

Think Quality - Think Future

Blount County Planning Department

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TO: Blount County Planning Commission

FROM: John Lamb

DATE: October 20, 2010

SUBJECT: Long Range Planning agenda items for the October 28, 2010 meeting.

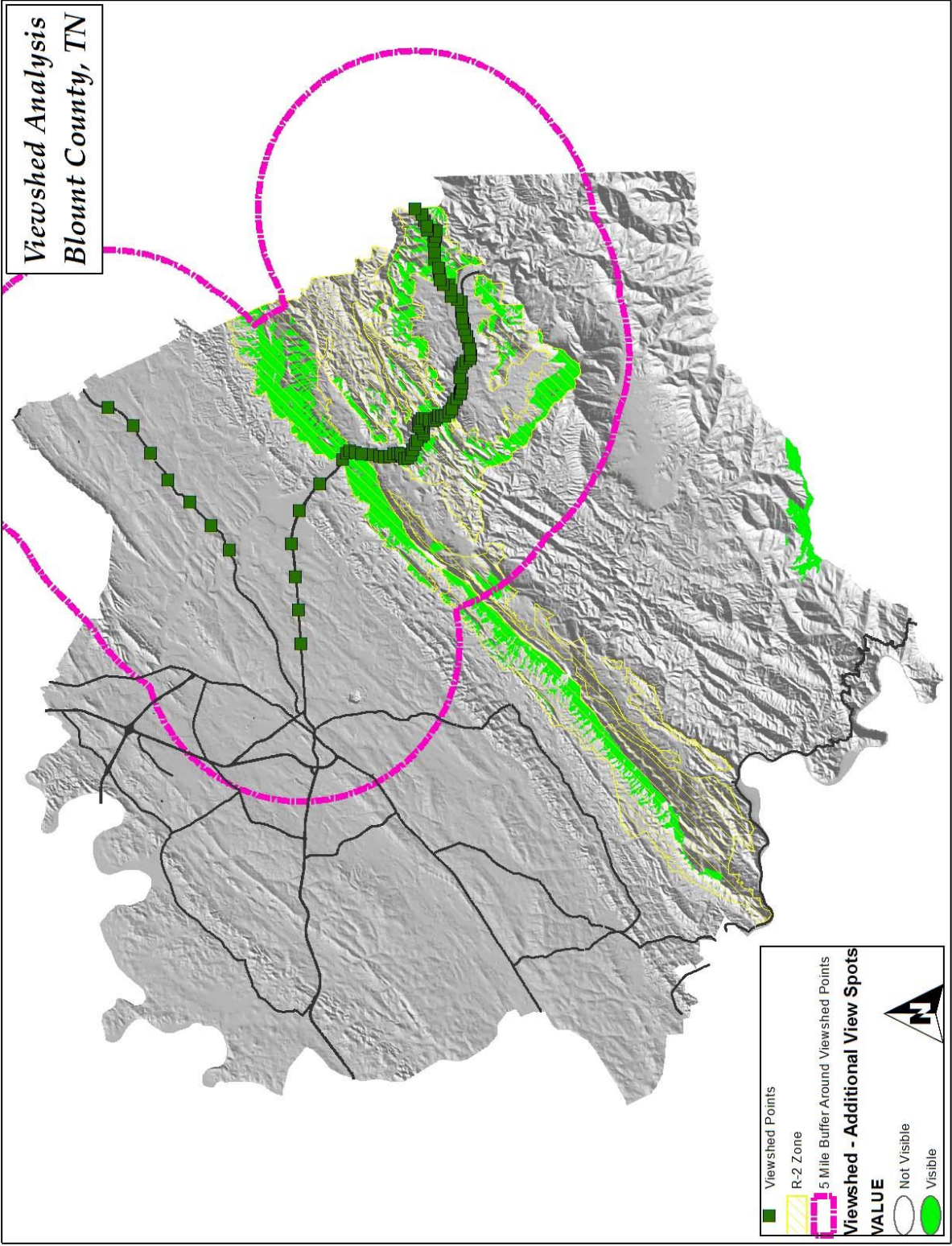
1. Discussion on ridge-top and hillside development regulations.

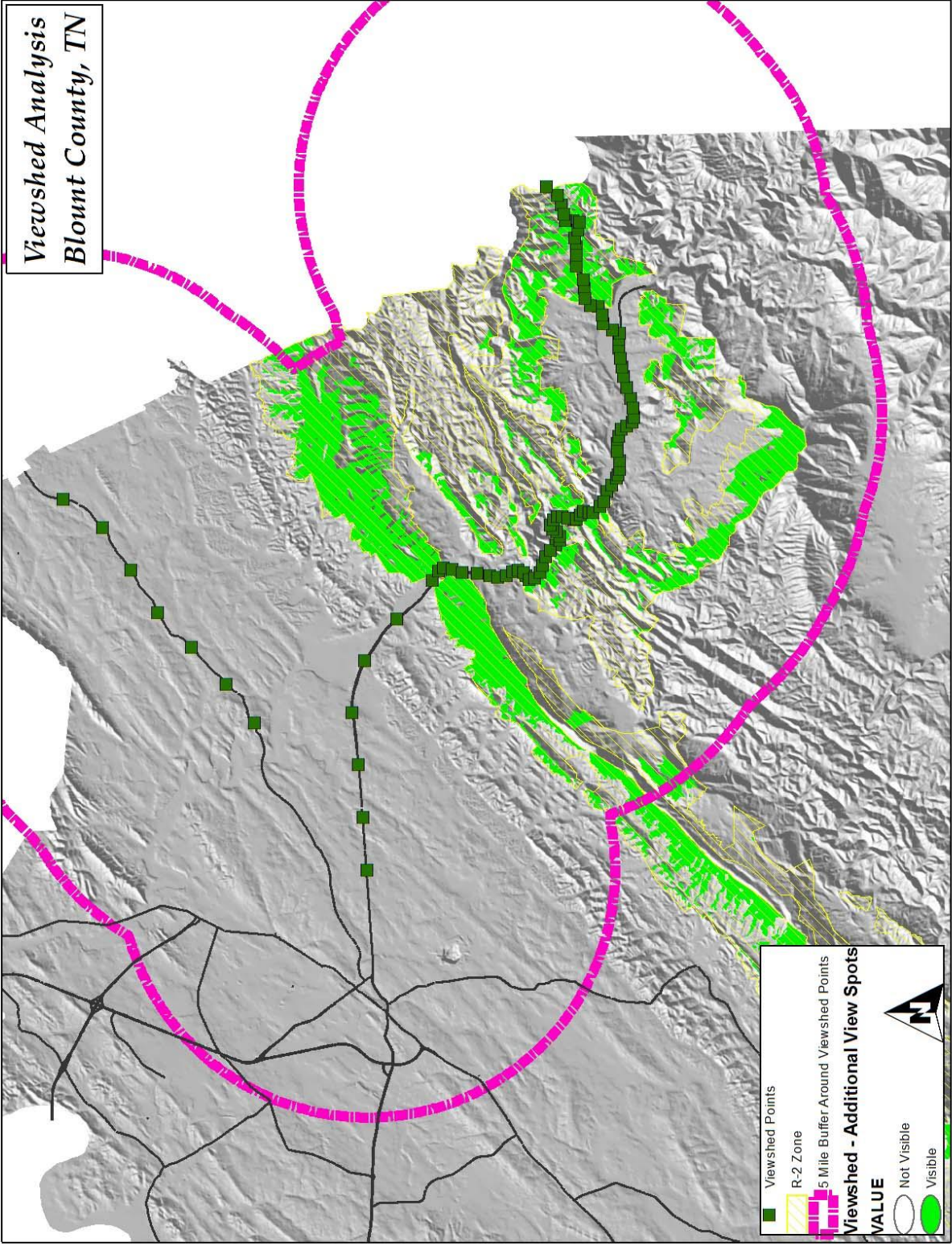
The Planning Commission requested that staff prepare map of boundaries for a possible separate ridge-top and hillside zone. Staff contacted Ray Boswell of the Blount GIS to prepare the maps on the following two pages for consideration.

The green squares on the maps indicate points of SLRS from which views of the mountainous R-2 zone are defined. The light green indicates areas within the R-2 zone that are visible from the SLRS points. The pink dashed line indicates the boundary of those areas within five miles of the SLRS points. The first map shows the areas in large perspective, and the second map is a closer view providing more detail.

Following the maps, the most recent version of the regulations is presented. Note that if a separate ridge-top and hillside zone is desired, then the present version of the regulations will need to be reformatted to address a separate zone, along with other issues of permitted uses and lot standards, etc., if different from the present R-2 zone.

This item is open for discussion and guidance to staff.





Present proposal for ridge-top and hillside zoning regulations:

That Section 9.3.E for the R-2-Rural District 2 be amended to read as follows:

- E. Uses Requiring Site Plan Review:
 - 1. For general site plan review, all uses permitted as special exception in sub-sections B and C above, and permitted uses in subsection A above, except one or two single family or manufactured home dwellings on a single lot, duplex dwelling on separate lot, and customary accessory structures to such excepted uses.
 - 2. For specific ridge-top and hillside review, all uses and building sites determined visible from a Scenic Landscape Resource of Significance (SLRS) and within five miles of such SLRS shall be subject to application of review procedure and standards in Section I below in addition to any other site plan or permit requirements.

That a new Section 9.3.I be added for the R-2-Rural District 2 to read as follows:

- I. Visually Subordinate Ridge-Top and Hillside Development Review Procedures and Standards:
 - 1. a. Applicants for all buildings requiring a building permit shall first confer with the Building Commissioner to determine if the proposed building site will be visible from one or more Scenic Landscape Resource of Significance (SLRS) listed under b. below, and within five miles distance from such SLRS. Assessment of visibility shall assume no intervening vegetation between the SLRS and the building site. The Building Commissioner shall utilize the County GIS and USGS topographical maps to assess visibility and distance by identifying location of building site by tax map parcel, and assess visibility and distance of the site from any SLRS by GIS sightline analysis and map distance measure. The applicant may further specify the actual building site by submission of latitude-longitude location certified by a surveyor, and the Building Commissioner may utilize such location information in addition to tax map parcel location.
 - b. Scenic Landscape Resources of Significance are those arterial road routes with relatively unobstructed views of mountains, and that are

within five miles of the R-2 zone. Scenic Landscape Resources of Significance (SLRS) shall be the following: Highway 411 from Sevier County Line to the Little River; Hwy 321 from intersection of Woodland Drive to Sevier County Line.

c. For any building site determined not visible from any of the above listed SLRS or farther than five miles from the closest of the above listed SLRS, no further review will be required under this section. For any building site determined visible from any of the above listed SLRS and within five miles of the SLRS, a site plan shall be submitted to the Building Commissioner for analysis and report of a Findings Statement assessing visual impact and measures needed to achieve visually subordinate development as specified below. The Findings Statement along with the site plan shall be forwarded to the Planning Commission, and the Planning Commission will be the approval authority for the site plan under this section. This site plan process may be in addition to other required site plan review and approval requirements for a permit.

d. In considering the site plan under this section, the Planning Commission shall utilize three decision principles as follows:

- i. Completeness of site plan and Findings Report information in relation to subsections 2 thru 4 below.
- ii. No project shall result in an undue adverse impact on any SLRS, with “undue” meaning unwarranted, unjustified, inappropriate, or excessive by reason of conditions inherent in mountain areas, and the available design solutions that may be applied to the site.
- iii. No project shall be approved if the site plan fails to apply available design solutions to the site to overcome adverse impacts to the maximum extent practicable, with “practicable” meaning what is able to be practiced on the site.

2. The site plan required under this section shall be drawn at a scale of no less than 1 inch equals 50 feet. The site plan shall include at least the following elements:

- a. applicant's name and address (including owner of land and owners representative if applicable), and signatures by owners or authorized representative certifying plan for review;
 - b. property boundary (survey boundary recommended), north arrow and map scale;
 - c. location map in relation to surrounding lands and roads;
 - d. written description of the proposed building and use;
 - e. list of SLRS visible from the site and direction of visibility shown by arrows;
 - f. topographic contours from USGS Quad sheet scaled and located to the property boundary;
 - g. location of existing buildings or structures on the property;
 - h. location to scale of proposed building(s) in plan view;
 - i. proposed building exterior color schemes and building materials;
 - j. required and proposed building setbacks from property lines;
 - k. present and proposed access roads or driveways;
 - l. present and proposed utility service lines;
 - m. plan for preservation or establishment of trees to meet requirements for screening under 3.a below, and plans for any tree removal;
 - n. proposed grading plan for the site;
 - o. areas managed specifically for fire risk reduction;
 - p. plan for exterior lighting;
 - q. other substantial landscape features such as prominent rock outcroppings greater than 1000 square feet in area, water bodies, perennial streams, and springs.
3. Design requirements for a visually subordinate building site shall include the following in addition to other requirements:
- a. retention of vegetation to achieve at least 75 percent screening of permitted buildings potentially visible from SLRS;
 - b. clearing of trees and vegetation for roads, drives and utility easements shall be the minimum extent necessary for construction;
 - c. trimming of trees shall be conducted in a manner that is sufficient only to allow a filtered view from the property towards any SLRS, that conforms to screening requirements in

- a. above, and that assures continued health of each tree left standing;
 - d. tree root areas of retained trees shall not be filled above the natural grade;
 - e. use of contour grading and retaining walls if necessary;
 - f. use of dark earth-tone colors for exterior of permitted buildings visible from SLRS, such earth-tone colors as are found predominantly on the building site, in particular tree and bush summer leaf and bark color;
 - g. use of non-reflective or low-reflective exterior building materials and finishes, particularly low-reflective roof material.
 - h. avoiding building locations that are on highpoints, outcroppings or prominent knolls, and avoiding designs that push buildings up, out or away from a hillside;
 - i. outdoor lighting shall be directed downward, sited, limited in intensity, shielded and hooded in a manner that prevents lighting from projecting onto adjacent properties and roadways, and shielding and hooding materials shall be composed of non-reflective and opaque materials;
 - j. if the building site is on a ridge-top or ridgeline, the minimum building setback from property line shall be 75 feet if on a separate lot, or minimum building separation shall be 150 feet if multiple buildings on an undivided parcel.
4. If requirement for 75 percent visual screening under 3.a above cannot be attained feasibly with existing vegetation due to slope or other physical constraint specifically documented by the applicant, then a minimum of 50 percent visual screening may be accepted with use of a combination of five or more design options that may appropriately mitigate visual impact as follows:
- a. screening by constructed fences or walls of soil, rocks or bricks of dark earth-tone colors, or screening by planted vegetation, or a combination of both, provided that the screening does not in itself pose an impact as viewed from an SLRS;
 - b. relocation of a building site component to another place within the site which is less visible from an SLRS;
 - c. camouflage or disguise in character with the landscape of the building site;
 - d. reducing the height of a building or building component;

- e. downsizing by reducing the number, area or density of buildings and/or site components;
- f. decommissioning or removal of existing structures on the site;
- g. setbacks from ridge-tops (ridgelines) such that the structure does not exceed the ridge-top as seen from any SLRS;
- h. stepping or setting buildings in sections into the hillside by means of split development pads down the slope;
- i. terracing of retaining walls into sections down the slope and contoured with the slope;
- j. greater setbacks from property lines and/or other buildings;
- k. breaking of uniform and blank massing of surfaces, including building surfaces and other constructed elements such as retaining walls;
- l. use of low-reflectivity glass in windows;
- m. planting of new vegetation that will result in 75 percent screening within five years of planting, using a mix of vegetation matching both in species and density those indigenous to the areas.

2. Proposed campground regulations – revisions from last meeting.

The County Commission voted to refer the proposed campground regulations back to the Planning Commission for further consideration of changes. County Commissioners also raised specific concerns and made several suggestions. The Planning Commission considered several possible changes at the last meeting. Outstanding issues that the Commission indicated for further consideration were:

Setback from river and waterways – suggested 50 feet for septic, 15 feet for structures and RV sites – suggested do not allow cabins close to waterways.

Visual buffer from roads – present none. It was noted that there is a provision for buffering on surrounding property but none from the road. Discussed RV's that might be parked close to the road and the use of trees as a buffer, however there is a concern about the trees causing a site distance issue if near the road. Storage is to be located at the rear of the property.

The Commission considered several specific changes and directed staff to come back with a revised draft as follows (changes from previous draft in bold-italic-underline).

Section 7.17 – Commercial Campground and Recreational Vehicle Parks (revised to 10-10)

The purpose of this section is to provide opportunities for quality designed commercial campgrounds and recreational vehicle parks that are properly located in the community where street access and capacity and other infrastructure are favorable for higher density development. In order to create a desirable recreational environment and protect the public health, safety, and welfare, site plans are required for all new commercial campgrounds and recreational vehicle parks. A commercial campground and recreational vehicle park shall meet the following regulations:

1. Minimum lot size requirement: The minimum development site for a commercial campground and recreational vehicle park shall be five (5) acres.
2. Permitted uses and activities: The following uses, vehicles and activities shall be permitted in all commercial campgrounds and recreational vehicle parks.
 - A. Recreational vehicles, travel trailers, pick-up coaches, motor homes, camping trailers, *camping cabins*(not to exceed 25% of the total camp sites), and tents suitable for temporary habitation and used for travel, vacation and recreation purposes provided:
 - 1) Underpinning or the removal of wheels, except for the temporary purpose of repair or stabilizing is prohibited.

- 2) **External structures permanently attached to the ground such as carports, cabanas, or patios, associated with individual campsites, shall not be permitted.**
 - B. A recreational vehicle shall not remain in a recreational vehicle park for more than two hundred seventy (270) days in any three hundred sixty five (365) day period, except:
 - 1) Vehicles owned and operated by seasonal camp workers shall be exempt from this requirement.
 - 2) **Storage of unoccupied recreational vehicles may be allowed in a designated storage area, with number of stored vehicles not to exceed 40% of total number of campsites, and area not to exceed 10% of the total campground area, and shall not encroach on primary subsurface sewage disposal system.**
 - C. Camp Workers: Each commercial campground or recreational vehicle park may have campsites available for camp workers **directly employed by the campground.**
3. Accessory Uses: Management headquarters, toilets, dumping stations, showers, coin-operated laundry facilities, commercial uses exclusive to the park that cater to camp patrons only, and structures which are customarily incidental and subordinate to the operation of a commercial campground or recreational vehicle park are permitted as accessory uses to the park, subject to the following restrictions:
 - A. Such establishments and parking areas primarily related to their operations shall not occupy more than five (5) percent of the gross area of the park.
 4. Prohibited uses and structures:
 - A. Mobile homes and mobile home parks.
 - B. Permanent residences, excluding the accessory use of a resident management structure.
 5. Design standards for recreational vehicle parks and campgrounds. All commercial campgrounds and recreational vehicle parks shall meet the following requirements in addition to the requirements set forth in Section 9.3B (at this time this is the only permissible area for commercial campgrounds).
 - A. Density. The maximum number of campsites shall be controlled through this section and environmental health department approval.
 - B. Access and location criteria:
 - 1) **Commercial campgrounds and recreational vehicle parks (campgrounds) shall be limited to specific areas deemed significant to tourism, generally the Highway 321 corridor**

leading to Townsend, and the Hwy 129 corridor leading to Tallassee. With exception specified below, campgrounds will be limited to direct access on the following arterial and collector status roads: Lamar Alexander Parkway (Hwy 321) from Maryville City Limits to the City Limits of Townsend, Highway 321 from the Townsend City Limits to the Blount/Sevier County line; Old Tuckaleechee Road around the southern boundary of Townsend; Old Walland Highway from intersection with Ellejoy Road to intersection at Melrose Bridge; Hwy 129 (Calderwood Hwy) from intersection with Six Mile Road to intersection with Happy Valley Road. For roads directly intersecting the above listed arterial and collector status roads, commercial campgrounds and recreational vehicle parks (campgrounds) may be permitted if direct access on such roads is within _____ feet of direct intersection with the arterial and collector status roads, and such roads meet standards of subsection 2 below.

2) Location of campgrounds shall be limited to off site roads with 18 foot wide pavement with 2 foot shoulders.

3) Entrances and exits to the campgrounds shall be designed for safe and convenient movement of traffic into and out of the park and to minimize traffic conflict and facilitate free movement of traffic on adjacent streets. All traffic into and out of the park shall be thru such entrances and exits. No entrance or exit shall require a turn at an acute angle for vehicles moving in the direction intended. Curb radii, driveway cut and placement at intersections shall have a minimum of fifty (50) feet turning radius and exits shall be designed to allow ingress and egress simultaneously.

4) A deceleration lane may be required to entrance of the campground. When a deceleration lane is proposed to be located off a state right-of-way, the deceleration lane is subject to review and approval by the Tennessee Department of Transportation. When a proposed deceleration lane is proposed to be located off a county maintained right-of-way, the deceleration lane is subject to review and approval by the Blount County Highway Department.

C. Internal Roadways. All internal roadways shall meet the following requirements:

- 1) Internal roadways shall be maintained so emergency vehicles can safely access all areas of the site.
- 2) All interior roadways shall be constructed with an adequate, well-drained base and be surfaced with a minimum four (4) inches of gravel. Roadway grades shall not exceed ten (10) percent for gravel roads and thirteen (13) percent for paved roads.
- 3) An erosion control plan shall also be required.
- 4) All internal roadways shall have a minimum width of no less than (14) feet for one way traffic and no less than (18) feet for two way traffic.

D. Check-in Facility. Designate on the site plan a central vehicle check-in facility with the queuing capacity for a minimum of three (3) recreational vehicles, to insure check-in does not become congested.

E. Parking for workers and quests. Parking spaces shall be provided for the manager and camp workers. A minimum of one guest parking space shall be provided for every five (5) campsites.

F. Sewage Disposal. All campgrounds will be required to be connected to a public sewer system or have a subsurface sewage disposal system approved by the Blount County Environmental Health Department.

- G. Any site plan shall address provision for fire service with fire hydrants, and adequate access for emergency vehicles within the development.
- H. Any site plan shall address garbage service, particularly if common receptacles are used in which case screening of receptacles shall be required.
- I. Fire Pits. Campfires shall only be permitted in designated fire pits.
- J. Lighting and Noise. All campgrounds shall be designed to meet the current outdoor lighting standards found in section 7.15-D. All campgrounds should conduct business in accordance to any existing noise laws within the county.

6. Design Requirements for Recreational Vehicle Campsites and Tent Campsites.

A. Recreational Vehicle Campsite.

- 1) All recreational vehicle campsites shall have a minimum of 1,400 square feet.
- 2) A recreational vehicle campsite shall be designed so there is a minimum of ten (10) feet between recreational vehicles.
- 3) Each campsite shall contain a stabilized vehicular parking pad.
- 4) No building or storage sheds are permitted on individual recreational vehicle campsites.
- 5) Recreational vehicle campsites shall include a minimum of one automobile vehicle parking space with minimum dimensions of ten (10) feet by twenty (20) feet.
- 6) Each campsite shall abut at least one internal roadway within the boundaries of the Recreational Vehicle Park and campground. Ingress and egress to the campsite shall be limited to an internal roadway.

B. Tent Campsite.

- 1) All tent campsites shall have a minimum area of 1,400 square feet.
- 2) Tent campsites shall include a minimum of one automobile parking space with minimum dimensions of ten (10) feet by twenty (20) feet.
- 3) Each campsite shall abut at least one internal roadway within the boundaries of the Recreational Vehicle Park and campground. Ingress and egress to the campsite shall be limited to an internal roadway.

C. Camping Cabin sites.

- 1) All camping cabin sites shall have a minimum area of 1,400 square feet.
- 2) A camping cabin site must be designed so there is a minimum of twenty (20) feet between camping cabins.
- 3) No storage sheds are permitted on an individual camping cabin site.

- 4) Camping cabin sites shall include a minimum of one automobile vehicle parking space with minimum dimensions of ten (10) feet by twenty (20) feet.
- 5) Each campsite shall abut at least one internal roadway within the boundaries of the Recreational Vehicle Park and Campground. Ingress and egress to the campsite shall be limited to an internal roadway.

D. All campsites shall be designed in conformity with the Floodplain Regulations if within a flood zone.

3. Noise Issue in Zoning Site Plan Process.

At the request of the County Mayor, staff prepared an analysis of issues related to addressing noise in the zoning site plan process. The present criteria of considering noise may be viewed as too subjective, and in need of more objective standards.

Present Zoning Regulations. Our zoning regulations include the following as part of site plan design requirements in the RAC (Rural Arterial Commercial) zone Section 9.10 (noise provisions highlighted):

J. Additional design requirements: All site plans shall be accompanied by a stormwater drainage plan prepared by a qualified engineer, and shall address the need for detention, if necessary, and pollution control. All uses permitted under this Section shall provide a vegetative landscape buffer, to be determined by the Planning Commission during site plan review, between the use/buildings on the commercial site, and any parcel or lot zoned other than RAC or C. Such buffering shall apply to rear lot lines of the commercial site, and also to side lot lines behind the minimum front building setback lines, except where there is an immediately adjacent residential use that would require screening within the minimum front building setback line. All uses permitted under this Section shall have a front building elevation, along all fronting roads, constructed of at least 50 percent nonmetal building materials. All external lighting shall be directed away from or screened from land zoned other than RAC or C, and away from any public right-of-way. **Where noise is determined to be a probable off-site impact of a proposed use, a noise mitigation barrier of solid structure or earth berm, in addition to vegetative buffer, shall be designed as part of the site plan and constructed.**

Note that this requirement is not present in the C-Commercial or the IND-Industrial zone, and is not considered in general site plans requirements that address other zones. This may be then criticized as discriminatory and an added burden on commercial projects in the rural areas of the county, but was purposefully placed there in recognition that noise may be of greater impact in the rural areas of the county. The present wording does not provide objective criteria for consideration in the site plan process, and should be considered for amendment.

Note also that other sections in the zoning regulations have requirements for addressing noise as follows by section:

7.10 Family Commercial Enterprises, Section F

F. No equipment or process shall be used in such enterprise or occupation which creates ***noise***, vibration, glare, fumes, odors, or electrical interference detectable to the normal senses off the lot or parcel housing the proposed use.

Note that this section poses several criteria that may be impossible to meet and therefore may not be defensible. This section too may need to be amended to add objective criteria.

7.13 Sport Shooting Ranges, Section B

B. Sport shooting range shall be designed to ***minimize noise*** to surrounding properties. Mitigation shall include soundproofing for indoor shooting ranges. For outdoor shooting range, mitigation shall include minimum distance from active firing lines or stations of 1000 feet from adjacent property lines to front (direction of line of fire) and sides of such firing lines or stations, and 500 feet from the rear (diametrically away from the line of fire) of such firing lines or stations, and shall include a combination of vegetative buffer, earthen buffer and constructed buffer as appropriate.

Note that though “minimize noise” standing alone may be seen as subjective, the mitigation criteria that follow provide objective content.

9.8 AHO Airport Hazard Overlay, Section B

B. Within the Airport Hazard Overlay and within the 65 DNL Contour, prior to the issuance of any building permit or approval of any special exception or variance, any application for permit or special exception or variance shall be forwarded to the McGhee Tyson Airport Authority for review and recommendation on compatibility with the ***Noise Compatibility Program of the Airport Authority***, and any other requirements for airport operations. The Airport Authority shall have 45 days in which to review and make recommendation. Lack of recommendation from the Airport Authority within such 45 days shall be interpreted as a recommendation of no effect in relation to the proposed permit. Any such recommendation finding incompatibility with the Noise Compatibility Program or interference with airport operations shall be grounds for denying a building permit or denying a special exception or variance.

Note that the Airport Hazard Overlay zone already sets an objective standard of average day/night noise level of 65 DNL within a plan adopted by the Airport Authority and is governed by FAA regulations.

Other county regulations adopted under animal control and the general county powers act also address noise without setting objective noise level. See last section of this item for those regulations.

Review of Possible Regulations. Review of internet sources reveals a range of objective requirements for noise based on decibel (dB) levels for different land use situations. Almost all seem to be related to a general noise ordinance and not to specific provisions in zoning regulations. The probable reason for this is that objective noise level requirements in zoning presuppose a method of predicting noise level prior to actual permit and use.

The question would be: How can you determine the objective noise level of a potential use at a specific site through the zoning permit process? This answer assumes a modeling methodology that could address a wide range of potential uses and site characteristics. Such methodologies exist, given evidence that commercial and industrial impact studies address noise issues projectively in some jurisdictions. However, such studies would probably be an added expense in the permit process and require expertise outside the present capabilities of county government.

The following is an example of how noise levels were integrated into a zoning ordinance in Nevada County, California, and may be used as a template for designing a noise element in our zoning regulations. Note that one of the features of this set of regulations is inclusion of rural zones which would be an important consideration for Blount County regulations.

Section L-II 4.1.7 Noise

A. Purpose. The purpose of these regulations is to ensure that future development minimizes unnecessary and annoying noise, by establishing maximum noise levels and standards for evaluating potential noise impacts.

B. Applicability. Noise standards shall apply to all discretionary projects, including Development Permits and Use Permits, unless otherwise excepted in this Section.

C. Definitions.

1. dBA - The "A-weighted" scale for measuring sound in decibels (a unit used to express the relative intensity of a sound as it is heard by the human ear). This logarithmic scale reduces the effects of low and high frequencies in order to simulate human hearing.

2. Leq - The energy equivalent level, defined as the average sound level on the basis of sound energy (or sound pressure squared). It is the level of constant sound

which, in a given situation and time period, has the same sound energy as does a time varying sound.

3. Lmax - The maximum sound pressure level for a given period of time.

D. Noise Standards. All land use projects requiring a Development Permit or a Use Permit shall comply with the noise standards provided herein. Permitted residential land uses, including parcel and tentative maps, are not subject to these standards.

Table L-II 4.1.7					
Exterior Noise Limits					
Land Use Category	Zoning Districts	Time Period		Noise Level, dBA	
		Start	End	L eq	L max
Rural	AG, TPZ, AE, OS, FR, IDR	7 am	7 pm	55	75
		7 pm	10 pm	50	65
		10 pm	7 am	40	55
Residential and Public	RA, R1, R2, R3, P	7 am	7 pm	55	75
		7 pm	10 pm	50	65
		10 pm	7 am	45	60
Commercial and Recreation	C1, CH, CS, C2, C3, OP, REC	7 am	7 pm	70	90
		7 pm	7 am	65	75
Business Park	BP	7 am	7 pm	65	85
		7 pm	7 am	60	70
Industrial	M1, M2	any time		80	90

1. A comprehensive noise study shall be prepared for all projects requiring a Development Permit or a Use Permit and which have a potential to create noise levels inconsistent with the standards contained herein. The study shall be prepared in accordance with the methodology identified in the Noise Element Manual contained in General Plan, Volume 2, Section 3 – Noise Analysis Appendix A, Table A-1.

2. Projects with the potential for generating noise impacts shall incorporate design controls that assist in minimizing the impacts through the use of increased setbacks, landscaped earthen berms, solid fencing, placement of structures or other effective means.

3. Compliance with the above standards shall be determined by measuring the noise level based on the mean average of not less than three 20 minute measurements for any given time period. Additional noise measurements may be necessary to ensure that the ambient noise level is adequately determined. All measurements shall be conducted by a qualified person experienced in the field of environmental noise assessment and architectural acoustics.

- 4.** Where 2 different zoning districts abut, the standard applicable to the lower, or more restrictive, district plus 5 dBA shall apply.
- 5.** The above standards shall be measured only on property containing a noise sensitive land use, including residences, schools, hospitals, nursing homes, churches, and libraries, and may be measured anywhere on the property containing said land use. However, this measurement standard may be amended to provide for measurement at the boundary of a recorded noise easement or as determined in a recorded letter of agreement between all affected property owners and approved by the County.
- 6.** If the measured ambient level exceeds that permitted, then the allowable noise exposure standard shall be set at 5 dBA above the ambient.
- 7.** Because of the unique nature of sound, the County reserves the right to provide for a more restrictive standard than shown in the Exterior Noise Limits Table. The maximum adjustment shall be limited to be not less than the current ambient noise level and shall not exceed the standards of this Section. Imposition of a noise level adjustment shall only be considered if one or more of the following conditions are found to exist:
 - a.** Unique characteristics of the noise source:
 - 1)** The noise contains a very high or low frequency, is of a pure tone (a steady, audible tone such as a whine, screech, or hum), or contains a wide divergence in frequency spectra between the noise source and ambient level;
 - 2)** The noise is impulsive in nature (such as hammering, riveting, or explosions), or contains music or speech;
 - 3)** The noise source is of a long duration, defined as a cumulative period of more than thirty minutes in any hour.
 - b.** Unique characteristics of the noise receptor when the ambient noise level is determined to be 5 dBA or more below the standard of the Exterior Noise Limits Table for those projects requiring a General Plan amendment, rezoning, and/or Use Permit. In such instances, the new standard shall not exceed 10 dBA above the ambient or the Exterior Noise Limits Table standard, whichever is more restrictive.
- 8.** The above standards shall not apply to those activities associated with the actual construction of a project or to those projects associated with the provision of emergency services or functions.
- 9.** The standards of this Section shall be enforced through compliance inspections and/or complaints.

10. A legal nonconforming use inconsistent with the noise standards of this Section shall be required to comply with said standards in the event it upgrades, enlarges, intensifies, extends, moves, or recommences after abandonment or discontinuance of a period of 180 days or more. In the event such a use is changed or modified through the permit process, the noise standards in this Section shall be applied only to that portion of the land use requiring approval, provided, however, that in no event shall the noise cumulatively generated from the entire use on the site after the change or modification exceed the pre-permit ambient noise level. All such projects that have a potential to create noise levels inconsistent with the standards in this Section will require a noise study consistent with this Section.

Note that the above regulations would not address specific noise complaints after site plan approval permit, such as with operation of an approved business. Such noise complaints would be better addressed by a separate noise ordinance not related to zoning site plan requirements. A site plan approval process can address design issues related to noise, but is not well suited to address operation issues on an on-going basis after permit is issued.

Background on Noise Standards. Noise can be viewed as a health hazard, a safety hazard, and a nuisance or annoyance. In this context, noise is characterized by a level of intensity or other quality above that normally accepted or tolerated by individuals and the community.

Noise, or sound in general, can be measured in decibels or dB of intensity. The scale is logarithmic, meaning that increments of number are not in simple additive relationship, but reflect progressively greater intensity for each numerical increment. Thus a 20 dB sound is ten times greater than a 10 dB sound, and a 30 dB sound is 10 times greater than a 20 dB sound and 10x10 or 100 times greater than a 10 dB sound.

For comparison, sound at 0 to 20 dB is considered very faint, up to the level of a whisper. Up to 40 dB includes low volume radio in an otherwise quiet room. Up to 60 dB includes freeway traffic sound. Normal speech is in the range of 50 to 70 dB. Up to 80 dB includes a noisy school cafeteria. From 80 to 105 dB includes noisy factory, noisy urban street, and a loud car horn at close range. Levels above 105 dB reach into deafening sound and threshold of pain.

Sound can be a health hazard at levels above 70 dB for extended periods of time, and can lead to cardiovascular, digestive, stress, and behavioral and psychological problems (some would peg the level at less than 70 dB). At about 85 dB, prolonged exposure greater than eight hours can result in permanent damage to hearing, and at levels above 105 dB even short exposure can lead to hearing damage.

Noise is unwanted or harmful sound. When sound becomes so intense or prolonged that it causes unwanted health effects, it may be classed as noise. Noise can also pose safety problems if it interferes with receiving necessary signals from the environment such as sirens, alarms, and verbal instructions.

Noise can be a nuisance. The nuisance characteristic of noise is different for different people, and different in different contexts and time of day. Noise can disrupt concentration at work. Noise can interfere with education of children in schools. Noise can interrupt and disturb sleep. Noise can reduce the enjoyment of residential living. Often, it is not only the intensity of the sound, but also the frequency or pulsing of the sound that causes noise to be a nuisance or annoyance. In addition, a sound that is slightly perceived within daytime background sounds, may become a nuisance or annoyance at night when people are more sensitive to sounds.

Increments of sound from various sources are perceived differently in a city with high level of background sound, compared to a quiet rural setting. An increase in sound can be lost to perception in a city context, but be very noticeable and objectionable in a rural context.

Most people expect to enjoy their residences free from unnecessary and unwanted sound. In general, acceptable sound intensity at night in a bedroom would be around 30 to 40 dB, or up to 45 dB with open window. Outside sound levels for regular enjoyment in a quiet neighborhood would be around 45 to 55 dB.

The reception of sound from a source is dependent on distance and intervening barriers. When distance from a point source is doubled, the intensity is reduced approximately 6 dB. Thus, sound measured 10 feet from source at 80 dB, would be 74 dB if 20 feet away, and would be 68 dB if 40 feet away. If there is a barrier such as a solid fence, dense vegetation or an earth berm between sound source and receptor, noise may be attenuated substantially by absorption or reflection.

Perception of noise, or loudness, is not in simple relation to the intensity of the sound. Generally, a reduction of noise by 10 dB would be perceived as a reduction by 1/2 in loudness. For example, a reduction in noise from 60 dB to 50 dB would normally be perceived as reduction in loudness by 1/2. Conversely, an increase of noise by 10 dB would be perceived as a doubling of loudness.

Multiple sources of sound are not linearly additive, and a doubling of equal intensity sound sources would increase overall sound by about 3 dB. As example, two sources of 45 dB each would result in a total sound intensity of 48 dB

combined, and four such sources combined would result in total sound intensity of 51 dB.

Other County Regulations (for reference only). Blount County has adopted two other sets of regulations that also address noise, one is animal control regulations (Resolution 99-03-001 that contains the following:

SECTION 6. Noisy dogs prohibited. No person shall own, keep, harbor, possess or maintain any dog which disturbs the peace and quiet of others by loud and frequent barking, whining or howling. A dog shall be deemed in violation of this section if it barks, whines or howls continuously for a period in excess of one (1) hour and fifteen (15) minutes. This section shall not apply to a dog on a hunt or chase, or a dog guarding or driving livestock, or a dog participating in an organized animal show, or to veterinary clinics or boarding facilities.

The second set of regulations (Resolution 02-02-004) were adopted under the county powers act as indicated in the following preamble and specific regulations:

WHEREAS, upon the adoption of such resolution and pursuant to the provisions of said subsection (22) of Tennessee Code Annotated section 6-2-201, Blount County is authorized to define, prohibit, abate, suppress, prevent and regulate all acts, practices, conduct, businesses, occupations, callings, trades, uses of property and all other things whatsoever detrimental, or liable to be detrimental, to the health, morals, comfort, safety, convenience or welfare of the inhabitants of the unincorporated areas of the county, and to exercise general police powers.

Regulation No. 1. Motor vehicle requirements. No person shall operate a motor vehicle unless such vehicle (1) is equipped with a properly operating muffler, ...

Regulation No. 30. Causing unnecessary noise. No person operating a motor vehicle shall cause unnecessary noise by sounding the horn, "racing" the motor or causing the "screeching" or "squealing" of the tires thereof.

Regulations No. 45. Antinoise regulations. No person shall create or cause any noise of such character, intensity or duration as to be detrimental to the life or health of any individual or in disturbance of the public peace and welfare.

(1) The following noises are declared to be in violation of this regulation, but this enumeration shall not be deemed to be exclusive, to wit:

(a) Blowing horns. The sounding of any horn or audible signal device on any motor vehicle while such motor vehicle is not in motion, except as a danger signal if another vehicle is approaching, apparently out of control, or if in motion, only as a danger signal after or as brakes are being applied and deceleration of such motor vehicle is intended; the creation by means of any horn or audible signal device on any motor vehicle of any unreasonably loud or harsh sound; and the sounding of any horn or audible signal device on any motor vehicle for an unnecessary and unreasonable period of time.

(b) Radios, phonographs, etc. The playing of any radio, phonograph, tape recorder or player or any musical instrument or sound device, including but not limited to loudspeakers or other devices for reproduction or amplification of sound, either independently or in connection with motion pictures, radio or television, in such a manner or with such volume, particularly during the hours of 11:00 p.m. and 7:00 a.m., as to annoy or disturb the quiet, comfort or repose of any person in any office or hospital, or of any person in any dwelling, hotel or other type of residence, or of any person in the vicinity.

(c) Yelling, shouting, hooting, etc. Yelling, shouting, hooting, whistling or singing or any highway, street, road or public way, particularly between the hours of 11:00 p.m. and 7:00 a.m., or at any time or place so as to annoy or disturb the quiet, comfort or repose of any person in any office or hospital, or of any person in any dwelling, hotel or other type of residence, or of any person in the vicinity.

(d) Pets. The keeping of any animal, bird or fowl which by causing frequent or long continued noise shall disturb the quiet, comfort or repose of any person in the vicinity.

(e) Use of vehicle. The use of any motor vehicle so out of repair, so loaded or in any manner as to cause loud and unnecessary grating, grinding, rattling or other noise.

(f) Exhaust discharge. The discharge into the open air of the exhaust of any steam engine, stationary internal combustion engine, motor vehicle or boat engine, except through a muffler or other device which will effectively prevent loud or explosive noises therefrom.

(g) Noises near schools, hospitals, churches, etc. The creation of any loud and excessive noise on any street adjacent to any hospital or adjacent to any school, institution of learning, church or court while the same is in session.

(h) Noises to attract attention. The use of any drum(s), loudspeaker or other instrument or device emitting noise for the purpose of attracting attention to any performance, show or sale or display of merchandise.

(i) Loudspeakers or amplifiers on vehicles. The use of loudspeakers or amplifiers on motor vehicles, either moving or standing, for advertising or other purposes.

(2) None of the terms or prohibitions hereof shall apply to or be enforced against:

(a) Government vehicles and authorized emergency vehicles. Any vehicle of any government while engaged in necessary public business and any authorized emergency vehicle.

(b) Repair of streets, etc. Excavations or repairs of bridges, highways, streets, roads or public ways by or on behalf of any government.

(c) Noncommercial and nonprofit use of loudspeakers or amplifiers. The reasonable use of loudspeakers or amplifiers in the course of noncommercial public addresses and in the course of noncommercial functions of nonprofit organizations.

4. Staff reports. Staff may supply other reports at meeting.