide access to property but are not intended to accommodate through traffic. Alleys are often used by garbage trucks. In some areas alleys must accommodate dumpsters.

[Note: Not to be accepted onto the state system]

### Features

- Requires 20' right of way (minimum)
- Utilities, either above or underground, may be located in alleyways to provide service connections to rear elevations
- Width 12' (minimum)
- Additional pavement at alleyway intersections is necessary to facilitate turns.

### Building and Land Use

- Residential - primarily single family
- Provides rear access to garages