ATTACHMENT A-1

A RESOLUTION ADOPTING A STATEMENT EXPLAINING
THE BOARD OF ALDERMEN'S REASONS FOR ADOPTING AN AMENDMENT
TO THE TEXT OF THE CARRBORO LAND USE ORDINANCE
Resolution No. 65/2007-08

WHEREAS, an amendment to the text of the Carrboro Land Use Ordinance has been proposed, which amendment is described or identified as follows: An Ordinance Amending the Carrboro Land Use Ordinance to Modify Sight Distance Requirements

NOW THEREFORE, the Board of Aldermen of the Town of Carrboro Resolves:

Section 1. The Board concludes that the above described amendment is consistent with the Town of Carrboro Land Use Ordinance, Section 15-215.

Section 2. The Board concludes that its adoption of the above described amendment is reasonable and in the public interest because the Town seeks for public streets to be designed in such a way that their final grades shall as closely as practicable conform to original topography.

Section 3. This resolution becomes effective upon adoption.

ATTACHMENT A-2

A RESOLUTION ADOPTING A STATEMENT EXPLAINING THE BOARD OF ALDERMEN'S REASONS FOR REJECTING AN AMENDMENT TO THE TEXT OF THE CARRBORO LAND USE ORDINANCE
Resolution No. 66/2007-08

WHEREAS, an amendment to the text of the Carrboro Land Use Ordinance has been proposed, which amendment is described or identified as follows: An Ordinance Amending the Carrboro Land Use Ordinance to Modify Sight Distance Requirements

NOW THEREFORE, the Board of Aldermen of the Town of Carrboro Resolves:

Section 1. The Board concludes that the above described amendment is not consistent with Town of Carrboro Land Use Ordinance.

Section 2. The Board concludes that its rejection of the above described amendment is reasonable and in the public interest because existing policies are sufficient.

Section 3. This resolution becomes effective upon adoption.

** DRAFT 11-19-07 **

AN ORDINANCE AMENDING THE CARRBORO LAND USE ORDINANCE RELATING TO SIGHT DISTANCES AT INTERSECTIONS

THE BOARD OF ALDERMEN OF THE TOWN OF CARRBORO ORDAINS:

Section 1. Appendix C-1, Sight Distances at Intersection of the Land Use Ordinance, is revised by the addition of a new subsection (a) that reads as follows:

(a) The design speed, sight distance and centerline radii shall be constructed according to the table above. For stop conditions, sight distance may be designed per the criteria listed in the NCDOT Subdivision Roads Minimum Construction Standards manual (2000) or the most recent version of that document, so long as such standards will result in a street layout with a demonstrable environmental benefit.

Section 2. All provisions of any town ordinance in conflict with this ordinance are repealed.

Section 3. This ordinance shall become effective upon adoption.

Appendix C

SPECIFICATIONS FOR DESIGN AND CONSTRUCTION

(AMENDED 04/03/90)

C-1. Design Speed, Sight Distance, Centerline Radius

	MINOR	LOCAL	SUBCOLLECTOR	COLLECTOR	ALLEY
DESIGN SPEED	25 MPH	25 MPH	30 MPH	30 MPH	15 MPH
MINIMUM SIGHT DISTANCE ON VERTICAL CURVE	150'	150'	200'	200'	110'
MINIMUM CENTERLINE RADIUS	150'	150'	200'	230'	90'

(AMENDED 09/27/94; 11/28/06)

C-2. Cut and Fill Slopes

Cut and fill slopes on any street right-of-way may not exceed 2:1.

C-3. Sight Distances at Intersections

(a) At non-stop intersections, the intersection shall be constructed so that a person standing at a location on the centerline of any street 90 feet from the intersection of the street centerlines has an unobstructed view to a point located on the centerline of the intersecting street 90 feet (in either direction) from the intersection of the street centerlines. See Standard Diagram No. 1.

(b) Subject to subsection (c), at stop intersections, the intersection shall be constructed so that a person standing 10 feet back of the intersection of right-of-way lines on the stop street has an unobstructed view to a point on the right-of-way line of the intersecting through street located 70 feet from the intersection of the right-of-way lines. See Standard Diagram No. 2.

(c) At stop intersections where a residential street intersects with a state-maintained primary road (U.S. or N.C.), the intersection shall be constructed so that a person standing 30 feet back of the intersection of right-of-way lines on the stop street has an unobstructed view to a point on the centerline of the through street located 150 feet from the intersection of the street right-of-way lines. See Standard Diagram No. 3.

C-4. Radius at Street Intersections

At street intersections, the intersections of the paved surfaces shall be rounded with a minimum radius as shown in Standard Diagram No. 4 and No. 5. Where streets intersect at less that right angles, a greater radius may be required.

DIVISION OF HIGHWAYS
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

SUBDIVISION ROADS

MINIMUM CONSTRUCTION STANDARDS

JANUARY
2000

K. MINIMUM DESIGN CRITERIA

1. Local Residential Subdivision Roads include:
   a. Cul-De-Sacs
   b. Dead End Roads - Less than 2500 feet in length
   c. Short connecting Roads - One block long or that extend on a block by block basis
   d. Loop Roads - Less than 1 mile in length
   e. Other roads that do not connect thoroughfares or serve major traffic generators. These roads do not have "collector" characteristics.

TERRAIN CLASSIFICATION	LEVEL	ROLLING	HILLY
Terrain Classification Definition Level - Cross slope range of 0% to 8% Rolling - Cross slope range of 8.1% to 15% Hilly - Cross slope over 15%			
Right of Way Width			
Curb and Guner Section	40'	40'	40'
Shoulder Section	45'	45'	45'
Pavement Width			
Curb and Gutter Section	*26' G-G	*26' G-G	*26' G-G
Shoulder Section	18'	18'	18'
G-G refers to face to face of standard curb and gutter section, bottom of the "V" to the bottom of the "V" for the valley types section. Other types will be reviewed by the District Engineer with the GG limits applicable			
Minimum Shoulder Width			
Shoulder Section	6'	4' to 6'	4' to 6'
Shoulder width between 4' to 6' shall be approved by the District Engineer considering adjacent land characteristics			
Maximum Cut and Fill Slopes	2:1	2:1	1 1/2:1
Design Speed	30 mph	25 mph	20 mph
Minimum Sight Distance on Vertical Curves	200'	150'	110'
Minimum Centerline Radius	230'	150'	90'
Minimum Superelevation Rate for Minimum Radius	.06 ft/ft	.04 ft/ft	.02 ft/ft
Maximum Grade	9%	12%	18%
Grades for 100' each way from intersection exceeding 5 percent may be reviewed by District Engineer for consideration. Grades less than 0.5 percent should not be used unless reviewed individually by the District Engineer to determine potential maintenance problems.			
K = Rate of Vertical Curvature for Minimum Sight Distance.			
CREST	30	20	10
SAG	30	20	10
STOP	14	9	5
Formula for determination of length of vertical curve required to provide minimum site distance. [L = KA] L = Length of vertical curve in feet K = Rate of vertical curvature in feet per percent of A A = Algebraic difference in grades in percent			
Minimum Cul-De-Sac Radius Right of Way			
Curb and Guner Section	45'	45'	45'
Shoulder Section	50'	50'	50'
Minimum Cul -De-Sac Radius			
Curb and Guner Section	37' to G	37' to G	37'to G
Shoulder Section * (See page 28)	35'	35'	35'

2. Residential Collector Roads include:

a. Dead End Roads - More than **2500** feet in length
b. Connecting roads between the local residential subdivision roads and the thoroughfare system
c. Loop Roads - More than one (1) mile in length
d. Other roads having a "collector" type function in the thoroughfare system

TERRAIN CLASSIFICATION	LEVEL	ROLLING	HILLY
Terrain Classification Definition Level - Cross slope range of **0%** to **8%** Rolling - Cross Slope range of **8.1%** to **15%** Hilly - Cross slope over **15%**			
Right of Way Width			
Curb and Gutter Section	**50'**	**50'**	**50'**
Shoulder Section	**50'**	**50'**	**50'**
Pavement Width			
Curb and Gutter Section	**34'** G-G	**34'** G-G	**34'** G-G
Shoulder Section	**20'**	**20'**	**20'**
G-G refers to face to face of standard curb and gutter section, bottom of the "V" to the bottom of the "V" for the valley types section. Other types will be reviewed by the Division Engineer with the G-G limits applicable.			
Minimum Shoulder Width			
Shoulder Section	6'	6'	6'
Maximum Cut and Fill Slopes	**2:1**	**2:1**	**1 1/2:1**
Design Speed	35 mph	**30** mph	**25** mph
Minimum Sight Distance			
Vertical Curves	**250'**	**200'**	**150'**
Minimum Centerline Radius	**310'**	**230'**	**150'**
Minimum Superelevation Rate for Minimum Radius	**.08 ft/ft**	**.06 ft/ft**	**.04 ft/ft**
Maximum Grade	6%	**9%**	**12%**
Grades for **100'** each way from intersection exceeding **5** percent (%) may be reviewed by District Engineers for consideration. Grades less than **0.5** percent should not be used unless reviewed individually by the District Engineer to determine potential maintenance problems.			
K = Rate of Vertical Curvature for minimum sight distance			
CREST	**45**	**30**	**20**
SAG	**45**	**30**	**20**
STOP	**20**	**14**	**9**

Formula for determination of length of vertical curve required to provide minimum sight distance.

[L = KA]
L = Length of vertical curve in feet
K = Rate of vertical curvature in feet per percent of A
A = Algebraic difference in grades in percent

Comparison of standards for residential streets

	Residential Streets			Town of Carrboro					NCDOT Subdivision Streets Manual					
Standard	15	25	30	Alley	Minor	Local	Subcollector	Collector	Local			Collector		
									Level	Rolling	Hilly	Level	Rolling	Hilly
Design Speed	15	25	30	15	25	25	30	30	35	30	25	35	30	25
Stopping Distance	80	155	200	110	150	150	200	200	110	150	200	250	200	150
K2														
Crest	3	12	26						30	20	10	45	30	20
Sag	10	19	37						30	20	10	45	30	20
Stop									14	9	5	20	14	9
Centerline Radius	45	165	260	90	150	150	200	200	230	150	90	310	230	150

ATTACHMENT E

ATTACHMENT F

TOWN OF CARRBORO

PLANNING BOARD

301 West Main Street, Carrboro, North Carolina 27510

* D R A F T * R E C O M M E N D A T I O N

NOVEMBER 1, 2007

Land use ordinance text amendment to modify sight distance requirements

David Clinton moved that in light of the safety concerns this brings to the Planning Board, the Planning Board recommends that the Board of Aldermen not adopt this measure unless more persuasive evidence is heard. The motion was seconded by Rich Bell and unanimously approved.

VOTE: AYES: (7) Barton, Bell, Carnahan, Clinton, Cook, Fritz and Poulton; NOES: (0); ABSENT/EXCUSED: (2) Chadbourne and Lavelle; ABSTENTIONS: (0).

November 21, 2007

James Carnahan, Chair (date)