



AGENDA
BREVARD PLANNING BOARD - REGULAR MEETING
Tuesday, April 25, 2023 - 5:30 PM
City Council Chambers

I. Welcome

II. Introduction of Board Members

III. Certification of Quorum

IV. Approval of Agenda

V. Approval of Minutes

- a. March 28, 2023

VI. New Business

- a. Consideration of application for rezoning REZ-23-001 by Jeremy and Maria Watson of 1699 Old Hendersonville Highway for property zoned Corridor Mixed Use (CMX) to be rezoned to General Residential (GR4) property further identified by PIN# 8596-58-8230-000.
- b. Consideration of application for rezoning REZ-23-002 by Tore Borhaug and Paralift Holdings, LLC of Deerlake Road for property zoned Independent Living at Tore's Home Planned Development District to be rezoned to Corridor Mixed Use and General Residential (GR8) property further identified by PIN #s 8586-86-4675-000; 8586-86-1995-000 and 8586-87-0180-000.
- c. Continuation of TXT-22-006 Steep Slopes
- d. CLUP Priorities Discussion

VII. Unfinished Business

VIII. Public Comments

IX. Remarks

X. Adjourn

Agenda Posted, Website (April 21, 2023)
J. Pinson, Clerk to the Board

To review Agenda materials, go to the City's website www.cityofbrevard.com. Select "Your Government" tab followed by "Agenda Packet" tab. Agenda packet materials are posted on Friday afternoon prior to the meeting.

**MINUTES
BREVARD PLANNING BOARD REGULAR MEETING
MARCH 28, 2023
CITY COUNCIL CHAMBERS**

Brevard Planning Board met for a regular meeting, Tuesday, March 28, 2023, at 5:30 PM, in Council Chambers at City Hall.

Members Present: Greg Hunter, Chair
Reid Wood, Vice Chair
Peter Chaveas
James Carli
Molly Jenkins
Alan Mercaldo

Absent: John Schommer

Staff Present: Paul Ray, Planning Director
Aaron Bland, Assistant Planning Director
Emily Brewer, Senior Planner
Janice H. Pinson, Board Clerk

I. Welcome

At 5:30 PM, Greg Hunter, Chair called the meeting to order.

II. Introduction of Planning Board Members

The Board introduced themselves.

III. Certification of Quorum

Chair Greg Hunter confirmed with the Board Clerk that a quorum of the Board was present.

IV. Approval of Agenda

Motion to approve agenda J. Carli, second P. Chaveas, unanimously carried.

V. Approval of Minutes

Motion to approve February 28, 2023, minutes as presented by P. Chaveas, second J. Carli, unanimously carried.

VI. New Business

a. Consideration of Request for Contiguous Annexation ANN-23-001 by David and Catherine Nielsen for property located at 31 York Circle and further identified by PIN# 8596-26-2338-000.

Aaron Bland, Assistant Planning Director, presented his staff report a portion of which follows:

Background

On January 24, 2023, David and Catherine Nielsen (“Applicant”) submitted a request for voluntary continuous annexation for their property at 31 York Circle. The subject property is located off of Osborne Road and is identified by PIN 8596-26-2338-000. See Attachment 1 for the petition materials, Attachment 2 for the preliminary annexation plat submitted, and Attachment 3 for a site map.

Discussion

The subject property is located within the City’s Extra-Territorial Jurisdiction (ETJ) adjacent to the corporate limits and is zoned General Residential – 8 (GR8). The Applicant wishes to annex the entirety of the property. The financial and service delivery impacts are estimated to be minimal; see Attachment 4 for full financial impact details.

There are currently two structures on the property, one historic cabin built in 1905, approximately 600 square feet in size, and a larger barn/woodworking shop space. The Applicant has indicated their intention to build a new primary single-family house and convert the cabin to an accessory dwelling unit (ADU). Per Brevard’s Unified Development Ordinance, properties in General Residential are limited to one principal structure (i.e., the single-family home) and up to two accessory structures, one of which may be an accessory dwelling unit, thus the Applicant’s stated plans for the property are allowed by the UDO.

The existing cabin structure is already connected to City water, upon annexation it is assumed it will also be connected to City sewer. Additionally, the new principal house will require new connections as well. The cost of determining the appropriate connection method and physical connections will be borne by the property owner.

Policy Analysis

Voluntary, contiguous annexations are governed by North Carolina General Statute §160A-31 which authorizes cities to annex any area contiguous to its borders on receipt of a petition signed by all the owners of real property within the area proposed for annexation. The subject property qualifies for annexation under this statute.

After a brief discussion, M. Jenkins made a motion to recommend annexation to Council, second by R. Wood, unanimously carried.

b. Consideration of TXT-23-002 Land Use Matrix

Emily Brewer, Senior Planner, presented her staff report a portion of which follows:

Background On December 5, 2022, City Council adopted Ordinance 2022-76 amending the land use matrix, standards and definitions. This amendment clarified, consolidated, and added new use definitions and standards in logical groupings to improve the usability and efficiency of the UDO. Since then, Staff has been using the ordinance and found some items that can be refined. City ordinances are not meant to be static, but living documents that change as the City does. These revisions, included in Attachment A, will continue clarifying the land uses and regulations.

Discussion The proposed text amendments along with Staff's reasoning for the changes is as follows:

- *Shelters*: Despite being considered a residential use in our ordinance, shelters are not permitted in residential districts. However, there are existing shelters that are in residential settings, such as the Haven located in the Residential Mixed-Use (RMX) zoning district, that are compatible with the surrounding areas. This amendment makes shelters allowed with a Special Use Permit in General Residential (GR) and permitted with standards in RMX.
- *Live-Work Units and Mixed-Use Residential Unit*: The definition of live-work units was refined in last year's text amendment to say: "*a residential building type that consists of both a residential use and a non-residential use...*" Since then, Staff has determined that another land use is required to account for non-residential building types (e.g., mixed-use buildings). Staff has added a definition and standards for "Mixed-Use Residential Unit" that mirrors that of the live-work unit. The permissions for this new household living type align with the zoning districts where "Mixed-Use Buildings" are allowed under Section 5.6 of the UDO.
- *Mobile Food Vendor Site*: Mobile food vendors (or food trucks) are currently in our UDO as a temporary use that would only be permitted for 90 days at a time, after which they would be required to vacate and not be established for a period of 45 Page 23 of 125 days. However, the City does not regulate food trucks (they have to secure permits from the Transylvania County Health Department), but it does regulate the food truck *site*. The site has requirements for setbacks and separation distances. The site is permanently established, but according to our use standards the vendor would need to vacate. The solution proposed by Staff is to remove "Mobile Food Vendors" from the temporary uses section and incorporate the standards as a new non-residential accessory use: *Mobile Food Vendor Site*.

Policy Analysis Effective land use is an essential function of city planning and zoning. The proposed text amendment is consistent with the following elements of *Building Brevard 2030* Comprehensive Land Use Plan: Goals

GOAL 1: *Expand housing opportunities for all residents while preserving the character of Brevard and its neighborhoods.*

GOAL 2: *Encourage a development pattern that respects Brevard's sense of place and prioritizes livable communities.*

GOAL 7: *Support economic vitality and grow the tax base, cultivate local businesses, and attract sustainable industry.*

Recommendations

LUH-4: *Identify areas across the City that are best positioned to accommodate future growth.*

LUH-9: *Evaluate and amend development ordinances to facilitate infill development on vacant and underdeveloped parcels, as well as revitalization of developed parcels.*

EDIR-3: *Encourage building and site upgrades Downtown and in other key commercial areas.*

After discussion the Board recommended a change to the language for Mobile Food Vendor Site to state that the waste receptacle(s) be adequate to handle the waste produced by the operations.

M. Jenkins recommended approval of the use matrix revisions with the additional language about waste receptacles with reference to the Consistency Statement which is attached hereto and labeled, Exhibit "A", second by P. Chaveas, unanimously carried.

c. Continuation of TXT-22-006 Steep Slopes

Emily Brewer, Senior Planner, presented her staff report with revisions made based on the last meeting discussion.

After review, discussion, and correction of some errors to language and lettering the Board asked that more revisions be made and that the matter be brought back before them at their next meeting.

The Board unanimously agreed that the perpendicular option for building height and bulk be used but with a change to the building height to 35 or 40 feet. R. Wood requested the option to look at the matter and give Staff feedback on her professional determination.

Also agreed upon was that stronger language should be created for retaining walls with a possible maximum height of 7', over 5' required to be engineered and that depending on height the requirement that walls be stepped back.

Matters the board would like to focus on in the future that were determined not to be part of the steep slope ordinance.

Protection of view sheds.

Upland bogs protection.

VII. Public Comment –

J. Carli recommended that when the Comprehensive Land Use Plan is finalized by Staff that the Planning Board receive a copy and that each member pick out items that are important to them for discussion and make recommendations to Council.

VIII. Remarks –

G. Hunter, Chair recommended that the board get together on a social basis and get to know each other better. He said when John Schommer was present, he will revisit the idea.

Paul Ray cautioned the board that they could not discuss board topics as a group and stated that he would run it by Mack McKeller, City Attorney, as to his thoughts on the matter.

X. Adjournment

There being no further business, R. Wood moved to adjourn, seconded by M. Jenkins, carried unanimously, and the meeting adjourned 7:10 PM.

Greg Hunter, Chair

Janice H. Pinson, Board Clerk

STAFF REPORT

Planning Board, Tuesday, April 25, 2023

Title: Consideration of application for rezoning REZ-23-001 by Jeremy and Maria Watson of 1699 Old Hendersonville Highway for property zoned Corridor Mixed Use (CMX) to be rezoned to General Residential (GR4) property further identified by PIN# 8596-58-8230-000.

Speaker: Emily Brewer, AICP, Senior Planner

Prepared by: Emily Brewer, Senior Planner

Approved by: Paul Ray, Planning Director

Background

On February 22, 2023, an application was submitted by Jeremy and maria Watson ("Applicants") requesting a map amendment (rezoning) of their property. The property is located at 1699 Old Hendersonville Highway near Ecusta Road, identified by PIN 8596-58-8230-000. The parcel is currently zoned Corridor Mixed-Use (CMX). The request is to rezone to General Residential-4 (GR-4) to restore the historic structure and return it to use as a single-family home. The property abuts CMX, GR-4, and General Industrial (GI) zoning districts. See Attachment 1 for the application materials and Attachment 2 for a map of the current zoning.

Discussion

The property currently has a historic single-family home built in the 1840s. According to the applicants, it has gone through many owners and over time fell into disrepair and was ultimately abandoned. The applicants intend to work with the Joint Historic Preservation Commission to maintain the home's historical character and upgrade to interior to modern living standards.

Though the property was previously used as a single-family home, the property cannot return to use as a single-family residence in the current zoning district because it was abandoned for more than 180 days. The CMX zoning district is described by the Unified Development Ordinance as follows:

The Corridor Mixed-Use District is coded to facilitate convenient access, minimize traffic congestion, and reduce the visual impact of auto-oriented uses along the city's major thoroughfares. In addition, this district is established to assure the continuation of the natural beauty and green appearance of the major thoroughfares leading into the city, for enhancement of the appearance of newly developed and redeveloped properties, and for the promotion of public safety by limiting the number and location of access points.

The requested zoning district, GR-4, is intended for primarily-residential neighborhoods. Below is a comparison of density and dimensional requirements of the existing and

proposed districts:

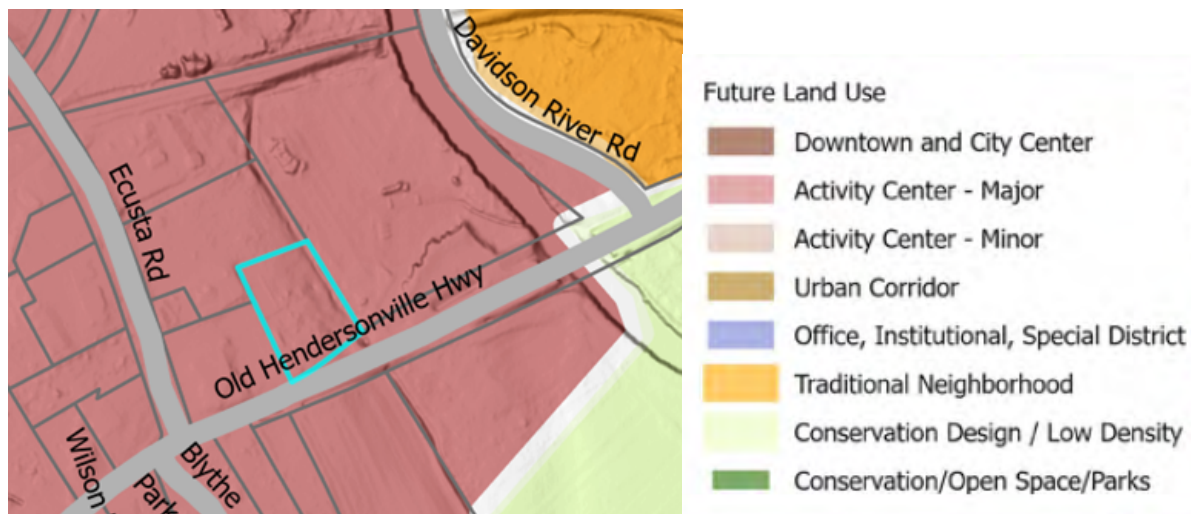
Requirement	CMX	GR-4
Maximum dwelling unit density	40/acre	4/acre
Maximum ground floor area for principal structures	50,000 SF	10,000 SF
Minimum setbacks for principal structures (front/side/rear)	10/0/10*	15/6/25
Minimum setbacks for accessory structures < 120 square feet (side/rear)	0/0	3/3
Minimum setbacks for accessory structures ≥ 120 square feet (side/rear)	0/0	6/10
Maximum height by right	50 feet	35 feet
Minimum lot width	0 feet	30 feet

**Side and rear setbacks are increased if adjacent to residential district.*

It should also be noted that rezoning this property alters the permitted uses for future development (see Attachment 3 for a comparison of uses in CMX and GR). For example, the majority of commercial, institutional, and manufacturing uses would no longer be permitted on the property.

Policy Analysis

The *Building Brevard 2030* Comprehensive Land Use Plan designates the property as a Major Activity Center. Activity Centers represent unique destinations across the City. They are meant to be the focus of targeted urban design initiatives with a focus on infill, adaptive reuse, and creative solutions to address opportunities and challenges in each unique place.



According to the Future Land Character Area Table, GR-4 is not an applicable zoning district for a Major Activity Center:

Future Land Use Character Areas	Applicable Zoning Districts
City Center / Downtown	Downtown Mixed-Use, Corridor Mixed Use, and Residential Mixed-Use
<i>Activity Center – Major</i>	<i>Corridor Mixed-Use, Neighborhood Mixed-Use, Special Districts</i>
Activity Center – Minor	Neighborhood Mixed-Use, Residential Mixed-Use
Urban Corridor	Corridor Mixed-Use, Neighborhood Mixed-Use, and
Office, Institutional, Special District	Institutional Campus and General Industrial
Traditional Neighborhood	General Residential-8, Residential Mixed-Use
Conservation Design / Low Density	General Residential-4
Conservation / Open Space	-

Though GR-4 is inconsistent with the future land use map, the Comprehensive Land Use Plan does include goals and recommendations related to historic preservation and creation of housing. The following goals and recommendations are related to this rezoning request and should be considered by the Board:

Goals

- ***GOAL 1:*** Expand housing opportunities for all residents while preserving the character of Brevard and its neighborhoods.
- ***GOAL 6:*** Integrate arts, culture, diversity, and history into everyday life and build on Brevard’s identity as a dynamic community to live, work, and play.

Recommendations

- ***Land Use and Housing-2:*** Evaluate rezoning requests based on the Future Land Use Map and character area descriptions.
- ***Land Use and Housing-6:*** Encourage rezonings to allow for a mix of uses in Activity Centers.
- ***Land Use and Housing-9:*** Evaluate and amend development ordinances to facilitate infill development on vacant and underdeveloped parcels, as well as revitalization of developed parcels.

- ***Land Use and Housing-18:*** Collaborate with neighborhoods to explore opportunities for zoning overlays, historic preservation, adaptive reuse, infill projects, special events, and other neighborhood-specific activities.
- ***Parks, Natural Resources, and Cultural Resources-17:*** Continue participating in North Carolina Historic Preservation Office's Certified Local Government Program via the Transylvania County Joint Historic Preservation Commission.

Recommendation

Planning Board's role is to make a recommendation to City Council. The Board has 30 days to do so; if no recommendation is made by Thursday, May 25, 2022, then the application will be sent to Council without the Board's decision. The Board's options are as follow:

1. Recommend approval as requested
2. Recommend approval with a change in the area as described by the Board
3. Recommend denial

In accordance with North Carolina General Statutes, the Planning Board must also submit a statement analyzing the consistency and reasonableness of this proposal with regards to existing policies or plans of the City of Brevard. A Statement of Consistency and Reasonableness is included for the Board's review (Attachment 4).

Attachments:

1. Application Materials
2. Map of Current Zoning
3. Comparison of Allowable Uses
4. Consistency Statement



The City of Brevard North Carolina

REQUEST FOR ZONING MAP AMENDMENT (REZONING)

Applicant Information:

Name: Jeremy and Maria Watson

Address: 5236 Mulholland dr Summerville SC

Phone: 801-833-3372

Property Owner Information (if different than applicant):

Name: Same as above

Address: _____

Phone: _____

Location of Property:

1699 Old Hendersonville Hwy

Pisgah Forest, NC 28768

Property Identification Number (PIN): 8596588230000

Present Zoning District: Corridor mixed use

Request District to be Changed to: Residential 4 (attach additional explanation if necessary)

Existing Use of Adjacent Properties:

North Commercial

West Commercial

South Residential + Vacant

East Recycling Center

[Signature]
Signature of Applicant

2/22/23

Date

* * * * *

Planning Department must receive the following prior to placement on BPB agenda:

____ Completed Application Form

____ Survey of Property

____ Application Fee (\$500.00) – Date Paid _____, Receipt # _____

Heard by Planning Board on: _____

Planning Board's Recommendation: ____ Approval ____ Denial

Heard by City Council on: _____

City Council Action: ____ Approval – Ord. Number _____ Effective Date _____
____ Denial

To Whom It May Concern,

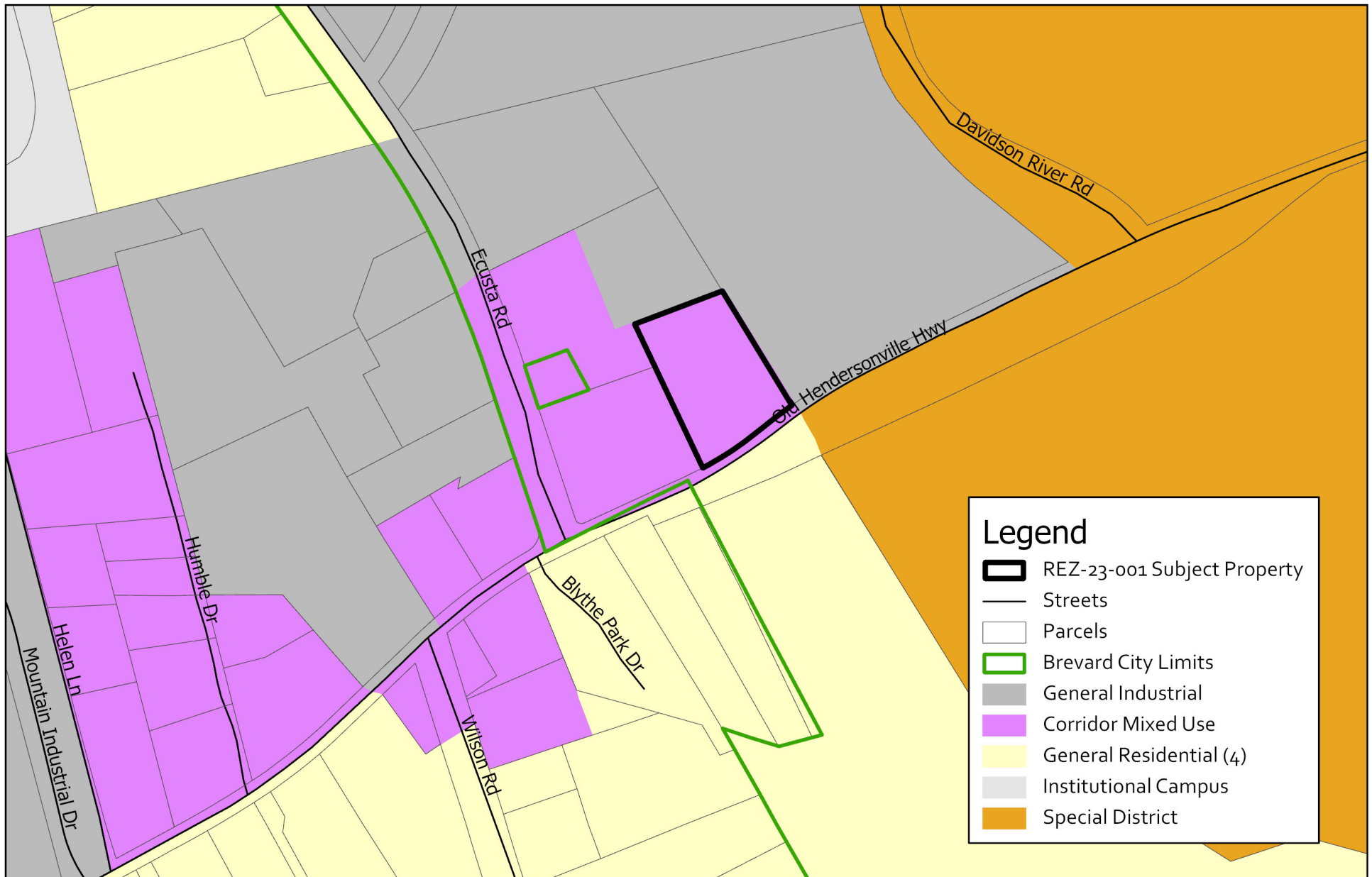
The Elizur and Ann Patton House was built in the 1840s and was a beloved family home for about a century to two different Patton families. It was the hub of a thriving farm which helped build and support the community we now reside in. The property has gone through several owners and adjustments through the decades and fell into disuse and disrepair until it was finally abandoned. There have been several attempts to rehab and restore this property but to no avail. My husband and I recently bought this home and we hope to make it a family home once more which is why we are petitioning to rezone the building back to residential.

Our plan is to work closely with the historical society respecting the home's unique architectural details. Our goals are to restore the original windows, doors, fix the exterior siding, roof, and improving its overall curb appeal. We will also be bringing the interior up to modern living standards while also maintaining the home's historical character. We are still at the beginning of this project but we hope that you will see the value of us committing to this property and bring back a piece of Brevard's history to function and prominence.

Thank you,

Maria and Jeremy Watson

Rezoning Request REZ-23-001: 1699 Old Hendersonville Highway



0 55 110 220 330 440 Feet
1 inch = 211 feet

This map was prepared by the City of Brevard Planning Department, April 2023.

Disclaimer: The information contained on this page is NOT to be construed or used as a survey or legal description. Map information is believed to be accurate, but accuracy is not guaranteed.

COMPARISON OF ALLOWABLE LAND USES – GENERAL RESIDENTIAL AND CORRIDOR MIXED-USE

CATEGORY	SECTION (a)	USE	ZONING DISTRICTS	
<i>Residential</i>			GR	CMX
Household Living	3.5.1	Dwelling—Single-Family	P	—
		Dwelling—Duplex	P	—
		Dwelling—Multifamily 3—4 units/bldg.	P	P
		Dwelling—Multifamily more than 4 units/bldg.	—	P
		Dwelling—Townhome	P	P
		Manufactured Home (single unit)	MHD	MHD
		Manufactured Home Park	MHD	MHD
		Live-Work Units	P	—
Group Living	3.5.2	Family Care Home (Less than 6 residents)	P	P
		Housing Services for the Elderly	SUP	P
		Rooming or Boarding House	P	P
Social Services	3.5.3	Group Care Facility (6 or more residents)	P	P
		Shelter	—	P
<i>Lodging</i>			GR	CMX
Overnight Accommodations	3.6.1	All overnight accommodations, except as listed below	—	P
		Bed and Breakfast	PS	PS
		Short-Term Rental	PS	—
Camping	3.6.2	Campground/Recreational Vehicle Park	SUP	—
		Rental Cottage/Cabins	PS	—
		Seasonal Camp	PS	—
<i>Commercial</i>			GR	CMX
Eating and Drinking Establishments	3.7.1	All restaurants and other eating and drinking establishments except as listed below	—	P
		Bar/Night Club	—	P
Personal Services	3.7.2	All personal services, except as listed below	—	P
		Day Care Center	PS	PS
Professional Services	3.7.3	All professional services, except as listed below	SUP	P
		Adult Establishment	—	—
		Banks, Credit Unions, Financial Services, and ATMs	—	P
		Funeral Homes and Services	—	P

		Human Crematories and Crematoriums	—	PS
		Indoor Animal Services	—	P
		Kennels and Outdoor Animal Services	—	PS
		Landscaping and Contractor Services	SUP	—
		Vehicle Services—Major Repair/Body Work	—	PS
		Vehicle Services—Minor Maintenance/Repair	—	PS
Retail	3.7.4	All retail and sales establishments except as listed below	—	P
		Alcoholic Beverage Sales Store	—	P
		Auto/Mechanical Parts Sales	—	P
		Gas Station	—	PS
		Gunsmiths and Weapon Sales	—	PS
Shopping Centers	3.7.5	All shopping centers	—	PS
Civic/Institutional			GR	CMX
Educational	3.8.1	All educational uses except as listed below	SUP	P
		Colleges/Universities	—	P
		Schools—Vocational/Technical	—	P
Government	3.8.2	All government uses, except as listed below	—	P
		Correctional Facilities	—	P
		Public Safety Station	SUP	P
Medical	3.8.3	All medical offices and facilities except as listed below	—	P
		Hospital	—	P
Places of Worship	3.8.4	All religious institutions or places of worship	SUP	P
		Cemeteries	PS	PS
Entertainment/Recreation			GR	CMX
Indoor Recreation	3.9.1	All indoor recreation facilities, except as listed below	SUP	P
		Cultural or Community Facility	SUP	P
		Indoor Amusements	—	P
		Indoor Firing Range	—	SUP
		Live Performance Theater	—	P
		Movie Theater	—	P
		Special Event Venue	SUP	PS
		Studios, Galleries and Workshops - High Impact	—	P

		Studios, Galleries and Workshops - Low Impact	—	P
Outdoor Recreation	3.9.2	All outdoor recreation facilities, except as listed below	SUP	P
		Non-Residential Swimming Pool or Pond	—	PS
		Outdoor Amusements	—	P
		Outdoor Firing Range	—	—
		Parks, Open Space, and Greenways	P	P
Agriculture			GR	CMX
Agriculture	3.10.1	All agricultural uses	PS	PS
Manufacturing/Wholesale/Storage			GR	CMX
Light Industrial and Manufacturing	3.11.1	All light industrial and manufacturing activities, except as listed below	—	SUP
		Brewery, Distillery, Winery, Cidery - High Impact	—	P
		Brewery, Distillery, Winery, Cidery - Low Impact	—	PS
		Laboratory	—	P
		Laundry, Dry Cleaning Plant	—	SUP
		Manufacturing Research and Development	—	P
		Media Production	—	P
Heavy Manufacturing	3.11.2	All heavy manufacturing activities, except as listed below	—	—
		Metal Products Fabrication, Machine or Welding Shop	—	P
Storage and Disposal	3.11.3	All storage and disposal uses, except as listed below	—	SUP
		Chemical Storage Facility	—	—
		Solid Waste Storage or Disposal Facilities	—	—
		Junkyard / Salvage Yard	—	—
Wholesaling and Distribution	3.11.4	All wholesaling and distribution activities, except as listed below	—	P
		Equipment Rental	—	P
		Indoor Vehicle/Heavy Equipment Sales	—	PS
		Outdoor Vehicle/Heavy Equipment Sales	—	PS
Infrastructure			GR	CMX
Utilities	3.12.1	Utilities—Class 1	P	P
		Utilities—Class 2	P	P
		Utilities—Class 3	—	—

Telecommunication s	3.12.2	All wireless telecommunication facilities, except as listed below	PS	PS
		Wireless Telecommunication Facility—Tower	—	SUP
Transportation	3.12.3	Parking Lot	PS	PS
		Passenger Vehicle Terminals	—	P
Accessory			GR	CMX
Residential Accessory	3.13.1	All residential accessory uses, except as listed below	PS	PS
		Day Care Home	PS	PS
		Dwelling—Accessory Unit (ADU)	PS	PS
		Home Occupation	PS	P
		Keeping Bees	PS	PS
		Keeping Domestic Fowl (Chickens)	PS	PS
		Swimming Pool or Pond	PS	PS
Non-Residential Accessory	3.13.2	All non-residential accessory uses, except as listed below	—	PS
		Accessory Retail	—	PS
		Drive-Thrus	—	PS
		Recycling - Small Collection	—	SUP
		Rooftop Amenity Space	—	PS
		Taproom / Tasting Room	—	P
Temporary			GR	CMX
Events and Structures	3.14.1	All temporary events and structures, except as listed below	PS	PS
		Carnivals or Circus	—	PS
		Farmers Market	—	PS
Vendors	3.14.2	All temporary vendors, except as listed below	—	PS
		Mobile Food Vendors	—	PS
		Vending Pushcarts	—	—

(a) This column refers to the section of this ordinance that contains the use definition and additional standards.

**STATEMENT OF CONSISTENCY AND REASONABLENESS WITH
ADOPTED PLANS AND POLICIES OF THE CITY OF BREVARD
REZ-23-001**

NCGS 160D-604 requires that the Planning Board shall advise and comment on whether the proposed amendment is consistent with any comprehensive plan prior to consideration by the Governing Board. The Planning Board shall provide a written recommendation to the Governing Board that addresses plan consistency and other matters as deemed appropriate by the Planning Board, but a comment by the Planning Board that a proposed amendment is inconsistent with the Comprehensive Plan shall not preclude consideration or approval of the proposed amendment by the Governing Board.

The Brevard Planning Board forwards this recommendation to City Council with a finding that the proposed zoning map amendment is **consistent** with the following elements of the City's adopted plans and policies:

Building Brevard 2030 Goals

- **GOAL 1:** *Expand housing opportunities for all residents while preserving the character of Brevard and its neighborhoods.*
- **GOAL 6:** *Integrate arts, culture, diversity, and history into everyday life and build on Brevard's identity as a dynamic community to live, work, and play.*

Building Brevard 2030 Recommendations

- **Land Use and Housing-18:** *Collaborate with neighborhoods to explore opportunities for zoning overlays, historic preservation, adaptive reuse, infill projects, special events, and other neighborhood-specific activities.*
- **Parks, Natural Resources, and Cultural Resources-17:** *Continue participating in North Carolina Historic Preservation Office's Certified Local Government Program via the Transylvania County Joint Historic Preservation Commission.*

The Brevard Planning Board forwards this recommendation to City Council with a finding that the proposed zoning map amendment is **inconsistent** with the following elements of the City's adopted plans and policies:

Building Brevard 2030 Future Land Use Map

The Future Land Use Map recommends *Activity Center – Major* as the future character area:

Activity Centers represent unique destinations across the City. They are meant to be the focus of targeted urban design initiatives with a focus on infill, adaptive reuse, and creative solutions to address opportunities and challenges in each unique place.

The appropriate character area for the proposed zoning district is *Conservation Design / Low-Density*.

Building Brevard 2030 Recommendations

- ***Land Use and Housing-2:*** Evaluate rezoning requests based on the Future Land Use Map and character area descriptions.
- ***Land Use and Housing-6:*** Encourage rezonings to allow for a mix of uses in Activity Centers.
- ***Land Use and Housing-9:*** Evaluate and amend development ordinances to facilitate infill development on vacant and underdeveloped parcels, as well as revitalization of developed parcels.

The Brevard Planning Board forwards this recommendation to City Council with a finding that the proposed zoning map amendment is in the public interest and **reasonable** due to the following factors:

- As defined in the City of Brevard Unified Development Ordinance, the General Residential-4 zoning district is a logical and appropriate zoning district for a single-family home.
- The Plan is consistent with the goals and recommendations outlined in the City's Comprehensive Land Use Plan.

STAFF REPORT

Planning Board, Tuesday, April 25, 2023

Title: Consideration of application for rezoning REZ-23-002 by Tore Borhaug and Paralift Holdings, LLC of Deerlake Road for property zoned Independent Living at Tore's Home Planned Development District to be rezoned to Corridor Mixed Use and General Residential (GR8) property further identified by PIN #s 8586-86-4675-000; 8586-86-1995-000 and 8586-87-0180-000.

Speaker: Aaron Bland, Asst. Planning Director

Prepared by: Aaron Bland, Asst Planning Director

Approved by: Paul Ray, Planning Director

Background

October 17, 2019 an application was submitted by Tore Borhaug, of Lift Holdings, LLC, along with a preliminary master plan for a mixed-use development located along Deerlake Road. The three parcels that make up the subject area were all zoned General Residential – 8 (GR8) and the Applicant was seeking a conditional zoning district, then called a “planned development district” to establish a site-specific ordinance tailored to the planned mixed-use development of the site.

After several meetings of discussion, the Planning Board unanimously recommended approval at a special-called meeting on June 25, 2020.

After the final Planning Board meeting the Applicant amended the preliminary master plan in order to alleviate neighbor concerns; this plan was presented to Council on August 17, 2020. Council held an on-site meeting on September 3, 2020 and voted on the matter at their regular meeting on September 21, 2020, adopting Ordinance No. 2020-18 approving the PDD.

Mr. Borhaug now wishes to rezone the properties, subject to the PDD, back to traditional “base zoning” districts. Two of these parcels will revert to GR-8, as they were before the PDD rezoning, and one parcel will be rezoned to Corridor Mixed Use (CMX).

Discussion

A conditional zoning district is a rezoning in which the developer and the City negotiate site-specific development standards for the site/project. These standards are codified in a stand-alone ordinance which applies to the subject property in perpetuity. This process is meant to be flexible and is intended to accommodate complex projects.

Applications for conditional rezonings may seek exceptions to standard development requirements regarding density, building types, architectural standards, open space, landscaping, parking, and signs, but may not seek exceptions for stormwater management,

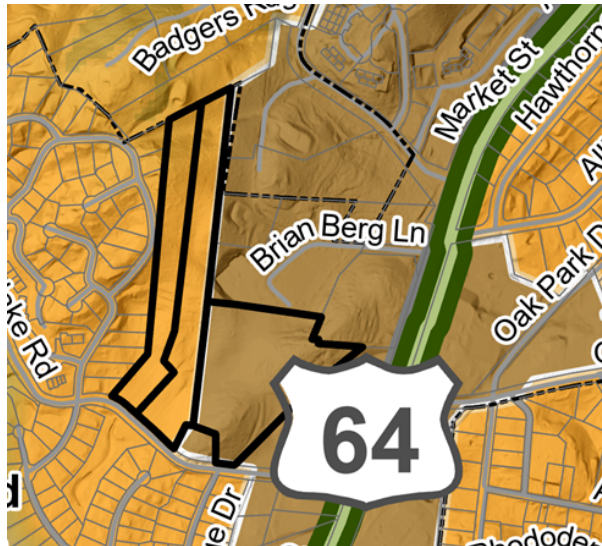
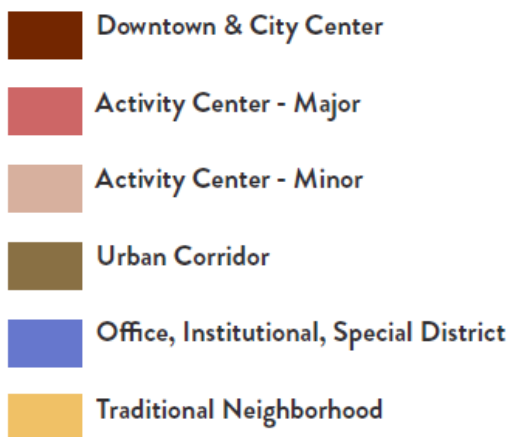
steep slope protections, and floodplain regulations.

Base districts are the standard zoning districts applied throughout the City's jurisdiction. Rezoning to base districts would undo the site-specific standards of the PDD, including any deviations from the typical UDO requirements. Moving forward, any development of the site would have to follow any and all applicable UDO requirements.

Policy Analysis

Recommendation LUH-2 of the Comprehensive Land Use Plan states "Evaluate rezoning requests based on the Future Land Use Map and character area descriptions." The Future Land Use Map identifies the two parcels proposed to revert to GR8 as within the Traditional Neighborhood character area, and the parcel proposed to be CMX within the Urban Corridor character area. Both of the proposed new zoning districts are applicable zoning districts for the character areas as outlined in the Future Land Use Character Area Table. Therefore, this proposal is consistent with the Future Land Use Map and LUH-2.

Character Areas



Action

Rezoning is approved via a legislative decision by City Council and by law these legislative decisions must first include review and a recommendation to City Council from the Planning Board. The Board shall make one of the following recommendations in regard to a petition for a zoning map amendment:

1. Grant the zoning map amendment as requested.
2. Grant the zoning map amendment with a reduction of the area requested.
3. Grant the zoning map amendment to a more restrictive general zoning district or districts.
4. Deny the application.

In accordance with state law, the Planning Board must submit to Council a consistency

statement analyzing the reasonableness of this proposal. Staff has included a recommended statement in this packet.

Attachments:

1. Current PDD Ordinance
2. Approved Master Plan
3. Current Zoning
4. Proposed Zoning
5. Consistency Statement

ORDINANCE NO. 2020-18**AN ORDINANCE AMENDING THE OFFICIAL ZONING MAP
OF THE CITY OF BREVARD CREATING THE INDEPENDENT
LIVING AT TORE'S HOME PLANNED DEVELOPMENT DISTRICT**

WHEREAS, Lift Holdings LLC requests the establishment of the Independent Living at Tore's Home Planned Development District; and

WHEREAS, the City of Brevard has the authority, pursuant to Part 3 of Article 19 of Chapter 160A of the North Carolina General Statutes, to adopt zoning regulations, to establish zoning districts and to classify property within its jurisdiction according to zoning district, and may amend said regulations and district classifications from time to time in the interest of the public health, safety and welfare; and

WHEREAS, the City of Brevard Planning Board considered REZ-19-008 on June 25, 2020 and unanimously recommended approval by City Council; and

WHEREAS, the Brevard Planning Board and City Council have determined that this rezoning is both consistent and inconsistent with the City's 2002 Land Use Plan and the 2015 Comprehensive Plan, for the reasons described in the Consistency Statement attached hereto as Exhibit C and incorporated herein by reference; and

WHEREAS, Council finds that the size of the tract and the proposed uses are reasonable and appropriate within the context of the existing zoning districts and the prevalence of uses in the vicinity of the Subject Parcel; and

WHEREAS, a public hearing was conducted August 17, 2020; and

WHEREAS, the City of Brevard, after hearing all persons wishing to comment on this request, desires to approve said request.

NOW, THEREFORE, BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY OF BREVARD, NORTH CAROLINA THAT:

Section 01. The zoning classification of that certain real property depicted in Exhibit A to this Ordinance, which is attached hereto and incorporated herein by reference, is hereby rezoned to be the Independent Living at Tore's Home Planned Development District.

Section 02. The District is a conditional zoning district established pursuant to the Unified Development Ordinance of the City of Brevard by means of authority granted by the North Carolina General Statutes.

Section 03. Development and use of lands within the District shall occur in accordance with the approved List of Conditions and Preliminary Master Plan, which are attached to this ordinance as Exhibit B and Exhibit D respectively, and incorporated herein by reference.

Section 04. This Ordinance and its exhibits shall run with the land and shall be binding on Lift Holdings LLC, its heirs and assigns.

Section 05. The Planning Director is hereby authorized and directed to modify the City's Official Zoning Map consistent with this Ordinance.

Section 06. If any section, subsection, sentence, clause or phrase of this ordinance is for any reason held to be invalid, such decision shall not affect the validity of the remaining portions of the ordinance.

Section 07. All ordinances or portions thereof in conflict herewith are hereby repealed to the extent of such conflict.

Section 08. This ordinance shall be in full force and effect from and after the date of adoption.

Adopted this the 21st day of September, 2020.

Jimmy Harris,
Mayor

ATTEST:

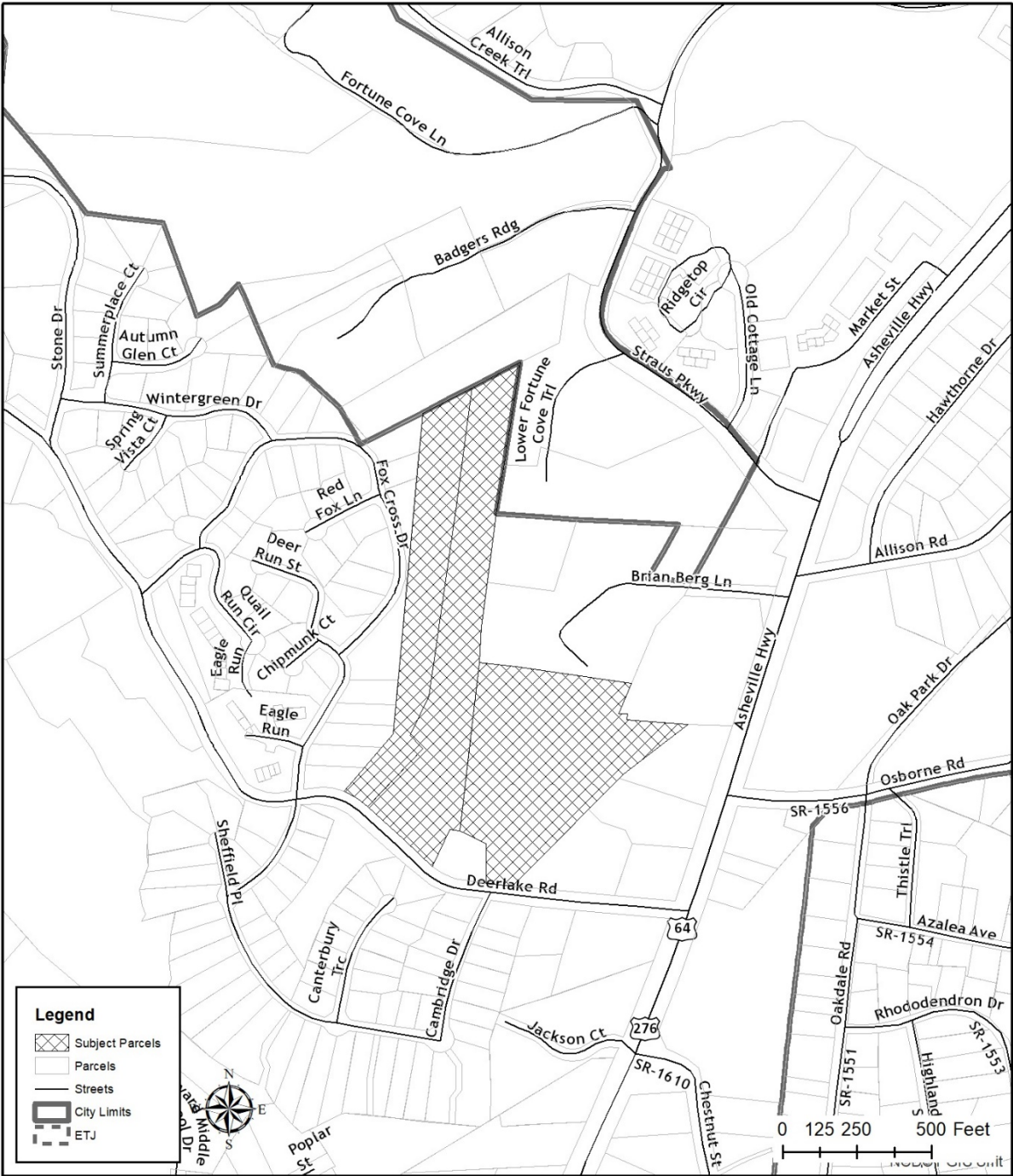
Jill Murray CMC
City Clerk

APPROVED AS TO FORM:

Michael K. Pratt
City Attorney

EXHIBIT A
Ordinance Number 2020-18

INDEPENDENT LIVING AT TORE’S HOME PLANNED DEVELOPMENT DISTRICT:
LOCATION MAP



Rezoning REZ-19-008
Independent Living at Tore’s Home
Planned Development District

EXHIBIT B
Ordinance Number 2020-18

**INDEPENDENT LIVING AT TORE’S HOME PLANNED DEVELOPMENT DISTRICT:
LIST OF CONDITIONS**

- 1. Definitions.** Within this List of Conditions, the following terms shall have the meanings articulated:
- a. “District” refers to the Independent Living at Tore’s Home Planned Development District, as depicted on the Preliminary Masterplan.
 - b. “UDO” refers to the City of Brevard Unified Development Ordinance in effect as of January 21, 2020.

- 2.Future Development.**
- a. Compliance with Final Master Plan.
 - i. The Applicant shall provide a Final Master Plan for the development or any phase thereof for review and approval by the Planning Board within five years of the approval of this Ordinance.
 - ii. Modifications to the Final Master Plan shall be considered in accordance with Chapter 16, Section 16.8 of the UDO.

- 3.Land Use.**
- a. Allowable Land Uses.
 - i. Land uses may be permitted according to the following table:

Allowable Land Uses	
Dwelling—Duplex	P
Dwelling—Multifamily 3—4 units/bldg., not including Condominium Buildings or multiple structures	P
Dwelling—Multifamily more than 4 units/bldg.	P
Cultural or Community Facility	P
Professional Service	P
Adult/Child Day Care Center (6 or more)	PS
Cemeteries	PS
Parking	P
Fences	PS

- 4.Dimensional Requirements.**
- a. Setbacks shall comply with GR standards of Chapters 2 of the UDO to the greatest extent possible.
 - i. Minimum rear yard setback shall be equal to or exceed 15 feet as depicted on the Preliminary Master Plan.
 - b. Maximum Dwelling Unit (DU) Density shall not exceed 11.2 du/acre.
 - c. Maximum Ground Floor Area for each principle structure shall not exceed those as depicted on the Preliminary Master Plan.

- 5.Building Types and Architectural Standards.**
- a. Structures within the Project Area shall be designed and constructed in a manner that is generally consistent with structures as shown on the Preliminary Master Plan with respect to location, area, height, bulk, and mass.

- 6.Environmental Protection.**
- a. Shall comply with Chapters 6 of the UDO.

7. Open Space.

- a. Developer shall dedicate a 15-foot wide easement for a 10-foot wide paved greenway to the City, as shown on the Preliminary Master Plan. Such dedication shall satisfy Open Space requirements of Chapter 7 of the UDO.

8. Tree Protection and Landscaping.

- a. Buffers shall comply with GR standards of Chapters 8 of the UDO to the greatest extent possible.

9. Parking.

- a. Parking shall comply with off-street standards of Chapter 10 of the UDO to the greatest extent possible as depicted on the Preliminary Master Plan.
 - i. Duplex structures shall provide 1-1.5 spaces per dwelling unit.
 - ii. Angled off-street parking shall meet or exceed a minimum width of 8 feet.
- b. Applicant will meet UDO standards for the number of parking spaces for the apartment buildings.

10. Lighting and Signage.

- a. Shall comply with Chapters 11 and 12 of the UDO, respectively.

11. Public Infrastructure.

- a. Driveway curb cuts shall not exceed 30 feet, as depicted on the Preliminary Master Plan.
- b. Minimum right-of-way width for new streets shall be 45 feet as depicted on the Preliminary Master Plan.
- c. No new streets built as depicted on the Preliminary Master Plan shall be designated to allow for on-street parking.

12. Phasing of Development

- a. The Applicant's proposed phasing is allowed with the following condition: Apartment Buildings 2, 3, and 4, as shown on the Preliminary Master Plan, can only be built after the community center is built.

EXHIBIT C
Ordinance Number 2020-18

**INDEPENDENT LIVING AT TORE'S HOME PLANNED DEVELOPMENT DISTRICT:
STATEMENT OF CONSISTENCY WITH CITY POLICIES AND PLANS**

NCGS 160A-383 requires that the Planning Board shall advise and comment on whether the proposed amendment is consistent with any comprehensive plan prior to consideration by the governing board. The planning board shall provide a written recommendation to the governing board that addresses plan consistency and other matters as deemed appropriate by the planning board, but a comment by the planning board that a proposed amendment is inconsistent with the comprehensive plan shall not preclude consideration or approval of the proposed amendment by the governing board.

The Planning Board forwards this recommendation to City Council with a finding that the proposed zoning map amendment is **consistent** with the following elements of the City's adopted plans and policies:

2015 Comprehensive Plan:

OBJECTIVE 2.1: As the City of Brevard's primary source of financial capital, the City will take proactive measures to stabilize and grow the tax base.

POLICY 2.1.A: Modify zoning regulations to encourage and allow greater density and intensities of land use within its jurisdiction.

POLICY 2.1.B: Collaborate with partner organizations and developers to financially support the City's goals for infill development and redevelopment.

OBJECTIVE 4.1: Increased efficiency of land uses to help stabilize and grow the City's tax base.

POLICY 4.1.A: Evaluate and amend development ordinances to facilitate infill development on vacant and under-developed parcels, as well as revitalization of developed parcels.

OBJECTIVE 4.2: Develop a system of "complete neighborhoods" throughout Brevard. (This is a multi-faceted objective that will rely on objectives and policies from other elements as well.)

POLICY 4.2.A: Modify zoning to increase allowable densities and the mixing of uses in appropriate areas.

POLICY 4.2.E: Collaborate with partners to increase the amount of available affordable and workforce housing, and to combat homelessness.

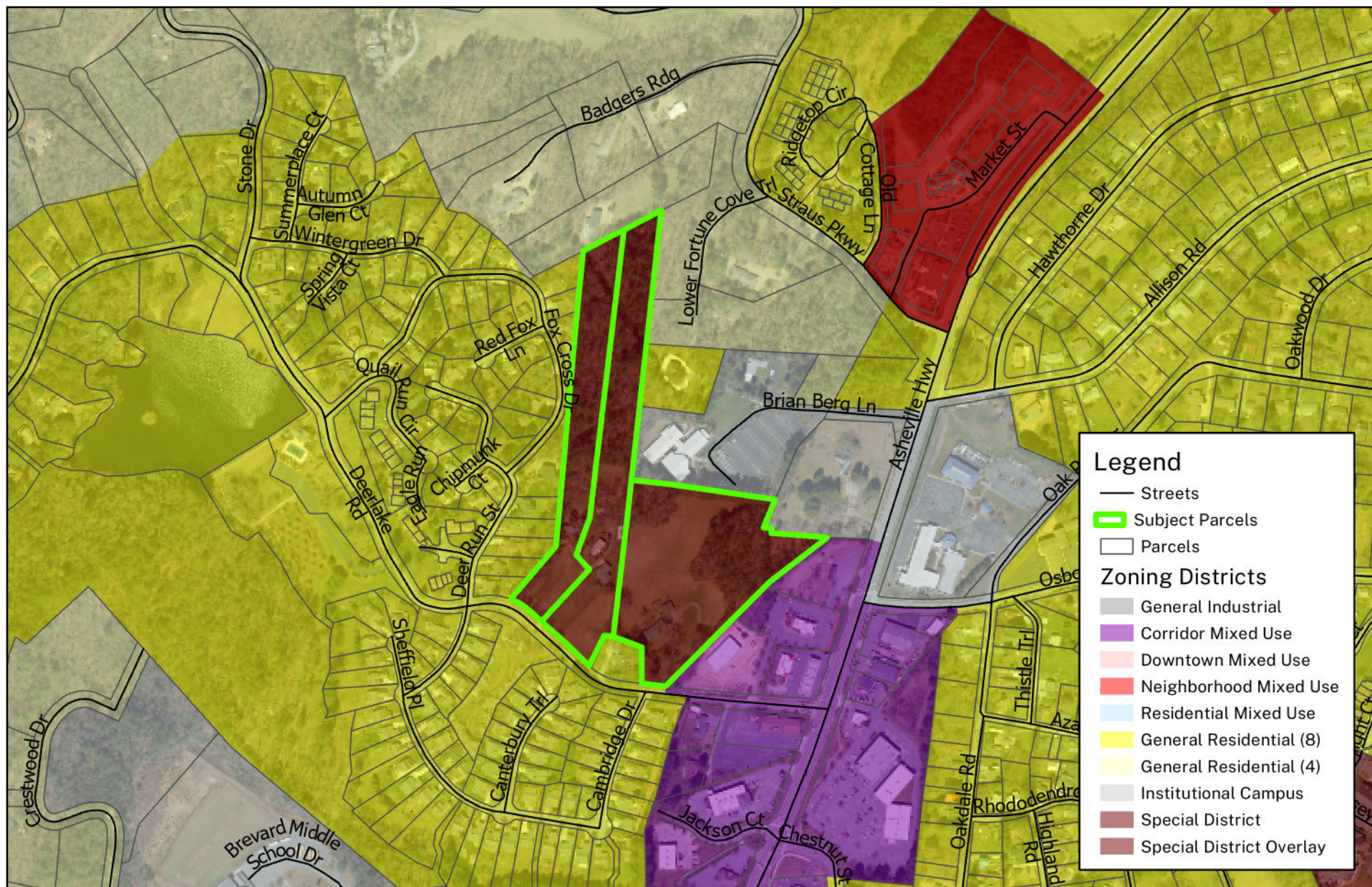
The Planning Board forwards this recommendation to City Council with a finding that the proposed zoning map amendment is **inconsistent** with the following elements of the City's adopted plans and policies:

The 2002 City of Brevard Land Use Plan, Future Land Use Map recommends use of these properties for "Residential – Medium Density," of 3-6 dwelling units per acre.

EXHIBIT D
Ordinance Number 2020-18

INDEPENDENT LIVING AT TORE'S HOME PLANNED DEVELOPMENT DISTRICT:
PRELIMINARY MASTER PLAN SHEETS

Rezoning Request REZ-23-002

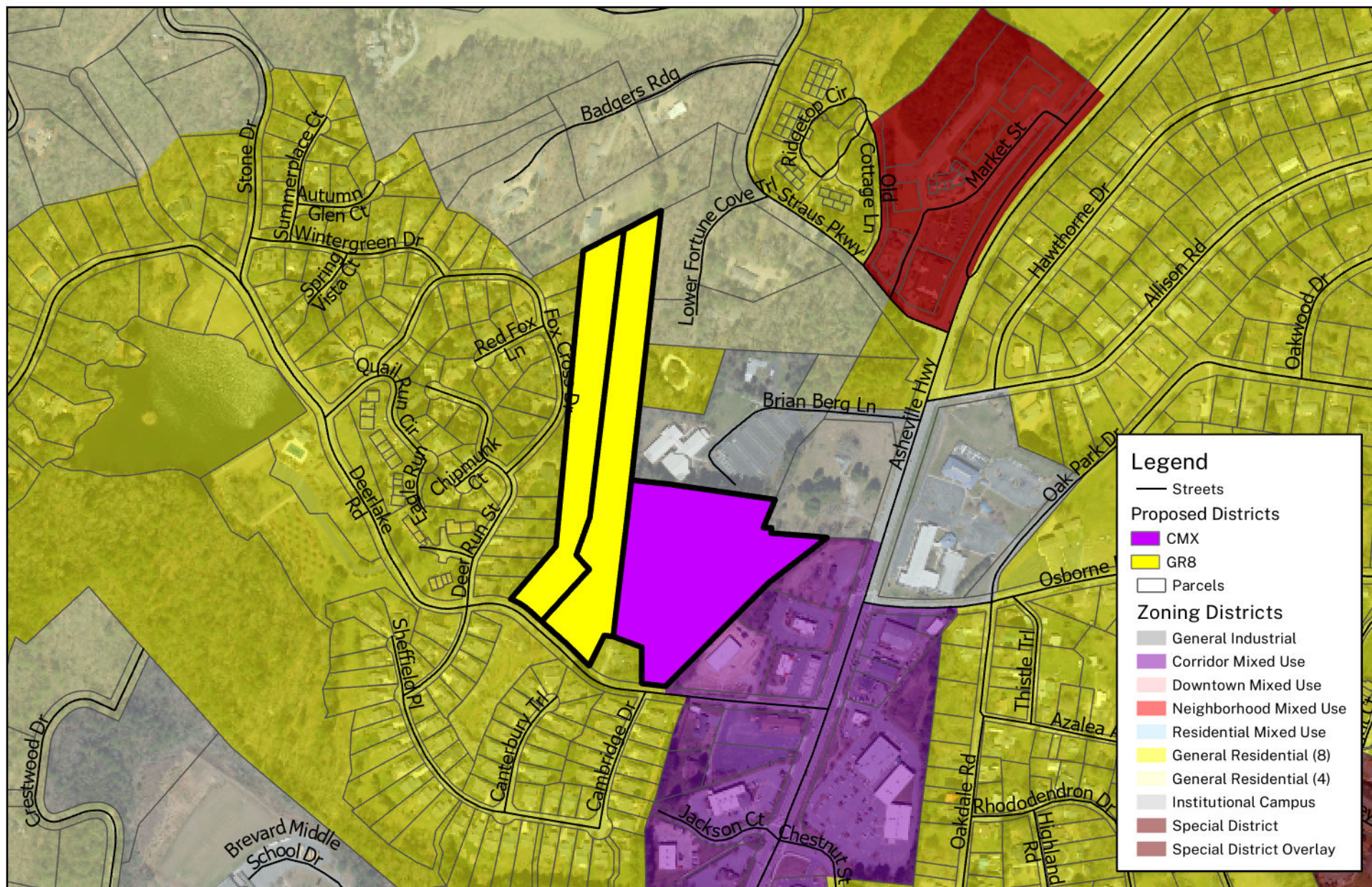


1 inch = 500 feet

This map was prepared by the City of Brevard Planning Department, April 2023.

Disclaimer: The information contained on this page is NOT to be construed or used as a survey or legal description. Map information is believed to be accurate, but accuracy is not guaranteed.

Rezoning Request REZ-23-002



1 inch = 500 feet

This map was prepared by the City of Brevard Planning Department, April 2023.

Disclaimer: The information contained on this page is NOT to be construed or used as a survey or legal description. Map information is believed to be accurate, but accuracy is not guaranteed.

**STATEMENT OF CONSISTENCY AND REASONABLENESS WITH
ADOPTED PLANS AND POLICIES OF THE CITY OF BREVARD
REZ-23-002**

NCGS 160D-604 requires that the Planning Board shall advise and comment on whether the proposed amendment is consistent with any comprehensive plan prior to consideration by the Governing Board. The Planning Board shall provide a written recommendation to the Governing Board that addresses plan consistency and other matters as deemed appropriate by the Planning Board, but a comment by the Planning Board that a proposed amendment is inconsistent with the Comprehensive Plan shall not preclude consideration or approval of the proposed amendment by the Governing Board.

The Brevard Planning Board forwards this recommendation to City Council with a finding that the proposed zoning map amendment is **consistent** with the following elements of the City's adopted plans and policies:

Comprehensive Land Use Plan & Future Land Use Map

Recommendation Land Use & Housing – 2: Evaluate rezoning requests based on the Future Land Use Map and character area descriptions.

The Future Land Use Map identifies the two parcels proposed to revert to GR8 as within the *Traditional Neighborhood* character area, and the parcel proposed to be CMX within the *Urban Corridor* character area. Both of the proposed new zoning districts are applicable zoning districts for the character areas as outlined in the Future Land Use Character Area Table. Therefore, the Board finds that this proposed zoning map amendment is consistent with the Future Land Use Map and LUH-2.

NCGS 160D-605 requires the Governing Board to approve a statement analyzing the reasonableness of a proposed rezoning. The statement of reasonableness and the statement of consistency may be approved as a single statement.

The Brevard Planning Board forwards this recommendation to City Council with a finding that the proposed zoning map amendment is in the public interest and **reasonable** due to the following factors:

- The relationship between the current permissible development and land uses in the existing conditional zoning district is very similar to the development and land uses permissible under the proposed zoning districts.
- The size of the parcels and proximity to existing areas of the proposed zoning districts does not constitute spot zoning.
- The Plan is consistent with the above elements of the Comprehensive Land Use Plan and the Future Land Use Map.

STAFF REPORT

Planning Board, Tuesday, April 25, 2023

Title: Continuation of TXT-22-006 Steep Slopes

Speaker: Emily Brewer, AICP, Senior Planner

Prepared by: Emily Brewer, Senior Planner

Approved by: Paul Ray, Planning Director

Background

The City of Brevard is endowed with a diverse and dynamic topography that defines its character as a mountain town nestled within the Blue Ridge Mountains. Development regulations for steep slopes are a critical tool in ensuring this identity is protected for future generations of Brevardians.

The steep slope ordinance has been discussed many times in the past few years, especially as infill residential development becomes more of a priority. Revisions have been presented to Planning Board and City Council most recently in the fall of 2022. Staff shared relatively minor changes to the review process and the requirements for Conditional Zoning Districts with steep slope areas. The text amendment was intended to clarify language around steep slopes in advance of broader changes in the coming months. Planning Board unanimously recommended approval of the text amendment to City Council. During their discussion on October 17th, multiple members of City Council expressed an interest in seeing a fully revised version of Section 6.4 – Steep Slope Area Requirements – instead of small revisions.

Discussion

On February 28, 2023, Staff facilitated a work session with Planning Board to establish priorities for steep slope development regulations and protections. During this discussion, Staff shared lessons learned from researching other municipalities, conducted a mapping exercise to assess where regulations would be necessary, and evaluated the viability of potential solutions. The presentation used to guide the work session is included as Attachment 3.

This discussion included Staff's findings from reviewing steep slope ordinances of many other Western North Carolina jurisdiction. A matrix of findings can be found in Attachment 4. Notable takeaways are as follows:

- All jurisdictions reviewed vary regulations at different slope percentages.
- Brevard's ordinance does not *regulate* development. It only allows administrators the *ability* to impose conditions on development from 15-24% and *prohibits* any development on greater slopes.
- No other jurisdiction (except Hendersonville) prohibit development on steep slopes. However, many of them impose regulations regarding building height,

density, amount of grading, etc. that increase in severity as the slope increases. None of these regulations are currently in Brevard's steep slope ordinance.

- Heavier development regulations typically do not start until a parcel reaches 35% in slope.
- Many jurisdictions that were reviewed use an elevation trigger for regulations to apply.
- All other jurisdictions (except Boone) use the same slope formula (detailed below).
- Many other cities require geotechnical engineering be completed to ensure development plans are safe and do not contribute to further erosion and sedimentation.

With Planning Board's guidance and input, Staff has prepared a revised amendment to the steep slope ordinance and other related sections. Staff presented a full draft of the text amendment to Planning Board at the March 28rd meeting, where the Board required some revisions. The details of the text amendment and the rationales for including them are outlined below:

1. Scale of Regulations

Currently, Section 6.4 of the UDO defines "steep slopes" as areas with a slope of "15 percent or greater." However, there are no meaningful regulations stated for parcels with an average slope between 15-24%. The only stipulation is that the administrators have the ability to impose conditions to ensure safe development.

Furthermore, the current ordinance states that areas with "an average slope of 25 percent or greater" are deemed "protection areas for which no development shall be permitted." However, under NC law, property owners should be granted reasonable use of their land and a strict prohibition would not be permissible. Because of this, there is a caveat in our ordinance that:

*"Only one principal structure shall be permitted within **preexisting lots containing steep slope areas** unless all proposed principal structures can be constructed on portions of the lot not considered to be a steep slope area and still conform to all other requirements of this ordinance."*

This means that even if a lot has a slope of 25% or greater, if it was established before April 3, 2006 (the date of the UDO), the parcel would be exempt from the steep slope ordinance regulations, except that they may only have one principal structure. Staff believes that the majority of the parcels in the City's planning jurisdiction were created (via subdivision, recombination, etc.) before 2006, meaning most of our jurisdiction would be exempt from this section with that one exception. This is contrary to the stated purpose and objectives of the chapter to protect our natural resources and minimize the impact to sensitive areas (Sections 6.2 and 6.3).

Staff discussed these issues at length with Planning Board. They concurred with Staff's recommendation to remove the prohibition of development and instead levy development

regulations and vegetation preservation requirements that scale up as the slope increases.

2. Definition and Applicability

Staff and Planning Board extensively discussed the applicability of regulations, referring to the slope ordinances of other municipalities and examining existing parcels in the jurisdiction. The group came to consensus that protections should begin at 25% (equating to a 4H:1V ratio or 14 degrees) with heavier regulations at 35% (roughly 20 degrees) and above.

At the work session, Planning Board also recommended that steep slope regulations only be applicable to properties above a certain elevation, similar to those of other Western North Carolina municipalities. With this, properties located below the elevation can be entirely exempt from steep slope regulations, while those above it may be subject. Staff led Planning Board through a mapping exercise to visualize the elevation of the jurisdiction. Ultimately, the Board recommended 2,250 feet above sea level as this trigger elevation. This protects the most visible “viewshed” slopes while exempting lower-lying sloped areas in the already developed parts of town that would otherwise be restricted.

The revised section now stipulates that all development projects and subdivisions on parcels at or above 2,250 feet in elevation must provide a slope calculation. Based on the calculated slope of the parcel, it may be designated as a “moderately steep slope area” (25-34%) with moderate regulations or a “steep slope area” (35%+) with more regulations and environmental protections.

3. Slope Determination

The slope calculation is vague and over-simplified using a linear assessment or a simple average. The existing language can be applied with relative ease in areas of uniform, gentle elevation changes, but not with Brevard’s diverse and dynamic topography. Many, if not most, parcels have significant elevation changes within the property lines.

The proposed amendments provide a specific formula which can be applied to any property as to calculate the average existing grade. The Board proposed using the following contour interval formula, which is very commonly used even within Western North Carolina (see Attachment 4). The formulas is as follows:

Slope (**S%**) is equal to the total length (**L**) of contour lines within a given parcel, multiplied by the contour interval (**I**) of said parcel, then multiplied by .0023, divided by the area (**A**) of the parcel.

Or,

$$S = ((.0023 \times (L) \times (I)) / A$$

.0023 is the product of two constants, one of which converts feet into acres and one of which converts a decimal fraction into a percentage, the value of .0023 is the percentage of one square foot of one acre.

Attachment 5 includes an example on a three-acre tract with 2-foot contour intervals.

Property owners would also have the option to provide a slope analysis conducted and sealed by a professional surveyor, engineer, or landscape architect.

Furthermore, the ordinance does not specify if it is the average of the whole parcel or just the area to be built upon. Staff discussed the area of measurement with Planning Board at the work session. The pros and cons are outlined below:

	Whole Parcel	Area of Disturbance
Principle	Doesn't always protect what we want to protect (especially without elevation trigger)	Allows "reasonable use" of a property owner's land
Application	Doesn't account for less steep portions of the lot that are not sensitive for development	Allows development on less steep portions of the lot
Process	Could be automatically calculated and property owners can look it up (see Asheville/Buncombe County)	Would need to be an additional step in the permitting process where staff determines the slope for them with GIS
Grading Extent	Could regulate (very common)	Doesn't allow for regulations that limit grading extent because not disturbing the whole property
Vegetation Preservation	Could regulate (very common)	Doesn't allow for broad tree preservation because not disturbing the whole property (would need to be incentives and/or buffer regulations)

Following discussion, Planning Board concurred with Staff that using the whole parcel as the area of measurement would create an easier permitting process (e.g., slope calculations could be pre-calculated and available for lookup) and would allow for greater preservation of the natural landscape.

The text amendment allows property owners to remove areas from their slope calculation if it is placed in a permanent conservation easement or otherwise permanently protected in a natural state with a legal prohibition on vegetation removal and land disturbance. This provides an incentive to permanently preserve the steepest and most sensitive portions of a lot, while still allowing reasonable development of the remainder of a property owner's land.

4. Geotechnical Analysis

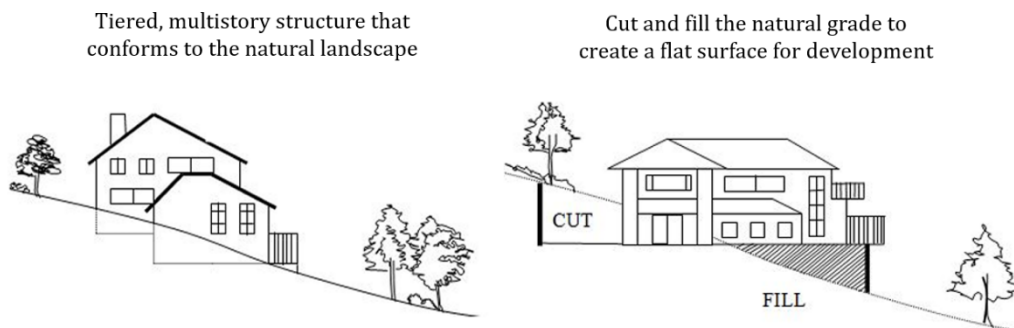
The planners administering the code are not experts in assessing the safety of developing on steep slopes. Staff would prefer to rely on professional engineers to determine the feasibility of projects. Other municipalities have addressed this with geotechnical analysis requirements (see Attachment 4). These reports typically include subsurface/soil compositions, stability assessments, and recommendations for safe construction, grading, soil reinforcement, etc. Planning Board concurred and decided that geotechnical engineering should be required for projects in “steep slope areas” (35% or greater), which is in line with the regulations in Asheville, Black Mountain, Buncombe County, and Sylva.

5. Retaining Walls

Planning Board expressed a strong desire to limit the height of retaining walls in steep slope areas in an effort to reduce the visual bulk of a project and protect the natural slope to the greatest extent possible. Staff determined that this does not need to be limited to steep slope areas, so additional regulations have been incorporated into Section 4.9, now labeled “Fences and Walls.” The maximum height of the retaining wall is proposed as 5 feet, unless required to be higher for engineering reasons.

6. Development Type and Design

At the work session, Staff presented examples of two types of development: step-back or tiered development and cut-and-fill development.



Both Staff and Planning Board wish to incentivize development to occur using the former. Additionally, the development should blend in with the natural surroundings and conform to the natural topography.

Under the *North Carolina Residential Code for One- and Two-Family Dwellings*, municipalities cannot impose architectural standards for single-family residences and duplexes. Instead, Staff and Planning Board proposed regulations for certain features that are allowed under NC law and development incentives for other architectural standards.

The regulations that are included to create appropriate development on sloped parcels, include:

- Requiring development and subdivision plans for moderately steep slope and steep slope areas cluster development on portions of the lot not considered to be steep, minimize land disturbance, and avoid rigid contouring;

- Limiting the amount of the parcel that can be graded for moderately steep slope and steep slope areas;
- Reducing the maximum allowable density of development in steep slope areas;
- Restricting the maximum height and reducing visual bulk of structures in steep slope areas; and
- Preserving all trees and vegetation except in the area approved for grading in steep slope areas.

For two of the regulations – maximum grading extent and maximum allowable density – the Board discussed offering development incentives for property owners to “win back” the reductions. These credits include: exterior colors that blend with natural surroundings, permanently protecting the steepest portions of the lot, and screening the buildings to reduce the visual impact.

7. Steep Slopes in Conditional Zoning Districts

In the current ordinance, City Council has the authority to make minimal allowances to facilitate development on extremely steep slopes as part of a Conditional Zoning District. This section is overly prescriptive about the maximum allowable density permissible. The revisions remove this provision and enables Council to include any density or development design conditions necessary to uphold the intent of the steep slope ordinance while still allowing development on a case-by-case basis.

8. Other Minor Revisions

Other revisions were made throughout the UDO to better align with these changes, such as moving the regulations about infrastructure in steep slope areas to new Section 6.4 and removing reference to 15% slope in other sections.

Policy Analysis

The *Building Brevard 2030* Comprehensive Land Use Plan calls for refinements to the zoning standards to facilitate infill development that is safe and does not compromise the natural character of these areas.

Goals

GOAL 2: *Encourage a development pattern that respects Brevard’s sense of place and prioritizes livable communities.*

GOAL 5: *Celebrate Brevard’s natural resources through conservation of environmentally sensitive areas, improving access to recreation, and restoration of native ecosystems.*

Recommendations

LUH-4: *Identify areas across the City that are best positioned to accommodate future growth.*

LUH-9: *Evaluate and amend development ordinances to facilitate infill development on vacant and underdeveloped parcels, as well as revitalization of developed parcels.*

LUH-24: *Refine zoning districts and slope regulations in constrained areas*

PNRC-10: Preserve steep slopes and natural areas adjacent to Pisgah Forest.

Recommendation

The Board's role is to make a recommendation to City Council. The Board has the following options in this role:

1. Recommend adoption of the amendment as written;
2. Recommend adoption of the amendment as revised by the Board; or
3. Recommend rejection of the amendment.
4. Table the amendment for further consideration.

In accordance with North Carolina General Statutes, the Planning Board must also submit a statement analyzing the consistency and reasonableness of this proposal with regards to existing policies or plans of the City of Brevard. A Statement of Consistency and Reasonableness is included for the Board's review (Attachment 6).

Attachments:

1. Proposed Text Amendment - Strikethrough Version
2. Proposed Text Amendment - Clean Version
3. Staff's Presentation for Planning Board Work Session – February 28, 2023
4. Matrix of Western North Carolina Steep Slope Ordinances
5. Slope Calculation Demonstration
6. Consistency Statement

4.9. Fences and walls.

- A. All fences and walls shall be constructed so that the best face faces outward from the parcel upon which it is constructed and towards adjacent properties. The "best face" shall generally mean the side opposite to framing members.
- B. Fences and walls shall not be placed within public utility easements or public right-of-way without first securing an encroachment agreement from the City of Brevard, the North Carolina Department of Transportation, or other appropriate entity.
- C. Fence or wall height shall be measured from the side of the fence or wall that is exterior to the property as the vertical distance between the lowest adjacent ground level, natural or filled, and the top of the fence material. Fence heights are restricted as follows:
1. In industrial districts, and public safety and other critical facilities. Fences or walls shall be no greater than six feet in height before the front building line and no greater than eight feet in height in the side or rear yard.
 2. All other districts and uses. Fences or walls shall be no greater than eight feet in height behind the front building line or four feet in height before the front building line.
 3. No closed fence or wall shall be greater than two-and-a-half feet in height when placed within the sight triangle of any intersection as specified in Section 4.5 of this ordinance. Open fences are exempt from this provision.
- D. Fence and wall materials shall conform to the following requirements:
1. *Residential districts:*
 - (a) All fences and walls must be of brick, stone, stucco, wrought iron, wood, or other materials similar in appearance and durability, except that chain link or woven wire may be used in the side and rear yard behind the front building line.
 - (b) All other wire fences, including barbed wire or concertina wire, are prohibited.
 - (c) Nothing in this chapter shall prevent the administrator from approving architecturally variant uses of material to allow creative fence design, such as the contemporary look of heavy-gauged welded wire panels framed in timber.
 - (d) The use of plastic plumbing pipe is a prohibited fence material.
 2. *Commercial districts:*
 - (a) All fences and walls must be of brick, stone, stucco, wrought iron, wood, or other materials similar in appearance and durability.
 - (b) Chain link wire fences may be used as secure enclosures internal to the property or site subject to the following requirements:
 - (1) Chain link fences shall not be visible from a public right-of-way,
 - (2) Chain link fences shall not serve as a perimeter fence or property line fence unless buffered by a type A buffer yard on all sides, and then only in the side or rear yard behind the front building line.
 - (c) All other wire fences, including barbed wire or concertina wire, are prohibited.
 - (d) All walls and fences shall be materially similar to other walls and fences in the same block or general vicinity.
 3. *Industrial districts, public safety facilities, and other critical facilities:*
 - (a) ~~Materials:~~

~~(1)~~ All fences and walls must be of brick, stone, stucco, wrought iron, wood, or other materials similar in appearance and durability, and shall be materially similar to other walls and fences on the same block or general vicinity.

~~(b)~~ ~~(2)~~ Vinyl coated, chain link fencing may be approved by the administrator as perimeter fencing with additional filtering through openings using opaque or semi opaque slats or screening or by installing a type A landscaping buffer between incompatible uses, between different zoning districts or where visible from a public street.

4. *Barbed wire*: Barbed wire may be permitted within bona-fide agricultural operations within any zoning district.

E. Retaining walls shall also conform to the following requirements:

1. Retaining walls should minimize the impacts of cut and fill on a site.

2. The height of any retaining wall should not exceed five feet unless required to be higher for engineering reasons.

(a) An increase in retaining wall height may be allowed if the proposed design minimizes the cut and fill impacts and enhances the existing landscape.

3. In areas where cuts are steeper, a stepped or terraced wall should be used. Large, unbroken retaining walls in a uniform plane should be avoided.

6.1. Statutory Authority and Legislative Findings-of-Fact.

The Legislature of the State of North Carolina has in Part 6, Article 21 of Chapter 143; Articles 7, 11, 9, and 13 of Chapter 160D; and Article 8 of Chapter 160A of the North Carolina General Statutes, delegated to local governmental the responsibility units to adopt regulations designed to promote the public health, safety, and general welfare of its citizenry.

The City Council of the City of Brevard, North Carolina, makes the following legislative findings-of-fact.

- A. The flood prone areas within the City of Brevard and its extraterritorial jurisdiction are subject to periodic inundation which results in loss of life, property, health hazards, safety hazards, disruption of commerce and governmental services, extraordinary public expenditures of flood protection and relief, and impairment of the tax base, all of which adversely affect the public health, safety, and general welfare.
- B. The development activities listed herein contribute, individually and cumulatively, to the flood losses addressed above: (1) obstructions in floodplains causing increases in flood heights and velocities; (2) the occupancy in flood prone areas of uses vulnerable to floods or other hazards; (3) the loss of wetlands, streamside riparian areas, and other lands that slow, absorb, retain, and cleanse storm and flood waters; and (4) the expansion of impervious surfaces both within and outside of flood prone areas that cause increases in the velocity and rate of the discharge of stormwater into bodies of water.
- C. The discharge of urban pollutants and sedimentation into bodies of water results in health and safety hazards and the impairment of environmentally and economically significant aquatic wildlife habitat, adversely affecting the public health, safety, and general welfare.
- D. Development activities cause sedimentation pollution through untreated and uncontrolled stormwater from impervious areas, improper land disturbance, and the loss of wetlands, streamside riparian areas, and other lands that absorb and cleanse storm and flood waters.

E. Brevard is in a unique geographical location where mountains, valleys and hills constitute significant natural topographical features. The mountains and hillsides of Brevard are visible from many locations within the city, adding to the quality of life for residents and improving tourism opportunities. These areas are sensitive to development and measures shall be taken to preserve viewshed, maintain slope stability, control erosion and stormwater runoff.

F. The steeply sloping areas within the City of Brevard and its extraterritorial jurisdiction are particularly susceptible to erosion and landslides, and pose particular difficulties in the construction and maintenance of public infrastructure and the provision of public services. Development activities in such areas are likely to result in the loss of life and property, health and safety hazards, disruption of commerce and governmental services, extraordinary public expenditures, and impairment of the tax base, all of which adversely affect the public health, safety, and general welfare.

F.G. On June 20, 2005, the City of Brevard, in conjunction with Transylvania County and the City of Rosman, adopted the Multi-Jurisdictional Hazard Mitigation Plan as an additional resource to substantially and permanently reduce the planning area's vulnerability to natural hazards. The plan is intended to promote sound public policy designed to protect citizens, critical facilities, infrastructure, private property, and the natural environment. This is to be achieved by increasing public awareness, documenting resources for risk reduction and loss prevention, and identifying activities to guide the planning area towards the development of a safer, more sustainable community.

6.2 Statement of Purpose

A. It is the purpose of this chapter to protect and promote the public health, safety and general welfare by preventing the loss of life and/or public and private economic loss due to landslides, floods, erosion and sedimentation pollution. It is further the purpose of this chapter to protect our existing environmental resources, including steep slopes, floodplains, stream corridors, wetlands, watershed and groundwater recharge areas, soils, forest stands, specimen trees, and other significant vegetation and wildlife, which are of economic value to the city and its citizens and make Brevard a desirable place to live and visit.

In furtherance of this purpose, the regulations contained herein are designed to accomplish the following:

1. Restrict or prohibit uses that are or may be dangerous to health, safety, and property or that may result in damaging increases in erosion, flood heights or velocities;
2. Require that uses and infrastructure vulnerable to the movement of earth or flooding be protected against such damage at the time of initial construction;
3. Control the alteration of steep slopes, natural floodplains, stream channels, and natural protective barriers, which are involved in the accommodation of floodgates;
4. Control filling, grading, dredging, and all other development that may increase erosion or flood damage;
5. Prevent or regulate the construction of flood barriers that will unnaturally divert flood waters or which may increase flood hazards to other lands; and
6. Require that stormwaters that may damage property, increase flood hazards, or pollute surface waters be adequately controlled and treated.

6.3. Objectives.

The objectives of this chapter are as follows:

1. To protect human life and health;

2. To minimize the expenditure of public money for costly stormwater or flood control and stormwater management projects;
3. To minimize the need for rescue and relief efforts associated with flooding [and landslides](#) and generally undertaken at the expense of the general public;
4. To minimize prolonged business losses and interruptions;
5. To minimize damage to public facilities and utilities (i.e. water and gas mains, electric, telephone, cable and sewer lines, streets, and bridges) that are located on steep slopes or in flood prone areas;
6. To help maintain a stable tax base by providing for the sound use and development of steep slope areas, flood prone areas, and the control of stormwater runoff;
7. To minimize the impairment of, or damage to, sensitive natural areas and bodies of water; and
8. [To ensure that potential buyers are aware that property is in a special flood hazard area or area of known landslide potential.](#)
- ~~8.~~ [9. Protect the viewshed and natural beauty of natural slopes and floodplains.](#)

6.4. Steep slope area requirements.

In accordance with G.S. 160D-703(d), the provisions contained in this section shall apply to all areas within the planning jurisdiction of the City of Brevard that are classified as [“moderately steep slope areas”](#) and “steep slope areas”. These provisions do not limit or negate the effect of other provisions of this ordinance which may apply to steep slope areas.

A. Applicability: ~~Steep slope areas are defined as those areas with a slope of 15 percent or greater.~~

1. This section shall apply to any subdivision plat, land-disturbing activity, building permit, or any other development proposal on a parcel located at or above 2,250 feet in elevation above mean sea level and with an average slope of 25% or greater.

i. “Moderately steep slope” areas are defined as those areas with a slope of 25% to 34%.

ii. “Steep slope” areas are defined as those areas with a slope of 35% or greater.

iii. A parcel is considered at or above the elevation if any area within the parcel boundaries is at or above the stated elevation.

2. The provisions in this section are intended to encourage a sensitive form of development and to allow for a reasonable use that complements the natural and visual character of the community.

B. Determining slope: Slope shall be determined in accordance with the methods and procedures contained herein.

1. Prior to commencing any development or land-disturbing activity and prior to issuing any permits and/or other approvals, the calculated slope for the parcel(s) shall be approved by the Planning Department.

i. Parcels where no portion of the lot is located at or above 2,250 feet in elevation above mean sea level are exempt from this requirement.

ii. Incidental improvements and additions to existing structures, accessory structures less than 1,000 square feet in ground floor area, and interior renovations are exempt from this requirement.

2. Calculations and supporting documentation shall be submitted to the Planning Department for review prior to or in conjunction with the applicable submittals. The administrator

shall: (a) request additional information; (b) request revisions to the slope calculation submittal; or (c) issue written concurrence with the determination of slope, as submitted.

i. Each slope calculation and supporting documentation submitted to the Planning Department for review shall include a scaled map, accurately showing the topography for the entire land tract and the parcel boundaries.

ii. In cases where the applicant or property owner does not agree with the determination made by the administrator, the alternative slope analysis shall be heard and decided on by the Board of Adjustment, following a notice of appeal filed with the City Clerk.

3. Slope shall be determined through use of one of the following methods:

i. The approved contour interval formula:

Slope (S%) is equal to the total length (L) of contour lines in feet within a given parcel, multiplied by the contour interval (I) of said parcel, then multiplied by .0023, divided by the area (A) of the parcel.

Or,

$$S\% = \frac{(L \times I) \times .0023}{A}$$

The calculation shall use the smallest contour interval for which maps are available or at a minimum of five-foot intervals.

.0023 is the product of two constants, one of which converts feet into acres and one of which converts a decimal fraction into a percentage, the value of .0023 is the percentage of one square foot of one acre.

ii. Analysis conducted and sealed by a professional surveyor, engineer, or landscape architect using recognized, industry-accepted methods.

1. The administrator may require slope calculations to be sealed by a professional surveyor, engineer, or landscape architect for projects with over an acre of disturbed area.

~~1. Slope shall be determined by measuring the change in height for every 100 feet of horizontal distance. For example, a change in elevation of 15 feet over a horizontal distance of 100 feet equals a 15 percent slope. Alternatively, slope may be determined by means of commonly accepted slope Geographic Information System modeling software using commonly accepted topographical baseline data produced by the United States Government, the State of North Carolina, Transylvania County, or the City of Brevard.~~

4. ~~General standards:~~ Slope shall be rounded to the nearest whole number and noted in increments of less than 15 percent, 15—24 percent, or 25 percent or greater on all development plans required by this ordinance.

5. Areas placed in a permanent conservation easement, dedicated to the public for open space, protected as open space by restrictive covenants, or otherwise permanently protected in a natural state with prohibition on vegetation removal and land-disturbing activities may be removed from the calculation of parcel slope.

i. The applicant shall provide the legal documentation for permanent protection and a closed perimeter line delineating the revised boundaries for calculating slope.

ii. Nothing shall limit the ability of moderately steep slope areas, steep slope areas, conservation easements, or other means of permanent land protections to be included in the total parcel area for the means of calculating density.

C. Geotechnical analysis:

220 1. Development in steep slope areas shall be required to undergo geotechnical analysis by a
221 registered professional engineer to determine the stability of the underlying geology and
222 soils to support the proposed project. The geotechnical analysis report shall be required to
223 be submitted prior to the issuance of a zoning permit.

224 2. If a geotechnical analysis has been performed for subdivision approval that includes
225 building pad analysis of the individual lots, it is unnecessary to submit a new analysis for
226 each lot, provided the location of structures on each lot does not change by more than 20
227 feet in any one direction.

228 D. ~~C. Pre-existing lots:~~ General standards for development projects with moderately steep slope areas
229 and/or steep slope areas:

230 1. Development and subdivision plans shall be designed to minimize disturbance to the
231 natural landform and should not destroy the visual quality and community character.

232 i. To the extent possible given topographic and other physical constraints, land
233 disturbance should be confined to portions of the lot not considered to be steep
234 slope areas.

235 ii. Developers shall make reasonable efforts to preserve and protect existing natural
236 features of the slope, such as trees and other plant materials, and rock
237 outcroppings which may help to stabilize the slope.

238 iii. Buildings, parking, and other improvements should be clustered on less steep and
239 less sensitive areas of the site to reduce the amount of grading.

240 iv. Projects are encouraged to demonstrate terrain-adaptive design and construction
241 techniques.

242 2. Proposed land-disturbing activity shall meet all applicable local and State regulations
243 relating to soil erosion and sedimentation control.

244 3. Land disturbance shall be limited to the minimum required for building foundations,
245 driveways, stormwater management measures and immediate areas surrounding these
246 elements as required by this ordinance.

247 i. With the exception of approved stockpiling or restoration efforts, substantial earth
248 moving beyond that required for the installation or construction of approved
249 buildings, structures, driveways, or stormwater management measures shall not
250 be permitted.

251 4. When grading is necessary, it should be blended with the natural land form as much as
252 possible. Rigid contouring should be avoided, and contours should be rounded to appear
253 undulating and natural.

254 5. The approving authority shall have the right to impose such conditions as are necessary to
255 ~~ensure safe construction protect public health, safety, and welfare for projects in within the~~
256 ~~moderately~~ steep slope ~~or steep slope~~ areas ~~as authorized under the provisions of this~~
257 ~~section of pre-existing lots when,~~ because ~~the minimum standards set forth in this~~
258 ~~ordinance are insufficient given the~~ of exceptional and unique conditions of topography,
259 location, shape, size, drainage or other physical features of the site, or because of the
260 special nature and character of surrounding development, ~~the minimum standards set~~
261 ~~forth within this ordinance would not reasonably protect the public health, safety, or~~
262 ~~welfare.~~

263 i. Such conditions shall be reasonable and shall be limited to the minimum additional
264 improvements necessary to protect the public health, safety or welfare. Such
265 conditions may, without limitation, pertain to the following:

266 1. The retention and planting of vegetation;

- 267 2. Sedimentation and erosion controls;
- 268 3. Cut and fill slope design and stabilization;
- 269 4. The degree of land disturbance; and
- 270 5. The location, form and design of proposed structures and driveways so as
- 271 to minimize land disturbance and ensure structural integrity; and;
- 272 6. f. — The location, form and design of subdivision lots, streets, and
- 273 public utilities, so as to minimize land disturbance and ensure structural
- 274 integrity.
- 275 ii. ~~2.~~ — The ~~approving authority~~ administrator may reduce the required setbacks ~~by~~
- 276 ~~up to 20 percent of the required distance~~ in accordance with Section 2.3 in order to
- 277 facilitate compliance with this section.
- 278 3. ~~Only one principal structure shall be permitted within preexisting lots containing steep slope~~
- 279 ~~areas unless all proposed principal structures can be constructed on portions of the lot not~~
- 280 ~~considered to be a steep slope area and still conform to all other requirements of this~~
- 281 ~~ordinance.~~
- 282 B.E. ~~Development projects approved subsequent to the enactment of this ordinance:~~ Conditional zoning
- 283 districts with steep slope areas:
- 284 1. It is strongly encouraged that any proposed development project ~~subdivision~~ containing
- 285 extensive steep slope areas be considered in accordance with the procedures for
- 286 conditional zoning districts, which process allows for creative designs that may enhance
- 287 development potential while achieving the steep slope protection requirements of this
- 288 section.
- 289 2. ~~The approving authority shall have the right to impose such conditions as are necessary to~~
- 290 ~~ensure safe construction within the steep slope area of pre-existing lots when, because of~~
- 291 ~~exceptional and unique conditions of topography, location, shape, size, drainage or other~~
- 292 ~~physical features of the site, or because of the special nature and character of surrounding~~
- 293 ~~development, the minimum standards set forth within this ordinance would not reasonably~~
- 294 ~~protect the public health, safety, or welfare.~~
- 295 3. ~~Such conditions shall be reasonable and shall be limited to the minimum additional~~
- 296 ~~improvements necessary to protect the public health, safety or welfare. Such conditions may,~~
- 297 ~~without limitation, pertain to the following:~~
- 298 a. ~~The retention and planting of vegetation;~~
- 299 b. ~~Sedimentation and erosion controls;~~
- 300 c. ~~Cut and fill slope design and stabilization;~~
- 301 d. ~~The degree of land disturbance;~~
- 302 e. ~~The location, form and design of proposed structures and driveways so as to minimize~~
- 303 ~~land disturbance and ensure structural integrity; and~~
- 304 f. ~~The location, form and design of subdivision lots, streets, and public utilities, so as to~~
- 305 ~~minimize land disturbance and ensure structural integrity.~~
- 306 4. ~~Steep slope areas with an average slope of 25 percent or greater shall be delineated upon all~~
- 307 ~~final development plans and plats and shall be noted as protection areas for which no~~
- 308 ~~development shall be permitted. These areas shall be off limits to all development or land~~
- 309 ~~disturbances of any kind whatsoever and shall be maintained in a naturally vegetated state,~~
- 310 ~~except that forest management in accordance with the provisions set forth in this ordinance~~
- 311 ~~may be permitted.~~

5. ~~The applicant may transfer development potential from protected steep slope areas described in section 6.4(D(4)) to other areas of the project not set aside from development. Such transferred development potential shall be calculated at a ratio of one dwelling unit for every three acres.~~

~~6.2. City council~~ Council may ~~make such minimal allowances as are necessary in order to allow development on steep slope areas 25 percent or greater when Section 6.4(D(4)) would render the property unusable due to the absence of meaningful developable area with slopes less than 25 percent. In such situations council may,~~ by means of a conditional zoning district, ~~permit development on slopes 25 percent or greater at a maximum average density of one dwelling unit for every three acres.~~ Council ~~shall~~ may require the clustering of structures and impose any other necessary condition upon the design of the development in order to minimize impacts and uphold the intent of this section.

~~2.~~

F. Grading extent:

1. The maximum extent of grading on a property with moderately steep or steep slope areas shall be reduced to support the goals and objectives of this section. This shall be governed by the following table:

<u>Average Existing Slope</u>	<u>Maximum Percent of Site Graded</u>
<u>25% - 29%</u>	<u>70%</u>
<u>30% - 34%</u>	<u>60%</u>
<u>35% - 39%</u>	<u>50%</u>
<u>40% - 44%</u>	<u>35%</u>
<u>45% or greater</u>	<u>20%</u>

2. Additional grading may be awarded to projects on steep slope areas if any of the following conditions are met. The credits may accumulate to equal the total reduction outlined herein.

<u>Credit</u>	<u>Conditions</u>
<u>10%</u>	<u>Buildings and parking areas are properly screened by vegetation to minimize the visual impact from key viewing areas, which include downtown, public parkland and other public recreational areas, and major streets and highways</u>
<u>10%</u>	<u>The steepest portions and/or most visible portions of the lot are placed in a permanent conservation easement, dedicated to the public for open space, protected as open space by restrictive covenants, or otherwise permanently protected in a natural state with prohibition on vegetation removal and land-disturbing activities</u>
<u>10%</u>	<u>Exterior colors for new buildings and structures, including roofs, are coordinated with the predominate colors of the surrounding landscape to minimize contrast between the structure and the natural environment</u>

3. Additional grading may also be permitted as part of a conditional zoning district.

G. Density:

1. Densities of residential development shall be reduced in steep slope areas to support the goals and objectives of this section. This shall be governed by the following table:

<u>Average Existing Slope</u>	<u>Maximum Residential Density</u>
<u>35% - 39%</u>	<u>20% reduction of underlying zoning district</u>
<u>40% - 44%</u>	<u>50% reduction of underlying zoning district</u>
<u>45% or greater</u>	<u>70% reduction of underlying zoning district</u>

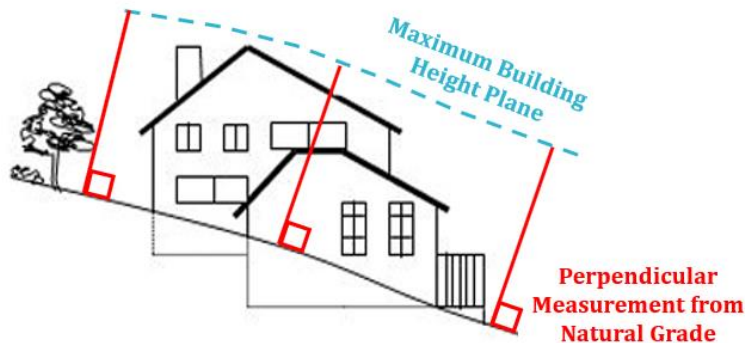
2. Additional density may be awarded to projects on steep slope areas if any of the following conditions are met. The credits may accumulate to equal the total reduction outlined herein.

Credit	Conditions
<u>10%</u>	<u>Grading is limited to 10% of more under the maximum allowed under this section</u>
<u>10%</u>	<u>Buildings and parking areas are properly screened by vegetation to minimize the visual impact from key viewing areas, which include downtown, public parkland and other public recreational areas, and major streets and highways</u>
<u>10%</u>	<u>The steepest portions and/or most visible portions of the lot are placed in a permanent conservation easement, dedicated to the public for open space, protected as open space by restrictive covenants, or otherwise permanently protected in a natural state with prohibition on vegetation removal and land-disturbing activities</u>
<u>10%</u>	<u>Exterior colors for new buildings and structures, including roofs, are coordinated with the predominate colors of the surrounding landscape to minimize contrast between the structure and the natural environment</u>

i. The maximum residential density shall not exceed the maximum residential density permitted in the underlying zoning district as outlined in Section 2.3, unless such provisions are specified in a conditional zoning district.

H. Building height:

1. The maximum height of principal structures in steep slope areas shall be limited to 35 feet measured perpendicular from the natural grade to the top of the built structure.



2. The property owner is encouraged to utilize step-back or terraced building approach to reduce the visual bulk of the structure.

3. Accessory structures shall not exceed 15 feet in height on any side.

4. Applicants shall provide architectural plans and building elevations to demonstrate compliance with this section.

I. Tree and vegetation preservation:

1. Landscaping / vegetation preservation plans, in accordance with Section 17.9, shall be required for all development projects on steep slopes to ensure compliance with this section.

2. Plant materials should be used that blend with the mountainside of hillside. Landscape schemes that are rough, natural, and/or subdued in character are encouraged.

357 3. All trees and other specified vegetation shall be preserved except in the area approved for
358 grading or within 20 feet of the building footprints.

359 i. Non-native or invasive species may be removed.

360 4. In the event a property owner desires to remove trees and other protected vegetation
361 required to be preserved in this section, they may submit an alternative landscape plan for
362 consideration by the Brevard Planning Board.

363 i. This alternative landscape plan must contain:

364 1. a tree survey of the property showing which trees and other protected
365 vegetation will be removed and which will remain;

366 2. the location of any structures, driveways, and other impervious surfaces;
367 and

368 3. an explanation of the reason(s) for removal of required trees and other
369 protected vegetation, including a statement of how the removal of the
370 required trees and other protected vegetation supports the purposes of
371 this section or how such removal can be mitigated consistent with the
372 purposes of this section.

373 ii. The Planning Board may approve, approve with conditions, or deny the alternative
374 landscape plan. If conditions are established, they shall be enforceable in
375 accordance with the provisions of the development permit.

376 ~~G.I.~~ Infrastructure:

377 1. Infrastructure shall be installed in steep slope areas as defined in chapter 6 in accordance
378 with the provisions of this chapter.

379 2. Roads and driveways created on parcels with steep slopes should follow the natural
380 terrain, unless necessary to accomplish the purpose.

381 ~~2.3.~~ The approving authority shall have the authority to modify infrastructure requirements
382 and impose such conditions as are necessary to minimize the disturbance caused by the
383 installation of infrastructure in steep slope areas.

384 i. Modifications and conditions shall be intended to minimize disturbance and
385 increase the safety and stability of infrastructure, and shall not be granted or
386 imposed to reduce cost to the developer.

387 ii. Modifications and conditions may relate but shall not be limited to pavement
388 width, sidewalk width, curb and gutter design and width, and shoulder design. The
389 maximum road grade requirement shall not be modified.

390 ~~3.4.~~ Culs-de-sac:

391 i. The required turnaround on a dead-end street in a steep slope area shall have a
392 roadway diameter of not less than 50 feet.

393 ii. If the street length does not exceed 300 feet and if construction difficulties will not
394 permit a turnaround, the use of a "Y" or "T" or other turning space of a design such
395 as will allow a vehicle with a wheel base of at least 20 feet to complete a turning
396 movement with a maximum of one backing movement may be permitted.

397 ~~4.5.~~ Grading:

398 i. Grading shall not be required for the full right-of-way in steep slope area if the
399 administrator determines that full grading will prevent convenient access to
400 adjoining property or will destroy the natural beauty of the site by excessive cut
401 and fill.

- ii. Shoulder fill slopes shall not be steeper than ~~2:1~~40%.

K. Subdivision of land:

1. Newly created parcels of land shall have adequate developable area outside of steep slope areas, except parcels created and restricted for the purpose of recreation, conservation or open space protection and land processes which are exempt from the subdivision ordinance.

6.5. - Sedimentation and erosion prevention.

In order to prevent soil erosion and sedimentation pollution of streams, springs, flat water bodies, drainage networks, or other surface waters, the property owner shall at all times comply with all requirements of the North Carolina Sedimentation Pollution Control Act of 1973, as amended.

- A. The following conditions are considered hazardous, a nuisance, and a threat to property and the environment; creating such conditions and/or allowing them to continue shall constitute a violation of this ordinance.

1. The discharge or deposition of sedimentation pollution from one parcel of land onto another parcel of land of the same or different ownership.
2. The discharge or deposition of sedimentation pollution onto a street or public right-of-way, including drainage ditches and swales within a public right-of-way.
3. The discharge or deposition of sedimentation pollution into any surface water, including drainage ditches and swales.
4. The discharge or deposition of sedimentation pollution into wetlands, surface water protection areas, or other protected areas.
5. The uncontrolled or uncontained movement of sedimentation pollution within any parcel of land.
6. The presence of destabilized slopes that may collapse and pose a hazard to life or property.
7. Any other condition that may pose a nuisance or hazard to life, property, or the environment by means of the movement, collapse, discharge, or deposition of earth.

- B. *Requirements of the property owner and developer.* The property owner or developer or both, as the case may be, are responsible for ensuring that development complies with the following requirements of this ordinance:

1. No land disturbance activity of any kind shall take place without a site plan approval authorizing development of the site. The tilling of earth for the cultivation of crops and other incidental land disturbances as determined by the administrator shall be exempt from this requirement.
2. Development shall at all times comply with the provisions of this Chapter and with the provisions of the North Carolina Sedimentation Pollution Control Act.
3. The discharge of sedimentation pollution from agricultural fields, gardens, unsurfaced driveways and parking lots, grading, excavations, open cuts, side slopes, and other land surface disturbances shall be prevented, and all grading, excavations, open cuts, side slopes, and other land surface disturbances shall be mulched, seeded, sodded, or otherwise protected with appropriate sedimentation and erosion control treatments.
4. All cut slopes, fill slopes, side slopes, road or driveway embankments, and any other sloping excavated area or land disturbance shall be stabilized at all times to prevent potentially

hazardous subsidence or collapse, or the discharge of sedimentation pollution. Such areas shall at all times be maintained at a ~~slope ratio of no greater than two feet of horizontal run to one foot of vertical rise (2:1 slope)~~ grade of no greater than 40%.

5. Erosion and sedimentation from all land disturbance activities shall be controlled and contained with silt fencing, road matting, and any other method approved by the administrator to prevent the deposition of sedimentation pollution upon adjoining parcels, lots, streets, and any surface water. Failure to properly install and/or properly maintain approved sedimentation/erosion control measures shall constitute a violation of this ordinance.
6. Furthermore, it is recognized that development projects are dynamic and that proposed and approved sedimentation/erosion control measures may, from time to time, prove inadequate. Therefore, it shall also be a violation of this ordinance to fail to install additional sedimentation/erosion control measures upon observing, or being notified, that approved and installed sedimentation/erosion control measures are insufficient.
7. Erosion and sedimentation control measures, structures, and devices shall be planned, designed, and constructed to provide protection from the calculated maximum peak rate of runoff from a ten-year storm.
8. On-site areas that are subject to severe erosion, and off-site areas that are especially vulnerable to damage from erosion and/or sedimentation, shall be identified and receive special attention.
9. All land-disturbing activities shall be planned and conducted to limit exposure to the shortest feasible time.
10. Exposed slopes shall be planted or otherwise provided with ground cover, devices, or structures sufficient to restrain erosion within 30 calendar days after completion of any phase of grading.
11. All uncovered areas shall be provided with protective cover unless the administrator has granted an extension of time, for good cause shown, upon written request of the property owner and developer. This cover shall be planted within 15 working days (exclusive of days where seedbed preparation is not possible due to weather as determined by the administrator) or 90 days following completion of any phase of grading, whichever period is shorter. Ground cover is not required on cleared land forming the future basin of a planned reservoir.
12. Land disturbance shall not be permitted within surface water protection areas, except as permitted within this chapter.

C. Duties of the administrator:

1. The administrator shall require a copy of a North Carolina Department of Environmental Quality approved sedimentation and erosion control plan prior to the issuance of site plan approval for any project proposing to disturb one acre or more of land.
2. The administrator shall, from time to time, inspect areas of land disturbance for compliance with this section and shall take necessary action to remedy violations.
3. Upon observation of any violation of this section, the administrator shall notify the property owner and developer of such violation and the need to remedy it. If the property owner and developer fail to take immediate and appropriate action to remedy the violation, the administrator shall take action to remedy the violation in accordance with the procedures set forth herein. Furthermore, the administrator shall notify the appropriate office of the North Carolina Department of Environmental Quality of a potential violation of the North Carolina Sedimentation Pollution Control Act of 1973

13.5. Street design.

A. *Streets required:*

1. All new development shall abut a public street as required in Chapter 4 of this ordinance.
2. New development and substantial improvements to existing development with frontages on existing public streets shall be required to upgrade all their frontages to meet the standards of this chapter.
3. New development without frontages upon a public street shall, in all cases, extend and connect to a public street. Public street extensions and improvements required for new development, including those beyond the development boundary, are the sole responsibility of the developer. Such improvements must be provided in accordance with the requirements of the Chapter 62 of Brevard City Code and this ordinance. This section shall apply to all subdivisions, the development of which is subject to the control of the city, both inside and outside the city limits.
4. Streets shall be installed by the developer and dedicated to the city prior to the approval of any final subdivision plat or development plan unless a performance guarantee is provided to the administrator in accordance with City Code, this ordinance, and procedures established by the administrator. Streets shall be installed by the developer and dedicated to the city prior to the issuance of any certificates of occupancy for any building within that phase or on that street, as applicable to the particular development.
5. City streets shall be built to the minimum specifications of this chapter and Chapter 62 of Brevard City Code, and shall comply with all standards and specifications of the public works director. New streets in the ETJ shall meet all standards and requirements of the North Carolina Department of Transportation.

B. *Streets to connect:* Streets shall interconnect within a development and with adjoining development in accordance with Chapter 8 and 10 of this ordinance. Culs-de-sac are permitted only where topographic conditions and/or exterior lot line configurations offer no practical alternatives for connection or through traffic. Street stubs shall be provided with development adjacent to open land to provide for future connections at the discretion of the administrator. Streets shall be planned with due regard to the designated corridors shown on adopted plans and policies of the city or Transylvania County.

C. *Pedestrian and bicycle infrastructure:* Pedestrian and bicycle infrastructure shall be required as set forth within this chapter and conformance with adopted plans and policies of the city or Transylvania County.

D. *Topographic considerations:* Wherever possible, street locations should account for difficult topographical conditions, paralleling excessive contours to avoid excessive cuts and fills and the destruction of significant trees and vegetation outside of street-rights-of way on adjacent lands.

E. [Infrastructure in steep slope areas: Infrastructure shall be installed in steep slope areas in accordance with the provisions of this chapter and any other applicable provisions in Section 6.6.](#)

F. *Private streets and reserve strips:* There shall be no private streets or reserve strips platted in any subdivision except as provided for in Chapter 4 of this ordinance.

~~F~~G. *On-street parking:*

1. On-street parking may be required by the administrator.
2. When required, all on-street parking provided shall be parallel. Curb or angle parking is permitted upon approval of the administrator when the fronting buildings are more than 22 feet in height to provide spatial definition and when the posted speed limit is less than 25 mph.
3. When required, minimum right-of-way widths shall be modified to account for on street parking.

- 536 **GH.** *Traffic calming devices:* The use of approved traffic calming measures is encouraged as alternatives to
537 conventional traffic control measures on Neighborhood Streets and within circulation areas of
538 commercial and mixed-use developments.
- 539 **HJ.** *Flood elevations:* No street in an area subject to flooding shall be approved if it is more than one foot
540 below the elevation of the 100-year flood. The administrator may require, where necessary, profiles and
541 elevations of streets for areas subject to flooding. Fill may be used for streets in accordance with
542 Chapter 34 of Brevard City Code. Drainage openings shall be so designed as to not restrict the flow of
543 water and unduly increase flood heights.
- 544 **IJ.** *Storm drainage:* Stormwater shall not be discharged into any stream and shall be retained and treated
545 accordance with Chapter 6 of this ordinance, except that streets and related retention/treatment
546 infrastructure shall be designed to accommodate a 25-year, 24-hour storm drainage standard.
- 547 **KJ.** *Street names:* Streets shall be named and property addressing assigned in accordance with Brevard City
548 Code, Chapter 62, Streets, Sidewalks and Other Public Ways, Article VII, Property Addressing and Road
549 Naming. The administrator shall require evidence that road names and property addresses have been
550 approved and assigned by the Transylvania County Property Addressing Coordinator prior to approving
551 any development.
- 552 **LK.** *Blocks:*
- 553 1. The lengths, widths, and shapes of blocks shall be determined with due regard to:
- 554 a. The provision of adequate building sites suitable to the special needs of the type of use
555 contemplated, and adequate public open spaces accessible and visible to residents.
- 556 b. District requirements and design criteria.
- 557 c. Needs of non-vehicular and vehicular traffic circulation and traffic control and safety.
- 558 d. Opportunities and constraints of topography, with convenient access to important physical
559 and topographical features such as lakes and rivers, significant areas of trees and other
560 natural features, and areas of high ground offering scenic views.
- 561 2. Blocks shall not be less than 200 feet nor more than 660 feet ($\frac{1}{8}$ -mile), as measured from edge of
562 right-of-way, unless site and topography or other special circumstances are present as determined
563 by the administrator. Where deemed necessary by the administrator, a pedestrian crosswalk of at
564 least ten feet in width may be required.
- 565 3. Blocks shall have sufficient width to allow two tiers of lots of minimum depth except where single
566 tier lots are required to separate residential development from another type of use, or when
567 abutting a perennial stream or lake.
- 568 **LM.** *Landscaping:*
- 569 1. Streets shall be landscaped with street trees. Commercial streets shall have trees which
570 compliment the face of the buildings and which shade the sidewalk. Residential streets shall
571 provide for an appropriate canopy, which shades both the street and sidewalk, and serves as a
572 visual buffer between the street and the home.
- 573 2. All street trees shall be installed in accordance with Chapter 8 of this ordinance. Large canopy
574 trees shall be planted in a planting strip at a minimum average distance of 40 feet on-center.
- 575 3. The minimum width of all planting strips shall be six feet. For large canopy trees such as Willow
576 Oaks and Red Maples, a minimum of eight foot planting strip is suggested. Refer to Chapter 8 of
577 this ordinance for additional information on landscaping.
- 578 **MN.** *Street markers and traffic control signs:* Street markers and traffic control signs shall be required and
579 posted in accordance with city standards and the Manual of Uniform Traffic Control Devices. Such
580 infrastructure shall be installed by the developer prior to the issuance of any Certificates of Occupancy
581 for any building on that street.

~~N.O.~~ *Pedestrian and bicycle infrastructure:* Sidewalks, multi-use paths, or other pedestrian/bicycle infrastructure shall be constructed in accordance with the following requirements:

1. In determining the type of pedestrian/bicycle infrastructure that shall be required the Administrator shall refer to any adopted plan or policy of the city for guidance. Such plans or policies include but are not limited to: *City of Brevard Comprehensive Transportation Plan, City of Brevard Comprehensive Pedestrian Plan, City of Brevard Street Schedule, City of Brevard Comprehensive Land Use Plan, City of Brevard Recreation Plan*, other master plans and small area plans, and other plans and policies.
2. Sidewalks, multi-use paths, and other pedestrian and bicycle improvements shall be installed by the developer and dedicated to the city prior to the approval of any final subdivision plat, or issuance of final zoning approval or certificate of occupancy for any development plan. Pedestrian and/or bicycle infrastructure shall be constructed within the street right-of-way. The approving authority shall require the dedication of additional street right-of-way or a pedestrian easement when sufficient right-of-way does not exist to comply with this requirement. The approving authority may accept the dedication of additional right-of-way or a pedestrian easement in order to accommodate alternative routes and designs that do not follow streets.
3. Streets shall be bordered by pedestrian/bicycle infrastructure on both sides. Exceptions to this requirement and modifications to the design of pedestrian/bicycle infrastructure may be granted by the TRC for developments in steep slope areas and where warranted by environmental or topographic conditions, or where this requirement would serve no useful purpose.
4. Without exception, pedestrian/bicycle infrastructure shall be required along all new public and private streets within new subdivisions or developments, and within new phases of existing subdivisions and any other form of development.
5. Without exception, pedestrian/bicycle infrastructure shall be required along existing streets within or abutting new subdivisions and any other form of development (except subdivisions in GR districts establishing less than eight dwelling units); or along existing streets within or abutting any form of existing development undergoing substantial improvement (except single-family and duplex residential structures in GR districts).
6. Pedestrian/bicycle infrastructure shall be required along the same side of the street upon which the development fronts, except that when a development project is located on both sides of the same street the approving authority may require that infrastructure be installed on both sides of the street.
7. When site characteristics and/or traffic patterns are such that the construction of pedestrian/bicycle infrastructure in accordance with this section would be a hardship and would not result in useful pedestrian walkways, the administrator, upon recommendation from the TRC may allow the applicant to pay the designated cost of constructing such infrastructure into the city sidewalk fund in lieu of requiring construction of the infrastructure. In determining whether to accept a fee in lieu of construction of infrastructure, the administrator shall refer to any adopted plan or policy of the City for guidance. Such plans or policies include but are not limited to: *City of Brevard Comprehensive Transportation Plan, City of Brevard Comprehensive Pedestrian Plan, City of Brevard Street Schedule, City of Brevard Comprehensive Land Use Plan, City of Brevard Recreation Plan*, other master plans and small area plans, and other plans and policies.
8. The administrator may accept a performance guarantee for the construction of sidewalks on behalf of the city in situations where no other public infrastructure is proposed in accordance with Chapter 16 of this ordinance.
9. Multi-use paths and other infrastructure:
 - a. Multi-use paths, and other pedestrian and bicycle infrastructure shall be provided instead of or in addition to sidewalks wherever called for on an adopted plan or policy of the city. Such plans or policies include but are not limited to: *City of Brevard Comprehensive Transportation Plan, City of Brevard Comprehensive Pedestrian Plan, City*

of Brevard Street Schedule, City of Brevard Comprehensive Land Use Plan, City of Brevard Recreation Plan, other master plans and small area plans, and other plans and policies.

- b. When a multi-use path is required in an area not adjacent to a public or private street, then such facility shall be credited towards the satisfaction of the open space requirements as set forth in Chapter 7 of this ordinance.
- c. All required multi-use paths shall be dedicated to the City of Brevard by means of right-of-way or pedestrian easement.
- d. On-street bicycle lanes shall be required when called for upon an adopted plan or policy of the city.

10. Pedestrian and bicycle improvements shall be as follows:

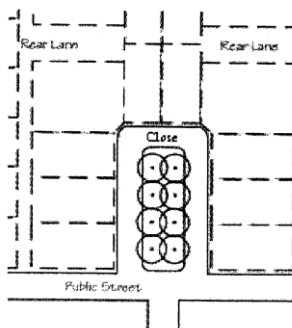
Zoning District	Facility Width	
	City Streets	NCDOT Streets*
GR	5 feet	5 feet
RMX, NMX, CMX, DMX, GI, IC	5 feet	8 feet
Public Streets	City Streets Required; Dedication to City Required	NCDOT Streets Required
Street Rights-of-Way	Required; Dedication to City Required	Required; Dedication to NCDOT Required
Multi-Use Path (where required)	10 feet	10 feet
On-Street Bike Lane (where required)	5 feet	5 feet

**Sidewalks are not required along alleys and commercial service streets except when required as a condition of a Conditional Zoning District, Group Development, or special use permit.*

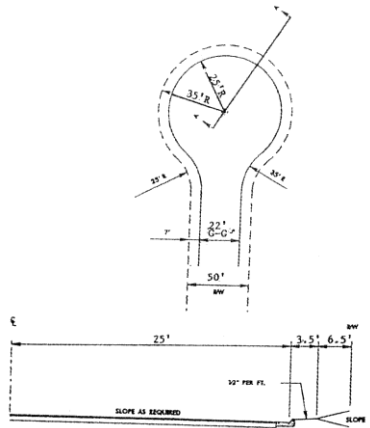
- 11. All pedestrian/bicycle infrastructure shall comply with the minimum requirements for handicapped accessibility in compliance with the North Carolina Accessibility Code or other federal, state, or local regulations. During the construction of pedestrian/bicycle infrastructure, whether new or replacement, handicapped ramps shall be placed in the sidewalk where it intersects with streets and other pedestrian and vehicular travel ways.
- 12. All sidewalks shall be made of 4,000 PSI concrete with a minimum depth of four inches, except that street and driveway crossings shall be a minimum of six inches in depth. Bike lanes and multi-use paths shall be made of asphalt, designed according to the North Carolina Bicycle Planning and Design Guidelines published by the NCDOT and shall include all appropriate signage and pavement markings. Alternative materials and designs may be approved by the TRC in consultation with the public works director.

- ⓪. *Culs-de-sac and closes.* Where practical, a close (see graphic, below) shall be used in place of a cul-de-sac. Culs-de-sac and closes shall be designed to facilitate the turning radius of emergency vehicles.

Close



Cul-de-sac with Curb and Gutter Section



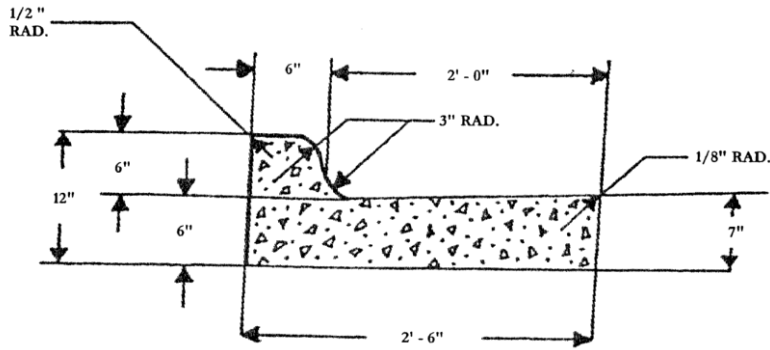
P.Q. Intersections:

1. All streets shall intersect at right angles as nearly as possible and no street shall intersect at less than 60 degrees.
2. Where practical, intersections should be aligned to create four-way intersections.
3. Off-set intersections for local streets and neighborhood collectors should be at least 125 feet apart measured from centerline to centerline. A larger spacing in accordance with American Association of State Highway and Transportation Officials (AASHTO) standards may be required for all other streets.
4. Property lines at street intersections shall be rounded with a minimum radius of 20 feet. At an angle of intersection of less than 90 degrees, a greater radius may be required.
5. Proper sight lines shall be maintained at all intersections of streets to permit adequate sight distance. Where the posted speed limit is less than 20 mph, the intersection sight distance may be reduced to 105 feet.
6. Bulb-outs are discouraged on narrow streets (less than 30 feet face-of-curb to face-of-curb) but encouraged on wider streets.
7. Property lines at street intersections shall be rounded with a minimum radius of 20 feet. Where a street intersects a state highway, the design standards of the state department of transportation shall apply.

Q.R. *Curb radii:* Curb radii shall be designed to reduce pedestrian crossing times along all streets requiring sidewalks. In general, curb radii should not exceed 20 feet except along NCDOT-maintained roads.

R.S. *Curbs and drainage for city streets:* The following requirements shall apply to streets within the city. Streets within the ETJ shall meet all applicable requirements of the North Carolina Department of Transportation.

Standard Vertical Face Curb and Gutter



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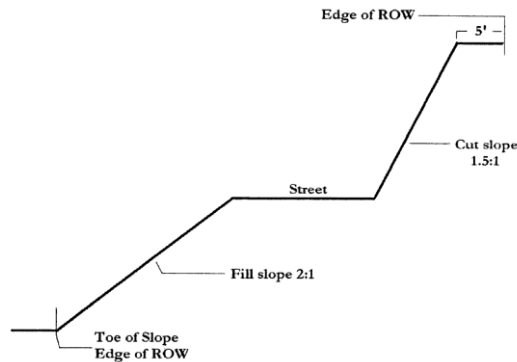
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1. Curb and gutter shall be required on all new residential and commercial streets constructed within the city.
2. Standard vertical face curb and gutter within the city shall be two-foot, six-inch concrete with a height of six inches (see graphic, above). All curbing shall be properly backfilled.
3. Exceptions to this requirement may be made by the administrator subject to circumstances in the area under study. Such circumstances shall relate to the topography of the area, future maintainability of the streets, or other factors deemed relevant by the administrator.
4. Vertical face curbing is required along all streets with on-street parking and around all required landscaping areas and parking lots.
5. All drainage gates must be safe for bicyclists. Bicycle-safe drainage grates are types E, F, and G as approved by the NCDOT.
6. City street culvert dimensions shall be subject to the requirements of the public works director.
7. The right-of-way shall extend from a point five feet outward from the top of the bank of any cut slope to the toe of any fill slope. Maximum slope of any cut slope shall be at a ratio of no greater than 1.5 feet of horizontal run to one foot of vertical rise (1.5:1 slope), and the maximum slope of any fill slope shall be at a ratio of no greater than two feet of horizontal run to one foot of vertical rise (2:1 slope).



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- ST.** *Centerline radius:* A 90-foot minimum centerline radius shall be used for local streets, parkside drives, and minor streets between reverse curves though they may be reduced to 45 feet for design speeds less than 20 mph. All other streets shall be in accordance with AASHTO standards.
- TU.** *Street lights:* Street lights shall be installed by the developer on all streets in accordance with Chapter 12 of this ordinance.
- UV.** *Posted speed limits:* All streets shall be posted in accordance with the Manual of Uniform Traffic Control Devices and the City of Brevard Traffic Schedule.

~~W~~W. *Street grades*: The maximum permissible street grade shall be 18 percent.

~~W~~W. *Design standards*: Design standards not specifically addressed in this ordinance must comply with the minimum design and construction criteria of the N.C. Department of Transportation.

~~X~~Y. *Minimum right-of-way*: The administrator shall determine right-of-way widths based upon the characteristics of the proposed development. However, unless otherwise specified, the minimum right-of-way for all new streets within the city shall be 50 feet, and shall satisfy minimum requirements of the North Carolina Department of Transportation in the ETJ.

13.7. ~~Infrastructure requirements in steep slope areas.~~ Reserved

~~A. ——— *Infrastructure*: Infrastructure shall be installed in steep slope areas as defined in chapter 6 in accordance with the provisions of this chapter. However, the approving authority shall have the authority to modify infrastructure requirements and impose such conditions as are necessary to minimize the disturbance caused by the installation of infrastructure in steep slope areas. Modifications and conditions shall be intended to minimize disturbance and increase the safety and stability of infrastructure, and shall not be granted or imposed to reduce cost to the developer. Modifications and conditions may relate but shall not be limited to pavement width, sidewalk width, curb and gutter design and width, and shoulder design. The maximum road grade requirement shall not be modified.~~

~~B. ——— *Culs-de-sac*: The required turnaround on a dead-end street in a steep slope area shall have a roadway diameter of not less than 50 feet. If the street length does not exceed 300 feet and if construction difficulties will not permit a turnaround, the use of a "Y" or "T" or other turning space of a design such as will allow a vehicle with a wheel base of at least 20 feet to complete a turning movement with a maximum of one backing movement may be permitted.~~

~~C. ——— *Grading*: Grading shall not be required for the full right-of-way in steep slope area if the administrator determines that full grading will prevent convenient access to adjoining property or will destroy the natural beauty of the site by excessive cut and fill. Shoulder fill slopes shall not be steeper than 2:1.~~

17.3. Environmental survey.

Identification of existing trees, understory vegetation, known endangered species, habitats, wetlands, perennial streams, floodplains, and topographical features on a site prior to the advanced preparation of development plans enables the reasonable and practical planned preservation of existing and environmentally sensitive areas.

This requirement provides the city and the applicant the ability to evaluate the proposed development in order to preserve vegetation, to improve the appearance of the development proposed and to encourage the use of the existing forest and tree canopy, specimen trees, and significant vegetation to satisfy the requirements of this chapter.

An environmental survey is intended to identify forest stands or trees of a uniform size and species; specimen trees of varying sizes and species, particularly free standing or open-grown or field grown trees; a distinctive tree line or forest edge; existing watercourses; and previously documented endangered species habitats.

A. The use of digital geographic data obtained from the City of Brevard, ~~or~~ Transylvania County, or the State of North Carolina is deemed to be sufficient for the sketch plan and master plan phases of submittal requirements.

B. For construction documents, the environmental survey requirements are as follows

1. Provide a general written description of the significant vegetation. Significant vegetation is defined as being 12 inches in diameter at breast height (DBH) or greater and native understory species two inches or greater (e.g. dogwood, holly, redbud, etc.), including tree

- species and uniform the size and height of stands of homogeneous trees including the typical tree species composition of the forest stand, typical tree size, and general health and vigor of the stand and specimen trees.
2. Denote the dripline of any existing forest stand, as measured between existing tree trunks six inches or greater located at the edge of the stand.
 3. Identify all free standing, open grown or field-grown specimen trees located on the site 12 inches or greater DBH.
 4. Show all other important natural features influencing site design such as the location of wetlands, rock outcroppings, site topography at ~~two~~-~~five~~-foot contour intervals, slopes steeper than ~~15~~-~~35~~ percent, and perennial streams, natural drainage ways, lakes, and other water bodies, and floodplains indicating both the flood fringe and the flood way. USGS and FEMA data shall be used to determine the location of perennial streams.
 5. Denote the presence of any known endangered species' habitats indicated in any surveys completed by Transylvania County, the State of North Carolina, or other governmental agency.
 6. Show all buffer delineations as follows:
 - i. Buffer boundaries including all undisturbed buffer zones must be clearly delineated on all development plans for approval by the city, on all construction documents, including grading and clearing plans, erosion and sediment control plans, and site plans.
 - ii. Buffer boundaries for all required undisturbed buffer zones must be clearly delineated on-site prior to any land disturbing activities. Where existing trees are to be preserved in a buffer zone, limits of grading shall maintain a minimum 20-foot separation from the base of each tree on the upland side of the buffer or to the dripline.
 - iii. Buffer boundaries including all buffer zones as well as all buffer requirements must be specified on the record plat, on individual deeds, and in property association documents for lands held in common.
- C. This requirement can be waived by the administrator if the site lacks qualifying natural features.

17.4. Sketch plan requirements.

In addition to information on the environmental survey, the sketch plan shall show in simple sketch form the proposed layout of streets, lots, buildings, public open spaces and other features in relation to existing conditions based upon the size of the tract proposed for development. All plans shall be submitted at a scale not less than one inch = 50 feet unless otherwise authorized by the administrator. It shall also include the following information:

- A. A sketch vicinity map, including north arrow, showing the location of any proposed building(s) or subdivision in relation to neighboring tracts, subdivisions, roads, and waterways.
- B. The name, address, and telephone number of the property owner.
- C. The name of the proposed development project.
- D. The boundary lines of the property.
- E. The total acreage.
- F. The existing and proposed land uses and the existing land uses of adjacent properties.

- G. The existing topographic conditions of the property including contours not exceeding five-foot intervals. Transylvania County, ~~or~~ City of Brevard, or State of North Carolina topographic information may be used to fulfill this requirement.
- H. The location, names, and private and recorded right-of-way widths of any existing streets on or within 300 feet of the land to be subdivided.
- I. Lots of adjacent developed or platted properties.
- J. Zoning classification of the land and adjacent properties.
- K. Illustrative building elevations denoting general design elements and materials.
- L. Watershed classification, if any.
- ~~M. Delineation of slopes greater than 15 percent.~~
- ~~N. Delineation of slopes greater than 25 percent.~~
- MO. Floodway, non-encroachment, and surface water protection area delineation.
- NP. Floodplain delineation.

17.5. Master plan requirements.

The master plan shall be drawn to the following specifications and must contain or be accompanied by the information listed below. This section defines both preliminary and final master plans. A preliminary master plan may only be submitted as part of an application for a conditional zoning district. All plans shall be submitted at a scale not less than one inch = 50 feet unless otherwise authorized by the administrator.

- A. Processing or review of a preliminary or final master plan may not proceed without all of the following information:
1. The boundary, as determined by survey, of the area to be developed with all bearings and distances shown and the location within the area, or contiguous to it, of any existing streets, railroad lines, perennial streams, wetlands, easements or other significant features of the tract.
 2. Scale denoted both graphically and numerically with north arrow.
 3. A vicinity map at a scale no smaller than one inch equals 1,200 feet showing the location of the subdivision with respect to adjacent streets and properties.
 4. The proposed name of the development, street names, the owner's name and address, the names of adjoining subdivisions or property owners, the name of the city, county, and state in which the development is located, the date of plan preparation, and the zoning classification of the tract to be developed, and of adjoining properties.
 5. Corporate limits and extraterritorial jurisdiction boundaries (where applicable).
 6. A timetable for estimated project completion for each phase proposed.
 7. Original contours at intervals of not greater than ~~two~~ five feet for the entire area to be subdivided or developed and extending into adjoining property for a distance of 300 feet at all points where street rights-of-way connect to the adjoining property and 50 feet at all other points of common project boundaries. Transylvania County or City of Brevard digital topography may be used to satisfy this requirement but should be field-verified to ensure accuracy. This requirement may be waived for developments smaller than one acre or where insufficient topographic changes warrant such information.
 8. The location of any building restriction areas (i.e. flood hazard areas, buffer locations, watershed protection districts, and/or jurisdictional wetlands), where applicable.

- 844 9. Site calculations shall include total acreage of tract, acreage in parks and other non-
845 residential uses, total number and acreage of parcels, and the total number of housing units.
- 846 10. The following statement shall be placed upon all final master plan documents, as applicable:
847 "Areas delineated upon this plat or plan as a protection area or Special Flood Hazard Areas is
848 subject to limitations upon development as set forth Chapter 34 of Brevard City Code, and
849 any development, disturbance, or encroachment is prohibited except in accordance
850 therewith."
- 851 B. Requirements for preliminary master plans. A preliminary master plan may only be submitted as
852 part of an application for a conditional zoning district. A preliminary master plan may be more
853 conceptual in nature than a final master plan, and shall be sufficient to demonstrate deviations
854 from the base zoning district and the scope of the project.
- 855 1. At a minimum, a preliminary master plan shall show the conditions both requested and
856 offered that deviate from the base zoning district.
- 857 2. A preliminary master plan may divide the district into land use areas and specify proposed
858 uses and other development standards which shall apply to such land use area. The
859 preliminary master plan may also depict transition zones between any such land use areas
860 which shall permit deferring the determination of the precise boundaries between land use
861 areas until final master plan review.
- 862 3. Additional submittal requirements for the preliminary master plan shall be determined by
863 the administrator in the pre-application meeting or during review. The approving authority
864 may require additional submittals as deemed necessary due to the particulars of the project.
865 A preliminary master plan may include the following information, as applicable:
- 866 (a) The location of proposed buildings, parking and loading areas, streets, alleys,
867 easements, lots, parks or other open spaces, site reservations (i.e. school sites),
868 property lines and building setback lines with street dimensions, and tentative lot
869 dimensions.
- 870 (b) The traffic and circulation system demonstrating a safe and adequate on-site
871 transportation system that addresses vehicular, bicycle, transit and pedestrian
872 circulation. The on-site transportation system shall be integrated with the off-site
873 transportation circulation system of the city.
- 874 (c) The proposed limits of construction for all proposed development activity, including all
875 required protected areas and open space.
- 876 (d) Landscaping plan and/or vegetation preservation plan in accordance with Section
877 17.9.
- 878 ~~(e) Tree preservation plan in accordance with Section 17.9.~~
- 879 (f) Lighting plan in accordance with Section 17.10.
- 880 (g) Architectural plans in accordance with Section 17.11.
- 881 (h) Traffic impact analysis (if required) in accordance with Section 17.12.
- 882 (i) Stormwater management concept plan in accordance with Section 17.13.
- 883 (j) Conceptual utilities plan. Conceptual plans for utilities to serve the development,
884 including sanitary sewers, storm sewers and water lines.
- 885 (k) Environmental impact statement, pursuant to Article 113A of the North Carolina
886 General Statutes, if: the development exceeds two acres in area, and; if the BPB deems
887 it necessary due to the nature of the land or peculiarities in the proposed design.
- 888 (l) Development permit and certification application with supporting documentation as
889 required by the flood hazard prevention requirements of Chapter 6 of this ordinance.

C. Requirements for final master plans.

1. A final master plan shall include all of the following information, as applicable:

- (a) The location of proposed buildings, parking and loading areas, streets, alleys, easements, lots, parks or other open spaces, site reservations (i.e. school sites), property lines and building setback lines with street dimensions, and tentative lot dimensions.
- (b) The transportation and circulation system showing typical cross-sections of proposed streets. Where a proposed street is an extension of an existing street, the profile of the street shall include 300 feet of the existing roadway, with a cross section of the existing street. Where a proposed street within the development abuts a tract of land that adjoins the development and where said street may be expected to extend into said adjoining tract of land, the profile shall be extended to include 300 feet of the said adjoining tract.
- (c) The proposed limits of construction for all proposed development activity, including all required protected areas and open space.

2. Additional submittal requirements for the final master plan shall be determined by the administrator in the pre-application meeting or during review. The approving authority may require additional submittals as deemed necessary due to the particulars of the project. A final master plan may include the following information and supplemental plans, as applicable.

- (a) Landscaping plan and/or vegetation preservation plan in accordance with Section 17.9.

~~(b) Tree preservation plan in accordance with Section 17.9.~~

- ~~(b)~~ (e) Lighting plan in accordance with Section 17.10.

- ~~(c)~~ (d) Architectural plans in accordance with Section 17.11.

- ~~(d)~~ (e) Traffic impact analysis (if required) in accordance with Section 17.12.

- ~~(e)~~ (f) Stormwater management concept plan in accordance with Section 17.13.

- ~~(f)~~ (g) Conceptual utilities plan. Conceptual plans for utilities to serve the development, including sanitary sewers, storm sewers and water lines.

- ~~(g)~~ (h) Environmental impact statement, pursuant to Article 113A of the North Carolina General Statutes, if: the development exceeds two acres in area, and; if the BPB deems it necessary due to the nature of the land or peculiarities in the proposed design.

- ~~(h)~~ (i) Development permit and certification application with supporting documentation as required by the flood hazard prevention requirements of Chapter 6 of this ordinance.

17.9. Landscape plan requirements.

A. A ~~tree~~/landscaping plan and/or vegetation preservation plan shall be required prior to any site disturbance for: ~~on~~

1. All non-residential uses;

2. All ~~and~~ multi-family uses in a residential district; ~~prior to any site disturbance.~~

3. Any development in steep slope areas, in accordance with Section 6.4; and

4. Any other development where a landscaping plan and/or vegetation preservation plan is deemed necessary by the administrator due to the particulars of the project.

B. The plan shall contain the following information:

1. ~~A.~~ An accurate drawing of property boundaries.
2. ~~B.~~ A development summary including the total development acreage, proposed use(s), required parking and provided parking spaces, and total building square footage.
3. ~~C.~~ The location of proposed buildings, driveways, parking areas, required parking spaces, and traffic patterns.
4. ~~D.~~ The location of all overhead and underground utilities.
5. ~~E.~~ Name of the project, name and address of owner, name and address of engineer, scale, date, legend, and north arrow.
6. ~~F.~~ General location, type and quantity of existing plant materials.
7. ~~G.~~ Existing plant materials and areas to be left in natural state.
8. ~~H.~~ Methods and details for protecting the critical root zone (CRZ) of existing plant materials during construction.
9. ~~I.~~ Locations, size and labels for all proposed plants.
10. ~~J.~~ Plant lists with common name, botanical name, quantity, and spacing and size of all proposed landscape material at the time of planting.
11. ~~K.~~ Location and description of other landscape improvements, such as earth berms, walls, fences, screens, sculptures, fountains, lights, courtyards, walks or paved areas. Berms shall have topo.
12. ~~L.~~ Planting and installation details as necessary to ensure conformance with all required standards as referenced in Chapter 9.

19.3. Definitions.

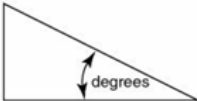
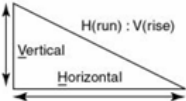
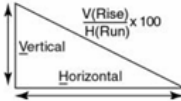
Cut slope: The exposed ground surface resulting from excavation of material.

Fill slope: The exposed ground surface resulting from deposition of material.

Grade: See Slope.

Slope: The extent to which a land form deviates from the perfectly horizontal as expressed in percent, degree, ratio. The following table explains the conversion between these separate methods of expressing the extent of slope.

Slope Measurements

Degrees	Ratio	Percent
		
45°	1H:1V	100%
39°	1.25H:1V	80%
34°	1.5H:1V	67%
30°	1:75H:1V	57%
27°	2H:1V	50%
22°	2.5H:1V	40%
18°	3H:1V	33%
14°	4H:1V	25%
8.5°	6.7H:1V	15%

Slope, moderately steep: Areas at or above 2,250 feet in elevation above mean sea level and with an average slope between 25% and 34%.

Slope, steep: Areas at or above 2,250 feet in elevation above mean sea level and with an average slope of 35% or greater.

4.9. Fences and walls.

- A. All fences and walls shall be constructed so that the best face faces outward from the parcel upon which it is constructed and towards adjacent properties. The "best face" shall generally mean the side opposite to framing members.
- B. Fences and walls shall not be placed within public utility easements or public right-of-way without first securing an encroachment agreement from the City of Brevard, the North Carolina Department of Transportation, or other appropriate entity.
- C. Fence or wall height shall be measured from the side of the fence or wall that is exterior to the property as the vertical distance between the lowest adjacent ground level, natural or filled, and the top of the fence material. Fence heights are restricted as follows:
1. In industrial districts, and public safety and other critical facilities. Fences or walls shall be no greater than six feet in height before the front building line and no greater than eight feet in height in the side or rear yard.
 2. All other districts and uses. Fences or walls shall be no greater than eight feet in height behind the front building line or four feet in height before the front building line.
 3. No closed fence or wall shall be greater than two-and-a-half feet in height when placed within the sight triangle of any intersection as specified in Section 4.5 of this ordinance. Open fences are exempt from this provision.
- D. Fence and wall materials shall conform to the following requirements:
1. *Residential districts:*
 - (a) All fences and walls must be of brick, stone, stucco, wrought iron, wood, or other materials similar in appearance and durability, except that chain link or woven wire may be used in the side and rear yard behind the front building line.
 - (b) All other wire fences, including barbed wire or concertina wire, are prohibited.
 - (c) Nothing in this chapter shall prevent the administrator from approving architecturally variant uses of material to allow creative fence design, such as the contemporary look of heavy-gauged welded wire panels framed in timber.
 - (d) The use of plastic plumbing pipe is a prohibited fence material.
 2. *Commercial districts:*
 - (a) All fences and walls must be of brick, stone, stucco, wrought iron, wood, or other materials similar in appearance and durability.
 - (b) Chain link wire fences may be used as secure enclosures internal to the property or site subject to the following requirements:
 - (1) Chain link fences shall not be visible from a public right-of-way,
 - (2) Chain link fences shall not serve as a perimeter fence or property line fence unless buffered by a type A buffer yard on all sides, and then only in the side or rear yard behind the front building line.
 - (c) All other wire fences, including barbed wire or concertina wire, are prohibited.
 - (d) All walls and fences shall be materially similar to other walls and fences in the same block or general vicinity.
 3. *Industrial districts, public safety facilities, and other critical facilities:*

- (a) All fences and walls must be of brick, stone, stucco, wrought iron, wood, or other materials similar in appearance and durability, and shall be materially similar to other walls and fences on the same block or general vicinity.
- (b) Vinyl coated, chain link fencing may be approved by the administrator as perimeter fencing with additional filtering through openings using opaque or semi opaque slats or screening or by installing a type A landscaping buffer between incompatible uses, between different zoning districts or where visible from a public street.
4. *Barbed wire*: Barbed wire may be permitted within bona-fide agricultural operations within any zoning district.
- E. Retaining walls shall also conform to the following requirements:
1. Retaining walls should minimize the impacts of cut and fill on a site.
 2. The height of any retaining wall should not exceed five feet unless required to be higher for engineering reasons.
 - (a) An increase in retaining wall height may be allowed if the proposed design minimizes the cut and fill impacts and enhances the existing landscape.
 3. In areas where cuts are steeper, a stepped or terraced wall should be used. Large, unbroken retaining walls in a uniform plane should be avoided.

6.1. Statutory Authority and Legislative Findings-of-Fact.

The Legislature of the State of North Carolina has in Part 6, Article 21 of Chapter 143; Articles 7, 11, 9, and 13 of Chapter 160D; and Article 8 of Chapter 160A of the North Carolina General Statutes, delegated to local governmental the responsibility units to adopt regulations designed to promote the public health, safety, and general welfare of its citizenry.

The City Council of the City of Brevard, North Carolina, makes the following legislative findings-of-fact.

- A. The flood prone areas within the City of Brevard and its extraterritorial jurisdiction are subject to periodic inundation which results in loss of life, property, health hazards, safety hazards, disruption of commerce and governmental services, extraordinary public expenditures of flood protection and relief, and impairment of the tax base, all of which adversely affect the public health, safety, and general welfare.
- B. The development activities listed herein contribute, individually and cumulatively, to the flood losses addressed above: (1) obstructions in floodplains causing increases in flood heights and velocities; (2) the occupancy in flood prone areas of uses vulnerable to floods or other hazards; (3) the loss of wetlands, streamside riparian areas, and other lands that slow, absorb, retain, and cleanse storm and flood waters; and (4) the expansion of impervious surfaces both within and outside of flood prone areas that cause increases in the velocity and rate of the discharge of stormwater into bodies of water.
- C. The discharge of urban pollutants and sedimentation into bodies of water results in health and safety hazards and the impairment of environmentally and economically significant aquatic wildlife habitat, adversely affecting the public health, safety, and general welfare.
- D. Development activities cause sedimentation pollution through untreated and uncontrolled stormwater from impervious areas, improper land disturbance, and the loss of wetlands, streamside riparian areas, and other lands that absorb and cleanse storm and flood waters.
- E. Brevard is in a unique geographical location where mountains, valleys and hills constitute significant natural topographical features. The mountains and hillsides of Brevard are visible from

many locations within the city, adding to the quality of life for residents and improving tourism opportunities. These areas are sensitive to development and measures shall be taken to preserve viewshed, maintain slope stability, control erosion and stormwater runoff.

- F. The steeply sloping areas within the City of Brevard and its extraterritorial jurisdiction are particularly susceptible to erosion and landslides, and pose particular difficulties in the construction and maintenance of public infrastructure and the provision of public services. Development activities in such areas are likely to result in the loss of life and property, health and safety hazards, disruption of commerce and governmental services, extraordinary public expenditures, and impairment of the tax base, all of which adversely affect the public health, safety, and general welfare.
- G. On June 20, 2005, the City of Brevard, in conjunction with Transylvania County and the City of Rosman, adopted the Multi-Jurisdictional Hazard Mitigation Plan as an additional resource to substantially and permanently reduce the planning area's vulnerability to natural hazards. The plan is intended to promote sound public policy designed to protect citizens, critical facilities, infrastructure, private property, and the natural environment. This is to be achieved by increasing public awareness, documenting resources for risk reduction and loss prevention, and identifying activities to guide the planning area towards the development of a safer, more sustainable community.

6.2 Statement of Purpose

It is the purpose of this chapter to protect and promote the public health, safety and general welfare by preventing the loss of life and/or public and private economic loss due to landslides, floods, erosion and sedimentation pollution. It is further the purpose of this chapter to protect our existing environmental resources, including steep slopes, floodplains, stream corridors, wetlands, watershed and groundwater recharge areas, soils, forest stands, specimen trees, and other significant vegetation and wildlife, which are of economic value to the city and its citizens and make Brevard a desirable place to live and visit.

In furtherance of this purpose, the regulations contained herein are designed to accomplish the following:

1. Restrict or prohibit uses that are or may be dangerous to health, safety, and property or that may result in damaging increases in erosion, flood heights or velocities;
2. Require that uses and infrastructure vulnerable to the movement of earth or flooding be protected against such damage at the time of initial construction;
3. Control the alteration of steep slopes, natural floodplains, stream channels, and natural protective barriers, which are involved in the accommodation of floodgates;
4. Control filling, grading, dredging, and all other development that may increase erosion or flood damage;
5. Prevent or regulate the construction of flood barriers that will unnaturally divert flood waters or which may increase flood hazards to other lands; and
6. Require that stormwaters that may damage property, increase flood hazards, or pollute surface waters be adequately controlled and treated.

6.3. Objectives.

The objectives of this chapter are as follows:

1. To protect human life and health;
2. To minimize the expenditure of public money for costly stormwater or flood control and stormwater management projects;

3. To minimize the need for rescue and relief efforts associated with flooding and landslides and generally undertaken at the expense of the general public;
4. To minimize prolonged business losses and interruptions;
5. To minimize damage to public facilities and utilities (i.e. water and gas mains, electric, telephone, cable and sewer lines, streets, and bridges) that are located on steep slopes or in flood prone areas;
6. To help maintain a stable tax base by providing for the sound use and development of steep slope areas, flood prone areas, and the control of stormwater runoff;
7. To minimize the impairment of, or damage to, sensitive natural areas and bodies of water; and
8. To ensure that potential buyers are aware that property is in a special flood hazard area or area of known landslide potential.
9. Protect the viewshed and natural beauty of natural slopes and floodplains.

6.4. Steep slope area requirements.

In accordance with G.S. 160D-703(d), the provisions contained in this section shall apply to all areas within the planning jurisdiction of the City of Brevard that are classified as "moderately steep slope areas" and "steep slope areas". These provisions do not limit or negate the effect of other provisions of this ordinance which may apply to steep slope areas.

A. *Applicability:*

1. This section shall apply to any subdivision plat, land-disturbing activity, building permit, or any other development proposal on a parcel located at or above 2,250 feet in elevation above mean sea level and with an average slope of 25% or greater.
 - i. "Moderately steep slope" areas are defined as those areas with a slope of 25% to 34%.
 - ii. "Steep slope" areas are defined as those areas with a slope of 35% or greater.
 - iii. A parcel is considered at or above the elevation if any area within the parcel boundaries is at or above the stated elevation.
2. The provisions in this section are intended to encourage a sensitive form of development and to allow for a reasonable use that complements the natural and visual character of the community.

B. *Determining slope:* Slope shall be determined in accordance with the methods and procedures contained herein.

1. Prior to commencing any development or land-disturbing activity and prior to issuing any permits and/or other approvals, the calculated slope for the parcel(s) shall be approved by the Planning Department.
 - i. Parcels where no portion of the lot is located at or above 2,250 feet in elevation above mean sea level are exempt from this requirement.
 - ii. Incidental improvements and additions to existing structures, accessory structures less than 1,000 square feet in ground floor area, and interior renovations are exempt from this requirement.
2. Calculations and supporting documentation shall be submitted to the Planning Department for review prior to or in conjunction with the applicable submittals. The administrator shall: (a) request additional information; (b) request revisions to the slope calculation submittal; or (c) issue written concurrence with the determination of slope, as submitted.

- 174 i. Each slope calculation and supporting documentation submitted to the Planning
175 Department for review shall include a scaled map, accurately showing the
176 topography for the entire land tract and the parcel boundaries.
- 177 ii. In cases where the applicant or property owner does not agree with the
178 determination made by the administrator, the alternative slope analysis shall be
179 heard and decided on by the Board of Adjustment, following a notice of appeal filed
180 with the City Clerk.
- 181 3. Slope shall be determined through use of one of the following methods:
- 182 i. The approved contour interval formula:
- 183 Slope (**S%**) is equal to the total length (**L**) of contour lines in feet within a given
184 parcel, multiplied by the contour interval (**I**) of said parcel, then multiplied by
185 .0023, divided by the area (**A**) of the parcel.
- 186 Or,
- 187
$$S\% = \frac{(L \times I) .0023}{A}$$
- 188 A
- 189 The calculation shall use the smallest contour interval for which maps are available
190 or at a minimum of five-foot intervals.
- 191 .0023 is the product of two constants, one of which converts feet into acres and
192 one of which converts a decimal fraction into a percentage, the value of .0023 is the
193 percentage of one square foot of one acre.
- 194 ii. Analysis conducted and sealed by a professional surveyor, engineer, or landscape
195 architect using recognized, industry-accepted methods.
- 196 1. The administrator may require slope calculations to be sealed by a
197 professional surveyor, engineer, or landscape architect for projects with
198 over an acre of disturbed area.
- 199 4. Slope shall be rounded to the nearest whole number and noted on all development plans
200 required by this ordinance.
- 201 5. Areas placed in a permanent conservation easement, dedicated to the public for open space,
202 protected as open space by restrictive covenants, or otherwise permanently protected in a
203 natural state with prohibition on vegetation removal and land-disturbing activities may be
204 removed from the calculation of parcel slope.
- 205 i. The applicant shall provide the legal documentation for permanent protection and
206 a closed perimeter line delineating the revised boundaries for calculating slope.
- 207 ii. Nothing shall limit the ability of moderately steep slope areas, steep slope areas,
208 conservation easements, or other means of permanent land protections to be
209 included in the total parcel area for the means of calculating density.
- 210 C. *Geotechnical analysis:*
- 211 1. Development in steep slope areas shall be required to undergo geotechnical analysis by a
212 registered professional engineer to determine the stability of the underlying geology and
213 soils to support the proposed project. The geotechnical analysis report shall be required to
214 be submitted prior to the issuance of a zoning permit.
- 215 2. If a geotechnical analysis has been performed for subdivision approval that includes
216 building pad analysis of the individual lots, it is unnecessary to submit a new analysis for
217 each lot, provided the location of structures on each lot does not change by more than 20
218 feet in any one direction.

- 219 D. *General standards for development projects with moderately steep slope areas and/or steep slope*
220 *areas:*
- 221 1. Development and subdivision plans shall be designed to minimize disturbance to the
222 natural landform and should not destroy the visual quality and community character.
- 223 i. To the extent possible given topographic and other physical constraints, land
224 disturbance should be confined to portions of the lot not considered to be steep
225 slope areas.
- 226 ii. Developers shall make reasonable efforts to preserve and protect existing natural
227 features of the slope, such as trees and other plant materials, and rock
228 outcroppings which may help to stabilize the slope.
- 229 iii. Buildings, parking, and other improvements should be clustered on less steep and
230 less sensitive areas of the site to reduce the amount of grading.
- 231 iv. Projects are encouraged to demonstrate terrain-adaptive design and construction
232 techniques.
- 233 2. Proposed land-disturbing activity shall meet all applicable local and State regulations
234 relating to soil erosion and sedimentation control.
- 235 3. Land disturbance shall be limited to the minimum required for building foundations,
236 driveways, stormwater management measures and immediate areas surrounding these
237 elements as required by this ordinance.
- 238 i. With the exception of approved stockpiling or restoration efforts, substantial earth
239 moving beyond that required for the installation or construction of approved
240 buildings, structures, driveways, or stormwater management measures shall not
241 be permitted.
- 242 4. When grading is necessary, it should be blended with the natural land form as much as
243 possible. Rigid contouring should be avoided, and contours should be rounded to appear
244 undulating and natural.
- 245 5. The approving authority shall have the right to impose such conditions as are necessary to
246 protect public health, safety, and welfare for projects in moderately steep slope or steep
247 slope areas as authorized under the provisions of this section because the minimum
248 standards set forth in this ordinance are insufficient given the exceptional and unique
249 conditions of topography, location, shape, size, drainage or other physical features of the
250 site, or because of the special nature and character of surrounding development.
- 251 i. Such conditions shall be reasonable and shall be limited to the minimum additional
252 improvements necessary to protect the public health, safety or welfare. Such
253 conditions may, without limitation, pertain to the following:
- 254 1. The retention and planting of vegetation;
- 255 2. Sedimentation and erosion controls;
- 256 3. Cut and fill slope design and stabilization;
- 257 4. The degree of land disturbance; and
- 258 5. The location, form and design of proposed structures and driveways so as
259 to minimize land disturbance and ensure structural integrity; and
- 260 6. The location, form and design of subdivision lots, streets, and public
261 utilities, so as to minimize land disturbance and ensure structural
262 integrity.
- 263 ii. The administrator may reduce the required setbacks in accordance with Section
264 2.3 in order to facilitate compliance with this section.

E. *Conditional zoning districts with steep slope areas:*

1. It is strongly encouraged that any proposed development project containing extensive steep slope areas be considered in accordance with the procedures for conditional zoning districts, which process allows for creative designs that may enhance development potential while achieving the steep slope protection requirements of this section.
2. City Council may allow development on steep slope areas by means of a conditional zoning district. Council may require the clustering of structures and impose any other necessary condition upon the design of the development in order to minimize impacts and uphold the intent of this section.

F. *Grading extent:*

1. The maximum extent of grading on a property with moderately steep or steep slope areas shall be reduced to support the goals and objectives of this section. This shall be governed by the following table:

Average Existing Slope	Maximum Percent of Site Graded
25% - 29%	70%
30% - 34%	60%
35% - 39%	50%
40% - 44%	35%
45% or greater	20%

2. Additional grading may be awarded to projects on steep slope areas if any of the following conditions are met. The credits may accumulate to equal the total reduction outlined herein.

Credit	Conditions
10%	Buildings and parking areas are properly screened by vegetation to minimize the visual impact from key viewing areas, which include downtown, public parkland and other public recreational areas, and major streets and highways
10%	The steepest portions and/or most visible portions of the lot are placed in a permanent conservation easement, dedicated to the public for open space, protected as open space by restrictive covenants, or otherwise permanently protected in a natural state with prohibition on vegetation removal and land-disturbing activities
10%	Exterior colors for new buildings and structures, including roofs, are coordinated with the predominate colors of the surrounding landscape to minimize contrast between the structure and the natural environment

3. Additional grading may also be permitted as part of a conditional zoning district.

G. *Density:*

1. Densities of residential development shall be reduced in steep slope areas to support the goals and objectives of this section. This shall be governed by the following table:

Average Existing Slope	Maximum Residential Density
35% - 39%	20% reduction of underlying zoning district
40% - 44%	50% reduction of underlying zoning district
45% or greater	70% reduction of underlying zoning district

2. Additional density may be awarded to projects on steep slope areas if any of the following conditions are met. The credits may accumulate to equal the total reduction outlined herein.

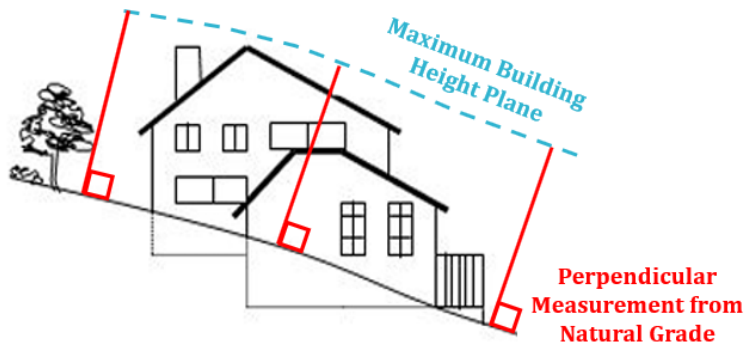
Credit	Conditions
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10%	Grading is limited to 10% of more under the maximum allowed under this section
10%	Buildings and parking areas are properly screened by vegetation to minimize the visual impact from key viewing areas, which include downtown, public parkland and other public recreational areas, and major streets and highways
10%	The steepest portions and/or most visible portions of the lot are placed in a permanent conservation easement, dedicated to the public for open space, protected as open space by restrictive covenants, or otherwise permanently protected in a natural state with prohibition on vegetation removal and land-disturbing activities
10%	Exterior colors for new buildings and structures, including roofs, are coordinated with the predominate colors of the surrounding landscape to minimize contrast between the structure and the natural environment

- i. The maximum residential density shall not exceed the maximum residential density permitted in the underlying zoning district as outlined in Section 2.3, unless such provisions are specified in a conditional zoning district.

H. *Building height:*

1. The maximum height of principal structures in steep slope areas shall be limited to 35 feet measured perpendicular from the natural grade to the top of the built structure.



2. The property owner is encouraged to utilize step-back or terraced building approach to reduce the visual bulk of the structure.
3. Accessory structures shall not exceed 15 feet in height on any side.
4. Applicants shall provide architectural plans and building elevations to demonstrate compliance with this section.

I. *Tree and vegetation preservation:*

1. Landscaping / vegetation preservation plans, in accordance with Section 17.9, shall be required for all development projects on steep slopes to ensure compliance with this section.
2. Plant materials should be used that blend with the mountainside of hillside. Landscape schemes that are rough, natural, and/or subdued in character are encouraged.
3. All trees and other specified vegetation shall be preserved except in the area approved for grading or within 20 feet of the building footprints.
 - i. Non-native or invasive species may be removed.

4. In the event a property owner desires to remove trees and other protected vegetation required to be preserved in this section, they may submit an alternative landscape plan for consideration by the Brevard Planning Board.

i. This alternative landscape plan must contain:

1. a tree survey of the property showing which trees and other protected vegetation will be removed and which will remain;
2. the location of any structures, driveways, and other impervious surfaces; and
3. an explanation of the reason(s) for removal of required trees and other protected vegetation, including a statement of how the removal of the required trees and other protected vegetation supports the purposes of this section or how such removal can be mitigated consistent with the purposes of this section.

ii. The Planning Board may approve, approve with conditions, or deny the alternative landscape plan. If conditions are established, they shall be enforceable in accordance with the provisions of the development permit.

J. Infrastructure:

1. Infrastructure shall be installed in steep slope areas as defined in chapter 6 in accordance with the provisions of this chapter.
2. Roads and driveways created on parcels with steep slopes should follow the natural terrain, unless necessary to accomplish the purpose.
3. The approving authority shall have the authority to modify infrastructure requirements and impose such conditions as are necessary to minimize the disturbance caused by the installation of infrastructure in steep slope areas.
 - i. Modifications and conditions shall be intended to minimize disturbance and increase the safety and stability of infrastructure, and shall not be granted or imposed to reduce cost to the developer.
 - ii. Modifications and conditions may relate but shall not be limited to pavement width, sidewalk width, curb and gutter design and width, and shoulder design. The maximum road grade requirement shall not be modified.

4. Culs-de-sac:

- i. The required turnaround on a dead-end street in a steep slope area shall have a roadway diameter of not less than 50 feet.
- ii. If the street length does not exceed 300 feet and if construction difficulties will not permit a turnaround, the use of a "Y" or "T" or other turning space of a design such as will allow a vehicle with a wheel base of at least 20 feet to complete a turning movement with a maximum of one backing movement may be permitted.

5. Grading:

- i. Grading shall not be required for the full right-of-way in steep slope area if the administrator determines that full grading will prevent convenient access to adjoining property or will destroy the natural beauty of the site by excessive cut and fill.
- ii. Shoulder fill slopes shall not be steeper than 40%.

K. Subdivision of land:

1. Newly created parcels of land shall have adequate developable area outside of steep slope areas, except parcels created and restricted for the purpose of recreation, conservation or open space protection and land processes which are exempt from the subdivision ordinance.

6.5. - Sedimentation and erosion prevention.

In order to prevent soil erosion and sedimentation pollution of streams, springs, flat water bodies, drainage networks, or other surface waters, the property owner shall at all times comply with all requirements of the North Carolina Sedimentation Pollution Control Act of 1973, as amended.

- A. The following conditions are considered hazardous, a nuisance, and a threat to property and the environment; creating such conditions and/or allowing them to continue shall constitute a violation of this ordinance.
 1. The discharge or deposition of sedimentation pollution from one parcel of land onto another parcel of land of the same or different ownership.
 2. The discharge or deposition of sedimentation pollution onto a street or public right-of-way, including drainage ditches and swales within a public right-of-way.
 3. The discharge or deposition of sedimentation pollution into any surface water, including drainage ditches and swales.
 4. The discharge or deposition of sedimentation pollution into wetlands, surface water protection areas, or other protected areas.
 5. The uncontrolled or uncontained movement of sedimentation pollution within any parcel of land.
 6. The presence of destabilized slopes that may collapse and pose a hazard to life or property.
 7. Any other condition that may pose a nuisance or hazard to life, property, or the environment by means of the movement, collapse, discharge, or deposition of earth.
- B. *Requirements of the property owner and developer.* The property owner or developer or both, as the case may be, are responsible for ensuring that development complies with the following requirements of this ordinance:
 1. No land disturbance activity of any kind shall take place without a site plan approval authorizing development of the site. The tilling of earth for the cultivation of crops and other incidental land disturbances as determined by the administrator shall be exempt from this requirement.
 2. Development shall at all times comply with the provisions of this Chapter and with the provisions of the North Carolina Sedimentation Pollution Control Act.
 3. The discharge of sedimentation pollution from agricultural fields, gardens, unsurfaced driveways and parking lots, grading, excavations, open cuts, side slopes, and other land surface disturbances shall be prevented, and all grading, excavations, open cuts, side slopes, and other land surface disturbances shall be mulched, seeded, sodded, or otherwise protected with appropriate sedimentation and erosion control treatments.
 4. All cut slopes, fill slopes, side slopes, road or driveway embankments, and any other sloping excavated area or land disturbance shall be stabilized at all times to prevent potentially hazardous subsidence or collapse, or the discharge of sedimentation pollution. Such areas shall at all times be maintained at a grade of no greater than 40%.

-
5. Erosion and sedimentation from all land disturbance activities shall be controlled and contained with silt fencing, road matting, and any other method approved by the administrator to prevent the deposition of sedimentation pollution upon adjoining parcels, lots, streets, and any surface water. Failure to properly install and/or properly maintain approved sedimentation/erosion control measures shall constitute a violation of this ordinance.
 6. Furthermore, it is recognized that development projects are dynamic and that proposed and approved sedimentation/erosion control measures may, from time to time, prove inadequate. Therefore, it shall also be a violation of this ordinance to fail to install additional sedimentation/erosion control measures upon observing, or being notified, that approved and installed sedimentation/erosion control measures are insufficient.
 7. Erosion and sedimentation control measures, structures, and devices shall be planned, designed, and constructed to provide protection from the calculated maximum peak rate of runoff from a ten-year storm.
 8. On-site areas that are subject to severe erosion, and off-site areas that are especially vulnerable to damage from erosion and/or sedimentation, shall be identified and receive special attention.
 9. All land-disturbing activities shall be planned and conducted to limit exposure to the shortest feasible time.
 10. Exposed slopes shall be planted or otherwise provided with ground cover, devices, or structures sufficient to restrain erosion within 30 calendar days after completion of any phase of grading.
 11. All uncovered areas shall be provided with protective cover unless the administrator has granted an extension of time, for good cause shown, upon written request of the property owner and developer. This cover shall be planted within 15 working days (exclusive of days where seedbed preparation is not possible due to weather as determined by the administrator) or 90 days following completion of any phase of grading, whichever period is shorter. Ground cover is not required on cleared land forming the future basin of a planned reservoir.
 12. Land disturbance shall not be permitted within surface water protection areas, except as permitted within this chapter.

C. *Duties of the administrator:*

1. The administrator shall require a copy of a North Carolina Department of Environmental Quality approved sedimentation and erosion control plan prior to the issuance of site plan approval for any project proposing to disturb one acre or more of land.
2. The administrator shall, from time to time, inspect areas of land disturbance for compliance with this section and shall take necessary action to remedy violations.
3. Upon observation of any violation of this section, the administrator shall notify the property owner and developer of such violation and the need to remedy it. If the property owner and developer fail to take immediate and appropriate action to remedy the violation, the administrator shall take action to remedy the violation in accordance with the procedures set forth herein. Furthermore, the administrator shall notify the appropriate office of the North Carolina Department of Environmental Quality of a potential violation of the North Carolina Sedimentation Pollution Control Act of 1973

13.5. Street design.

A. *Streets required:*

1. All new development shall abut a public street as required in Chapter 4 of this ordinance.
 2. New development and substantial improvements to existing development with frontages on existing public streets shall be required to upgrade all their frontages to meet the standards of this chapter.
 3. New development without frontages upon a public street shall, in all cases, extend and connect to a public street. Public street extensions and improvements required for new development, including those beyond the development boundary, are the sole responsibility of the developer. Such improvements must be provided in accordance with the requirements of the Chapter 62 of Brevard City Code and this ordinance. This section shall apply to all subdivisions, the development of which is subject to the control of the city, both inside and outside the city limits.
 4. Streets shall be installed by the developer and dedicated to the city prior to the approval of any final subdivision plat or development plan unless a performance guarantee is provided to the administrator in accordance with City Code, this ordinance, and procedures established by the administrator. Streets shall be installed by the developer and dedicated to the city prior to the issuance of any certificates of occupancy for any building within that phase or on that street, as applicable to the particular development.
 5. City streets shall be built to the minimum specifications of this chapter and Chapter 62 of Brevard City Code, and shall comply with all standards and specifications of the public works director. New streets in the ETJ shall meet all standards and requirements of the North Carolina Department of Transportation.
- B. *Streets to connect:* Streets shall interconnect within a development and with adjoining development in accordance with Chapter 8 and 10 of this ordinance. Culs-de-sac are permitted only where topographic conditions and/or exterior lot line configurations offer no practical alternatives for connection or through traffic. Street stubs shall be provided with development adjacent to open land to provide for future connections at the discretion of the administrator. Streets shall be planned with due regard to the designated corridors shown on adopted plans and policies of the city or Transylvania County.
- C. *Pedestrian and bicycle infrastructure:* Pedestrian and bicycle infrastructure shall be required as set forth within this chapter and conformance with adopted plans and policies of the city or Transylvania County.
- D. *Topographic considerations:* Wherever possible, street locations should account for difficult topographical conditions, paralleling excessive contours to avoid excessive cuts and fills and the destruction of significant trees and vegetation outside of street-rights-of way on adjacent lands.
- E. *Infrastructure in steep slope areas:* Infrastructure shall be installed in steep slope areas in accordance with the provisions of this chapter and any other applicable provisions in Section 6.6.
- F. *Private streets and reserve strips:* There shall be no private streets or reserve strips platted in any subdivision except as provided for in Chapter 4 of this ordinance.
- G. *On-street parking:*
1. On-street parking may be required by the administrator.
 2. When required, all on-street parking provided shall be parallel. Curb or angle parking is permitted upon approval of the administrator when the fronting buildings are more than 22 feet in height to provide spatial definition and when the posted speed limit is less than 25 mph.
 3. When required, minimum right-of-way widths shall be modified to account for on street parking.
- H. *Traffic calming devices:* The use of approved traffic calming measures is encouraged as alternatives to conventional traffic control measures on Neighborhood Streets and within circulation areas of commercial and mixed-use developments.
- I. *Flood elevations:* No street in an area subject to flooding shall be approved if it is more than one foot below the elevation of the 100-year flood. The administrator may require, where necessary, profiles and elevations of streets for areas subject to flooding. Fill may be used for streets in accordance with

Chapter 34 of Brevard City Code. Drainage openings shall be so designed as to not restrict the flow of water and unduly increase flood heights.

J. *Storm drainage:* Stormwater shall not be discharged into any stream and shall be retained and treated accordance with Chapter 6 of this ordinance, except that streets and related retention/treatment infrastructure shall be designed to accommodate a 25-year, 24-hour storm drainage standard.

K. *Street names:* Streets shall be named and property addressing assigned in accordance with Brevard City Code, Chapter 62, Streets, Sidewalks and Other Public Ways, Article VII, Property Addressing and Road Naming. The administrator shall require evidence that road names and property addresses have been approved and assigned by the Transylvania County Property Addressing Coordinator prior to approving any development.

L. *Blocks:*

1. The lengths, widths, and shapes of blocks shall be determined with due regard to:

a. The provision of adequate building sites suitable to the special needs of the type of use contemplated, and adequate public open spaces accessible and visible to residents.

b. District requirements and design criteria.

c. Needs of non-vehicular and vehicular traffic circulation and traffic control and safety.

d. Opportunities and constraints of topography, with convenient access to important physical and topographical features such as lakes and rivers, significant areas of trees and other natural features, and areas of high ground offering scenic views.

2. Blocks shall not be less than 200 feet nor more than 660 feet ($\frac{1}{8}$ -mile), as measured from edge of right-of-way, unless site and topography or other special circumstances are present as determined by the administrator. Where deemed necessary by the administrator, a pedestrian crosswalk of at least ten feet in width may be required.

3. Blocks shall have sufficient width to allow two tiers of lots of minimum depth except where single tier lots are required to separate residential development from another type of use, or when abutting a perennial stream or lake.

M. *Landscaping:*

1. Streets shall be landscaped with street trees. Commercial streets shall have trees which compliment the face of the buildings and which shade the sidewalk. Residential streets shall provide for an appropriate canopy, which shades both the street and sidewalk, and serves as a visual buffer between the street and the home.

2. All street trees shall be installed in accordance with Chapter 8 of this ordinance. Large canopy trees shall be planted in a planting strip at a minimum average distance of 40 feet on-center.

3. The minimum width of all planting strips shall be six feet. For large canopy trees such as Willow Oaks and Red Maples, a minimum of eight foot planting strip is suggested. Refer to Chapter 8 of this ordinance for additional information on landscaping.

N. *Street markers and traffic control signs:* Street markers and traffic control signs shall be required and posted in accordance with city standards and the Manual of Uniform Traffic Control Devices. Such infrastructure shall be installed by the developer prior to the issuance of any Certificates of Occupancy for any building on that street.

O. *Pedestrian and bicycle infrastructure:* Sidewalks, multi-use paths, or other pedestrian/bicycle infrastructure shall be constructed in accordance with the following requirements:

1. In determining the type of pedestrian/bicycle infrastructure that shall be required the Administrator shall refer to any adopted plan or policy of the city for guidance. Such plans or policies include but are not limited to: *City of Brevard Comprehensive Transportation Plan, City of Brevard Comprehensive Pedestrian Plan, City of Brevard Street Schedule, City of Brevard*

- 536 *Comprehensive Land Use Plan, City of Brevard Recreation Plan, other master plans and small area*
537 *plans, and other plans and policies.*
- 538 2. Sidewalks, multi-use paths, and other pedestrian and bicycle improvements shall be installed by
539 the developer and dedicated to the city prior to the approval of any final subdivision plat, or
540 issuance of final zoning approval or certificate of occupancy for any development plan. Pedestrian
541 and/or bicycle infrastructure shall be constructed within the street right-of-way. The approving
542 authority shall require the dedication of additional street right-of-way or a pedestrian easement
543 when sufficient right-of-way does not exist to comply with this requirement. The approving
544 authority may accept the dedication of additional right-of-way or a pedestrian easement in order
545 to accommodate alternative routes and designs that do not follow streets.
- 546 3. Streets shall be bordered by pedestrian/bicycle infrastructure on both sides. Exceptions to this
547 requirement and modifications to the design of pedestrian/bicycle infrastructure may be granted
548 by the TRC for developments in steep slope areas and where warranted by environmental or
549 topographic conditions, or where this requirement would serve no useful purpose.
- 550 4. Without exception, pedestrian/bicycle infrastructure shall be required along all new public and
551 private streets within new subdivisions or developments, and within new phases of existing
552 subdivisions and any other form of development.
- 553 5. Without exception, pedestrian/bicycle infrastructure shall be required along existing streets
554 within or abutting new subdivisions and any other form of development (except subdivisions in
555 GR districts establishing less than eight dwelling units); or along existing streets within or abutting
556 any form of existing development undergoing substantial improvement (except single-family and
557 duplex residential structures in GR districts).
- 558 6. Pedestrian/bicycle infrastructure shall be required along the same side of the street upon which
559 the development fronts, except that when a development project is located on both sides of the
560 same street the approving authority may require that infrastructure be installed on both sides of
561 the street.
- 562 7. When site characteristics and/or traffic patterns are such that the construction of
563 pedestrian/bicycle infrastructure in accordance with this section would be a hardship and would
564 not result in useful pedestrian walkways, the administrator, upon recommendation from the TRC
565 may allow the applicant to pay the designated cost of constructing such infrastructure into the city
566 sidewalk fund in lieu of requiring construction of the infrastructure. In determining whether to
567 accept a fee in lieu of construction of infrastructure, the administrator shall refer to any adopted
568 plan or policy of the City for guidance. Such plans or policies include but are not limited to: *City of*
569 *Brevard Comprehensive Transportation Plan, City of Brevard Comprehensive Pedestrian Plan, City of*
570 *Brevard Street Schedule, City of Brevard Comprehensive Land Use Plan, City of Brevard Recreation*
571 *Plan, other master plans and small area plans, and other plans and policies.*
- 572 8. The administrator may accept a performance guarantee for the construction of sidewalks on
573 behalf of the city in situations where no other public infrastructure is proposed in accordance with
574 Chapter 16 of this ordinance.
- 575 9. Multi-use paths and other infrastructure:
- 576 a. Multi-use paths, and other pedestrian and bicycle infrastructure shall be provided
577 instead of or in addition to sidewalks wherever called for on an adopted plan or policy of
578 the city. Such plans or policies include but are not limited to: *City of Brevard*
579 *Comprehensive Transportation Plan, City of Brevard Comprehensive Pedestrian Plan, City*
580 *of Brevard Street Schedule, City of Brevard Comprehensive Land Use Plan, City of Brevard*
581 *Recreation Plan, other master plans and small area plans, and other plans and policies.*
- 582 b. When a multi-use path is required in an area not adjacent to a public or private street,
583 then such facility shall be credited towards the satisfaction of the open space
584 requirements as set forth in Chapter 7 of this ordinance.

- c. All required multi-use paths shall be dedicated to the City of Brevard by means of right-of-way or pedestrian easement.
- d. On-street bicycle lanes shall be required when called for upon an adopted plan or policy of the city.

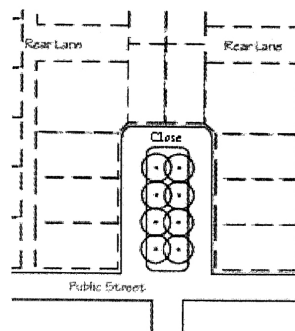
10. Pedestrian and bicycle improvements shall be as follows:

Zoning District	Facility Width	
	City Streets	NCDOT Streets*
GR	5 feet	5 feet
RMX, NMX, CMX, DMX, GI, IC	5 feet	8 feet
Public Streets	City Streets Required; Dedication to City Required	NCDOT Streets Required
Street Rights-of-Way	Required; Dedication to City Required	Required; Dedication to NCDOT Required
Multi-Use Path (where required)	10 feet	10 feet
On-Street Bike Lane (where required)	5 feet	5 feet

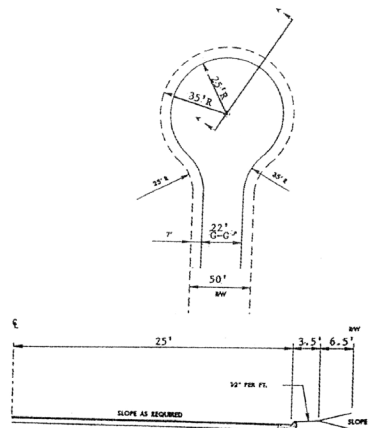
**Sidewalks are not required along alleys and commercial service streets except when required as a condition of a Conditional Zoning District, Group Development, or special use permit.*

- 11. All pedestrian/bicycle infrastructure shall comply with the minimum requirements for handicapped accessibility in compliance with the North Carolina Accessibility Code or other federal, state, or local regulations. During the construction of pedestrian/bicycle infrastructure, whether new or replacement, handicapped ramps shall be placed in the sidewalk where it intersects with streets and other pedestrian and vehicular travel ways.
 - 12. All sidewalks shall be made of 4,000 PSI concrete with a minimum depth of four inches, except that street and driveway crossings shall be a minimum of six inches in depth. Bike lanes and multi-use paths shall be made of asphalt, designed according to the North Carolina Bicycle Planning and Design Guidelines published by the NCDOT and shall include all appropriate signage and pavement markings. Alternative materials and designs may be approved by the TRC in consultation with the public works director.
- P. *Culs-de-sac and closes.* Where practical, a close (see graphic, below) shall be used in place of a cul-de-sac. Culs-de-sac and closes shall be designed to facilitate the turning radius of emergency vehicles.

Close



Cul-de-sac with Curb and Gutter Section



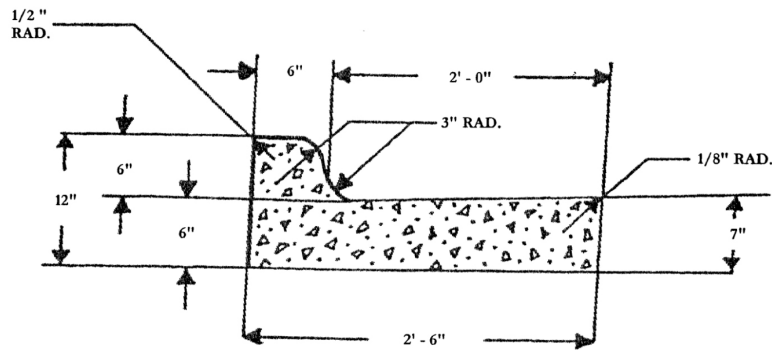
Q. Intersections:

1. All streets shall intersect at right angles as nearly as possible and no street shall intersect at less than 60 degrees.
2. Where practical, intersections should be aligned to create four-way intersections.
3. Off-set intersections for local streets and neighborhood collectors should be at least 125 feet apart measured from centerline to centerline. A larger spacing in accordance with American Association of State Highway and Transportation Officials (AASHTO) standards may be required for all other streets.
4. Property lines at street intersections shall be rounded with a minimum radius of 20 feet. At an angle of intersection of less than 90 degrees, a greater radius may be required.
5. Proper sight lines shall be maintained at all intersections of streets to permit adequate sight distance. Where the posted speed limit is less than 20 mph, the intersection sight distance may be reduced to 105 feet.
6. Bulb-outs are discouraged on narrow streets (less than 30 feet face-of-curb to face-of-curb) but encouraged on wider streets.
7. Property lines at street intersections shall be rounded with a minimum radius of 20 feet. Where a street intersects a state highway, the design standards of the state department of transportation shall apply.

- R. *Curb radii:* Curb radii shall be designed to reduce pedestrian crossing times along all streets requiring sidewalks. In general, curb radii should not exceed 20 feet except along NCDOT-maintained roads.
- S. *Curbs and drainage for city streets:* The following requirements shall apply to streets within the city. Streets within the ETJ shall meet all applicable requirements of the North Carolina Department of Transportation.

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Standard Vertical Face Curb and Gutter



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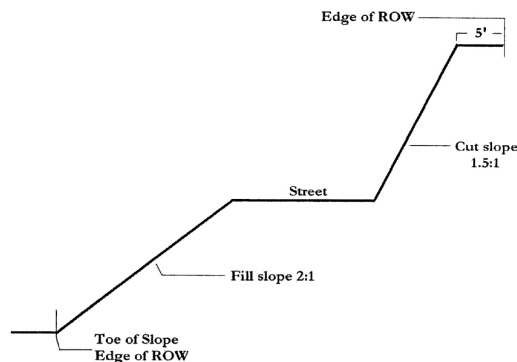
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1. Curb and gutter shall be required on all new residential and commercial streets constructed within the city.
2. Standard vertical face curb and gutter within the city shall be two-foot, six-inch concrete with a height of six inches (see graphic, above). All curbing shall be properly backfilled.
3. Exceptions to this requirement may be made by the administrator subject to circumstances in the area under study. Such circumstances shall relate to the topography of the area, future maintainability of the streets, or other factors deemed relevant by the administrator.
4. Vertical face curbing is required along all streets with on-street parking and around all required landscaping areas and parking lots.
5. All drainage gates must be safe for bicyclists. Bicycle-safe drainage grates are types E, F, and G as approved by the NCDOT.
6. City street culvert dimensions shall be subject to the requirements of the public works director.
7. The right-of-way shall extend from a point five feet outward from the top of the bank of any cut slope to the toe of any fill slope. Maximum slope of any cut slope shall be at a ratio of no greater than 1.5 feet of horizontal run to one foot of vertical rise (1.5:1 slope), and the maximum slope of any fill slope shall be at a ratio of no greater than two feet of horizontal run to one foot of vertical rise (2:1 slope).



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- T. *Centerline radius:* A 90-foot minimum centerline radius shall be used for local streets, parkside drives, and minor streets between reverse curves though they may be reduced to 45 feet for design speeds less than 20 mph. All other streets shall be in accordance with AASHTO standards.
- U. *Street lights:* Street lights shall be installed by the developer on all streets in accordance with Chapter 12 of this ordinance.
- V. *Posted speed limits:* All streets shall be posted in accordance with the Manual of Uniform Traffic Control Devices and the City of Brevard Traffic Schedule.

- W. *Street grades:* The maximum permissible street grade shall be 18 percent.
- X. *Design standards:* Design standards not specifically addressed in this ordinance must comply with the minimum design and construction criteria of the N.C. Department of Transportation.
- Y. *Minimum right-of-way:* The administrator shall determine right-of-way widths based upon the characteristics of the proposed development. However, unless otherwise specified, the minimum right-of-way for all new streets within the city shall be 50 feet, and shall satisfy minimum requirements of the North Carolina Department of Transportation in the ETJ.

13.7. Reserved

17.3. Environmental survey.

Identification of existing trees, understory vegetation, known endangered species, habitats, wetlands, perennial streams, floodplains, and topographical features on a site prior to the advanced preparation of development plans enables the reasonable and practical planned preservation of existing and environmentally sensitive areas.

This requirement provides the city and the applicant the ability to evaluate the proposed development in order to preserve vegetation, to improve the appearance of the development proposed and to encourage the use of the existing forest and tree canopy, specimen trees, and significant vegetation to satisfy the requirements of this chapter.

An environmental survey is intended to identify forest stands or trees of a uniform size and species; specimen trees of varying sizes and species, particularly free standing or open-grown or field grown trees; a distinctive tree line or forest edge; existing watercourses; and previously documented endangered species habitats.

A. The use of digital geographic data obtained from the City of Brevard, Transylvania County, or the State of North Carolina is deemed to be sufficient for the sketch plan and master plan phases of submittal requirements.

B. For construction documents, the environmental survey requirements are as follows

1. Provide a general written description of the significant vegetation. Significant vegetation is defined as being 12 inches in diameter at breast height (DBH) or greater and native understory species two inches or greater (e.g. dogwood, holly, redbud, etc.), including tree species and uniform the size and height of stands of homogeneous trees including the typical tree species composition of the forest stand, typical tree size, and general health and vigor of the stand and specimen trees.
2. Denote the dripline of any existing forest stand, as measured between existing tree trunks six inches or greater located at the edge of the stand.
3. Identify all free standing, open grown or field-grown specimen trees located on the site 12 inches or greater DBH.
4. Show all other important natural features influencing site design such as the location of wetlands, rock outcroppings, site topography at five-foot contour intervals, slopes steeper than 35 percent, and perennial streams, natural drainage ways, lakes, and other water bodies, and floodplains indicating both the flood fringe and the flood way. USGS and FEMA data shall be used to determine the location of perennial streams.
5. Denote the presence of any known endangered species' habitats indicated in any surveys completed by Transylvania County, the State of North Carolina, or other governmental agency.
6. Show all buffer delineations as follows:

- i. Buffer boundaries including all undisturbed buffer zones must be clearly delineated on all development plans for approval by the city, on all construction documents, including grading and clearing plans, erosion and sediment control plans, and site plans.
 - ii. Buffer boundaries for all required undisturbed buffer zones must be clearly delineated on-site prior to any land disturbing activities. Where existing trees are to be preserved in a buffer zone, limits of grading shall maintain a minimum 20-foot separation from the base of each tree on the upland side of the buffer or to the dripline.
 - iii. Buffer boundaries including all buffer zones as well as all buffer requirements must be specified on the record plat, on individual deeds, and in property association documents for lands held in common.
- C. This requirement can be waived by the administrator if the site lacks qualifying natural features.

17.4. Sketch plan requirements.

In addition to information on the environmental survey, the sketch plan shall show in simple sketch form the proposed layout of streets, lots, buildings, public open spaces and other features in relation to existing conditions based upon the size of the tract proposed for development. All plans shall be submitted at a scale not less than one inch = 50 feet unless otherwise authorized by the administrator. It shall also include the following information:

- A. A sketch vicinity map, including north arrow, showing the location of any proposed building(s) or subdivision in relation to neighboring tracts, subdivisions, roads, and waterways.
- B. The name, address, and telephone number of the property owner.
- C. The name of the proposed development project.
- D. The boundary lines of the property.
- E. The total acreage.
- F. The existing and proposed land uses and the existing land uses of adjacent properties.
- G. The existing topographic conditions of the property including contours not exceeding five-foot intervals. Transylvania County, City of Brevard, or State of North Carolina topographic information may be used to fulfill this requirement.
- H. The location, names, and private and recorded right-of-way widths of any existing streets on or within 300 feet of the land to be subdivided.
- I. Lots of adjacent developed or platted properties.
- J. Zoning classification of the land and adjacent properties.
- K. Illustrative building elevations denoting general design elements and materials.
- L. Watershed classification, if any.
- M. Floodway, non-encroachment, and surface water protection area delineation.
- N. Floodplain delineation.

17.5. Master plan requirements.

The master plan shall be drawn to the following specifications and must contain or be accompanied by the information listed below. This section defines both preliminary and final master plans. A preliminary master plan may only be submitted as part of an application for a conditional zoning district. All plans shall be submitted at a scale not less than one inch = 50 feet unless otherwise authorized by the administrator.

- A. Processing or review of a preliminary or final master plan may not proceed without all of the following information:
1. The boundary, as determined by survey, of the area to be developed with all bearings and distances shown and the location within the area, or contiguous to it, of any existing streets, railroad lines, perennial streams, wetlands, easements or other significant features of the tract.
 2. Scale denoted both graphically and numerically with north arrow.
 3. A vicinity map at a scale no smaller than one inch equals 1,200 feet showing the location of the subdivision with respect to adjacent streets and properties.
 4. The proposed name of the development, street names, the owner's name and address, the names of adjoining subdivisions or property owners, the name of the city, county, and state in which the development is located, the date of plan preparation, and the zoning classification of the tract to be developed, and of adjoining properties.
 5. Corporate limits and extraterritorial jurisdiction boundaries (where applicable).
 6. A timetable for estimated project completion for each phase proposed.
 7. Original contours at intervals of not greater than five feet for the entire area to be subdivided or developed and extending into adjoining property for a distance of 300 feet at all points where street rights-of-way connect to the adjoining property and 50 feet at all other points of common project boundaries. Transylvania County or City of Brevard digital topography may be used to satisfy this requirement but should be field-verified to ensure accuracy. This requirement may be waived for developments smaller than one acre or where insufficient topographic changes warrant such information.
 8. The location of any building restriction areas (i.e. flood hazard areas, buffer locations, watershed protection districts, and/or jurisdictional wetlands), where applicable.
 9. Site calculations shall include total acreage of tract, acreage in parks and other non-residential uses, total number and acreage of parcels, and the total number of housing units.
 10. The following statement shall be placed upon all final master plan documents, as applicable:
"Areas delineated upon this plat or plan as a protection area or Special Flood Hazard Areas is subject to limitations upon development as set forth Chapter 34 of Brevard City Code, and any development, disturbance, or encroachment is prohibited except in accordance therewith."
- B. Requirements for preliminary master plans. A preliminary master plan may only be submitted as part of an application for a conditional zoning district. A preliminary master plan may be more conceptual in nature than a final master plan, and shall be sufficient to demonstrate deviations from the base zoning district and the scope of the project.
1. At a minimum, a preliminary master plan shall show the conditions both requested and offered that deviate from the base zoning district.
 2. A preliminary master plan may divide the district into land use areas and specify proposed uses and other development standards which shall apply to such land use area. The preliminary master plan may also depict transition zones between any such land use areas

- 790 which shall permit deferring the determination of the precise boundaries between land use
791 areas until final master plan review.
- 792 3. Additional submittal requirements for the preliminary master plan shall be determined by
793 the administrator in the pre-application meeting or during review. The approving authority
794 may require additional submittals as deemed necessary due to the particulars of the project.
795 A preliminary master plan may include the following information, as applicable:
- 796 (a) The location of proposed buildings, parking and loading areas, streets, alleys,
797 easements, lots, parks or other open spaces, site reservations (i.e. school sites),
798 property lines and building setback lines with street dimensions, and tentative lot
799 dimensions.
- 800 (b) The traffic and circulation system demonstrating a safe and adequate on-site
801 transportation system that addresses vehicular, bicycle, transit and pedestrian
802 circulation. The on-site transportation system shall be integrated with the off-site
803 transportation circulation system of the city.
- 804 (c) The proposed limits of construction for all proposed development activity, including all
805 required protected areas and open space.
- 806 (d) Landscaping plan and/or vegetation preservation plan in accordance with Section 17.9.
- 807 (e) Lighting plan in accordance with Section 17.10.
- 808 (f) Architectural plans in accordance with Section 17.11.
- 809 (g) Traffic impact analysis (if required) in accordance with Section 17.12.
- 810 (h) Stormwater management concept plan in accordance with Section 17.13.
- 811 (i) Conceptual utilities plan. Conceptual plans for utilities to serve the development,
812 including sanitary sewers, storm sewers and water lines.
- 813 (j) Environmental impact statement, pursuant to Article 113A of the North Carolina
814 General Statutes, if: the development exceeds two acres in area, and; if the BPB deems
815 it necessary due to the nature of the land or peculiarities in the proposed design.
- 816 (k) Development permit and certification application with supporting documentation as
817 required by the flood hazard prevention requirements of Chapter 6 of this ordinance.
- 818 C. Requirements for final master plans.
- 819 1. A final master plan shall include all of the following information, as applicable:
- 820 (a) The location of proposed buildings, parking and loading areas, streets, alleys,
821 easements, lots, parks or other open spaces, site reservations (i.e. school sites),
822 property lines and building setback lines with street dimensions, and tentative lot
823 dimensions.
- 824 (b) The transportation and circulation system showing typical cross-sections of proposed
825 streets. Where a proposed street is an extension of an existing street, the profile of the
826 street shall include 300 feet of the existing roadway, with a cross section of the existing
827 street. Where a proposed street within the development abuts a tract of land that
828 adjoins the development and where said street may be expected to extend into said
829 adjoining tract of land, the profile shall be extended to include 300 feet of the said
830 adjoining tract.
- 831 (c) The proposed limits of construction for all proposed development activity, including all
832 required protected areas and open space.
- 833 2. Additional submittal requirements for the final master plan shall be determined by the
834 administrator in the pre-application meeting or during review. The approving authority may
835 require additional submittals as deemed necessary due to the particulars of the project. A

final master plan may include the following information and supplemental plans, as applicable.

- (a) Landscaping plan and/or vegetation preservation plan in accordance with Section 17.9.
- (b) Lighting plan in accordance with Section 17.10.
- (c) Architectural plans in accordance with Section 17.11.
- (d) Traffic impact analysis (if required) in accordance with Section 17.12.
- (e) Stormwater management concept plan in accordance with Section 17.13.
- (f) Conceptual utilities plan. Conceptual plans for utilities to serve the development, including sanitary sewers, storm sewers and water lines.
- (g) Environmental impact statement, pursuant to Article 113A of the North Carolina General Statutes, if: the development exceeds two acres in area, and; if the BPB deems it necessary due to the nature of the land or peculiarities in the proposed design.
- (h) Development permit and certification application with supporting documentation as required by the flood hazard prevention requirements of Chapter 6 of this ordinance.

17.9. Landscape plan requirements.

- A. A landscaping plan and/or vegetation preservation plan shall be required prior to any site disturbance for:
 - 1. All non-residential uses;
 - 2. All multi-family uses in a residential district;
 - 3. Any development in steep slope areas, in accordance with Section 6.4; and
 - 4. Any other development where a landscaping plan and/or vegetation preservation plan is deemed necessary by the administrator due to the particulars of the project.
- B. The plan shall contain the following information:
 - 1. An accurate drawing of property boundaries.
 - 2. A development summary including the total development acreage, proposed use(s), required parking and provided parking spaces, and total building square footage.
 - 3. The location of proposed buildings, driveways, parking areas, required parking spaces, and traffic patterns.
 - 4. The location of all overhead and underground utilities.
 - 5. Name of the project, name and address of owner, name and address of engineer, scale, date, legend, and north arrow.
 - 6. General location, type and quantity of existing plant materials.
 - 7. Existing plant materials and areas to be left in natural state.
 - 8. Methods and details for protecting the critical root zone (CRZ) of existing plant materials during construction.
 - 9. Locations, size and labels for all proposed plants.
 - 10. Plant lists with common name, botanical name, quantity, and spacing and size of all proposed landscape material at the time of planting.

11. Location and description of other landscape improvements, such as earth berms, walls, fences, screens, sculptures, fountains, lights, courtyards, walks or paved areas. Berms shall have topo.
12. Planting and installation details as necessary to ensure conformance with all required standards as referenced in Chapter 9.

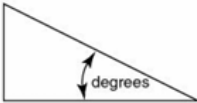
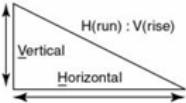
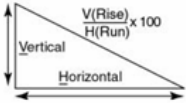
19.3. Definitions.

Cut slope: The exposed ground surface resulting from excavation of material.

Fill slope: The exposed ground surface resulting from deposition of material.

Grade: See Slope.

Slope: The extent to which a land form deviates from the perfectly horizontal as expressed in percent, degree, ratio. The following table explains the conversion between these separate methods of expressing the extent of slope.

Slope Measurements		
Degrees	Ratio	Percent
		
45°	1H:1V	100%
39°	1.25H:1V	80%
34°	1.5H:1V	67%
30°	1:75H:1V	57%
27°	2H:1V	50%
22°	2.5H:1V	40%
18°	3H:1V	33%
14°	4H:1V	25%
8.5°	6.7H:1V	15%

Slope, moderately steep: Areas at or above 2,250 feet in elevation above mean sea level and with an average slope between 25% and 34%.

Slope, steep: Areas at or above 2,250 feet in elevation above mean sea level and with an average slope of 35% or greater.



Agenda & Objectives

Agenda

- Background & Purpose
- Understanding the Current Ordinance
- Staff Goals
- Key Questions & Discussion
- Next Steps

Outcomes

- Identify Priorities for Ordinance
- Provide direction for Staff in Drafting



Image Source: Romantic Asheville

City of Brevard Planning Department

Previous Efforts

- Steep Slopes have been discussed numerous times in the past five years, especially as infill development becomes more of a priority
 - Planning Board – 4 times
 - City Council – 6 times

Fall 2022 Proposed Text Amendment

- Proposed Changes
 - Changes to the review process
 - Added stipulation that measurement should be for area of disturbance
 - Removed density restrictions for Conditional Zoning Districts
 - ***Did not address the calculation method itself or the application***
- Planning Board unanimously recommended approval
- City Council wanted to see the fully revised section before making a decision



City of Brevard Planning Department

Purpose

Development regulations around steep slopes and hillside protections generally have the following objectives:

1. Protecting the natural land conditions and respecting existing topography
2. Preventing inappropriate and/or unsafe development
3. Preserving the aesthetic and scenic qualities
4. Ensuring the public health, safety, and general welfare

*Ultimately, this is about **safety** and **aesthetics** that provide **economic value** and promote **quality of life** in Brevard*



City of Brevard Planning Department

Current Ordinances

Purpose: “promote the public health, safety and welfare... and protect our existing environmental resources... which are of economic value to the city and its citizens and make Brevard a desirable place to live and visit” (UDO 6.2).

Challenges in assessing the topographical land use conditions

- Steep Slope Area requirements are overly simplified and do not address the purpose as they open the door for significant grading
- Nothing to protect visual resources, scenic vistas, and mountain ridges



Image Source: Explore Brevard

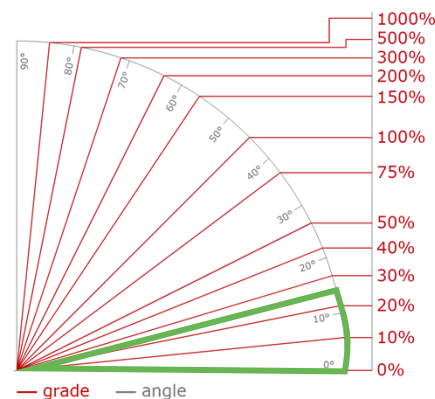


City of Brevard Planning Department

Steep Slope Ordinance

Current Regulations

- “Steep slope areas with an **average slope of 25 percent or greater** shall be delineated upon all final development plans and plats and shall be noted as protection areas for which **no development shall be permitted**. These areas shall be off-limits to all development or land disturbances of any kind whatsoever and **shall be maintained in a naturally vegetated state**, except that forest management in accordance with the provisions set forth in this ordinance may be permitted” (UDO 6.4.D.4)



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Steep Slope Ordinance

Current Definition

- “Steep slope areas are defined as those areas with a slope of 15 percent or greater. Slope shall be determined by **measuring the change in height for every 100 feet of horizontal distance**. For example, a change in elevation of 15 feet over a horizontal distance of 100 feet equals a 15 percent slope. Alternatively, slope may be determined by means of **commonly accepted slope Geographic Information System modeling software** using commonly accepted topographical baseline data” (UDO 6.4.A)

????

No clear definition of the area being measured, so it could be manipulated and/or lead to the entire site being graded

“Commonly accepted” is vague and there is no way of ensuring consistency in the definition

There is no means for Staff to verify/confirm the assessment



City of Brevard Planning Department

Sedimentation and Erosion Ordinance

Current Regulations

- “The property owner shall at all times **comply with all requirements of the North Carolina Sedimentation Pollution Control Act of 1973**, as amended.”
- “All cut slopes, fill slopes, side slopes, road or driveway embankments, and any other sloping excavated area or land disturbance shall be stabilized at all times... [and] be maintained at a slope ratio of no greater than two feet of horizontal run to one foot of vertical rise (**2:1 slope [roughly 50%]**).”
- “**Exposed slopes shall be planted** or otherwise provided with ground cover, devices, or structures sufficient to restrain erosion.”
- “The administrator shall require a copy of a **North Carolina Department of Environmental Quality approved sedimentation and erosion control plan**... for any project proposing to disturb one acre or more of land.”



City of Brevard Planning Department

How does our current slope ordinance protect?

Lots that don't Pre-date UDO with 25% Slope or Greater

- **No development allowed**
- Minimal allowances may be allowed via conditional zoning district

Lots that don't Pre-date UDO with 15-24% Slope

- Administrators **may** impose conditions to ensure safe development
- Encouraged to be a conditional zoning district

Lots that Pre-date UDO, Regardless of Slope

- One principal structure permitted
- **No other regulations or protections**

Lots that "Pre-date the Ordinance" were created before

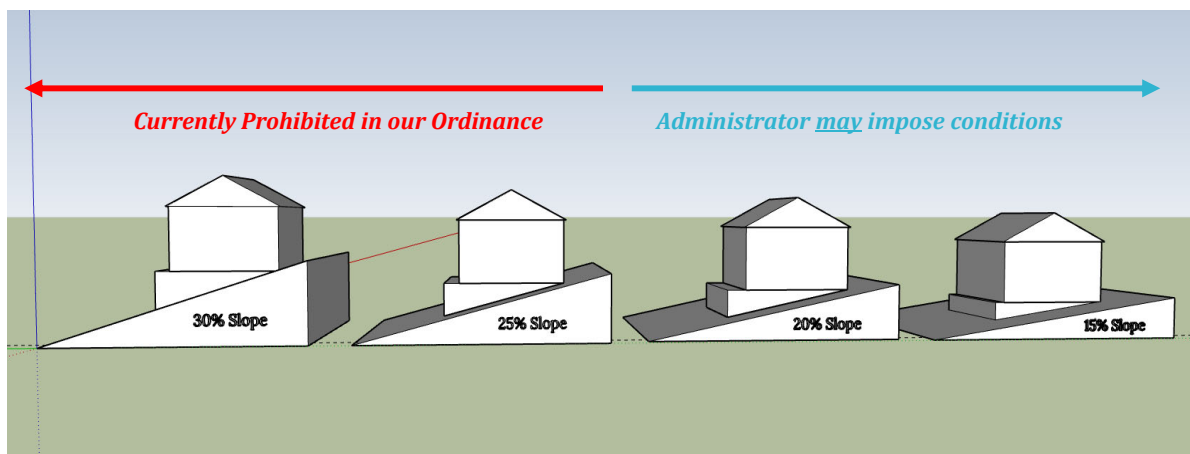
April 3, 2006

The only way for us to determine this is by searching historic deeds and plats for each individual parcel.

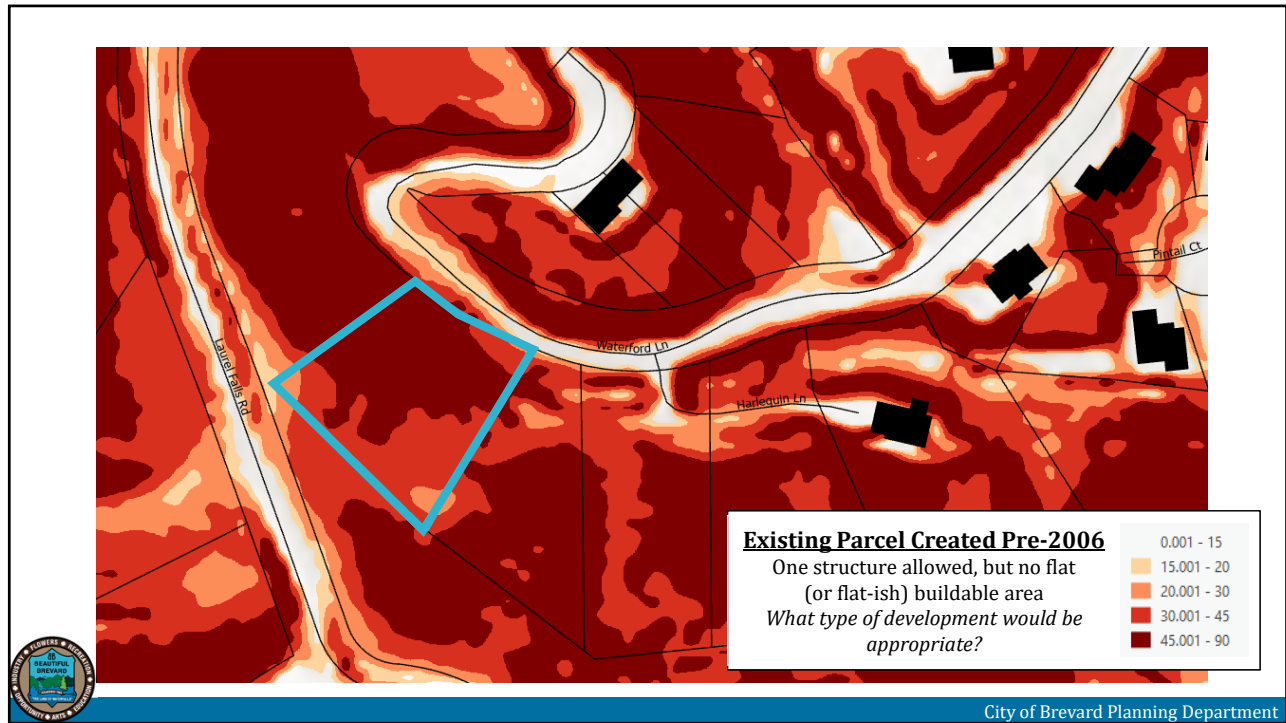


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What does slope look like?



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Staff's Goals & Objectives

The Steep Slope Ordinance Should:

- Accomplish the steep slope ordinance objectives
- Allow development *if* it is safe and doesn't diminish the community's scenic qualities and character
- Ensure development respects the natural form and does not lead to extensive grading and disturbance
- Ensure that all development on steep slopes are subject to regulations and protections
- Allow "reasonable use" of a property owner's land
- Be easy (or easier) to administer and enforce
- Be as clear and objective as possible
- Allow the administrator to impose protections in unique circumstances

Steep Slope Ordinance Objectives

1. Protect the natural land conditions and respecting existing topography
2. Prevent inappropriate and/or unsafe development
3. Preserve the aesthetic and scenic qualities
4. Ensure the public health, safety, and general welfare



Steep Slope Ordinance Topics

Discussion Questions

- ***How do we balance protecting natural resources with the need for infill development?***
 - What are we currently regulating? Is it working?
 - What can we regulate under NC law?
 - How can we incentivize things we can't regulate?
- ***What constitutes a "steep slope?"***
 - Where do we start regulating slopes? Does it vary by elevation?
 - Where do we have steep slopes in our jurisdiction? Are all of those (ditches, man-made slopes, etc.) worth protecting?
- ***How do we determine if it is a "steep slope?"***
- ***How do we determine if a development project is safe?***



Steep Slope Ordinance Objectives

1. Protect the natural land conditions and respecting existing topography
2. Prevent inappropriate and/or unsafe development
3. Preserve the aesthetic and scenic qualities
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How do we determine if it is a steep slope?

Proposed Options for Property Owners

- Slope (**S%**) is equal to the total length (**L**) of contour lines within parcel, multiplied by the contour interval (5ft or less) (**I**) of area, then multiplied by .0023, divided by the total area of the parcel (**A**).

$$S\% = \frac{.0023(I)(L)}{A}$$

- Analysis conducted and sealed by a professional surveyor, engineer, or landscape architect using recognized, industry-accepted method.

Proposed Process for Property Owners

- Look up and/or calculate slope and submit to Planning Department (see Buncombe County example)
- Property owners may choose to recalculate based on ordinance requirements (see Waynesville example)



Others that Use This Formula:

Asheville
Black Mountain
Buncombe County
Jackson County
Sylva
Waynesville
Weaverville

City of Brevard Planning Department

How do we determine if it is a steep slope?

Example: Buncombe County Slope Calculator (mapWNC)

- Ensures consistent methodology and analysis for all parcels
- Easy for property owners, developers, zoning administrators, etc. to use and understand
- Does not add additional expense to small projects where slope wouldn't be and issue

Find Slope for a Parcel

1. Use [SimpliCity](#) or [mapAsheville](#) to find the PIN of the parcel you are interested calculating slope for.

2. Enter the 10 or 15 digit PIN below and click Calculate.

To calculate the slope of multiple parcels enter a comma separated list PINs.

Jurisdiction: Asheville
 Acres: 0.22000
 Maximum Elevation: 2120
 Percent Slope: 14.89

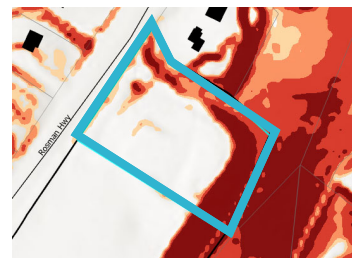


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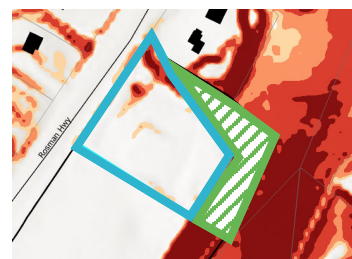
How do we determine if it is a steep slope?

Example: Waynesville Protections

- Property owners may remove **permanently protected areas** from their slope calculation
 - Permanent conservation easement,
 - Dedicated to the public for open space,
 - Protected as open space by restrictive covenants, or
 - Other means of permanently protecting in a natural state
- Incentivizes **permanent protection** of very steep slopes



Current Parcel
Average: 26%



If steep slope is
permanently
protected: <10%



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How do we know if development is safe?

Challenge

- Planners are not experts in assessing the safety of developing on steep slopes
- We should rely on experts!

Geotechnical Analysis

- Subsurface/soil composition and stability assessment
- Recommendations for safe construction, grading, foundations, soil reinforcement, etc.

Other Cities Require Geotechnical Analysis at:

- Greater than 35% Slope
 - Asheville, Black Mountain, Buncombe County, & Sylva
- Greater than 40% Slope
 - Weaverville
- Greater than 50% Slope
 - Boone & Banner Elk



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City / County	% Slope When Regs Start	Elevation Trigger?	Use Slope Formula?	Area Measured?	Prohibition ?	Scale
Brevard	15%	No	No	Not defined	Yes	15-24% - <u>May</u> impose conditions 25%+ - Prohibited
Asheville	15%	Yes	Yes	Not defined	No	Varies by slope and elevation
Black Mountain	25% (<1 acre) 16% (>1 acre) Any parcel 2,600ft+	Yes (some)	Yes	Parcel	No	16-25% - "Minimize impact" 25%+ - Regulated (varies)
Boone	30%	No	No	Parcel	No	30-49% - Regulated some (varies) 50%+ - Regulated more (varies)
Buncombe County	15%	Yes	Yes	Parcel	No	35% + - Regulated (varies)
Hendersonville	15%	No	No	Parcel	Yes	15-35% - Regulated (varies) 35%+ - Prohibited
Jackson County	35%	Somewhat, overlay trigger	Yes	Area of Disturbance	No	35% + - Regulated (varies)
Sylva	15%	No	Yes	Not defined	No	15-30% - Regulated some (varies) 30%+ - Regulated more (varies)
Waynesville	25%	Yes	Yes	Parcel	No	25% + - Regulated (varies)
Weaverville	15%	No	Yes	Parcel	No	15% + - Regulated



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Parcel vs. Area of Disturbance

	Principle	Application	Process	Grading Extent	Vegetation Preservation
Parcel	Doesn't always protect what we want to protect (especially without elevation trigger)	Doesn't account for less steep portions of the lot that are not sensitive for development	Could be automatically calculated and property owners can look it up (see Asheville/Buncombe County)	Could regulate (very common)	Could regulate (very common)
Area of Disturbance	Allows "reasonable use" of a property owner's land	Allows development on less steep portions of the lot	Would need to be an additional step in the permitting process where staff determines the slope for them with GIS	Doesn't allow for regulations that limit grading extent because not disturbing the whole property	Doesn't allow for broad tree preservation because not disturbing the whole property (would need to be incentives and/or buffer regulations)



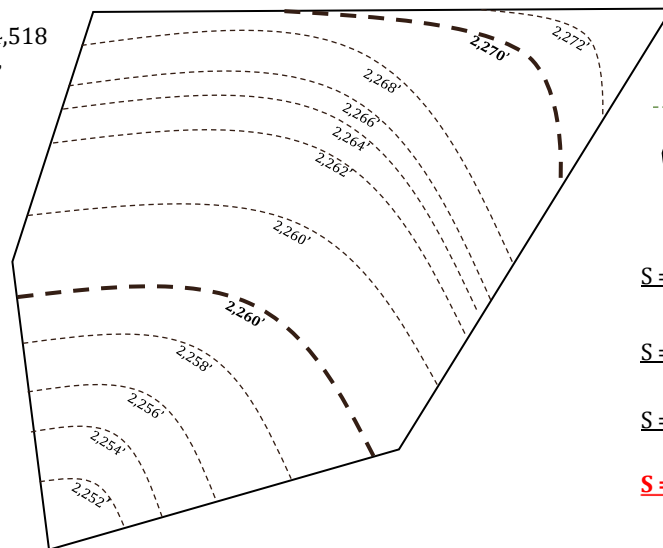
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Slope Calculation Example

Contour Length – 14,518

Contour Interval – 2'

Area – 3 acres



Not to Scale

$$S = \frac{(l \times i)}{a} .0023$$

--- Contour line
 Parcel

$$S = \frac{(14,518 \times 2)}{3} .0023$$

$$S = \frac{(29,036)}{3} .0023$$

$$S = \frac{66.78}{3}$$

$$S = 22.26$$



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What slopes do we want to protect?

- Mapping exercise



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How do you develop on steep slopes?

Tiered, multistory structure that conforms to the natural landscape



Cut and fill the natural grade to create a flat surface for development



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We can't regulate architectural standards for 1-2 unit homes, but we can encourage and incentivize!

Example: Sylva Regulations

- Reduced height and density for developments on steep slopes
- “Bonuses” offered for things like building colors / light reflectivity, vegetation preservation easements, clustering development on less steep portions of the lot, reduced amount of grading, etc.

Example: Jackson County Regulations

- “Applications for development authorization shall demonstrate compliance with the best practices set forth herein...”
- Includes a long list of best practices including grading, screening, building colors, clustering of buildings, vegetation, road placement, etc.
- *May be hard to enforce because isn't very objective*



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Building Height

Current Building Height Measurement

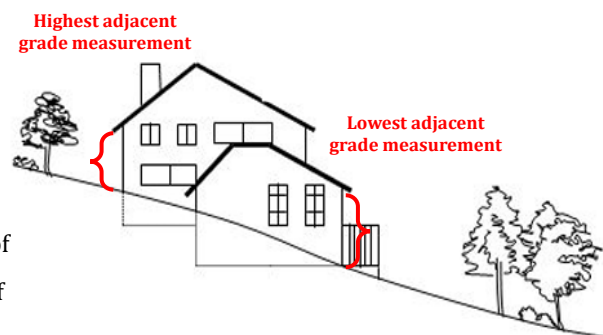
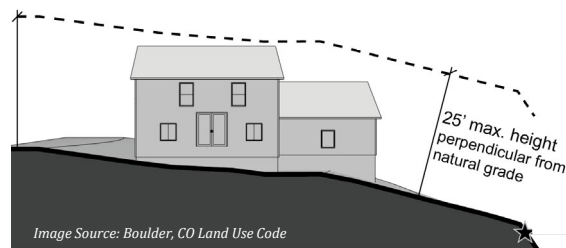
- 35 feet from *highest* adjacent grade

Steep Slopes Height Option #1

- (TBD) feet in height measured perpendicular from existing grade
 - Would this incentivize the type of buildings we want built?

Steep Slopes Height Option #2

- 35 feet from *lowest* adjacent grade AND (TBD) feet from *highest* adjacent grade
 - How do we regulate the tiers? Maybe 30% of the building footprint needs to be at each height? Do we regulate the center portion of the cross-section? If so, how?



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Discussion: What protections are needed?

- Building height
- Bulk and massing
- Building placement
- Amount of site disturbance
- Land use
- Landscaping, screening, vegetation preservation, etc.
- Residential density
- Non-residential density (Floor-Area Ratio)
- Architecture (where applicable)



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Next Steps

- Planning Board Work Session (Today, Feb 28th)
- Staff drafts new steep slope ordinance based on work session input
- Planning Board reviews steep slope ordinance



Image Source: David Oppenheimer, via Pixels.com



City of Brevard Planning Department

WESTERN NORTH CAROLINA STEEP SLOPE ORDINANCES

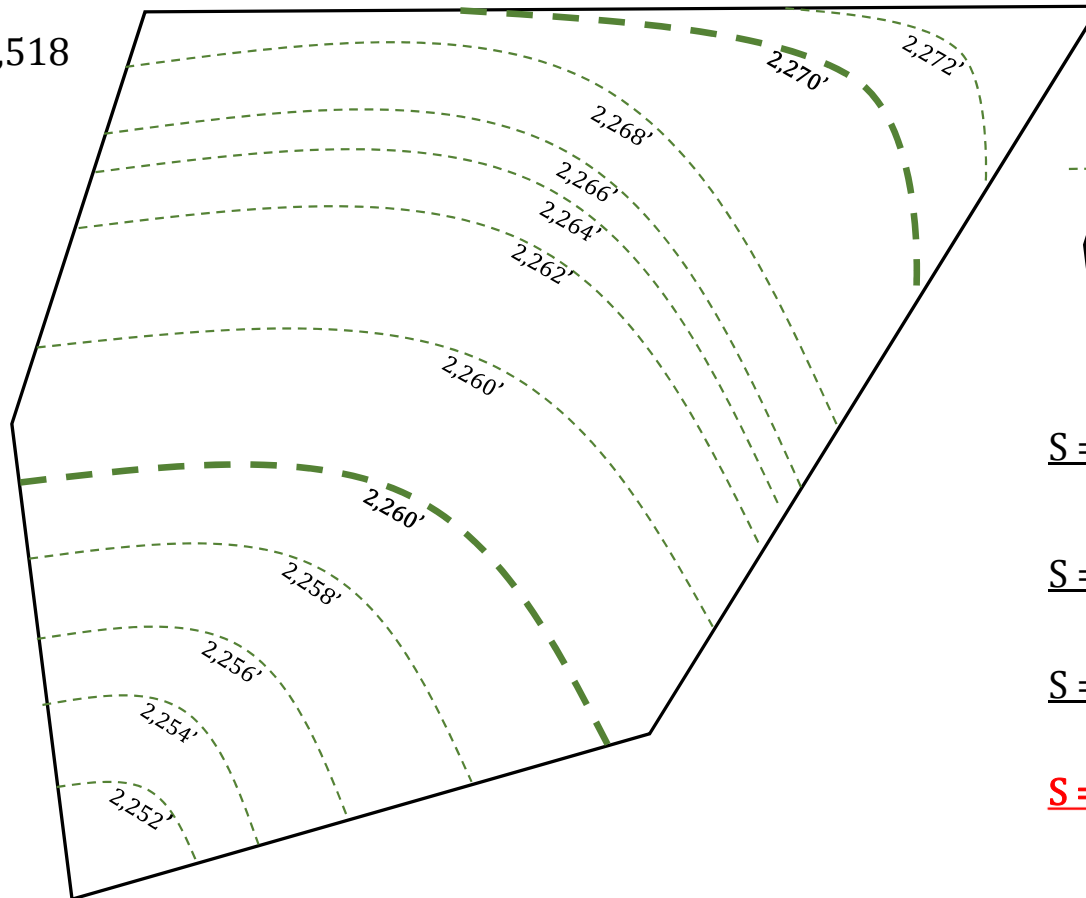
City / County	% Slope When Regs Start	Elevation Trigger?	Use Slope Formula?	Measurement Area?	Prohibition?	Scale	Geotechnical Analysis Required?
Brevard	15%	No	No	Not defined	Yes	15-24% - May impose conditions, no regulations 25%+ - Prohibited	None
Asheville	15%	Yes, 2,220 ft and 2,350 ft	Yes	Not defined	No	Varies by slope and elevation	36% +
Black Mountain	25% (<1 acre) 16% (>1 acre) Any parcel above 2,600 ft	Yes (some), 2,600 ft	Yes	Parcel	No	16-25% - "Minimize impact" 25%+ - Regulated (varies)	36% +
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Buncombe County	15%	Yes, 2,500 ft	Yes	Parcel	No	35% + - Regulated (varies)	36% +
Hendersonville	15%	No	No	Parcel	Yes	15-35% - Regulated (varies) 35%+ - Prohibited	None
Jackson County	35%	Somewhat, overlay trigger	Yes	Area of Disturbance	No	35% + - Regulated (varies)	None
Sylva	15%	No	Yes	Not defined	No	15-30% - Regulated some (varies) 30%+ - Regulated more (varies)	36% +
Waynesville	25%	Yes, 2,900 ft	Yes	Parcel	No	25% + - Regulated (varies)	None
Weaverville	15%	No	Yes	Parcel	No	15% + - Regulated (varies)	40% +

Existing Slope Calculation Example

Contour Length – 14,518

Contour Interval – 2'

Area – 3 acres



$$S = \frac{(l \times i)}{a} .0023$$

--- Contour line
 Parcel

$$S = \frac{(14,518 \times 2)}{3} .0023$$

$$S = \frac{(29,036)}{3} .0023$$

$$S = \frac{66.78}{3}$$

$$\underline{S = 22.26}$$

Not to Scale

COMMENT OF CONSISTENCY WITH COMPREHENSIVE PLAN AND ANY OTHER OFFICIALLY ADOPTED APPLICABLE PLANS

NCGS 160D-604 requires that the Planning Board shall advise and comment on whether the proposed amendment is consistent with any comprehensive plan prior to consideration by the Governing Board. The Planning Board shall provide a written recommendation to the Governing Board that addresses plan consistency and other matters as deemed appropriate by the Planning Board, but a comment by the Planning Board that a proposed amendment is inconsistent with the Comprehensive Plan shall not preclude consideration or approval of the proposed amendment by the Governing Board.

The Brevard Planning Board forwards this recommendation to City Council with a finding that the proposed zoning text amendment is **consistent** with the following elements of the City's adopted plans and policies:

Building Brevard 2030 Comprehensive Land Use Plan Goals

GOAL 2: *Encourage a development pattern that respects Brevard's sense of place and prioritizes livable communities.*

GOAL 5: *Celebrate Brevard's natural resources through conservation of environmentally sensitive areas, improving access to recreation, and restoration of native ecosystems.*

Building Brevard 2030 Comprehensive Land Use Plan Actions

PNRC-10: *Preserve steep slopes and natural areas adjacent to Pisgah Forest.*

LUH-4: *Identify areas across the City that are best positioned to accommodate future growth.*

LUH-9: *Evaluate and amend development ordinances to facilitate infill development on vacant and underdeveloped parcels, as well as revitalization of developed parcels.*

LUH-24: *Refine zoning districts and slope regulations in constrained areas*