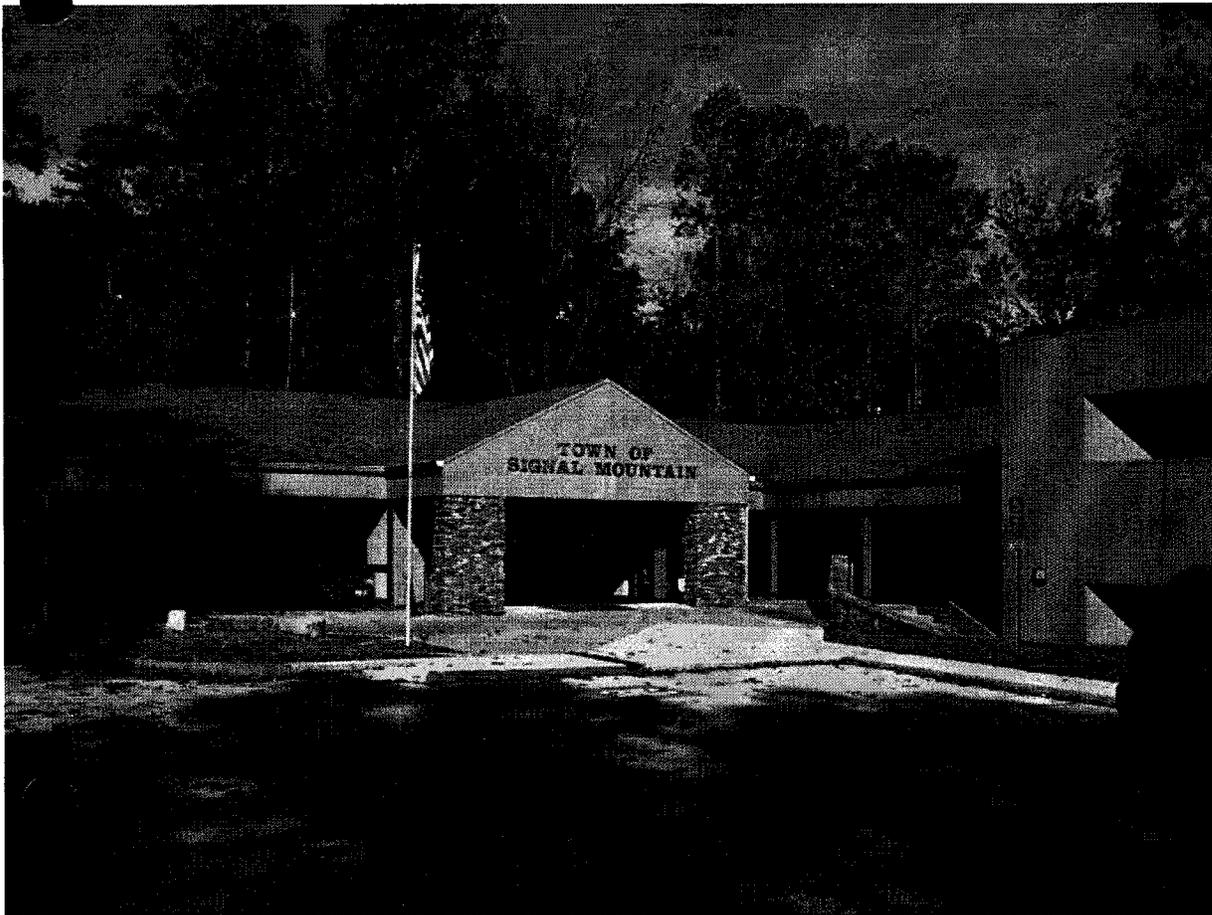


LAND USE PLAN



Town of Signal Mountain

Adopted
January 16,
2008

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This plan serves as a general policy guide for future community improvements and rezoning requests. This document provides the basic framework for land use, transportation, public services, and community improvements. Upon adoption of this plan, zoning changes and other redevelopment recommendations will not automatically occur.

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1.0 Introduction

The Signal Mountain Land Use Plan is the result of a collaborative planning effort by the residents and business people in the community, Regional Planning Agency staff, elected officials, and other community stakeholders. The purpose of the plan is twofold. First, it will provide residents, businesses, and policy makers with information on the conditions that exist in Signal Mountain today. Second, the plan will provide a framework for guiding future growth and redevelopment in the town in a way that can improve the livability and long-term economic prosperity of the area.

This document is divided into five sections. **Section 1 – Introduction** provides an overview of area plans and the process used to develop the Signal Mountain Land Use Plan. **Section 2 – Study Area Profile** provides background data for the study area including topics such as demographics, land use, and zoning. **Section 3 – Plan Approach-** discusses public input and overall goals for growth. **Section 4 – Land Use Plan** illustrates future land use recommendations for this portion of Signal Mountain and describes the various issues, objectives, and recommendations related to each land use category. **Section 5 – Historic and Cultural Preservation and Section 6 – Resource Management Plan** address historic and scenic assets as well as natural resource issues. **Section 7 – Transportation** focuses on a multi-modal system.

1.1 Planning Process

This plan was prepared by the Chattanooga-Hamilton County Regional Planning Agency in consultation with the Town of Signal Mountain, appointed and elected officials, and community stakeholders.

The Regional Planning Agency (RPA) is a joint agency of the City of Chattanooga and Hamilton County. The staff is comprised of professional city planners, urban designers, researchers, graphic designers and administrative personnel. The RPA is governed by an Executive Committee comprised of the Hamilton County Mayor, the Chattanooga Mayor, the County Commission Chair, the Chattanooga City Council Chair, and the Planning Commission Chair.

Its major responsibilities include developing land use plans and transportation plans, administering zoning, proposing development policies, and reviewing new subdivisions and other development projects for the county and most of its municipalities. The RPA also provides recommendations for zoning requests to the Chattanooga-Hamilton County Regional Planning Commission and other area Planning Commissions such as Signal Mountain for their consideration.

Except for the administration of the Transportation Planning Organization (TPO), which covers the northern portions of Catoosa, Walker, and Dade counties in Georgia, the RPA's jurisdiction lies within Hamilton County.

The mission of the Regional Planning Agency is to protect the public health, safety, and welfare... its quality of life. The planning process allows the community to define their quality of life. In this case, RPA's role is to lead a collaborative planning process for the Town of Signal Mountain. This includes facilitating a series of public meetings, assessing existing conditions and future trends, combining public input with traditional and innovative planning techniques, and creating a land use plan. The plan itself is a tool that states how the quality of life for the community will be protected and improved.

A land use plan guides how, when, and where new growth, redevelopment, and preservation should occur in a particular area. Community input provides a

RPA Planning Principals

Planning should provide for the health, safety, and welfare of the community.

- Planning should be proactive and visionary.
- Planning should reflect the integration of comprehensive economic, social, and environmental factors.
- Planning should promote the wise use of existing resources without compromising our options for the future.
- Planning should recognize the importance of diversity in our community, including its people, cultures, values, places and natural resources.
- Citizen involvement in the planning process is essential.
- Planning should reflect a high ethical standard, free from conflicts of interest.
- Planning should seek to find a balance between what is good for the community as a whole and the rights of citizens as individuals.
- Planning should incorporate realistic and flexible implementation components that define specific areas of responsibility.
- Planning should recognize the importance of the urban, suburban, and rural areas to the economic and cultural vitality of the entire community.
- Planning should facilitate new growth while protecting neighborhoods, infrastructure, and the environment.
- Planning should be an ongoing process in which previously developed plans are reviewed periodically and updated or modified as needed if conditions or preferences have changed.

Tennessee Code Annotated 13-4-201. General plan for physical development. —

It is the function and duty of the commission to make and adopt an official general plan for the physical development of the municipality, including any area outside of its boundaries which, in the commission's judgment, bears relation to the planning of the municipality. The plan, with the accompanying maps, plats, charts, and descriptive and explanatory matter, shall show the commission's recommendations for the physical development, and may include, among other things, the general location, character and extent of streets, bridges, viaducts, parks, parkways, waterways, waterfronts, playgrounds, airports and other public ways, grounds, places and spaces, the general location of public buildings and other public property, the general location and extent of public utilities and terminals, whether publicly or privately owned, for water, light, power, sanitation, transportation, communication and other purposes; also the removal, relocation, widening, extension, narrowing, vacating, abandonment, change of use or extension of any of the foregoing public ways, grounds, places, spaces, buildings, properties or utilities; also a zoning plan for the regulation of the height, area, bulk, location and use of private and public structures and premises and of population density; also the general location, character, layout and extent of community centers and neighborhood units; also the general location, character, extent and layout of the replanning of blighted districts and slum areas. The commission may from time to time amend, extend or add to the plan or carry any part of subject matter into greater detail.

foundation for this plan. However, a plan should balance fact-based research and the values expressed by a community. It is also important that sound planning principles provide the framework for the plan goals, policies, and action steps.

This land use planning process is also a positive approach to discuss and seek a balance between private and community interests.

Government officials will use an adopted plan as a general policy guide when making decisions involving future community improvements and rezoning requests. A neighborhood association can use an area plan as a concise way to present its vision for the future to area residents, businesses, potential community partners, and investors.

Because an area plan is a guide, its adoption does not guarantee that community improvements or zoning changes will occur. Committed citizens and town officials must continue to work on implementing the recommendations of the plan.

The plan is reviewed and acted on by the Signal Mountain Planning Commission. State law requires that the Planning Commission have a municipal plan in place. The Town Council can choose to adopt the plan also although this is not required. The town reviews its land use plan at least every three years although updates and plan modifications can be made at any time.

1.2 Why do we need a plan?

Some benefits of having a plan include the following:

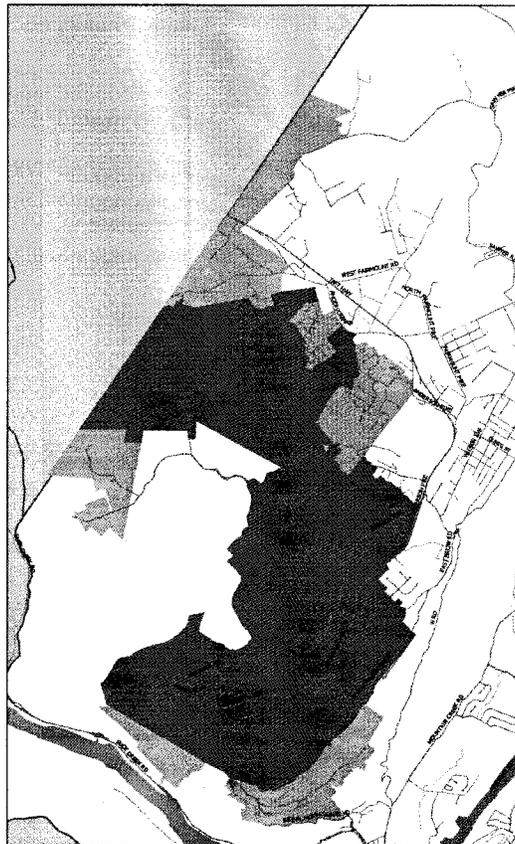
- A plan helps a community capitalize on its assets and develop coordinated initiatives for solving its problems.
- A plan provides citizens guidance for their positions on rezoning requests and capital improvements.
- A plan gives developers and other investors the opportunity to work in concert with the community's established vision.
- A plan can increase citizen participation in community affairs and foster community pride.
- A plan can be used to support the Town's and neighborhood associations' efforts to secure grants for community projects.
- A plan coordinates public improvements such as roads, sewers, and parks.

1.3 What area does this plan cover?

This plan is primarily focused on the Town of Signal Mountain and its Urban Growth Boundary (UGB). The State of Tennessee passed a law in 1998—*Public Acts 1998, Chapter 1101*—requiring all Tennessee counties to develop a comprehensive 20-year growth boundary plan. In 2001, Hamilton County and its municipalities signed an interlocal agreement showing those areas that contain the corporate limits of each of the county's ten municipalities and the adjoining territory where growth is expected. Chapter 1101 expressly recognizes annexation as a legitimate municipal growth tool. Annexation is a critical tool for most incorporated municipalities and is an effective method of controlling, managing, and directing the growth of urbanized areas.

Based on its agreement with Hamilton County and the Town of Walden the Town of Signal Mountain "shall not annex" any area within its Urban Growth Boundary north of Hwy. 127 until after January 19, 2011.

Public Acts 1998, Chapter 1101, provides for a comprehensive growth policy plan in each county that is, in theory, supposed to guide and direct new development in the county during the next 20 years. But it is probably accurate to say that in most counties the critical issue in the formation of the comprehensive growth plan was where municipalities could—and could not—annex territory during that period. *Annexation Handbook for Cities and Towns in Tennessee II 2007, Municipal Technical Advisory Service (MTAS)*



Darker area shown on map is the existing town limits; lighter area is the town's Urban Growth Boundary.

1.4 What is the difference between a plan and zoning?

An area plan differs from zoning in that a plan is an advisory document which includes a set of strategies for achieving specific community goals. These goals relate to things such as land use, transportation, resource protection, and community facilities.

Zoning on the other hand is a tool used to implement an area plan. Zoning is a legal and enforceable part of city or county code and is used to regulate the use of land and the type, scale, and intensity of development on that land.

1.5 How does this plan relate to other plans?

Data and recommendations from several of plans and studies created for and by the town have been consulted and incorporated into this document.

Those planning documents include the following:

- *Hamilton County Comprehensive Plan 2030*
- *Town of Signal Mountain, TN Zoning Regulations*
- *Walden's Ridge Plateau Area Plan, 1997*
- *Town of Signal Mountain Subdivision Regulations*
- *Planning documents related to Hamilton County's Urban Growth Plan*
- *TransPlan 2030*
- *Congestion Management Plan*
- Signal Mountain High School Business Plan (Friends of Signal Mountain High School)
- Town of Signal Mountain Land Use and Transportation Plan, 2000 (current plan)
- Mountain Vision, Strategic Planning Process

The plans or documents in italics were created and/or are administered by the Regional Planning Agency. The recommendations of this plan may also be incorporated into future plans and studies.

Another initiative was taken into consideration in the creation of this document. In July 2007, the Town Council voted unanimously on a resolution endorsing the U.S. Mayors Climate Protection Agreement, a national initiative to reduce greenhouse gas emissions. As stated by the organization leading this effort, "Under the Agreement, participating cities commit to take following three actions:

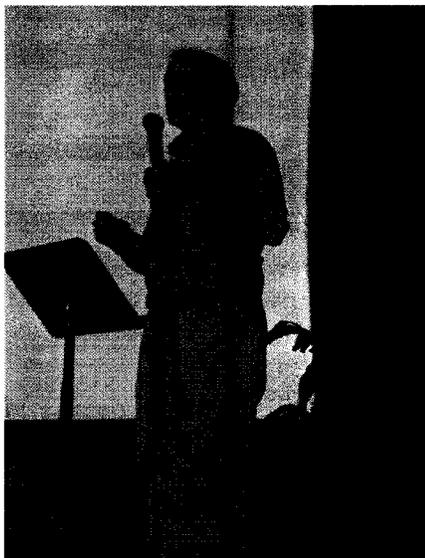
- Strive to meet or beat the Kyoto Protocol targets in their own communities, through actions ranging from anti-sprawl land-use policies to urban forest restoration projects to public information campaigns;
- Urge their state governments, and the federal government, to enact policies and programs to meet or beat the greenhouse gas emission reduction target suggested for the United States in the Kyoto Protocol -- 7% reduction from 1990 levels by 2012; and
- Urge the U.S. Congress to pass the bipartisan greenhouse gas reduction legislation, which would establish a national emission trading system.”

Strategies for achieving greenhouse gas reduction:

1. Inventory global warming emissions in City operations and in the community, set reduction targets and create an action plan.
 2. Adopt and enforce land-use policies that reduce sprawl, preserve open space, and create compact, walkable urban communities;
 3. Promote transportation options such as bicycle trails, commute trip reduction programs, incentives for car pooling and public transit;
 4. Increase the use of clean, alternative energy by, for example, investing in “green tags”, advocating for the development of renewable energy resources, recovering landfill methane for energy production, and supporting the use of waste to energy technology;
 5. Make energy efficiency a priority through building code improvements, retrofitting city facilities with energy efficient lighting and urging employees to conserve energy and save money;
 6. Purchase only Energy Star equipment and appliances for City use;
 7. Practice and promote sustainable building practices using the U.S. Green Building Council's LEED program or a similar system;
 8. Increase the average fuel efficiency of municipal fleet vehicles; reduce the number of vehicles; launch an employee education program including anti-idling messages; convert diesel vehicles to bio-diesel;
 9. Evaluate opportunities to increase pump efficiency in water and wastewater systems; recover wastewater treatment methane for energy production;
 10. Increase recycling rates in City operations and in the community;
 11. Maintain healthy urban forests; promote tree planting to increase shading and to absorb CO₂; and
 12. Help educate the public, schools, other jurisdictions, professional associations, business and industry about reducing global warming pollution.
- *U.S. Mayors Climate Protection Agreement*

**Tennessee Code Annotated
13-4-203. General purposes of
the plan — Surveys and studies.**

In the preparation of the plan, the commission shall make careful and comprehensive surveys and studies of the existing conditions and future growth of the municipality and its environs. The plan shall be made with the general purpose of guiding and accomplishing a coordinated, adjusted and harmonious development of the municipality which will, in accordance with existing and future needs, best promote public health, safety, morals, order, convenience, prosperity and the general welfare, as well as efficiency and economy in the process of development.



*Randall Arendt speaks at
public meeting*

1.6 How does the planning process work?

Active citizen participation is vital to the success of any plan. When stakeholders in a community are directly involved in the planning process, they are more likely to take ownership of the plan and then play an important and much-needed role in its implementation.

This plan was prepared using a community-based approach with stakeholders providing input and recommendations through a series of public workshops. The Regional Planning Agency served as a facilitator and professional resource at these workshops. Through the planning process a set of objectives, principles, and strategies emerged for the Town of Signal Mountain.

1.7 Preplanning phase

During the beginning of the planning process, RPA staff attended several Town Planning Commission meetings to review the town's 2000 Land Use and Transportation Plan and discuss the planning process. Planning Commissioners, Town Councilmembers, and citizens reviewed the 2000 plan goals and objectives and discussed what items had been addressed previously, what recommendations had been implement, and in what areas should the updated plan focus.

Additionally, the renowned open space conservation subdivision design planner Randall Arendt was contracted with to provide planning advice specifically for the town.

Mr. Arendt conducted three in-depth sessions for individuals involved in mountaintop issues specifically. The first session was for local developers and landowners that either actively develop on the mountaintop or are interested in developing in the area. Participants had the opportunity to ask very detailed questions about using open space design as a tool. Issues that were discussed included roadway connectivity, incorporating, types of natural areas that are most important to preserve, economic benefits of this form of development, and ownership and maintenance of open space.

During the second session, Mr. Arendt presented present an Ordinance Review for local officials, specifically identifying obstacles to conservation design in their

current codes, and offering practical alternatives for the subdivision and zoning ordinance language. This critique, with feedback provided to town officials and staff, helped identify shortcomings in the regulations and provided advice to improve any deficiencies. (Mr. Arendt's ordinance review is in the Appendix.)

The third meeting was open to all residents to help them gain a better understanding of the importance of open space design and to gain support from all stakeholders for the idea of partnering growth with open space preservation. Particular attention was given to the special topological and environmental issues of the plateau and the meeting ended with a question and answer period.

1.8 Public Input

Over 200 people attended the first public meeting on June 26th at Nolan Elementary School. Participants identified over 270 issues during this workshop-style event. Planning staff categorized the comments by general topic with some being specifically related to development of the land use plan and other topics being provided for general information during plan development.

Strengths/Assets

- Low Density
- Natural Beauty
- Small Town Feel
- Sense of Community/Community Involvement
- Family-oriented
- Multi-generational
- Location
- Safety
- Senior Housing
- Housing Diversity
- Residential developments
- Businesses: type, location and signage
- Trees
- Schools
- Community Involvement
- Town Services and amenities
- Sidewalks

Needs/Opportunities

- Planned Growth
- Capacity study



Participants at one of the Public Input sessions



- Control Population Growth
- Maintain Small Town Atmosphere
- Citizen Involvement
- Housing Diversity
- Cluster Development/Conservation Subdivisions
- Address appropriate density
- Similar development to Old Town
- Green Space in Neighborhoods
- Planned Growth
- Business Façade Improvements
- Expanded Non-residential Opportunities
- Tree Preservation
- Protect Natural Environment
- Protect Water Resources
- Address Sewer Service/Septic issues
- Intergovernmental Cooperation
- Infrastructure
- Trails
- Green Space Expansion and Promotion
- Expansion of Trails, Sidewalks, Bicycling opportunities
- New Road up mountain
- Limit Truck Traffic
- Bus Stops

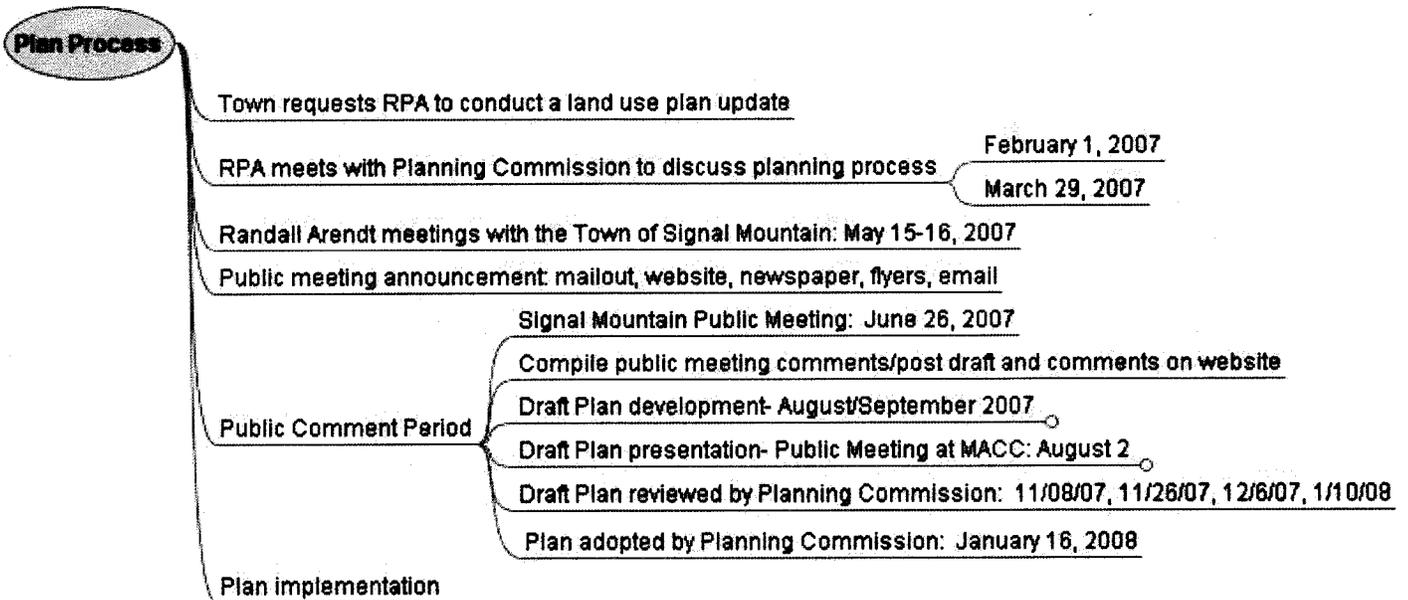
Weaknesses

- Lack of Planned Growth
- Lack of Information
- Lack of Diversity
- Sense of Community can decline as community changes
- Vacant Property
- Lack of Commercial Design Standards
- Development Not Concentrated
- Clear-cutting of Trees
- Water Pollution
- Sewer/Septic issues
- Town Services/Roles
- Utilities' Services
- Amount/maintenance of Sidewalks
- Limited Access on/off mountain
- Lack of Transit
- Bicycling Facilities/Hiking Trails/Greenways
- Traffic Congestion/Road Capacity
- Roadway Maintenance
- Shackleford Ridge Rd.

The draft plan was presented to the public in August and then received public hearings at Planning

Commission in November and December. During this time the draft plan was available online and interested stakeholders could also receive a copy via postal mail, email, or by picking up a copy at town hall. All comments were recorded and made available online and at all public meetings.

The following identifies important dates in the creation of this plan:



2.0 Study Area Profile

The following provides background information about the town including a brief history, government structure, demographics, zoning and land use.

2.1 History of the Town of Signal Mountain

It is believed that the Creek, Cherokee, and other Native American tribes used Signal Point and nearby promontories to send fire and smoke signals for centuries prior to the Civil War. During the fall of 1863, the Union Army used Signal Point as a communications station to signal various locations in the Chattanooga area. These activities clearly indicate a principal and appropriate reason why the present Town should be called Signal Mountain.

The Town of Signal Mountain originated with the purchase of 4,400 acres of land in the Signal Point area by Charles E. James. Mr. James' first contact with Walden's Ridge was during the 1878 yellow fever epidemic. Mr. James led a group of people to the Signal Point area to escape the epidemic and with his purchase began plans for a residential community.

Mr. James brought the modern world to the mountain. In the eyes of many Town residents, he was a prophet of progress. Mr. James was a visionary who dreamed of railroads, dams, towns, and a fine hotel surrounded by modern homes on a remote mountaintop. He found beauty and satisfaction in bricks, mortar, blueprints and machinery. He made those dreams come true.

Thirty years elapsed before Mr. James began developing the Signal Point area. In 1913, construction of twelve miles of streetcar track was completed. The streetcar track connected Chattanooga to Signal Mountain. Signal Mountain Inn opened in 1913 and catered to those on their way to winter in Florida. Mr. James knew the hotel needed recreation beyond that of hiking trails and the mineral waters of Burnt Springs, so he constructed a casino complete with dance floor across from the hotel. Soon he added two hundred rooms to the Inn. Many of these rooms were later occupied by friends and families of soldiers stationed at Fort Ogelthorpe during World War I. For the next six to eight years, Mr. James' principal interest was developing the area surrounding the hotel.

In 1918, the Signal Mountain Golf Course was completed. All of Walden's Ridge was open range for cattle, and farmers from Red Bank, Mountain Creek, and the surrounding areas drove their cattle up to Walden's Ridge in the spring and left them to forage until fall. Attracted to the golf course greens, the animals collected there in large numbers. When the Town was incorporated, its first ordinance prohibited running livestock within the Town limits.

On April 4, 1919, the Tennessee Legislature passed the bill that chartered the Town. The Charter required the Town to be governed by three commissioners to be elected by the Town's registered voters. The first Mayor was C. E. James. He served as Mayor from 1919-1921. When Mr. James died in 1925, two hundred houses had been built with their primary location being within a few blocks of the Signal Mountain Inn. Many of these were summer residences.

The Palisades section would remain forest for another ten years. Mr. James was instrumental in building Signal Mountain Grammar School which opened in 1927. A fire hall was built attached to a house. In 1927, a Town Hall and temporary jail were added.

The Alexian Order purchased the Signal Mountain Hotel in 1936, built a monastery, and converted the hotel into a home for elderly men by 1938. In 1950 the Generalate of the Congregation of Alexian Brothers moved the headquarters to the Town. The Order opened Alexian Village of Tennessee in September, 1983, which is a total life care community for the elderly. They opened the Alexian Inn, a thirty-three unit assisted living facility, in the old hotel building in August, 1992.

In 1939 the swimming pool near the Signal Mountain Golf Course was constructed for \$8,000. Wilkes T. Thrasher Elementary School opened in 1961. By 1971, 1,294 students were enrolled in the two elementary schools and Signal Mountain Junior High. Kindergartens were in operation at both schools by 1975.

The 1970's brought many changes to the Town. Its population had grown to 4,839 residents by 1970. A library was established in 1970. A new fire hall was built. A sewer system was approved for the oldest part



*Alexian Brotherhood Health Resort
-Chattanooga-Hamilton County
Bicentennial Library archives*

of the community as well as part of the Palisades Drive area, additional recreational facilities and a new Town Hall, including the Town's Administrative Offices, were built in 1979.

During the last twenty years, the Town has continued to change, grow and improve. Recreational facilities built during this period were a municipal playground, tennis courts, baseball, softball and soccer fields, and the Paul Mathes Family Center at the corner of Ridgeway and Rolling Way. A new library facility opened in 1988.

The Tennessee Legislature amended the Town's Charter to convert the Town's government to a Council/Manager form of government in May, 1990.

In May 2001, the Town signed an interlocal agreement with Hamilton County and its other municipalities outlining their Urban Growth Boundaries as part of the requirement under the state's Chapter 1101 regulations.

On May 18, 2005, Signal Mountain and Walden residents supported referendums that authorize the towns of Signal Mountain and Walden to issue \$10 million in bonds to help build a high school to serve the mountain communities. Subsequently, the Hamilton County Commission agreed to issue bonds to pay for \$96 million in school construction, a plan that included a new middle and high school on Signal Mountain. The new schools are slated for opening in 2008.

Crucial portions of this section of the plan were paraphrased from Signal Mountain and Walden's Ridge by Z. Carter Patten and various other sources and taken from the Town's 2000 Land Use and Transportation Plan. Minor revisions and updates were made as part of the 2007 planning process.

2.1 Government Structure

The Town was incorporated in 1919. It operated for many decades with the Commission form of government. In 1988, a Charter Study Committee was appointed by the Town Commission to study alternative forms of governmental structures. With the assistance of the Municipal Technical Advisory Service, the Charter Study Committee recommended to the Town Commission that the Council/Manager form of government be pursued. The Town Commission voted on February 12, 1990, to adopt the Private Act approved on January 29, 1990, by the Tennessee Legislature which amended the Town Charter to convert the Town's government from the Commission form of government to the Council/Manager form.

The Council is comprised of five members elected at-large by the voters with three of the five members running every two years on even-numbered years matching the national elections. All members serve without pay. Of the three candidates that receive the largest number of votes in each election, two receive four-year terms and one (the third place finisher) receives a two-year term. This ensures that three members of the Council will be up for election every two years.

The Council sets all policies, including ordinances, resolutions, contracts, personnel policies, personnel staffing levels, purchasing policies, the budget, tax rate, and other municipal policies.

The Mayor and Vice-Mayor are selected by and from among the Councilmembers. The Mayor presides at Council meetings and otherwise provides leadership for the Council and the Town. The Vice-Mayor acts as Mayor in the Mayor's absence.

The Council appoints the Town Manager, who serves at the will of the Council. The Charter provides the Manager with powers to be the chief administrative officer, to supervise all employees (except the Town Attorney and Judge), enforce all laws and ordinances of the Council, draft a budget for Council review, prepare an annual financial statement, supervise all purchasing using the Council's purchasing policy, and make recommendations to the Council through the agenda for Council meetings. All meetings are open to the public.

The Town has a number of boards and commissions, including the Planning Commission, Recreation Advisory Board, Library Board, Parks Board, Design Review Commission, Board of Zoning Appeals, and Condemnation Board, composed of citizen volunteers appointed by the Town Council who are interested in serving their community.

I know of no safe depository of the ultimate powers of society but the people themselves; and if we think them not enlightened enough to exercise their control with a wholesome discretion, the remedy is not to take it from them but to inform their discretion by education. — Thomas Jefferson

2.2 Planning Commission

While all the town's boards play an important role, it is the Planning Commission that is tasked with creating and adopting the official general plan for the town's physical development. The Planning Commission is composed of the Town mayor, one member of Town Council, and eight or nine other members appointed by the mayor. Under state legislation, the Planning Commission is an appointed body. While state law does allow Planning Commissioners to be compensated, members of the Signal Mountain Planning Commission are unpaid.

In addition to creating and adopting an official general plan for the physical development of the municipality, Tennessee Code specifies further powers of the Planning Commission. These include making advisory reports and recommendations, reviewing and commenting on public projects through the mandatory referral process, reviewing subdivision regulations and site plans, preparing and providing recommendations regarding the zoning ordinance and zoning maps, and reviewing amendments to the zoning ordinance and maps.

Signal Mountain Municipal Code further refines the local purpose and function of the Commission (Title 14, Chapter 1, Section 14-106):

(1) Purpose. Maintenance of the Town as a predominantly single-family residential community by protecting existing and future residential areas from encroachment by incompatible land uses and endeavoring to prevent commercial, industrial and multi-family development from impairing the property values of single-family residential areas within the Town.

(2) Functions. It shall be the duty of the Planning Commission to collect data and keep itself informed as to the best practices and the advancements made in the

art of municipal planning, to the end that it may be qualified to act on matters that affect the present and future movements of traffic, the convenience and safety of persons and property, the health, recreation and general welfare and the use of buildings, structures and land for trade, industry, residence, recreation, public activities and all other needs of the Town which are dependent upon a Town plan.

2.3 Demographics and Development Trends

In order to effectively plan for the future growth and development of the town, it is important to understand the historic growth patterns and assess how much growth is likely to occur in the future and whether this projected growth can be adequately accommodated.

The Regional Planning Agency's countywide Comprehensive Plan 2030 considers the study area's development form to be Outer Suburban:

Outer Suburban Development Sector

The hallmark of the Outer Suburban area is the distinct separation of residential and non-residential uses. The residential developments are usually single-units which are found on larger lots. Multi-family dwellings such as apartments are also found in select areas, usually as a buffer between more intense commercial uses and lower-density dwellings. Municipal services such as sanitary sewers are present in most parts of the Outer Suburban area; however, some areas are not serviced. The street network, although relatively dense in some locations, does not usually adhere to a grid pattern. Commercial uses are usually found along major arterial roadways while industrial uses are often concentrated in industrial parks.



Typical development pattern of the Outer Suburban area

In summary:

- Larger lot sizes
- Distinct, clearly-defined separation of residential and non-residential uses
- No sidewalks and no street grid
- Limited public transportation
- Single-unit residential dominates
- Little connection between subdivisions
- Greater distance between public recreational facilities
- Average Residential Density: 1.2 Dwelling Units/Acre *[this is a countywide average and is higher than the existing Town density]*

Hamilton County

The Town of Signal Mountain is one of ten municipalities within Hamilton County. The following information provides a countywide look at development trends:

- During the 2000 to 2006 period, 350 new major subdivisions were recorded throughout Hamilton County. 322 (92%) of these were residential subdivisions.
- New residential subdivisions comprised 9,510 lots, covering slightly more than 5,000 acres, with an overall average lot size of about one-half acre.
- The average lot size seems to be trending downward over the 2000 to 2006 period, going from a high of 0.8 acres per lot in 2001 to 0.4 acres per lot in 2006.
- Slightly more than 31,000 building permits were issued during the period of 2000 through 2006.
- Almost 13,000 (86%) of the permits issued for New construction were for New Residences.

**The previous breakdowns of subdivision recordings in Hamilton County include only "major" subdivisions, which are defined as those with five or more new lots, or new subdivisions with new streets.*

**Data from Red Bank not available for analysis and not included in this data.*

Population Growth

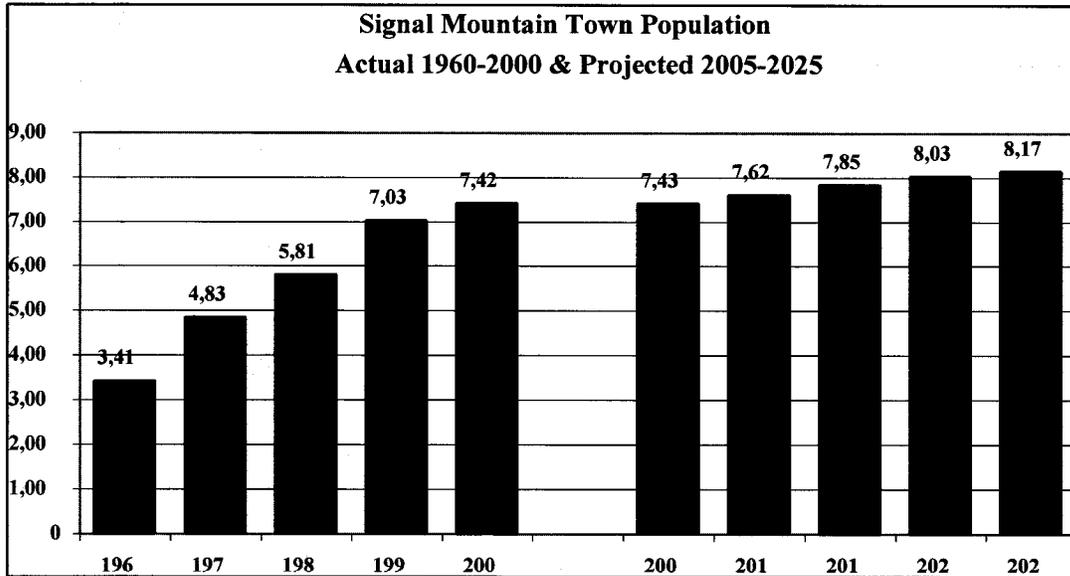
According to the U. S. Census Bureau, the total population in the Town of Signal Mountain was 7,429 in the year 2000. This figure represented an increase of 395 people or 5.6% from the previous Census in 1990, and was lower than the corresponding growth rates in several recent decades. From 1950 to 1960, population grew by 1,628 (91.2%); from 1960 to 1970 the population increased by 1,425 (41.7%); from 1970 to 1980 the town added 979 people (20.2%); and from 1980 to 1990 it grew 1,216 (20.9%). The Census Bureau's estimate for 2006 was 7,107—a decline from 2000 of 322 people or 4.3%.

The Center for Business and Economic Research (CBER) at the University of Tennessee in Knoxville and the Tennessee Advisory Commission on Intergovernmental Relations (TACIR) have developed population projections out to the year 2025 for all counties, cities and towns in Tennessee. The 2025 projected population

Word of Caution

Users of these data should be aware that population projections rely on a number of assumptions about the continuation of past trends into the future. When using population projections such as these, people are encouraged to use them as a guide illustrating a general possible scenario of future growth patterns. Although these projections are based on a mathematical model using sound scientific principles, ultimately, the overall accuracy of these projections will depend on the extent to which future events unfold in a manner that mirrors these past observations. Different projections using different assumptions will inevitably yield different results. In addition, there may be people with specific knowledge or understanding of events and factors that may affect their local communities that could result in a more complete understanding of the growth dynamic affecting their community. Thus, we caution users not to construe these figures as predicting a specific or inevitable future course of events. Instead, the numbers contained within this report should be read as a likely course of future population change based on a continuation of past trends. Population projections such as these are simply one of a number of tools that planners and local community leaders should consider when envisioning the future for their communities.

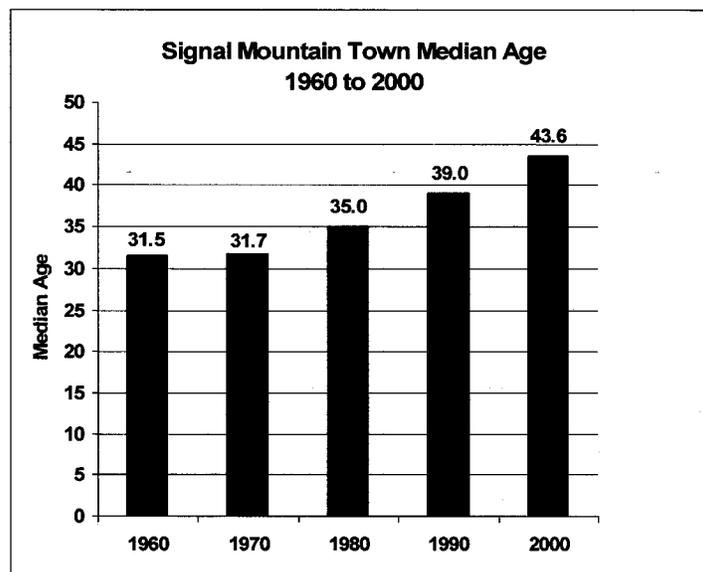
for the town of Signal Mountain is 8,173—an increase of 10% from the 2000 population. These projections, along with earlier Census figures earlier years, are shown in the chart below.



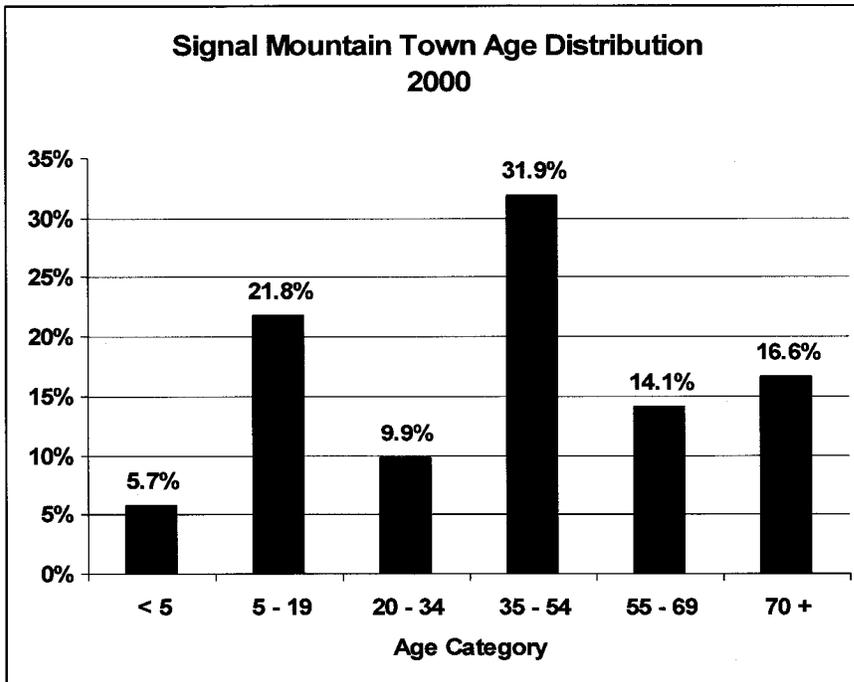
Age

Since 1960, the median age of Signal Mountain's population has increased with each Census year.

The median age of Signal Mountain's population is influenced somewhat by the older residents at the Alexian Brothers' facilities on the Mountain, which is addressed below.



In both 1960 and 1970, approximately 6% of the Town's population was 70 years of age or older. In 1980, this percentage rose to 8%. Then in 1990 it jumped to 12%, and in 2000 the figure rose to 16.6%.



As mentioned earlier, the median age and the proportion of residents in the 70 and older age bracket are influenced by the older residents at Alexian Brothers. Figures were provided by Mr. Bill Tobin of Alexian Brothers that show the number of residents by age group at the three facilities on Signal Mountain as of September 2007. This number includes the residents of the 57 apartments of the 2006 Canyon View addition.

Under 55 1
 55 to 69 21
 70 or older 494
 Total 516

Figures for the year 2000, for comparison with the U. S. Census figures, were not available, so it is not possible to know what the exact impact would have been in 2000. But, it would seem that if the proportions in each of age group of the current Alexian residents were about the same in the year 2000, then the percentage of all other residents in Signal Mountain aged 70 or older would be lower, perhaps more in line with all of

The following calculations were made to determine how Alexian Village senior housing complex impacts the overall age census:

2007 population estimate: approximately 7,528 people live in the Town of Signal Mountain.

In 2007, 494 residents live in the Alexian complex that 70 years of age or older.

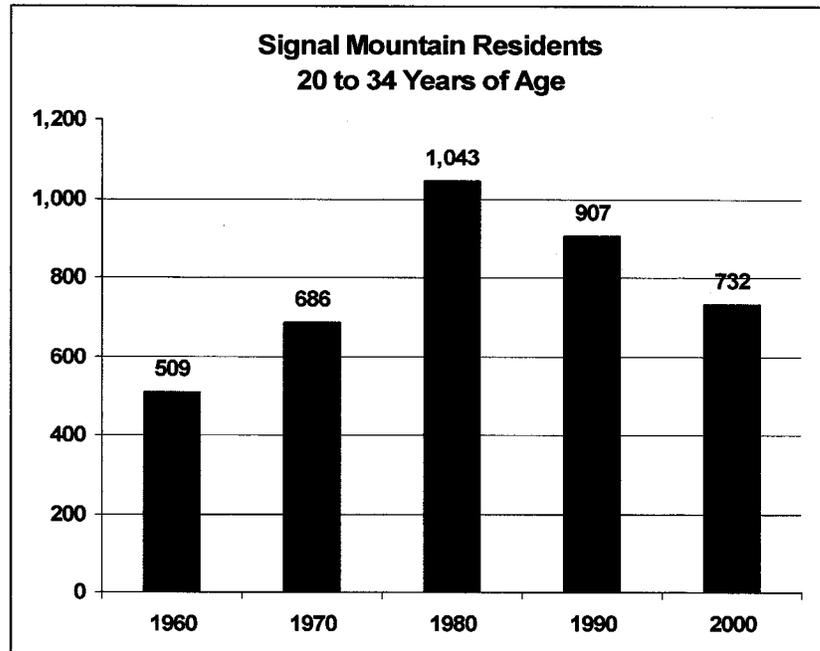
If 16.6% of the Town of Signal Mountain's population is 70 years of age or older (assuming the same % in 2007 as in 2000) then 1,250 people are 70 years of age or older in the total Town of Signal Mountain population in 2007.

2007 total population (70 years of age or older) minus 2007 Alexian population (70 years of age or older) = 756

Therefore, approximately 10.7% (70 years of age or older) people live in the Town of Signal Mountain that don't reside in the Alexian complex.

Hamilton County or the City of Chattanooga (as is shown in the box to the left).

In another vein, it is worth noting that only 10% of the Town's population was in the 20 to 34 year age bracket, which is considered to be a major child-bearing age category. This percentage is less than one-half of the comparable percentage for the State of Tennessee, and for all of Hamilton County, and for the city of Chattanooga. The actual number in this bracket has been declining since 1980.



Households and Families

In 2000, there were 2,924 households in the Town of Signal Mountain; 2,123 (73%) of these were family households, and the remaining 801 were non-family households.

Approximately 94% (754) of these non-family households were single individuals living alone. The average household size in 2000 was 2.50 persons per household, and the average family size was 3.02 persons per family.

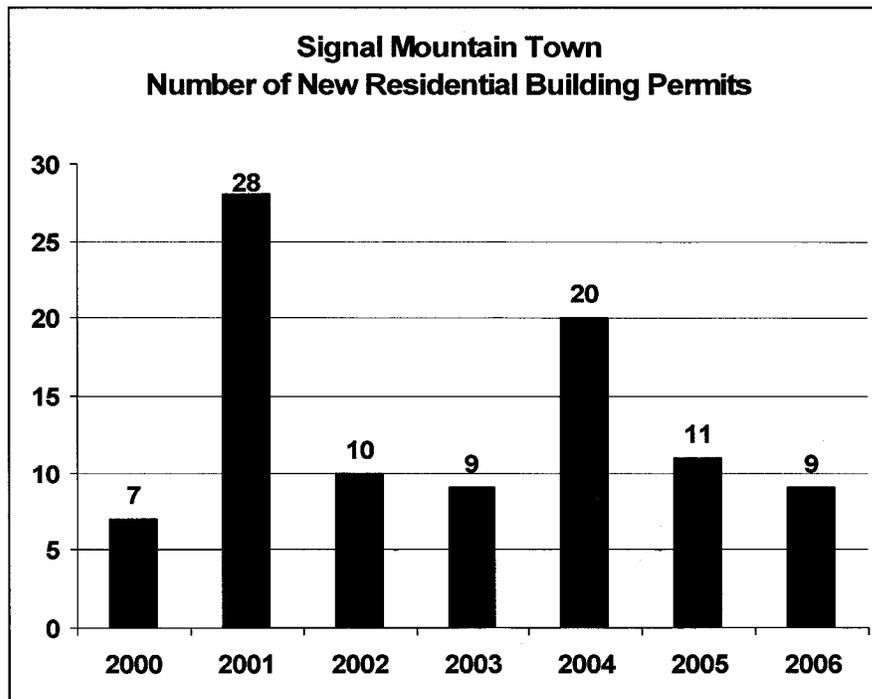
Among the 2,123 families, 1,928 (91%) were married-couple families, and 195 (9%) were other types of families. Overall, 989 (47%) of the families had children under the age of 18. Among these, there were

110 single-parent families with children under the age of 18.

Housing Units

In the year 2000, the Census Bureau enumerated 3,054 housing units in the Town. At that time 2,924 (96%) were occupied and 130 (4%) were vacant. Among the 2,924 occupied units, 2,364 (81%) were owner-occupied while 560 (19%) were renter-occupied. Census figures show that 263 (8.6%) of the 3,054 housing units were built from 1990 to March of 2000. Overall, 2,472 (81%) of the housing units were classified as single-unit detached housing. Another 84 (2.8%) were defined as single-unit attached structures.

During the period 2000 through 2006, 94 building permits were issued by Signal Mountain for new residential construction (excluding 1 permit for a six-story building at Alexian Brothers).



In current year dollars, the average (mean) value of the construction was \$558,958 and the median value was \$245,000. If adjusted by the Consumer Price Index (CPI) for Housing to 2007 dollars, the values become \$624,494 (mean) and \$276,688 (median).

Based on Hamilton County Assessor records, there were 2,481 single-family residences located in the town of Signal Mountain as of July 15, 2007. Approximately 25% of the houses were valued at less than \$150,000, and another 25% were valued at \$150,000 to \$199,999.

Signal Mountain Town Appraised Value of Single-Family Houses (including land value) as of July, 2007		
	Number	Percent
Under \$50,000	8	0.3%
\$50,000 to \$99,999	110	4.4%
\$100,000 to \$149,999	498	20.1%
\$150,000 to \$199,999	635	25.6%
\$200,000 to \$249,999	494	19.9%
\$250,000 to \$299,999	272	11.0%
\$300,000 to \$349,999	153	6.2%
\$350,000 to \$399,999	96	3.9%
\$400,000 to \$449,999	48	1.9%
\$450,000 to \$499,999	47	1.9%
\$500,000 to \$749,999	91	3.7%
\$750,000 to \$999,999	20	0.8%
\$1 million and higher	9	0.4%
Total	2,481	100.0%
Mean	\$232,389	
Median	\$198,300	
<i>Source: Hamilton County Assessor records</i>		

During the period January 2006 through June 2007, 152 sales of single-family properties in the town of Signal Mountain were recorded by the Assessor's office. Approximately 71% of these sales (108) were for amounts of \$100,000 to \$299,999.

Sales of Single-family Residences in Town of Signal Mountain by Recorded Sales Consideration (Price)				
	2006 (Jan-Dec)		2007 (Jan-Jun)	
	Number	Percent	Number	Percent
Under \$100,000	4	4.2%	0	0.0%
\$100,000 thru \$199,999	30	31.3%	16	28.6%
\$200,000 thru \$299,999	37	38.5%	25	44.6%
\$300,000 thru \$399,999	14	14.6%	9	16.1%
\$400,000 thru \$499,999	4	4.2%	3	5.4%
\$500,000 thru \$749,999	4	4.2%	2	3.6%
\$750,000 thru \$999,999	2	2.1%	1	1.8%
\$1 million or more	1	1.0%	0	0.0%
Total	96	100.0%	56	100.0%
Median Sales Consideration	\$223,750		\$241,000	
<i>Source: Hamilton County Assessor records</i>				

2.4 Existing Land Use

The Town developed around the prominence and success of Signal Mountain Inn. Early development patterns were residential in character and centered on the present day Alexian Village complex. The primarily single-family residential nature of the town, in part, stems from the entire residential portion of the town being zoned low-density residential which allowed only single-family development as late as the mid-1960s. Planned Unit Developments with apartments were allowed at that time but at a very low density. According to RPA planning documents of the time, by the mid-80s, rising housing costs and the aging of the population created a demand for multi-family housing. As a result, condominium townhouses on Signal Mountain Blvd. were developed. A townhouse development has also been added to the Town in conjunction with an accompanying attached and detached residential condominium development. Another recent addition to residential development is Alexian Brothers' six-story multi-unit senior living expansion.

Residential single-family lot sizes range from 15,000 sq. ft. (approximately 0.34 acres) in the Old Towne area to half acre to one acre lots in more recent subdivisions to large, rural lots in the Shackleford Ridge Road area.

The Town's current business development is centered at three locations: near the intersection of Signal Mountain Blvd. and Mississippi Ave. Ridgeway Ave. at Palisades Dr., and along Taft Hwy. between Cauthen Way and the town limits near Albert Rd. Much of the development is single-story strip development or stand-alone, single-use structures such as offices, restaurants, or banks. There is no integration of residential or civic uses and pedestrian connectivity within and between nodes is limited.

Development outside of the town within its Urban Growth Area consists of large lot residential development with scattered subdivisions such as Conner Creek, Windtree, and Fox Run.

2.5 Existing Zoning

Every parcel and right-of-way, including rivers and roads, in Hamilton County has a zoning designation. Zoning is the legislative process by which the local governing body divides the town into districts or zones and adopts regulations on buildings and the use of land for each zone. A zoning ordinance consists of the maps detailing the zones and a text document that outlays the rules for each zone and the procedures for administering them. The Town's zoning ordinance is available online at www.signalmtntown.org.

Zoning authority is derived from the Constitution's police power provision that allows government to enforce controls to protect public health, safety, convenience and welfare. Zoning is a legal and enforceable part of the town's code and is used to regulate the use of land and the type, scale and intensity of development on that land. According to the Planning Commissioner Journal "the primary goal of zoning is to avoid or minimized disruptive land use patterns involving incompatible land uses".

Residential

Most of the residential portion of the Town is zoned Low Density Residential District (LDR). Permitted uses in this district primarily include single-family dwellings; however, schools, parks, public buildings and churches are allowed uses in this zoning district. The minimum lot size for lots on public sewer in this district is 21,780 sq. ft.

Areas more recently annexed into the town are zoned Residential Estate District (RE). This district has uses similar to those found in areas zoned LDR, but permitted uses also include riding rings and outdoor recreation facilities for the use of the residents. The minimum lot size in the RE district is 21,780 sq. ft. except in the Shackle ford Ridge area where lots on sewers are allowed a minimum lot size of 14,520 sq. ft.

A variety of other residential uses are zoned Density Residential (MDR) or High Density Residential (HDR). The HDR zone requires a minimum building site for two family dwellings of 20,000 square feet (on sewer). An additional 5,000 square feet is required for each additional unit up to four units. Over four units require

an additional 4,000 square feet of for each additional unit. This roughly equates to a maximum density of approximately 10 du/acre allowable in this zone. Under the MDR zone, a two-family home may be built on a lot of 21,780 sq. ft. (on sewer). This corresponds to a density of 4 dwelling units/acre. As seen on the zoning map, these zones are scattered throughout the area and usually reflect low-intensity attached housing such as two-family (duplex) dwellings or small-scale multi-family housing.

1 acre = 43,560 sq. ft.

Westfield, a mixed attached and detached housing, and the Alexian Brothers complex are the largest of the higher-intensity developments.

Although available as an option in the zoning ordinance, currently no property is zoned for Residential Townhouse District or has developed under the Open Space Design Overlay Regulations.

Under certain conditions, residential developments other than single-family residential detached structures are subject to review by the town's Design Review Commission.

The majority of the unincorporated county inside the town's Urban Growth Boundary is zoned A-1 Agricultural District. Detached single-family dwellings and agricultural uses such as the raising of poultry and livestock are the most common uses in this zone.

Non-residential

The existing retail nodes at the intersections of Signal Mountain Boulevard and Mississippi Avenue, and Signal Mountain Boulevard and Palisades Drive are zoned Highway Commercial with some Office District zoning. As stated in the intent statement of that zone, this designation is for "the clustering and development of commercial facilities which are directly related to traffic along highways and major thoroughfares" with allowable uses such as restaurants, grocery stores, drugstores, banks, and offices. According to the zoning ordinance, businesses within this zoning designation "shall be situated on sites so as to utilize frontage on a principal arterial for principal access." Arterials, as classified by the Tennessee Department of Transportation, are those roadways that move traffic, but also collect traffic from local streets, major

commercial centers, and provide interchange access. TDOT classifies both Mississippi Avenue and Signal Mountain Boulevard as a lower classification regarding accessibility, speed, and function.

Commercial property fronting on the west side of Taft Highway between Cauthen Way and Albert Road are zoned Highway Commercial except for three properties near Albert Road. The Pruett's grocery store complex is zoned as a Planned Commerce Center (PCC). Permitted uses in this zone include many retail and service uses along with service stations, offices, clinics, and banking facilities.

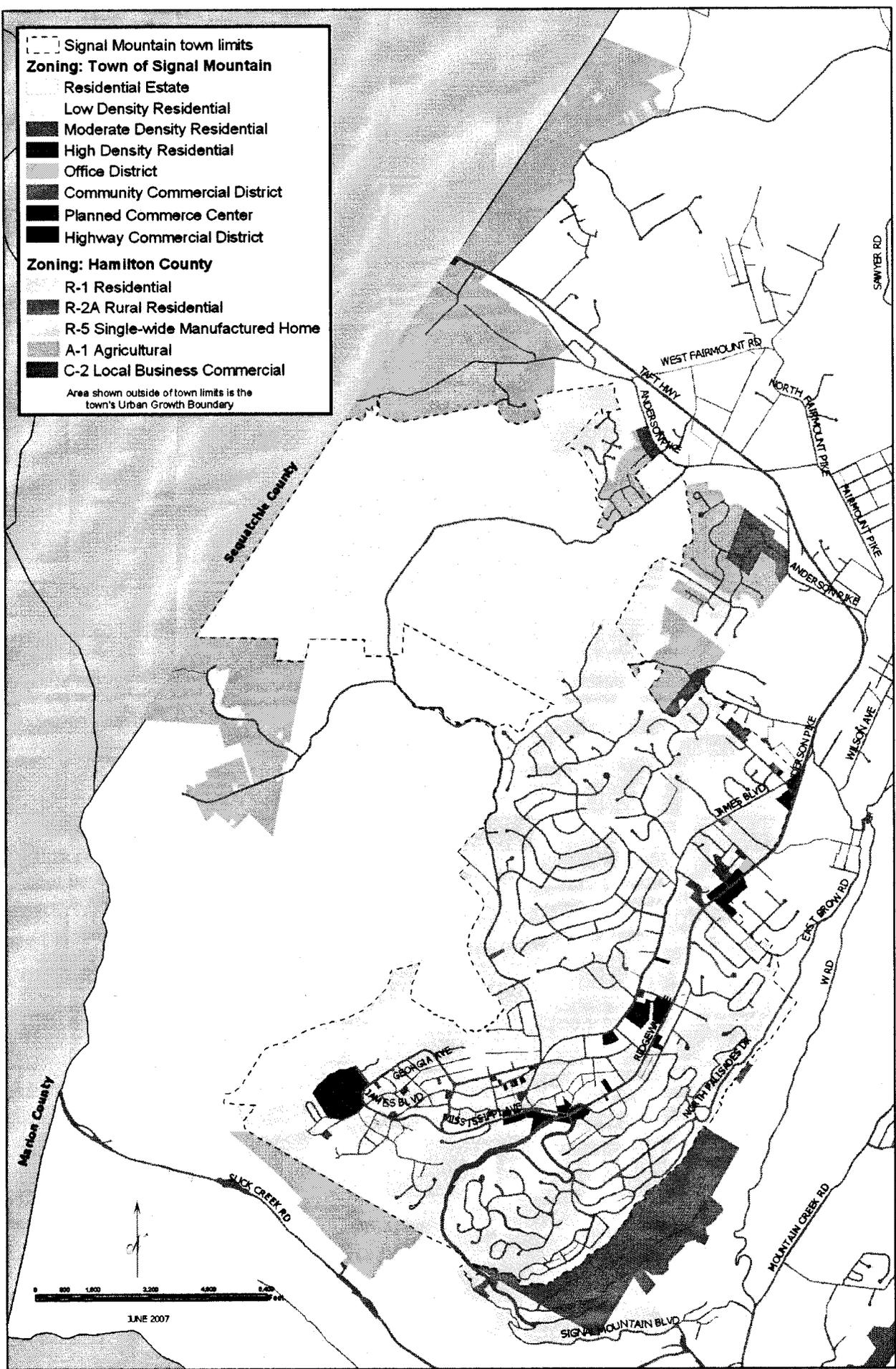
There are scattered non-residential uses zoned Community Commercial District which allows neighborhood retail uses such as bakeries, beauty shops, offices and repair shops.

The town currently has no property zoned Warehouse and Wholesale District or Specialty Commercial District.

Public or semi-public uses such as town hall, the library, and schools or religious facilities are not required to have a specific zoning and are generally found in residential zones.

Within the town's Urban Growth Boundary but outside the town's existing limits is a small commercial zone on Taft Highway abutting Sequatchie County.

-  Signal Mountain town limits
 - Zoning: Town of Signal Mountain**
 -  Residential Estate
 -  Low Density Residential
 -  Moderate Density Residential
 -  High Density Residential
 -  Office District
 -  Community Commercial District
 -  Planned Commerce Center
 -  Highway Commercial District
 - Zoning: Hamilton County**
 -  R-1 Residential
 -  R-2A Rural Residential
 -  R-5 Single-wide Manufactured Home
 -  A-1 Agricultural
 -  C-2 Local Business Commercial
- Area shown outside of town limits is the town's Urban Growth Boundary



JUNE 2007

3.0 Plan Approach

3.1 Community Attitudes

During the first public meeting, residents and other stakeholders were asked to provide their thoughts on the strengths and weaknesses of their community and the opportunities that exist for the town. These comments, along with their prioritization as noted by meeting attendees, have been analyzed in conjunction with past and current planning efforts to derive these prevailing community attitudes. *Refer to the Appendix for a list of all comments.*

Growth and Development

There will continue to be a desire to develop on the mountaintop. Sewer development and expansion of the water system will bring urban services to previously undeveloped areas. Also, new schools are often drivers for growth. Residents desire growth that occurs to be quality, planned growth. Growth for growth's sake is neither desired nor needed. Furthermore, if growth management policies in the town equate to a de-facto "no growth" policy, then the unintended consequences may be to divert these development pressures into areas which do not possess the natural or man-made features that permit this development.

Limited Roadway Connectivity

The communities of the Walden's Ridge Plateau share a unique position in the broader Chattanooga region. Topographic features separate these communities from the urban areas of Chattanooga. There is a concern that increased growth on the mountaintop can equate to greater volume in traffic on transportation corridors already at capacity. New development is viewed by many as having a negative impact on the transportation system.

Interlocal Cooperation/Competition

It is clear that the Town has an infrastructure network and service system that assists its neighboring jurisdictions. Recognition of this interlocal cooperation and the elimination of interlocal competition is needed to ensure the long term efficient and cost-effective provision of infrastructure and services to the Plateau's residents. Many of the issues concerning the Town regarding growth and development are best addressed

at the subregional level with the Town of Walden, Hamilton County, and even perhaps Sequatchie County.

Preservation of natural resources

Town residents feel strongly that natural resources contribute highly to quality of life and possess value ecologically. Specific natural features that were identified for protection include tree cover, water quality, streams, viewsheds, biodiversity and slopes.

The themes listed above provide a foundation for this plan. However, a plan should balance fact-based research and the values expressed by a community. It is also important that sound planning principles provide the framework for the plan goals, policies, and action steps.

As mentioned previously, this plan and its recommendations build on past planning efforts and include the issues that are historically part of the physical development of the town and seek to address challenges resulting from a new high school, expansion of the sewer system, and the potential for development in the town's growth area.

3.1 Mission

The mission of the Town of Signal Mountain is to be a community that preserves its small town atmosphere by managing growth and requiring development to be orderly and consistent; provides services that are necessary for the well-being and general welfare of its citizens; and endeavors to be a desirable and safe place in which families may live and grow.

The overall goal of this land use and policy plan for the Town is to provide a quality living and working environment for the residents of the Town.

The following goals are general statements that reflect the desires of the citizens regarding the future development of the municipality.

- To preserve, protect and enhance the quality of life in Signal Mountain while encouraging a continued high standard of development.
 - To ensure that all residential developments provide pleasant living environments, are served by adequate vehicular and pedestrian
-

Planning Initiative: Smart Growth

- Mix land uses
- Take advantage of compact building design
- Create a range of housing opportunities and choices
- Create walkable neighborhoods
- Foster distinctive, attractive communities with a strong sense of place
- Preserve open space, farmland, natural beauty, and critical environmental areas
- Strengthen and direct development towards existing communities
- Provide a variety of transportation choices
- Make development decisions predictable, fair, and cost effective
- Encourage community and stakeholder collaboration in development.

More information is available at www.epa.gov

circulation systems and are served by adequate infrastructure.

- To provide for concentrated commercial centers serving the needs of residents.
- To provide adequate and efficient public facilities and services, and to provide a diversity of cultural and recreational opportunities.
- To provide utility services that effectively and efficiently meet the current and anticipated needs of the Town.
- To provide an efficient and effective transportation system in the Town with appropriate linkages and capacities.
- To protect the environment and natural resources of the Town.

3.2 Recommendation Principles

The plan principles were derived by reviewing all of the public comments and summarizing those that were most prevalent. The following principles are a list of general underlying factors used in making the land use recommendations for this plan. Recommendations should help to...

- Provide a unique sense of community and place.
- Promote orderly development.
- Preserve and enhance valuable natural and cultural resources
- Maintain a low residential density while incorporating diversity of housing.
- Create "quality" commercial areas.
- Create more options and connectivity for pedestrians and bicyclists.
- Facilitate intergovernmental coordination and cooperation
- Minimize negative development impacts.
- Integrate land use recommendations with transportation systems.

In an effort to integrate land use recommendations with transportation systems, it is helpful to consider the intensity of different land uses as well as appropriate locations for them. Existing and proposed infrastructure should be able to support proposed land uses.

3.3 General Development and Growth Management

The Town is a well-organized, involved community and while some of its fundamental growth management can be addressed by town policy and implementation, some quality of life and quality of built environment issues require detailed planning with adjoining municipalities and Hamilton County. The extension or possibility of sewer extension and the provision of water through increased capacity of the Walden's Ridge Utility District is the advent of urban services for previously undeveloped land on the plateau. Sewer provision and adequate water supply can allow for growth at higher densities than previously permitted in some areas.

Therefore, it is the intent of this Growth Management section to provide overarching goals and policies which help to create and define the community character with the Land Use Plan and latter section providing strategies to implement these concepts.

Goal: Preserve and enhance the small town character with a sense of place that consists of distinctive neighborhoods, open spaces, and appropriate-scale development.

Objective: Signal Mountain will use this land use plan a tool for making development decisions regarding land use, zoning, and the expansion of public infrastructure.

Objective: Open space and natural resource preservation will be promoted through a compact development pattern in the town's developing areas. Compact development seeks to use land more efficiently while preserving environmentally sensitive areas. Compact development forms can include cluster/open space development, mixed-use development and traditional neighborhood development.

Objective: Infill residential development should preserve the integrity of existing neighborhoods and be of compatible density and form.

Objective: New non-residential development is encouraged to occur in and around existing or new activity centers (as discussed in Section 4.3).

Objective: something that one's efforts or actions are intended to attain or accomplish; purpose; goal

Goal: The Town of Signal Mountain should grow and develop efficiently relative to the location, cost, and timing of providing infrastructure and public services.

Objective: Infrastructure, particularly sewer and water service and site-specific transportation improvements, should be available concurrently with new development.

Objective: Development should be directed towards appropriate locations as identified in this plan.

Goal: Pursue intergovernmental coordination and cooperation particularly regarding primary transportation corridors.

Objective: Continue coordination with surrounding communities regarding land use decisions, municipal services and address other issues of mutual concern.

Objective: Target intergovernmental transportation planning as essential to addressing increased demand on the roadway network.

Implementation strategies: Provide 2007 Signal Mountain Transportation Study document to the Town of Walden, Hamilton County, and bordering counties.

Implementation strategies: Initiate formal, ongoing discussion centered on results of the 2007 Signal Mountain Transportation Study, TransPlan 2030, and other supporting document provided by the TPO and TDOT.

Goal: Make development decisions consistent and predictable.

Objective: Provide a development process that is clear and predictable and moves forward in a timely manner. A "fair" decision does not mean that the compromise that is reached is one with which everyone is happy.

- Implementation Strategy: Encourage a collaborative planning process that

seeks to best integrate proposed projects into existing neighborhoods through better communication throughout the development process, inclusion of features that enhance the community, and by positively addressing sustainability issues.

- **Implementation Strategy:** Require a sketch plan for residential development prior to the submittal of a Preliminary Plat. A sketch plan can provide reviewing officials and staff information on how the proposed development impacts the site and surrounding area.

Goal: Encourage public/private partnerships to support desired development

Objective: Continue efforts to strengthen partnerships with other local, state and regional agencies, as well as with non-profit and private enterprises.

4.0 Land Use Plan

The Land Use Plan is an attempt to integrate positive community assets and improve the quality of life for everyone. It is a description of how land should be occupied or utilized. It should serve as a guide to property owners and public decision makers for analyzing development strategies.

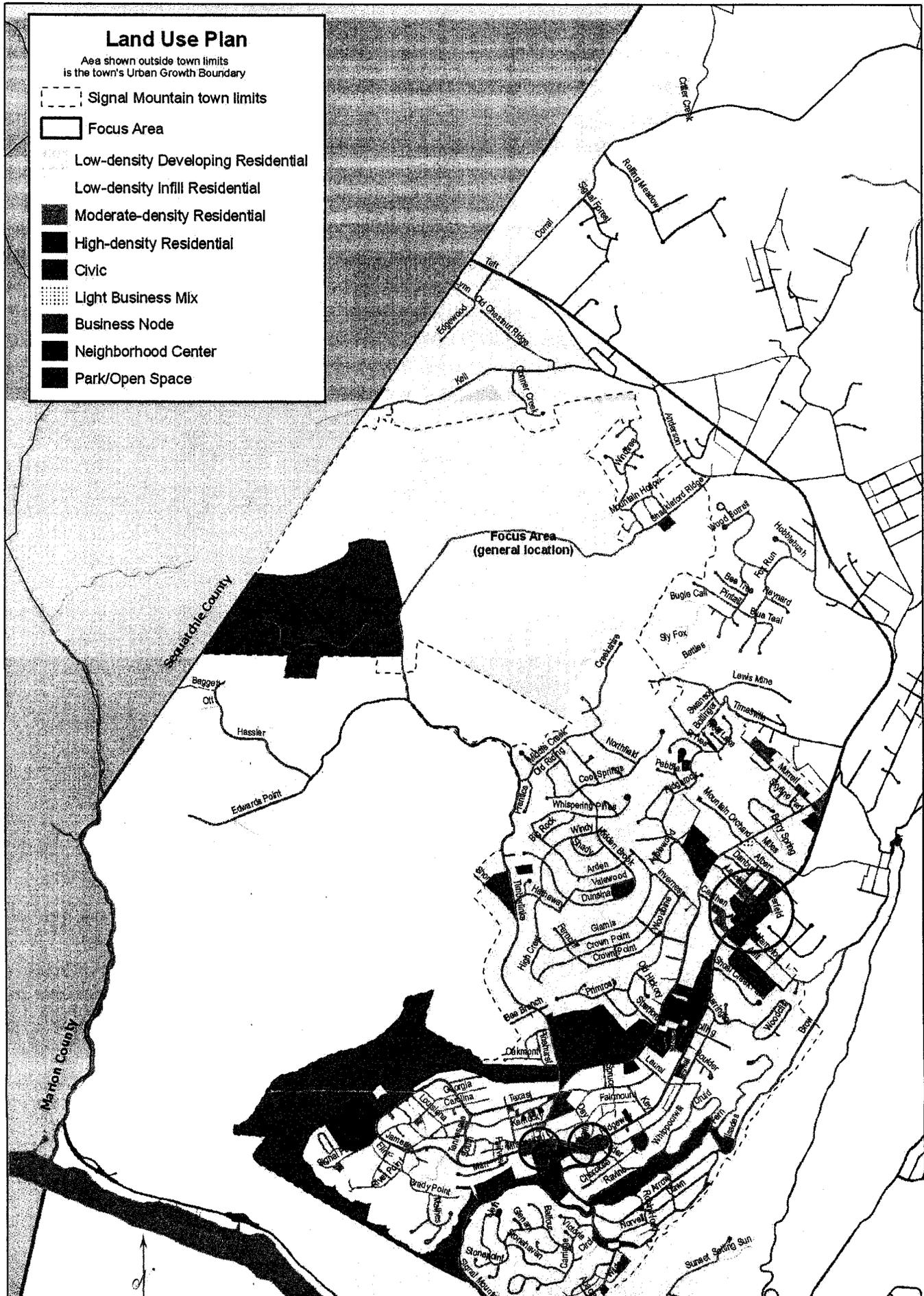
The land use classifications are meant to be broad enough to give the Town and stakeholders flexibility in implementation, but clear enough to provide sufficient direction in making informed zoning decisions. The map classifications show the highest recommended use. No automatic change will be made to existing zoning. This plan will be used in part to advise individual future zoning requests.

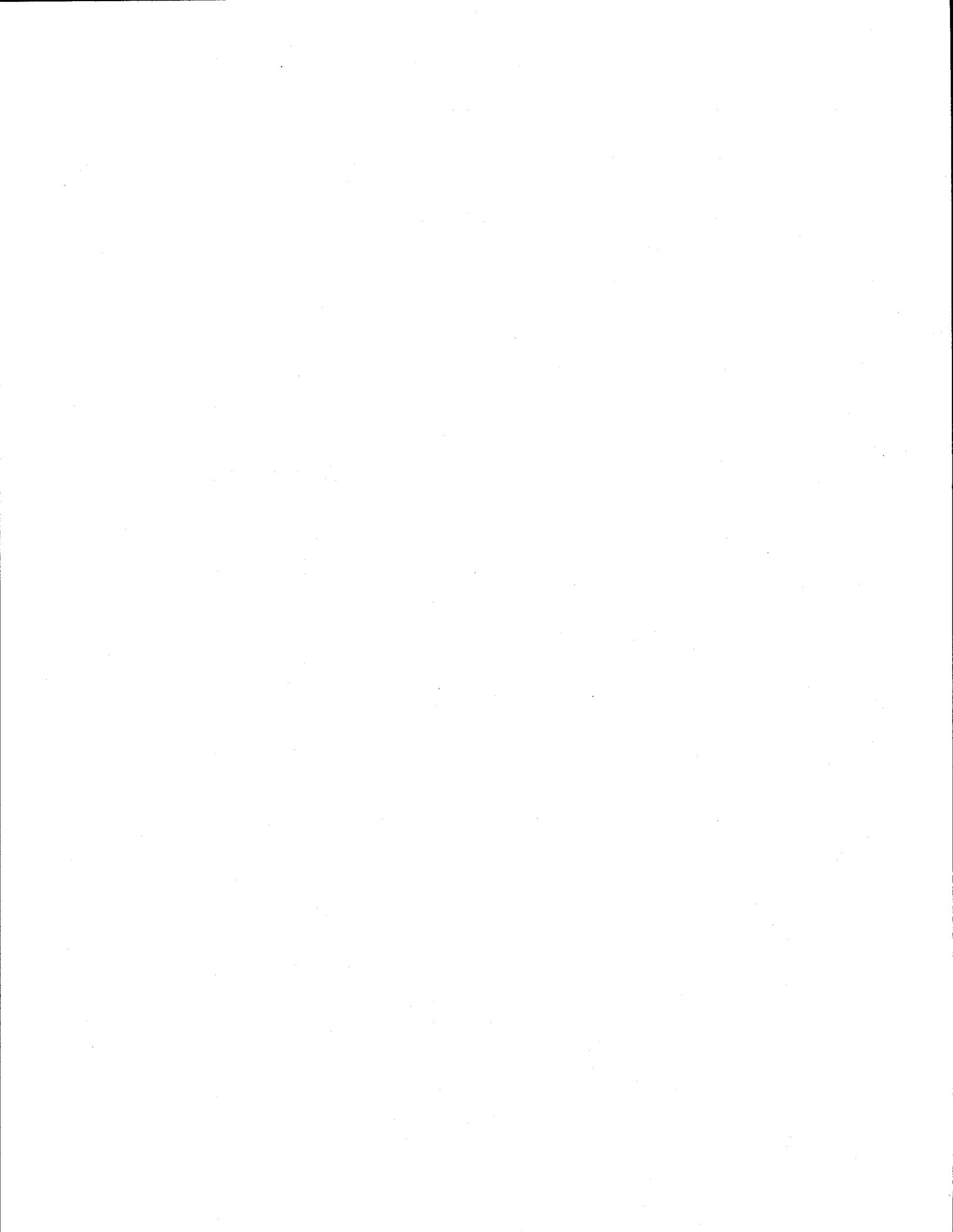
The Town's Zoning Regulations contain more detailed provisions and standards and can be found at www.signalmtntown.org. Unless specified in this plan, more than one zoning district may be consistent with a single land use classification.

Land Use Plan

Area shown outside town limits is the town's Urban Growth Boundary

-  Signal Mountain town limits
-  Focus Area
-  Low-density Developing Residential
-  Low-density Infill Residential
-  Moderate-density Residential
-  High-density Residential
-  Civic
-  Light Business Mix
-  Business Node
-  Neighborhood Center
-  Park/Open Space





ifications

tion for expanded discussion on categories.

ce
as include a mix of undisturbed open space that is currently protected from development vacant, open space areas. This category includes public or privately-owned land such as ks, community lots owned by neighborhood associations or other developed sites used for ities.

is primarily used to identify government properties. Typical uses in this designation include e/rescue stations, the library and other government facilities.

II Residential

vides for the maintenance of the existing pattern of low-density detached residential ost of this area should continue to develop with lots with a minimum size of 1/2 of an acre. nts on larger lots, or a combination of lots, should be of the same character of the ential development. Planned Unit Developments with attached single-family residences and relopments are only appropriate under certain conditions.

veloping Residential

the scenic beauty and sensitive natural features of this area, Open Space subdivisions are thod for development in these areas. Residential development should be limited to single-housing unless the development is included in a PUD or an Open Space Subdivision. In this ouses may be acceptable as long as the development consists primarily of single-family g with an overall, low gross density.

Moderate-density Residential

This classification is primarily used to specify locations of existing moderate-density residential uses. The plan does not recommend expansion of moderate-density residential uses except in locations depicted on the map.

High-density Residential

Existing high-density developments are shown on the map, but any new development of this density and/or use is shown as part of a Focus Area.

Townhouses when developed outside of cohesive PUD subdivisions are included in this class as well as patio homes, attached condominium units and smaller-scale apartment developments. This classification is most often recommended for use as a "step down" use between intense commercial development and less intense residential dwellings. This class is primarily depicted in the "Focus Area" studies at the end of this chapter.

Light Business

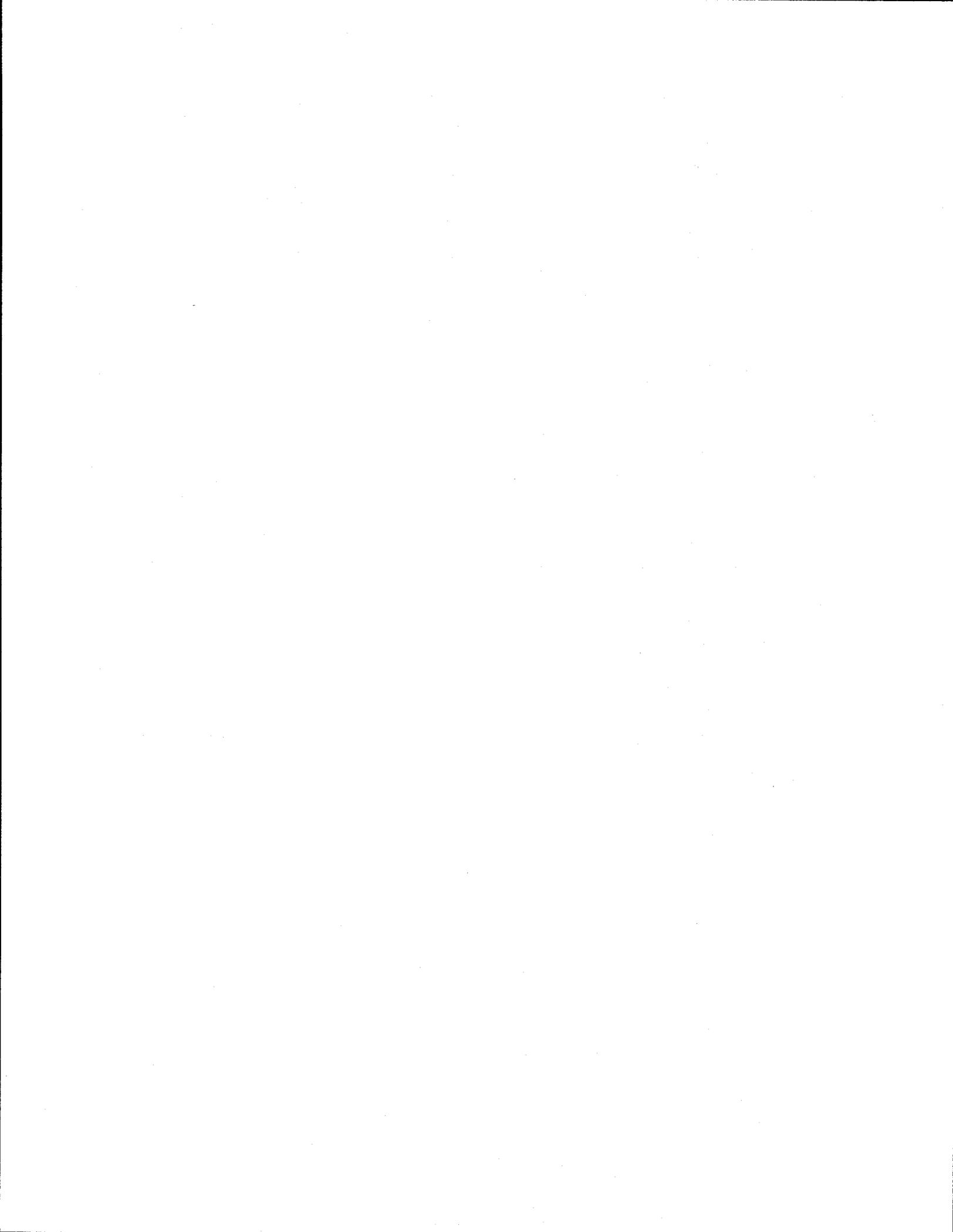
Single-use businesses such as offices or neighborhood serving commercial are dispersed throughout the community with very few having their use reflected in their current zoning. This category reflects the existing land use and expansion of these uses is discouraged.

Business Nodes

Land uses within these nodes are typically a mix of retail and office use with intensity of uses varying depending on location to higher-capacity transportation corridors.

Neighborhood Centers

Land uses within Neighborhood Activity Centers should consist of a variety of small-scale retail shops, small drug stores, convenience stores, eating establishments, offices, and personal and business service establishments with civic and institutional uses such as green space included. Higher-density housing may also be appropriate, either in mixed-use structures, or in single-use developments.



4.1 Park/Open Space Land Use

Open space areas include a mix of undisturbed open space that is currently protected from development and unprotected vacant, open space areas. This category includes public or privately-owned land such as golf courses, parks, community lots owned by neighborhood associations or other developed sites used for recreational activities.

(See Section 6.1 that recommends reclassifying areas as Preserve or Reserve areas once further study is completed.)

4.2 Residential Land Use

Variations on the traditional single-family dwelling subdivision have been discussed in Signal Mountain as a way to expand housing opportunities while maintaining the essential character of mountain life. Cluster developments, open space zoning guidelines and other types of residential development options are seen as viable alternatives to previous development types. They are included in the mix of housing types allowed, subject to certain buffering and locational criteria to help ensure their compatibility.

Several goals of this plan center on encouraging a balance of housing opportunities through the preservation of existing housing areas and the development of new neighborhoods. *Growing Cooler: The Evidence on Urban Development and Climate Change*, produced by the Urban Land Institute and others, mentions that as baby boomers become empty nesters and retirees, they are exhibiting a strong preference for compact, walkable neighborhoods. Single adults and married couples without children share this preference. Cultural preference seems to also affect the demand for more compact neighborhood design. Marketing studies show that Generation Xers (the generation following the Baby Boomers) "value traditional face-to-face relationships with neighbors and neighborhood characteristics such as sidewalks and nearby recreational facilities." *Growing Cooler* cites another analyst who reports that "Gen Xers are looking for more diverse and compact communities characterized by smaller but better-designed homes as well as shopping and schools in more central locations..."

"The shifting age and family composition of households will drive changes in the types of homes and the types of home improvements most in demand. At the same time, the growing number of singles and unmarried couples, as well as the shrinking share of families with children, will drive housing demand toward multifamily units, townhouses and condominiums." (*The State of the Nation's Housing 2005, Part III: Demographic Trends* by Harvard University's Joint Center for Housing Studies)

Public meeting participants indicated a strong preference for maintaining a low-density within the town. This plan does not specify a maximum gross density for developments. However, residents did express that there is a need and opportunity for development other than single-family housing. The Town and its urban growth areas are generally developed and should continue to be developed overall at a low-density level to maintain its small-town character. Limiting residential density in this category is recommended due to several factors:

- This is the current prevailing development form.
- There is currently limited capacity on the roadways up and down the mountain. Maintaining residential growth at a lower-density level will help reduce the increase in vehicle trips on the roadways up and down the mountain.

The following residential land use classifications are intended to meet these objectives:

- Continue to protect and preserve the existing residential areas of the Town.
- Provide a variety of housing options including higher density and attached housing in appropriate areas.
- Recognize that the Town is composed of residential neighborhoods, each with its own individual character, and allow change consistent with reinforcing positive neighborhood values.
- Densities of new residential development shall be compatible with surrounding residential areas and a buffer will be provided when there is a significant difference in densities.
- Routine maintenance by private property owners is encouraged and the overall condition of the property should be upgraded where necessary to preserve neighborhood stability. When necessary, the Town shall utilize strict code enforcement to protect and preserve stable residential areas.
- Provide land use categories for a variety of housing densities to offer existing and future residents sufficient opportunities and choices for locating in the community.

Low-density Infill Residential

The Town's existing neighborhoods are generally low-density, residential developments of primarily detached, single-family structures with larger lots, generous setbacks, large blocks, and limited connectivity. Higher-

density developments are either stand-alone (such as Jamestown or Stonewood) or incorporated into mixed-residential developments (such as Westfield).

These areas are expected to change very little over time with some expansion or replacement made to individual homes and limited development on single "remnant" lots in subdivisions.

In the town's residential areas, there is an expressed desire to maintain the existing pattern of development and this character should be preserved as much as possible.

New developments on larger lots, or a combination of lots, should be of the same character of the surrounding residential development. Proposed residential development which has a significantly different size, height, or mass from adjacent existing development will be discouraged if the proposed differences detract from the use and privacy of the adjacent development. Items such as setbacks, frontage, the way buildings front on the street, garage placement, building scale and materials, and design features can help make new developments more compatible with existing neighborhoods.

Most of this area should continue to develop with lots with a minimum size of 1/2 of an acre.

Planned Unit Developments (PUD) are allowed in Infill areas with a Special Permit and can provide a better site design and can be more sensitive to existing conditions than traditional single-family residential subdivisions. PUDs allow a density of up to 4 du/a in low-density residential areas and allow attached dwellings—townhomes and multi-family housing. This density and housing type may not match the character of surrounding development even if of similar density.

PUDs are most appropriate in Infill areas if the following conditions are met:

- The higher-density allowed under the PUD is off-set by meaningful open space.
 - If a development contains attached housing in an area of predominately detached housing, the attached housing should be located to the interior of the development.
-

- If a development contains attached housing in an area of predominately detached housing, the development should retain a natural vegetative buffer separating the perimeter of the site from adjacent, exterior roadways and the neighboring properties.

Surveys show that 40-80% of people living in golf course developments are not golfers, they choose to live there because of open space visible from their windows. NEMO (Nonpoint Education for Municipal Officials) Project.

Conservation subdivisions are also allowed in Low-density Infill areas. Although attached housing is not permitted, the reduced lot size allowed under this option may not be compatible with surrounding development. This development form is appropriate if the required open space or additional landscaping is used as a buffer separating the perimeter of the site from adjacent, exterior roadways and the neighboring properties.

Low-density Developing Residential

Residents value the open space in their community and realize that it helps provide character. However, large lot development with structures distributed on an equal amount of acreage with large lawns and wide roads contributes to the loss of this character and does not protect wildlife habitat and water quality. To help preserve the scenic beauty and sensitive natural features of this area, Conservation subdivisions with substantial amounts of open space are the preferred methods of development in these areas.

A major and persistent public misconception equates cluster development to multi-family housing and assumes that reduced lot-sizes result in lower quality homes. This is not the case. Many people prefer a lifestyle facilitated by maintenance-free homes and smaller yards.

- *Site Planning and Community Design for Great Neighborhoods*, Frederick D. Jarvis

In order to preserve desired natural features, the focus in this area should be providing more flexibility within regulations regarding net density, while maintaining a gross low density. This will allow better preservation of open space and environmental features.



The drawing to the left depicts a development with low gross density with areas of higher net density.

Gross Density: The number of total dwelling units within an area divided by the total area (in acres). This includes all nonresidential land uses and private streets in the town, as well as rights-of-way of dedicated streets and dedicated open space.

Net Density: The number of total dwelling units divided by the net area (in acres). This does not include public rights-of-way and private streets, dedicated open space, parks, sidewalks, and other public facilities within the area.

Residential development should be limited to single-family detached housing unless the development is included in a Conservation Subdivision. In this case, attached houses may be acceptable as long as the development consists primarily of single-family detached housing with an overall, low gross density.

Attached housing units within the Conservation Subdivision should be sited to the interior of the development site. In addition, Conservation Subdivisions should retain a substantial natural vegetative buffer separating the perimeter of the site from adjacent, exterior roadways and the neighboring properties.



Conservation subdivision development

Typical Features as identified in the *Comprehensive Plan 2030*

- Used to maintain the rural character of an area.
- Solely residential.
- Substantial amount of the site maintained as open space.
- Houses sited on smaller parcels of land in exchange for preserving large portions of open space.
- Overall density on a given acreage does not necessarily increase over that allowed in a conventional subdivision.
- Townhouses and other attached dwellings should generally be located in or near business areas or medium to high-density residential areas.
- Townhouses and other attached dwellings may also be considered in areas consisting primarily of low-density, single-family dwellings if they are part of a unified development, sited to the interior of that development, and either served by sewers or pre-approved by the Hamilton County Health Department.
- Reduces the impacts of development on watersheds.
- Infrastructure costs can be lower due to less extensive construction of roads and water/sewer infrastructure.
- Open space areas protected by conservation easements. A land trust or a public agency should maintain permanent control over this land.
- Homeowners' association is usually responsible for protecting and maintaining the open space.
- Open space can provide community members with larger recreation areas and create a sense of openness that many people desire.

Moderate-density Residential

This classification is primarily used to specify locations of existing moderate-density residential uses. The plan does not recommend expansion of moderate-density residential uses except as a "step-down" transitional use in Neighborhood Centers.

High-density Residential

A density of approximately 7.4 du/acre is allowed under the town's regulations. Existing high-density developments are shown on the map, but any new development of this density and/or use is shown as part of a Focus Area.

Townhouses when developed outside of cohesive PUD subdivisions are included in this class as well as patio homes, attached condominium units and smaller-scale apartment developments. This classification is most often recommended for use as a "step down" use between intense commercial development and less intense residential dwellings or inclusion in a mixed-use center. This class is primarily depicted in the "Focus Area" studies at the end of this section.

Residential Land Use Goal: The Town will provide a range of housing opportunities and choices that contribute positively to the surrounding area.

Residential Implementation Strategies:

- Provide zoning classifications that permit a variety of residential development types.
 - Consider strategically reducing minimum lot size requirements where appropriate while keeping overall density low.
 - Support the transition of existing Town-owned or non-residentially used sites (i.e. schools) to residential uses as opportunities to increase housing variety.
 - Use transitional areas such as linear greenbelts, landscaping, or other design elements between residential neighborhoods of differing densities, and between residential and non-residential areas in order to enhance compatibility of land uses.
 - Revise existing Planned Unit Development regulations to specify an amount of required open space and the form and/or function of the open
-

space. Existing regulations only state that onsite "usable recreation and open space shall be provided".

- Require traffic studies for new residential developments as required by the Vehicular Access ordinance (Ord. 98-5)
- Under state law, some divisions of a lot 5 acres or more do not have to meet the requirements of the subdivision regulations. Landowners and developers of these properties should be encouraged to meet the intent of this plan's recommendations.
- Use open space as a buffer to maintain the visual character of roadways in developing areas.
- To ensure that the town's existing Open Space subdivision regulations are effective, the town should review and possibly revise existing codes based on the recommendations provided by Randall Arendt and found in the Appendix.

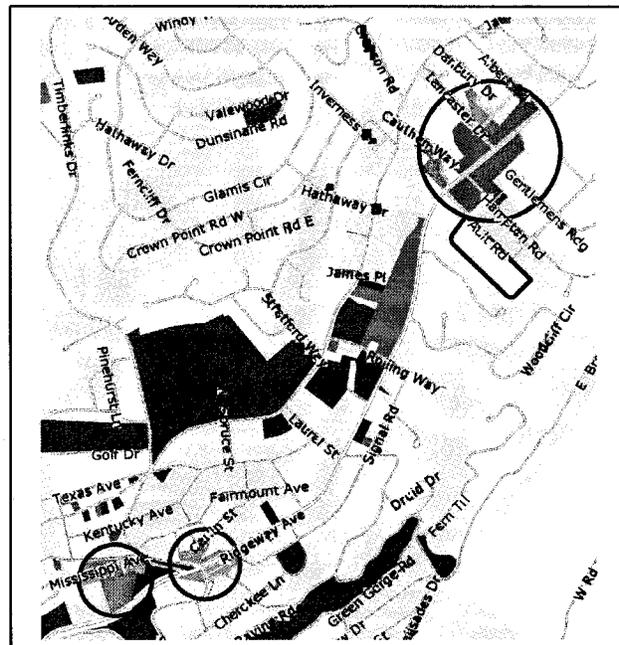
4.3 Non-Residential Land Use

This plan recommends some expansion of the Town's business district and identifies the possible location of a new activity center. At the initial public meeting, residents expressed that the opportunity exists for more non-residential uses (i.e. "mixed-use", "retail", "medical clinics", "quality restaurants").

If the town wishes to function as a small town, there needs to be a variety of retail and service opportunities. However, the development of new sites and the redevelopment of existing sites should occur appropriately. The Town has existing guidelines regulating design of developments (other than single-family residential detached). The Signal Mountain Design Review Commission has oversight of these regulations. Landscaping, screening, parking and paved areas, building design, and signage are included in the standards. The guidelines apply to new construction, remodeling, and renovations and Planned Unit Developments all of which require site plan submittal.

Two existing areas will continue to be classified as Business Nodes and an existing and an emerging area should develop as Neighborhood Centers. All development and redevelopment will comply with the design criteria and landscaping requirements contained in the Town's Design Manual.

The plan has identified five Focus Areas. The purpose of discussing these areas individually is to develop a strategy to balance potential growth while protecting existing development. Four Focus Areas are shown to the right, the other is generally identified as occurring on Shackleford Ridge Road.

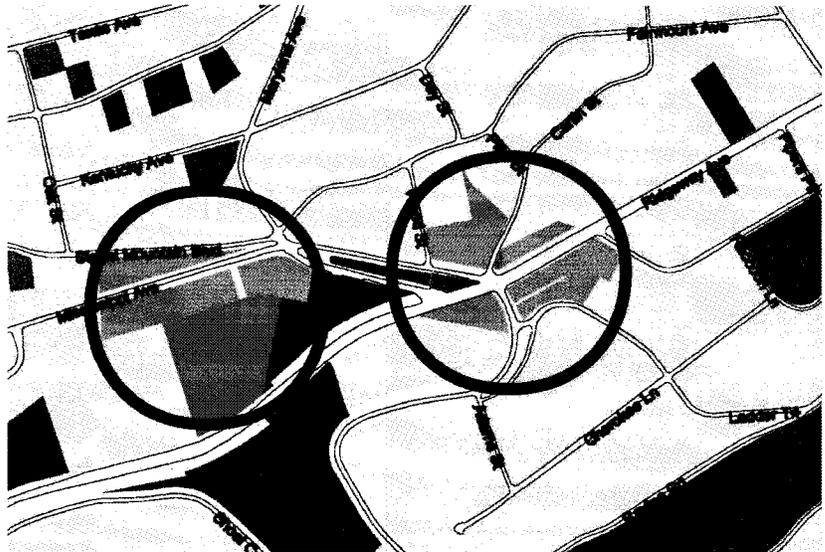


Light Business Mix

Other single-use businesses such as offices are dispersed throughout the community with very few having their use reflected in their current zoning. Expansion of these uses is discouraged.

Business Nodes

These nodes have a mix of retail and office uses. Existing nodes, with a few exceptions for more recently developed uses, have smaller or shared parking facilities. Few pedestrian or bicycle amenities exist within or between nodes.



Focus Area: Signal Mountain Blvd. and Mississippi Ave.

This node contains a mix of retail and office uses. The western edge of this area is bounded by the church south of Mississippi Avenue and by the five-way intersection to the east. In order to maintain the residential integrity of this area, there should be no expansion of this node unless as identified below, other than potential conversion of some solely office uses to low-intensity, neighborhood retail uses if appropriate parking is available.

One possible location for expansion of this Neighborhood Center is the existing site of the town's transfer station. Primarily used to move garbage from Town trucks to trucks moving trash

off the mountain, this five acre site does have potential for redevelopment. However, what makes this a good location for higher, intensity mixed-uses such as location away from neighborhoods and access to major corridors also makes this a preferred location for this station. Conversion to a mixed-use site is only likely to happen if a suitable site is found for the transfer station.

Focus Area: Ridgeway Ave. at Palisades.

This Business Node contains higher-intensity uses than the one located at Signal Mountain Blvd. and Mississippi Ave. This mix of uses is appropriate due to its location on Ridgeway Avenue/Hwy. 127, the number of travel lanes, and the protection offered by the traffic lights. However, no expansion of this commercial node is recommended in order to protect the integrity of the surrounding residential properties. Redevelopment of this area is encouraged to provide pedestrian and bicycle amenities such as bike racks and sidewalks, and seek to improve the appearance of this node through streetscaping.

Before bicycle, pedestrian and/or streetscaping are installed, consideration needs to be given to the existing parking layout as many businesses have back-out parking in front of their buildings. If right-of-way needs to be taken for pedestrian and bicycle facilities, an adequate amount of parking for these businesses needs to be ensured. Ideally, the Town and the property owners will seek safer alternatives to the back-out parking situation, particularly along the heavily-traveled Hwy. 127 corridor.

Neighborhood Centers

Land uses within Neighborhood Activity Centers typically consist of a variety of small-scale retail shops, small drug store, convenience stores, eating establishments, offices, and personal and business service establishments. Civic and institutional uses, as well as open spaces, neighborhood parks, greens, and squares should also be included.

What is a mixed-use development?

-Mixed-Use Development Handbook, Urban Land Institute

Both the concept of mixed-use development and the actual product have evolved tremendously. The original definition developed in 1976, however, still holds today. Mixed-use developments are characterized by:

- Three or more significant revenue-producing uses (such as retail/entertainment, office, residential, hotel, and/or civic/cultural/recreation) that in well-planned projects are mutually supporting;
- Significant physical and functional integration of project components (and thus a relatively close-knit and intensive use of land), including uninterrupted pedestrian connections; and
- Development in conformance with a coherent plan (that frequently stipulates the type and scale of uses, permitted densities, and related items).

Recommended improvements for existing centers as identified in the *Comprehensive Plan 2030*:

- Greater integration of uses either through Mixed-Use and/or Multi-Use development.
- More public green space.
- Restructure parking lots so that they do not dominate the site.
- Greater street connectivity to provide a variety of routes for daily trips. Improved street connectivity can reduce traffic on arterial streets, provide for continuous and more direct routes, provide greater emergency vehicle access and improve the quality of utility connections.
- Better pedestrian access.
- More attention to architectural details and landscaping.

Neighborhood activity centers should balance pedestrian and automobile needs with pedestrian access being an integral element of the commercial core and the surrounding residential neighborhoods. A continuous network of sidewalks in the commercial and residential areas encourages people to walk from their homes to retail shops, parks, and open spaces. To make the commercial core more attractive for pedestrians, landscape amenities and public open spaces should be provided.

As part of a mixed-use center, higher-density housing may also be appropriate, either in mixed-use structures, or in single-use developments. With the intention of designing a community that lets older residents remain on the mountaintop, providing a location of housing other than single-family detached near Neighborhood Centers allows older residents to remain active in the community once they no longer drive. This location will allow them to take advantage of the restaurants, banks, and other services this location can provide.

These should be places designed for people. Attractive sidewalks, small parks, and shops and restaurants that serve the community allow residents to interact with each other and help create the "small town" feel residents appreciate.

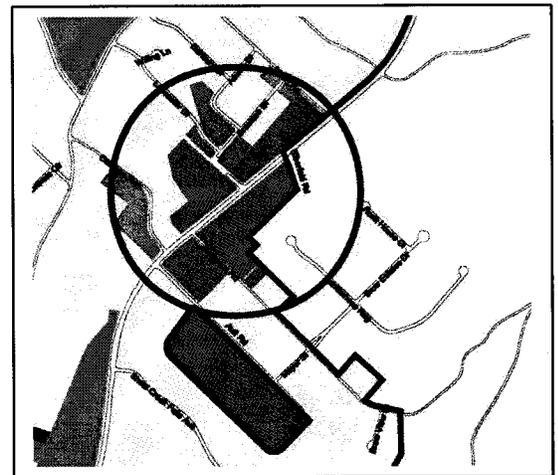
Neighborhood Activity Centers are appropriate at the intersection of major thoroughfares: for those areas divided into four quadrants by the intersection of two arterial classified streets, or the intersection of an arterial and a collector classified street.



Focus Area: Taft Hwy. at Cauthen Way to town limits

This commercial area should redevelop over time into a mixed-use center including a range of retail, office, civic, and possibly residential uses. Some expansion of this existing center is recommended to provide the town and its residents the wider range of services present in a small town. However, to avoid the "stripping" of non-residential development along Taft Highway, a firm edge needs to be established with transitional uses or distinct features such as rights-of-way.

There is possibility of expansion of this center behind the previous CVS pharmacy. Development of this area should be particularly sensitive to the sloping topography and any streams on or near the site. Additionally, any potential use and activity on this site should be directed away from the residences on Cauthen Way. Access should be either through the existing development onto Taft Highway or onto the right-of-way between the vacant pharmacy site and Suntrust Bank. No access should be allowed from Cauthen Way.



Another area identified for expansion as part of a mixed-use center is approximately four acres between Hampton Rd. and Ault Rd. Acting as more of a transitional area away from the higher-intensity uses in the core (such as Pruett's), this site could serve as an area of planned higher-density residential and neighborhood serving office or retail uses. Most appropriately developed as a whole, rather than on a parcel by parcel basis, development of this site needs to provide significant buffering from adjoining lower-density uses and provide quality public space. There is the possibility of connectivity between Ault and Hampton Roads from an existing right-of-way spur. A traffic study and discussion with the Town Engineer can help determine whether access to one or both of the adjoining local streets is most appropriate and/or if an additional curb cut may be needed on Taft Highway.

No expansion of non-residential use is recommended at this time for the properties on Cauthen Way abutting Taft Hwy. These two residential structures, located on approximately $\frac{1}{4}$ to $\frac{1}{2}$ acre size lots, front on Cauthen Way and change of use could negatively impact the adjoining neighbors due to the size of lots and the proximity of neighboring residences. The property to

the east of Cauthen Way appears to currently have no direct access to Taft Highway. Ingress and egress at this location onto Cauthen Way for higher-traffic generating uses may be unsafe. If some relief is desired by the property owners and development occurs across Taft Highway, these two structures may be appropriate locations for traffic-generating home occupations (currently an allowable use with a special permit by the town).

Typical Features of Crossroads Development as identified in the Comprehensive Plan 2030:

- Contains both Mixed-Use and Multi-Use developments.
- Commercial development is small-scale and neighborhood oriented such as personal service and eating establishments.
- Develops at the intersection of arterial and/or collector streets.
- Develops in an emerging growth area.
- Includes pedestrian connections to the surrounding development.

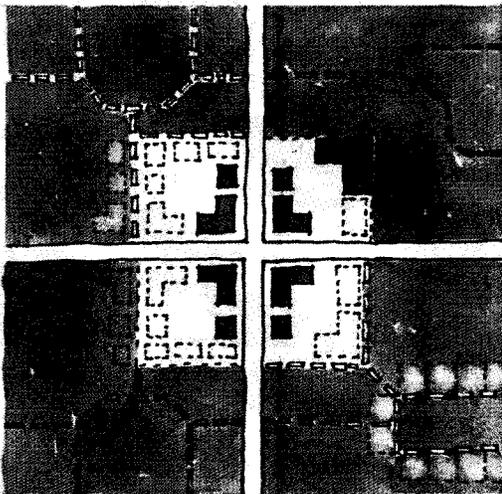
Focus Area: Shackleford Ridge Rd.

The Land Use Plan map recommends the development of a new activity center along Shackleford Ridge Road at an appropriate location and time. Development of a new node should follow the Crossroads Development model of the Comprehensive Plan 2030 and is most appropriately located at the intersection of two major roadways to take advantage of the connectivity provided by two thoroughfares. This node should develop as a neighborhood activity center and be a small-scale, clustered, low-intensity and relatively low traffic generating development that supports the common day-to-day demands of surrounding neighborhoods for goods and services. Non-residential uses that could be considered include small restaurants, delis, hair salons, day care centers, and food and hardware stores.

The size of the center will be dictated by the built and natural environment and the amount and nature of the surrounding residential development. As this development is expected to serve only those residences along the Shackleford Road corridor, this node should initially be conceived as a relatively small project with future phasing if and as needed.

Currently, a change in the zoning designation is necessary to implement an activity center in this area. A rezoning request is recommended to follow the outline for Rezoning Proposals available in the Appendix. The information provided in the Rezoning Proposal can help determine the timing and suitability of a land use change in this location.

The following components should be addressed when development of a new center at this location is proposed:



- Access management including curb-cuts onto Shackelford Ridge Road and adjoining roads if applicable, acceleration/deceleration lanes, and bicycle and pedestrian facilities.
- Landscaping within the development including 1) a substantial street yard where the proposed development site meets the public street right-of-way and 2) screening that provides a year-round visual buffer between the proposed development and neighboring land uses.
- Parking location and layout
- Site amenities including sidewalks, benches and seating areas, bike racks, plazas, public art, and green space.
- Nuisance issues such as noise, lighting, trash and delivery service should be managed to insure the developed site has as little impact as possible on adjacent properties.



Crossroads Development with recommended components

The intent of these recommendations is to maintain and create strong, attractive, identifiable retail and mixed-use districts. These areas contribute fiscal support for desired town services and provide a mix of retail and service opportunities. In reviewing the policies and action steps, it is important to consider the needs of businesses as well as residents when making land use and transportation decisions.

Focus Area: Middle School Site

The existing middle school site on Ault Rd. will no longer be needed by the Board of Education when the new school is opened in Fall 2008. Vacant schools in the county have been reused as senior living facilities, high-end condos, neighborhood recreation centers, and for religious and commercial purposes.

During the public process, comments directed towards the school mentioned that this site provides an opportunity for something else to occur. Among the uses listed for this location are retail, teen center, senior-targeted housing, offices, mixed-use, higher-density housing, coffee shop, and a park. This 13.5 acre site provides a good opportunity for reuse as a mixed-use center and may be one of the most viable options for increased retail and service uses, quality public spaces (see text box on next page), and/or higher-density residential development.

Principles for Quality Public Spaces:

- Quality public spaces can operate in concert with other civic uses to create centers of critical mass: new town centers, for example.
- Quality public spaces promote a sense of ownership, comfort and identity.
- Quality public spaces are for people; they should be planned by the people who will use them.
- Quality public spaces provide for a diverse range of activities important to the life of communities. The role of public spaces is not truly filled by the private spaces that take their place in the suburban environment: malls and shopping centers, mandated open space in subdivisions, and individual yards.
- Quality public spaces must be accessible and linked to the surrounding community.
- Quality public space should support a wide variety of uses and activities.
- Quality public spaces promote a sense of community by drawing people into the community life they promote.

This location, although off Taft Hwy., has good access via Ault Rd. As redevelopment of this site occurs, additional connectivity to Hampton Rd. may be considered. There is an existing right-of-way stub approximately 450' east of Taft Hwy. on Ault Rd. that could provide an option.

The Town should work with the Board of Education to determine how sale of this site could best occur to benefit the town and meet its goals and vision for this location. The Town may be able to either hold the property itself or work with the BOE to request development proposals.

Any potential reuse of this site should involve the neighboring property owners and residents.

Objective: Maintain a diversity of retail and office uses to serve both town and mountaintop residents.

Implementation Strategies:

- Encourage existing commercial nodes to incorporate suggested improvements for pedestrians and cyclists.
- Permit a variety of retail and service uses.
- Review existing zoning ordinance to determine if existing zones provide for the scale and form of preferred development.
- Use this Land Use Plan as a guide for directing development towards appropriate retail areas.

Objective: Continue the process of making retail centers distinctive and attractive destinations through the work of the Design Review Commission and others.

Implementation strategies:

- Encourage the maintenance and revitalization of existing commercial centers.
- Create a plan for improved streetscapes in commercial centers.
- Review existing landscaping and parking requirements in the Design Manual and revise if needed.
- Continue to provide architectural guidance through design guidelines.

Objective: Balance land use and the transportation system.

New development will generate new trips that will impact the transportation network. Generally, higher-density and intensity projects are more appropriately located along transportation corridors where capacity is greater and the system is more able to absorb the impact of these trips.

Implementation Strategies:

- Guide development towards existing nodes or the intersection of major thoroughfares in developing areas.
- Require traffic studies for all new non-residential developments via the Vehicular Access ordinance (Ord. 98-5)

Purpose of the Signal Mountain Design Review Commission (language from Town Code):
2-501. Purpose. (1) Maintenance of the town as a predominantly single-family residential community by protecting the character and integrity of existing and future residential areas through the provision of high quality design standards in new development and the protection of residential areas from encroachment by noncompatible land uses;
(2) Maintenance of a balance among land uses within the town favoring residential over commercial or industrial growth, a policy requiring the town to protect its residential property tax base through the implementation of appropriate community appearance standards generally and, more specifically, of standards insuring that commercial, industrial and multi-family development do not impair the property values of single-family detached residential development within the town.

- Include centers as important destinations during pedestrian and bicycle planning efforts.

Objective: Manage the transition between higher and lower-intensity land uses through landscaping or better site design. Create and enhance centers that are compatible with existing and new neighborhoods.

Implementation Strategy:

- Review existing landscaping and buffering requirements in the Design Manual and revise if needed.
- Require site plans for all new commercial and higher-density residential developments during the rezoning process.

Objective: Ensure landscaping standards are adequate for further development and redevelopment.

Implementation Strategies:

- The Design Manual's "statement of intent" should describe why landscaping is required in parking areas. In addition to landscaping's role in improving lot appearance and safety, its value regarding water quality protection and stormwater management should be mentioned.
- Landscaping regulations typically require a certain percentage of a parking area be vegetated. Consider the possibility of stormwater management plans incorporating these areas. For example, stormwater runoff can be directed to sunken vegetated islands (typically raised and curbed) that can filter and infiltrate stormwater (raingardens or bio-retention areas).

Objective: Ensure existing guidelines provide clear guidance on recommendations and requirements.

Implementation Strategies:

- Review existing Design Manual for areas of improvement or needed change.
 - Reformat and revise Design Manual with graphics and pictures to better explain principles and standards.
-

Other Implementation Strategies:

- Anyone proposing a request of zoning should meet with the staff of the Regional Planning Agency and town to review the proposal in regard to the land use plan and existing zoning ordinance and other regulations.
 - Review regularly and modify town codes if needed to incorporate provisions for desired new technologies like green building and Low Impact Developments.
 - Reference the threatened and endangered species map and database maintained by the TDEC Division of Natural Heritage and the proposed Resource Map in making development decisions and through the rezoning process.
-

Industry/Manufacturing

In the Town's 2000 Land Use and Transportation Plan, there was an expressed desire to prohibit the location of heavy industrial uses in the Town with a recommendation that the Planning Commission and Council reevaluate this restriction with every plan update. Limiting high-intensity manufacturing and industrial uses seems even more appropriate with the recent restriction on the operation of trucks with three or more axles passing through town. This plan does not recommend any development of industrial or manufacturing uses.

5.0 Historic and Cultural Preservation

Historic resources provide residents with another way of connecting with their community. Historic places provide a community's background and the protection of these places saves valuable resources while providing a link to this past. According to the National Trust of Historic Preservation the style and the variety of historic places makes communities more attractive.

Other advantages of historic preservation include:

- Preservation and protection of the historical and /or architectural value and cultural heritage of buildings, landmarks, and historic districts.
- Stabilization and improvement of property values
- An increase in neighborhood pride and awareness of the beauty and noble accomplishments of the past.
- Enhancement of the area's attraction to residents, tourists and visitors through the protection and preservation of historically significant areas which serve as a support and stimulus to business and industry.
- The fostering and encouragement of preservation, restoration and rehabilitation of structures, areas and neighborhoods.

The Town has many sites worthy of preservation due to their historic or cultural significance. Currently, three sites and one district are on the National Register of Historic Places. The National Register is the nation's official list of cultural resources worthy of preservation. The Register is part of a nationwide program to support public and private efforts to identify and protect historic and archaeological resources. It is important to note that listing on the National Register does not ensure protection of buildings from demolition or abusive alterations. Listing does not restrict the rights of private property owners. Listed sites in the area include:

- Connor Toll House: 4212 Anderson Pike, Listed 1977-08-22
 - Signal Mountain Elementary School: 809 Kentucky Ave., Listed 2001-04-19
 - Signal Mountain Historic District: Roughly along James Blvd., Brady Point Rd., and Signal Point Rd., Listed 2001-10-05
 - Topside: N of Signal Mountain off TN 8 on Wilson Ave., Listed 1973-04-11
-

- The W Road and Bachman School

It should be the goal of the Town to foster and encourage the preservation, restoration and rehabilitation of structures, areas and neighborhoods. The following principles apply:

- The Town will place increased emphasis on protecting and restoring historic landscapes and settings as well as individual structures.
- Emphasis should be given to the upkeep and enhancement of publicly-owned historic features.
- The potential impacts of proposed developments on historic sites or areas should be carefully considered, and appropriate measures should be required of the owner that mitigate any adverse impacts.

Implementation Strategies:

- Inventory and establishing a comprehensive listing of historic structures and districts.
- Pursue possible designation of Local Historic Districts. Usually, the purpose of local designation is to protect historically and architecturally significant neighborhoods and districts from insensitive alterations and demolition and to ensure that new buildings are compatible with the old. This process involves an ordinance change, the creation of a historic zoning commission, designation of local district(s), and creation and implementation of design review guidelines.
- Coordinate local preservation efforts with local, state and federal programs to broaden potential scope and impact of such programs. The Tennessee Historical Commission and Southeast Tennessee Regional Historic Planner (as staff of the Southeast Tennessee Development District) can provide assistance with both state and federal programs and funding.

6.0 Natural Resources

The desire for a high quality of life extends to a high quality environment and landscape in which to work, live, and play. The Town of Signal Mountain will continue to be a desired location to develop, but this does not mean that unnecessary losses of natural resources and environmental quality must be the result. It is clear that the preservation of existing natural features and the scenic beauty of the Town are paramount concerns of Town residents. These concerns extend not only to the impact on future development trends and areas, but also to the desire expressed by many residents to address the concerns of failing septic systems and water quality issues.

Currently, the Town has approximately 600 acres of land reserved for park and recreation usage. As part of that acreage, the Town has eight natural areas and three wilderness parks that serve primarily as open space. Much of the town-owned property set aside for parkland lies on or near steep slopes (defined in the Signal Mountain Zoning Regulations as 25% or greater) or waterways. Although not within the Town's municipal limits, Prentice Cooper State Forest provides 26,000 acres of open space and recreational opportunities to residents. It also contains 13 miles of the Tennessee Cumberland Trail State Park which connects to the Town's Rainbow Lake Wilderness Area.

In 2007, the Tennessee Department of Environment and Conservation (TDEC) imposed a moratorium on sewer hookups in the Town because Hamilton County Water and Wastewater Treatment Authority's wastewater treatment plant serving the town had repeatedly violated environmental regulations during the previous three years. TDEC also announced contamination of three streams- Bee, Short, and Shoal Creeks- by enough E. coli to cause serious illness. The bacteria problem is presumed to be related to human waste from failing septic systems, and an aging sewer network.

The three creeks have been on TDEC's impaired waters list since 2004. This list identifies the streams and lakes within watersheds in Tennessee that are "water quality limited" or are expected to exceed water quality standards within the following two-year period and need pollution controls. Water quality limited streams

are those that have one or more properties that violate water quality standards. They are considered impaired by pollution and not fully meeting designated uses. (Year 2004 303(d) List, September, 2004, Tennessee Department of Environment and Conservation)

Most of the Town is in the Tennessee River watershed with a portion of the Town and its growth area in the Suck Creek watershed. Watersheds, because of their physical shape and composition, naturally filter, absorb, and direct water to rivers, streams, lakes, and/or other naturally occurring bodies of water. Land development patterns and disturbance can dramatically affect water quality in a watershed.

Important natural areas that contribute significantly to a healthy balance between land development and the environment are riparian zones which include the floodplain and floodway, hillsides and mountains formed by soil composition including rock structures, sink holes, and caves, and trees and vegetation which filter air and water pollutants, help maintain temperature balance and provide scenic and wildlife habitat.

Policies and actions promoting the preservation of the Town's scenic beauty and natural resources are provided through recommendations in this section and in the land use plan.

6.1 Mapping Resources

It is necessary to maintain maps which identify specific natural resources within the community. The Town should identify and map sensitive resource areas and maintain a current map of these sites.

Implementation Strategy:

- Create a map of environmentally sensitive areas including slopes, native or endangered species, and riparian buffers.
- Reference the threatened and endangered species map and database maintained by the TDEC Division of Natural Heritage.
- Once resources are identified and mapped, update Parks and Open Space category on Land Use Plan map to reflect the following:

Preserve Areas

Preserve areas include undisturbed natural open space that is currently protected from development. This class includes areas under environmental protection by law, as well as land acquired for conservation through purchase or by easement. Examples of Preserve Areas include:

- Surface water bodies
- Protected wetlands
- Purchased open space
- Greenways and Trails
- Conservation easements

Reserve Areas

The category includes areas of vacant, open space that are not currently protected from development under current code. Included are: steep slopes, open space, view sheds corridors intended for acquisition and required buffers.

These areas may include public or privately owned land such as golf courses, parks, community lots owned by neighborhood associations or other developed sites used for recreational activities. Although they are expected to remain relatively undeveloped, Reserve lands still have the potential for eventual use at a higher intensity. In this case, the lands should be developed at intensity compatible with surrounding uses. Ideally, many Reserve lands will eventually gain the protected status enjoyed by Preserve Area lands.

6.2 Stormwater Management

Stormwater is water which flows across the ground and pavement when it rains. Stormwater runoff has been identified as one of the major contributors to ongoing water quality problems in the United States (EPA Report: Our Built and Natural Environments, A Technical Review of the Interactions between Land Use, Transportation, and Environmental Quality.) Its management is important to the community because of the volumes of stormwater being carried at a given point in time and the pollutants it carries. The need for stormwater maintenance is directly related to

development. A lack of responsible development practices results in higher maintenance costs, undue health and safety risks, and a devaluation in property owner investment.

The Town was recently encouraged by TDEC to correct problems in its stormwater program or face potential fines if it doesn't come into compliance. The Town has an MS4 Permit that requires the town to monitor, identify illicit discharges and impaired streams and take corrective action.

Implementation Strategies:

- Maintain communication with the Hamilton County Health Department regarding failing septic systems, appropriate remediation, and action taken.
- Aggressively enforce stormwater regulations.
- Actively and aggressively meet the requirements of the Town's current MS4 permit to avoid fines or involvement of the Environmental Protection Agency.
- Require installation, inspection, and maintenance of BMPs.
- Identify failing septic systems and prioritize remediation. If neighborhoods are a priority, educate and encourage residents to connect to the sewer system.
- Encourage educational programs and distribute Best Management Practices (BMPs) materials such as brochures and/or articles as part of stormwater management.
- Develop opportunities for increased public education at the schools or with civic groups regarding stormwater protection and the environment.
- Adopt landscaping provisions to complement existing Stormwater Management Standards.
- Encourage the use of stormwater management alternatives for street culverts such as bio-retention facilities.
- Continue painting "Dump No Waste – Drains to River" notices next to all stormwater drains.
- Seek local assistance (UTC, TDEC, and the Tennessee Division of Natural Heritage) in the identification of wetlands and sinkholes and with enforcement of existing state and federal regulations which specify wetlands shall not be regraded, filled, piped, diverted, channeled, built upon, or otherwise altered

or disturbed except where state or federal permits have been obtained.

6.3 Riparian Buffers

TDEC defines a riparian buffer as a strip of undisturbed, original vegetation, enhanced or restored existing vegetation, or the re-establishment of vegetation surrounding an area of disturbance or bordering streams, ponds, wetlands, or lakes. The purpose is protect water quality by filtering pollutants, sediment, and nutrients from runoff, reduce storm runoff velocities, protect channel banks from scour and erosion, cool rivers and streams by creating shade, and provide food and cover for wildlife and aquatic organisms.

Implementation Strategies:

- Monitor and, if necessary, develop regulations to require riparian buffers and minimize stream bank alteration and erosion. The Tennessee Department of Conservation requirements apply only to streams with sediment or habitat impairment. A good stream buffer ordinance specifies the size and management of the stream buffer and is a specific planning tool to protect stream quality and aquatic habitat. Its primary use is to physically protect and separate a waterbody from future disturbance or encroachment.
- Promote property owners to contact TVA's Watershed Teams for information on protecting and enhancing the riparian zone in part through better landscape design and the use of native plants to help restore and protect stream quality.

6.4 Greenways

Greenways such as the North Chickamauga Greenway, while used for recreational purposes, exist predominantly for environmental protection, helping to protect the watersheds of the waterways they are located along. While greenways may have onsite restrooms or other facilities, typically greenways will have a level of infrastructure.

Objective: Institute and coordinate a program of mountain stream greenway planning.

Implementation Strategies:

- Adopt a Greenway Master Plan which includes specific recommendations on greenway locations as a method of buffering waterways.
- Develop a program in partnership with neighboring communities to enhance existing mountain stream greenways and create new greenways where appropriate.
- Sponsor stream restoration or stream clean-up projects.
- Work with the Trust for Public Land and other partners to continue expansion of the network of multi-use paths.
- As development occurs, work to secure easements for a greenway network expansion as part of the development process.
- Make mountain stream greenways a priority concern when planning future open space acquisitions, protection easements, and local land trusts, or other forms of management agreements with private land owners.

6.5 Slopes

The Town's existing zoning and land use tools for development provide little incentive or requirements for developers to practice environmentally sensitive development design. Protection of steep slopes next to streams is important due to the potential harm to water quality and aquatic habitats due to stream siltation and contamination of surface waters. Steep slope protection also prevents problems resulting from slope instability and provides for the maintenance of important view sheds and maintains an area's natural topography and drainage patterns.

Implementation Strategies:

- Define "steep" slopes. Slopes are characterized by the run over rise ratio. Defining "steep" slopes is common but varies from municipality to municipality.
 - Consider developing a slope management ordinance and/or regulation encouraging development that is sensitive to steep topography.
 - Identify areas appropriate for compact cluster developments adjacent to steep slopes.
 - Identify ways to improve the subdivision regulations and zoning ordinance to reflect the importance of
-

slope conservation including options such as expedited process for including protection provisions in the development site plan.

6.6 Tree Preservation

Public comments were clear that residents value the town's tree cover and concerns were expressed about the clear-cutting of development sites. Currently, there are no provisions or incentives for the prevention of extensive tree removal or tree preservation.

Implementation Strategies:

- Assess the need for a tree coverage ordinance and and/or the creation of BMPs for tree protection.
- Consider the creation of a minimum standard for retaining existing tree cover on steep slopes.

6.7 Open Space preservation

The Town can use the acquisition of open space as a tool to protect high-priority resources. This is one method to insure that places of natural beauty and areas of wildlife habitat are preserved and maintained. There are also organizations that provide assistance to landowners to place their land in permanent conservation easements to ensure that important assets are preserved.

Objective: Use public and private open space acquisition as a method of preserving important natural resources.

Objective: "The Town should encourage the use of conservation easements in conjunction with a land use trust as a tool to protect natural resources within the Town. This is one method to insure that places of natural beauty and areas of wildlife habitat are preserved and maintained within the Town. There are also organizations that provide assistance to landowners to place their land in permanent conservation easements to ensure that important assets are preserved.

Objective: The Town should accept private open space donations as a method of preserving important natural resources. The Town should encourage the purchase of additional open space as public funds are

Benefits of Trees

-From "Building Greener Neighborhoods", American Forests and National Association of Home Builders

Energy Conservation and Air Quality

- Deciduous trees provide shade and can save 10 to 50 percent on a home's summer cooling costs.
- Deciduous trees provide evaporative cooling, lowering temperatures throughout a community.
- Evergreen trees block winter winds and can save 20 percent on a home's winter heating needs.
- Trees store carbon, offsetting the harmful by-products of burning fossil fuels.
- Trees trap air pollution particulates, cleaning air.

Storm-water Control and Water Quality

- Trees intercept and absorb storm-water, reducing runoff and soil erosion.
- Tree buffers near waterways improve water quality by acting as a filter.

Psychological and Physical Health

- Trees have a restorative effect that can improve physical wellbeing.
- Trees block and mask noise.
- Trees offer beauty and create a sense of place in the community.
- Trees provide recreational settings and wildlife habitat.

Marketability

- A well-treed development enhances property values and sales.
- Tree conservation enhances the developer's and builder's image.

available. The use of eminent domain for the purchase of additional public lands is not recommended.

Implementation Strategies:

- Prioritize areas/attributes for open space acquisition.
- Engage land trusts in conservation efforts.
- Maintain public open spaces and require private open space to be maintained.
- Use an array of techniques for open space preservation and acquisition.

Other Implementation Strategies:

- Sponsor stream restoration or stream clean-up projects.
- Review erosion control plan for construction areas which have the potential for erosion during and following construction. In addition provide Best Management Practices information for proper installation erosion control devices and materials.
- Use Open Space Overlays as a method of allowing residential development while preserving sensitive natural areas, where appropriate.
- Consider adoption of maximum parking standards, instead of the minimum requirement found in the current zoning ordinance, and shared parking requirements to discourage development of vast surface parking lots and reduce impervious services.

Land Trusts are local, regional, or statewide nonprofit conservation organizations directly involved in helping protect natural, scenic, recreational, agricultural, historic, or cultural property. Land trusts work to preserve open land that is important to the communities and regions where they operate. They have direct involvement in land transactions. They initiate, implement, and monitor land protection devices for individual pieces of property or for larger land areas, depending on the trust's specific goals.

7.0 Utilities

7.1 Sewer Service

The Town's 2000 Land Use and Transportation Plan contained a Sewerage Service Master Plan. Contained in the appendix, this master plan sought to address two main concerns. First, was the desire of residents to have their homes connected to the sewer system. Second, was addressing providing sewer service to the undeveloped portion of town (i.e. Shackleford Ridge Road area).

However, currently the Hamilton County Water and Wastewater Treatment Authority (WWTA), not the Town of Signal Mountain, is responsible for the public sewer system in the town. According to information provided by WWTA, the Authority extended a partnership offer to the Town to provide sewer service in a response to a report that the Town was considering a 150% rate increase to sewer service fees. In September 2002, the Town became a member of WWTA and the Authority accepted the town's sewer system. The WWTA is governed by a Board of Commissioners composed of five members appointed by the Hamilton County Mayor according to the Act and a representative from each municipality that has joined the WWTA. The Town Manager is the current representative.

WWTA's mission: "To provide reliable, courteous, and low-cost sewer service within our service area in order to promote economic development, eliminate health problems, and protect the environment."

At this time, WWTA does not have a detailed plan for expansion of its services although it does have a designated service area. There is not a plan for expansion in the Town because WWTA has a policy not to provide sewers to existing subdivisions. However, if requested and if the issue of covering the cost of provision of the service is addressed, the Authority will consider system expansion to these areas. WWTA has offered to partner with the Town in developing a master sewer plan and is studying alternative routes to remove wastewater from the mountain. Currently, the main drivers for sewers in WWTA's service areas are septic tank failures and subsequent health concerns and their use as an economic development tool.

The WWTA provides sewer service to over 24,000 commercial, industrial and residential customers. WWTA will expand its current system to accommodate any needed additional flow. No public tax money is spent on sewer service although the County or other government entities may choose to contribute money to

WWTA for governmental purposes. WWTA's cost to provide service depends on how far the land is from an existing line, how the property is being developed, and several other factors. Currently, the funds used to install new sewers are provided by private lending institutions and are repaid from the fees paid by each user. In instances where a developer requires sewer service for a new development, the developer funds 100% of all on-site sewer installation costs. Off-site sewer costs, if any, are funded either by the developer, or by a shared cost arrangement between the developer and WWTA. In all instances, WWTA's costs are recouped from fees paid by the users. Therefore, expansion of sewer service in the County should occur with no net long-term cost to the Authority's participating members unless members elect to take on cost.

7.2 Septic Tanks

Subsurface sewage disposal systems are regulated by the state, with local (county) health officials responsible for enforcement. No subdivision plan may be approved locally until it has been approved and a permit has been issued by the state Department of Environment and Conservation (T.C.A. §§ 68-221-401 et seq.). The Hamilton County Health Department is responsible for siting and permitting systems and identifying failing systems. Under its stormwater permit, the Town is required to monitor, identify, and correct non-natural discharge of any water into a stream that does not meet water quality standards. So, it is the town's responsibility also to take corrective action on failing septic tanks.

7.3 Drinking Water Supply

On August 27, 2007, the Division of Water Supply with the State of Tennessee Dept. of Environment & Conservation conducted a survey of the Signal Mountain Water System. In accordance with the Sanitary Survey Manual for Community Public Water Supplies, the Signal Mountain Water Company earned the highest numerical rating of 100.

There were no deficiencies identified during the survey. The water system will remain among Tennessee's APPROVED public water supplies. The Town buys treated water from the Tennessee-American Water Company and pumps the water up the mountain to

elevated storage tanks. The Town of Signal Mountain's water system has the capacity to store up to two million gallons and has pumped up to 800,000 gallons of water a day when needed. The Public Utility director does not project much growth within the system's service area with Walden's Ridge Utility District providing service to most areas in the town's growth boundary.

Walden's Ridge Utility District (WRUD) serves the Town of Walden and portions of the unincorporated mountain and also the Shackleford Ridge area. Walden's Ridge Utility District obtains its water from the Tennessee-American Water Company and currently serves about 2,600 customers.

WRUD has a 12" main on Shackleford Ridge Rd. that supplies water to the new school and surrounding area including St. Ives and a portion of Cool Springs Rd. That line was put in place by the landowners along the roadway and Hamilton County. There is a "line fee" on the water line meaning that each landowner was assessed a price during development of the line and if their property is sold a price per linear foot is required to be paid to Hamilton County.

Both systems pull their water from Tennessee-American Water which draws surface water from the Tennessee River. The Tennessee River is rated as reasonably susceptible to potential contamination based on geologic factors and human activities in the vicinity of the water source. Currently, the Town and WRUD are pursuing connecting the two water systems to provide redundancy should an emergency or contamination of a system occur.

Implementation Strategies:

- Identify failing septic systems and prioritize remediation. If neighborhoods are a priority, educate and encourage residents to connect to the sewer system.
 - Future growth on septic systems or other non-sewer systems, especially in developing areas is to be highly discouraged unless newer technologies are available which are protective of the environment.
 - Work with WWTA to develop a master sewer plan for the entire community and implement plan based on 1) areas identified as contributing to polluted streams and 2) available funding.
-

- Maintain communication with the Hamilton County Health Department regarding failing septic systems, appropriate remediation, and action taken.
 - Encourage the continuation of the current Electric Power Board street light policy and underground utility lines installation policy.
-

8.0 Transportation

8.1 Multi-modal Facilities

It is important to maintain and plan for a transportation system which ensures an adequate street network capable of providing safe and efficient movement of people and goods within and through the Town. This Plan recognizes that there needs to be improvements in the transportation system to provide alternatives to single-occupancy vehicle travel.

Accordingly, this Plan strongly encourages the development of a comprehensive, "multi-modal" transportation corridor addressing not only automobile travel, but also pedestrian, bicycle, and transit alternatives.

As population continues to grow in the Town, it is essential that a comprehensive pedestrian circulation system be established. On a basic, functional level, the system needs to accommodate safe and well-defined circulation between key destination points. On a more sophisticated level, it could provide an interfacing network of parks and green spaces through which the pedestrian would travel.

8.2 Bicycling

Like walking, the convenience of bicycling for travel is often determined by the pattern in which land is developed. As mentioned previously, most people are willing to walk for about fifteen minutes, or one-half mile, for transportation trips. In fifteen minutes, most cyclists can cover about two miles, making bicycles an even more versatile mode of travel.

Some land use patterns that encourage both bicycling and walking include:

- Development densities that allow people to live close to destinations such as schools and stores.
- Mixed-use zoning that allows commercial and residential land uses in the same area, along with standards that ensure compatible building design.
- Locating buildings close to the street, which can slow traffic and offers easier bicycle access.

Some common land development practices that discourage bicycle and pedestrian travel include:

This land use plan has a transportation plan as a companion document. The 2007 Signal Mountain Transportation Study is available at the Town Hall, Town website, or the RPA website.

- Segregated land uses that create long distances between destinations.
- Commercial properties set far back from the street with large parking lots in between. Such
- sites also typically include access and parking facilities for automobiles only.
- Large lots in residential areas that create greater distance between home and other destinations.

Bicycle facility planning should address the differing skill level of users. User types include the following:

- Class A: Expert
- Class B: Casual
- Class C: Inexperienced

Class A includes expert or experienced riders. Expert riders generally use their bicycles as transportation and desire direct connections to their destinations with minimal delay. These riders are confident riding their bicycles alongside motor vehicles and are able to negotiate high speed roadways without special bicycle facilities. In designing facilities for expert riders, adequate space should be provided so that cyclists and motorists can pass comfortably without shifting positions.

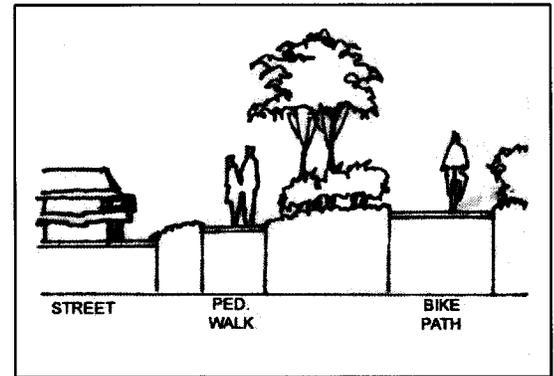
Class B includes casual or less confident riders. Most of these adult riders prefer to use roadways with fewer motor vehicles and more operating space. These casual riders also use their bicycles for transportation, but wish to avoid heavy, high-speed traffic. They prefer neighborhood streets and multi-use paths separate from roadways. Busier streets should include a designated bike lane or wide shoulder to accommodate casual riders.

Class C includes inexperienced riders, including children. Children are often confident riders with skilled bicycle handling abilities, but they lack the "traffic sense" and experience of maneuvering in high volume motor traffic. For these riders, connections are necessary to destinations including schools, convenience stores and recreational areas. Multi-use paths linking these facilities, in combination with neighborhood bike lanes can accommodate this group.

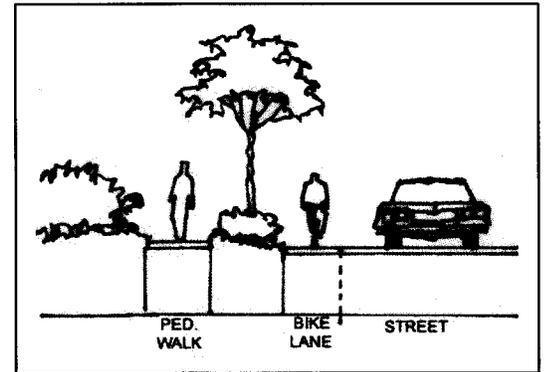
Class I Facilities include multi-use paths, more popularly known as greenways. Greenways do not allow motor vehicle traffic but they do permit a range of non-motorized travel including bicycling, walking, running and in-line skating. Although typically built in an independent right-of-way, park or easement, greenways may also be located within road rights-of-way, separated from motor vehicle traffic by open space or a structural barrier. Greenways primarily attract recreational users, but because they typically wind through a community and connect destinations, they also offer an excellent opportunity to function as nonmotorized transportation routes. They sometimes offer a more direct route to destinations than the roadway network. For children, or any cyclist not comfortable with sharing the roads with cars, trails may be the preferred facility. Greenways are an excellent training ground for building skills to ride on the road.

Class II Facilities include bicycle lanes and shouldered bikeways. A bicycle lane is a portion of the roadway separated from conventional travel lanes with a stripe, and designated for exclusive or preferential use by bicyclists. They are one-way facilities placed on both sides of a street in order to carry bicyclists in the same direction as motor vehicle traffic. Bike lanes also help to increase the total capacity of roadways by segregating users. In addition to lane striping, pavement markings and signage identify bike lanes. Shouldered bikeways are paved shoulders separated from travel lanes with a lane stripe, and are typical for rural roadways without curbs and gutters. Pavement markings are not typically used on shouldered bikeways, since they can also be used for other functions, such as for vehicle breakdowns.

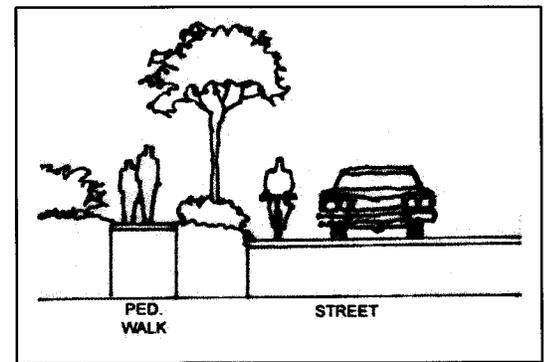
The Chattanooga Urban Area Bicycle Facilities Master Plan, adopted by the Town in 2002, recommends *Class III Facilities*, which includes bike routes, for identified roadways in the town. On a bike route, bicyclists and motorists share the same travel lanes. Except in cases where wide outside lanes are provided, motorists will typically have to move into the adjacent lane in order to safely pass a bicyclist. Bike routes function well on local and minor collector streets, where traffic volumes and speeds are typically lower than on major collector and arterial streets. There are three types of shared roadways: Wide Outside Lanes (WOLs), Shared Signed Roadways (SSRs) and Local Streets. On major collector and arterial streets, where severe physical constraints



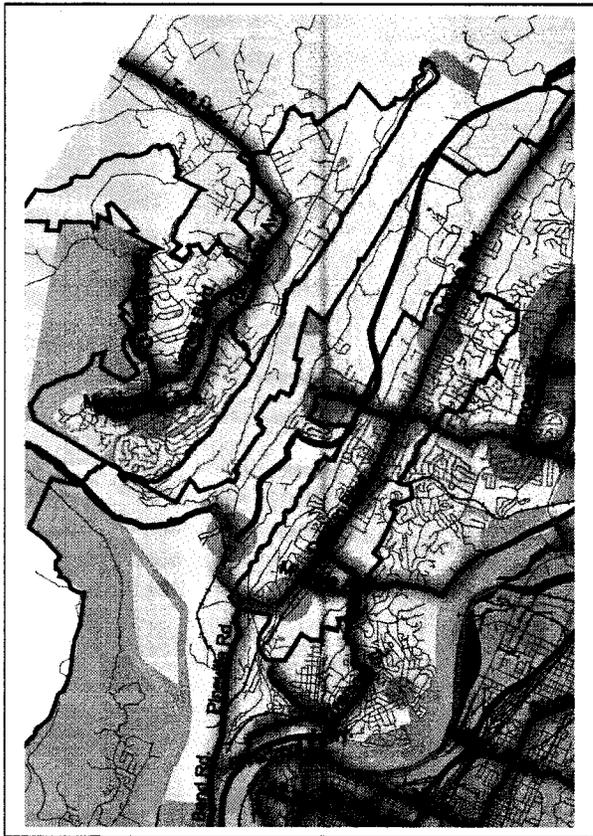
Class I



Class II



Class III



preclude bike lanes, WOLs are a desirable alternative. Because they provide less operating space than bike lanes, and are not designated for exclusive bicycle use, some cyclists will be uncomfortable using WOLs. However, WOLs allow most motor vehicles to pass bicyclists without weaving into the adjacent lane and provide a greater degree of comfort to cyclists than a typical 11' or 12' lane. SSRs are arterial or collector streets where bicycle traffic or demand is high but bike lanes or wide outside lanes cannot be provided due to severe physical constraints. SSRs are posted with appropriate speed limits and rely on signage to encourage both drivers and cyclists to be alert for all roadway users. Where appropriate, traffic calming devices can be used on collectors to further encourage appropriate travel speeds. In many cases, SSRs are a temporary solution, applied until a design solution that incorporates more appropriate bicycle facilities can be implemented.

The Chattanooga Urban Area Bicycle Facilities Master states that Local streets should be able to safely accommodate bicyclists without any special treatment. It further recommends that in cases where local streets carry more traffic at greater speeds than they were designed for, traffic calming techniques such as speed humps and pedestrian bulbs may be implemented to help ensure that bicycle and motor vehicle traffic operate compatibly.

Town of Signal Mountain Code 15-303. Off street use restricted. No motorcycle, motor scooter or any other motor driven cycle or bicycle shall be ridden upon any sidewalk of the Town of Signal Mountain nor shall any such vehicle be ridden on any vacant lot, yards or privately-owned property without the written consent of the owner.

Roads designed to accommodate bicyclists with moderate skills will meet the needs of most riders. However, children currently are using the town's roadway system and young children are primarily the bicyclists who may require special consideration, particularly on neighborhood streets, in recreational areas, and close to schools.

8.3 Pedestrian/Sidewalks

Everyone is a pedestrian at some point in life. Sidewalks and trails provide critical links in the transportation network by providing pedestrian access to schools, neighborhoods, businesses, and recreational and natural areas. Given the proper facilities, most people are willing to walk for about fifteen minutes, or one-half mile, for transportation trips. This distance has become a benchmark planning principle for those designing walkable communities.

Currently, the majority of sidewalks are found in Old Towne and providing connections to schools. Town residents support the addition of sidewalks in the community but commented that the poor condition of existing sidewalks were of concern. Frequently identified problems include sidewalk surfaces in poor repair, such as cracked or uneven concrete, and lack of regular sidewalk maintenance, including overhanging trees and overgrown shrubs.

The Town of Signal Mountain assigns property owners the responsibility for upkeep of the sidewalks adjacent to their property even though sidewalks are a part of the public right-of-way. Citizen maintenance extends to issues such as litter removal, limb and debris removal after a storm, and removal of vegetation. If walking is to be encouraged, a clear pathway must be maintained. If, as current Town Code requires, citizens are responsible for sidewalk maintenance, landowners must be made aware of the requirements and responsible maintenance practices enforced.

Citizens often report maintenance problems. This might be the only method that the town currently has of being aware of repair needs. The town should consider other methods of identifying sidewalk concerns.

New Sidewalks

The pedestrian zone is the area of the sidewalk corridor that is specifically reserved for pedestrian travel. It should be completely free of obstacles, protruding objects, and vertical obstructions because they can be hazardous to pedestrians, particularly for individuals with vision impairments who may not be able to detect or avoid the hazard.

From Town Code:

16-401. When owner/occupant to repair sidewalk. When any sidewalk becomes out of repair or in any manner defective, whether in the bed, pavement, or curbing thereof, the owner/occupant or agent shall cause such sidewalk to be reconstructed or put in good repair according to specifications required by the Town of Signal Mountain as to grade, dimensions, and character of said sidewalks or curbing or gutter and pavements, the material of which they shall be constructed and the manner in which they shall be laid.

16-402. Specifications for construction and repair; permit required. The type of repairs to existing sidewalks shall be such as may be prescribed and approved by the town council. The owner/occupant or agent in charge of the property where such work is to be done shall apply to the town manager for specifications and instructions setting forth the manner in which the work shall be performed and for a permit authorizing such work and in doing such work shall conform to the specifications and instructions required by the Town of Signal Mountain.

According to the Federal Highway Administration, the pedestrian zone should be at least five feet wide. This provides sufficient space for two pedestrians to travel side by side without passing other pedestrians, or for two people going in opposite directions to pass one another. However, because there is potential for pedestrian volumes to be much higher in commercial districts, the pedestrian zone may need to be widened to accommodate the additional users. As the pedestrian zone should still remain free of obstacles, if additional amenities are required/preferred, the planter/furniture zone should also be expanded.

The design of bicycle and pedestrian facilities can be determined by local design standards and Practices. Publications produced by the American Association of State Highway and Transportation Officials (AASHTO) such as the *Guide to the Development of Bicycle Facilities* and *A Objective on Geometric Design of Streets and Highways* can provide guidance.

Table 1. Guidelines for New Sidewalk Installation as recommended by the Federal Highway Administration

Roadway Classification and Land Use	Sidewalk Requirements	Future Phasing
Highway (rural/suburban - less than 2.5 d.u./hectare (1 d.u./acre))	One side preferred. Min. of 1.525 m (60 in) shoulders required.	Secure/preserve ROW for future sidewalks.
Suburban Highway (2.5 to 10 d.u./hectare (1 to 4 d.u./acre))	Both sides preferred. One side required.	Second side required if density becomes greater than 10 d.u./hectare (4 d.u./acre).
Major Arterial (residential)	Both sides required.	
Collector and Minor Arterial (residential)	Both sides required.	1.525 m (60 in)
Local Street (Residential - less than 2.5 d.u./hectare (1	One side preferred. Min. of 1.525 m (60 in)	Secure/preserve ROW for future sidewalks.

d.u./acre))	shoulders required.	
Local Street (Residential - 2.5 to 10 d.u./hectare (1 to 4 d.u./acre))	Both sides preferred. One side required.	Second side required if density becomes greater than 10 d.u./hectare (4 d.u./acre).
Local Street (Residential - more than 10 d.u./hectare (4 d.u./acre))	Both sides required.	
All Streets (commercial areas)	Both sides required.	

Note: d.u. stands for dwelling unit

[Information from *Final Draft: Priorities and Guidelines for Providing Places for Pedestrians to Walk Along Streets and Highways*. FHWA (1999).]

Case studies show that the pedestrian zone should never be less than three feet wide with this minimum width providing sufficient space for most people using mobility aids (i.e. wheelchairs). However, a three foot sidewalk does not allow pedestrians to pass each other or account for two-way travel. The FHWA recommends that this minimum width is only acceptable when:

- A wider width is impossible;
- The narrow width continues for as short a distance as possible; and
- Passing spaces are provided at intervals of no more than 200 ft.

Multi-use Paths/Greenways

Multi-use paths can be an important element in a transportation network. Multi-use paths, often referred to as greenways, are discussed in the Natural Resources section as providing a variety of important environmental functions. However, these paths also provide a number of other important benefits to communities:

- **Connectivity/Transportation:** Multi-use paths can be an integral element in a regional non-motorized transportation network, offering an alternative to

driving by connecting homes, parks, schools, offices, commercial areas and workplaces.

- **Recreation:** Multi-use paths provide recreational opportunities for citizens of all ages, as well as providing linkages between parks and other community facilities.
 - **Health:** Multi-use paths provide opportunities for moderate exercises such as walking and bicycling, activities that when performed regularly can have significant health benefits.
 - **Education:** Multi-use paths may incorporate natural, historic, and cultural resources along their routes into interpretive programs to educate the community.
 - **Economic and Quality of Life:** Multi-use paths are significant community assets that increase the attractiveness and desirability of communities for current and potential residents.
-

Transportation Goal: Create a walkable, bikeable community for residents of all ages.

The Town of Signal Mountain will provide a transportation system that meets the needs of all users including pedestrians, bicyclists, transit users, and motor vehicle drivers regardless of age or mobility level. These needs shall be accommodated and balanced in all types of transportation and development projects.

Recommend Implementation Strategies:

Pedestrian:

Bicyclists and pedestrians shall be given due consideration in comprehensive transportation plans.

Bicycle transportation facilities and pedestrian walkways shall be considered, where appropriate, in conjunction with all new construction and reconstruction of transportation facilities.

Develop a pedestrian master plan in conjunction with an overall plan for pedestrian and bicycle routes and facilities. A plan can help identify needs, prioritize funding, and furnish design and implementation guidelines for projects.

Design streets, pedestrian paths, and bicycle facilities to link neighborhoods with community facilities.

Conduct a sidewalk inventory of existing facilities.

Create a maintenance plan to address existing facilities. It is recommended that a plan be developed that specifically addresses how maintenance concerns will be identified, what corrective actions will be taken, and who is responsible for maintenance of sidewalks.

Maintenance strategies should be identified in the planning stages of new construction.

Bicycle:

Bicyclists and pedestrians shall be given due consideration in the comprehensive transportation plans.

Bicycle transportation facilities and pedestrian walkways shall be considered, where appropriate, in

Trees are generally installed because they improve the pedestrian experience along the street. Trees serve as a visual and auditory buffer between pedestrians and automobile traffic. They also improve the aesthetic appearance of a street and provide shade or shelter in warm or windy regions. In urban areas, trees provide needed green space and break up the monotony of the public right-of-way. In some residential areas, large trees that extend over the street may have a traffic calming effect by creating a sense of enclosure. According to urban design research, visual enclosure is required to transform streets into pedestrian places, which results in increased comfort for pedestrians and decreased comfort for speeding motorists - (Institute of Transportation Engineers, 1999) Federal Highway Administration

Vehicular Access Ordinance 98-5

Minimum Length/Restrictions. All driveways for commercial, industrial, office, institutional and apartment complexes must extend a minimum of 20 feet into the property...

Driveway Width Requirements. The width of driveways shall meet the following requirements for Office, Commercial, Institutional, Apartment Complexes:

One-way Traffic, Maximum 20 ft.
Two-way Traffic, Maximum 30 ft.

Curb Cut Policies for Major Streets (Arterials and Collectors)

1. The maximum width of a driveway opening at the property line along a major street shall be 35 feet.

2. The minimum throat length of a driveway (measured from property line to the first parking aisle, driveway or intersecting street) shall be 75 feet for access to an arterial street and 60 feet

The two examples above—one from the 2000 Land Use Plan and the other from the vehicular access ordinance—show conflicting recommendations and requirements.

conjunction with all new construction and reconstruction of transportation facilities.

Consider adoption of roadway design standards to include cross-sections that incorporate different types of bicycle facilities.

Develop a bicycle master plan in conjunction with an overall plan for pedestrian and bicycle routes and facilities. A plan can help identify needs, prioritize funding, and furnish design and implementation guidelines for projects.

Roadway:

Monitor the operation and performance of the roadway network by establishing a routine data collection program and by conducting special data collection as the need arises.

Require roadway and signal improvements for development projects to minimize decline of existing levels of service.

Study and implement physical and operation improvements to optimize roadway and intersection capacities.

Carpooling to minimize traffic impacts.

Promote the reduction of single occupant vehicle trips, and encourage an increase in the share of trips taken by other forms of travel.

Require a traffic study per the requirements set forth in Ordinance 98-5

Land use and transportation:

Review requirements of an access plan. Currently a plan is required for each new building or use of land per Ordinance 98-5.

Review existing curb-cut policy found in the Vehicular Access Ordinance 98-5.

Provide clear guidance on requirements by reviewing and rectifying the requirements found in the zoning

ordinance, subdivision ordinance, New Street Criteria,
and vehicular access ordinance.



Appendix

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Specific Memo

To: Signal Mountain Planning Commission

From: Randall Arendt

Date: April 3, 2007

Subject: **Constructive Comments on the *Land Use and Transportation Plan*, the Zoning Ordinance, and Subdivision Regulations Regarding Greenspace Protection**

As requested, I have reviewed the Town's *Land Use and Transportation Plan* and its zoning and subdivision ordinances from the perspective of a land-use planner who strives to blend conservation with new development in order to conserve interconnected networks of open space. However, because I am not an attorney, my recommendations should, of course, be reviewed by your legal counsel.

REGIONAL COMPREHENSIVE PLAN 2030

This document is very thorough and most commendable. It contains numerous policies concerning the environment and rural character, such as:

- retain scenic beauty and diverse wildlife habitats
- develop a Residential Conservation District of a contiguous greenbelt
- preserve open space in rural areas
- provide rural development options that cluster density while preserving...woodlands, hillsides, prime farmland, viewsheds...
- formulate new zoning tools allowing higher density or small lot developments in exchange for preservation of substantial areas of open space (above quotes are from pages 75 and 113)

LAND USE AND TRANSPORTATION PLAN

By contrast, this more local document is surprisingly deficient and incomplete. Rather than being comprehensively written, it appears to focus lopsidedly on development, as evidenced in chapter headings such as "Development Policy Plan", "Development Plan", and "Development Goals". A plan that is supposedly broad-based, reflecting the

full spectrum on interests in the community, would give equal (or almost equal) weight to the countervailing conservation objectives of community residents.

Although most such documents often go by the name of "Comprehensive Plan" (due to their more comprehensive nature), historically the local planning documents adopted by Connecticut towns were once known as the "Plan of Development". About a decade ago, however, the state legislature changed the enabling legislation to officially rename these documents as the "Plan of Conservation and Development". (This action was not unrelated to the publication of my first book-- *Dealing with Change in the CT River Valley: A Design Manual for Conservation and Development*-- which graphically illustrated exactly how those two seemingly conflicting goals could be blended through a technique that is now known as "conservation subdivision design".) The next time your Plan is updated, I suggest that the Town consider taking this more balanced approach.

Your current Plan appears to contain a seriously-below average amount of written information regarding natural and cultural features. As noted in the *General Memo*, it contains only just one single map with information about natural resources. And that map -- called *Natural Constraints in Developing Areas*-- is one where the natural features are viewed as obstacles (to development), rather than as the invaluable resources they are in terms of the environment, air quality, water quality, wildlife habitat, scenic viewsheds -- and the opportunities they represent for preserving community character.

This almost negative perception of natural resources is reinforced by the very revealing title chosen for a chapter on those parts of town rich in such natural resources: *Vacant Land/Open Space* (emphasis added), as if were land just waiting to be filled up with more houselots and streets

From this evidence, it appears that the philosophy of the community at the time this Plan was written was one which was focused almost entirely upon development. This is in marked contrast to the County's *2030 Comprehensive Plan*, which placed far more weight -- in a truly balanced manner -- upon environmental resources.

The current Plan's policies and implementation measures could greatly benefit by being expanded and updated, and among the kinds of additional goals it might embrace are the following:

- to protect undeveloped lands through flexible land-use controls that would become the norm rather than the exception
 - to use conservation design to locate houses and streets on the least productive farmland or the least significant woodland habitat, to locate septic sewage systems on soils best-suited for that purpose, and to provide for stormwater infiltration areas to recharge groundwater supplies (rather than permitting the "catch-and-release-downstream" method of stormwater management).
-

- to amend other development regulations to specifically and effectively protect historic and cultural features, and scenic viewsheds, and to restore degraded landscapes

In addition, I would suggest considering the following changes

- limiting the creation of impervious or graded surfaces, specifically including limiting woodland clearance for lawns, though conservation subdivision design (which effectively enforces a "maximum lot size"), and

- protecting key scenic resources and roadways, such as through a Scenic Road listing that creates a special category for roads where conservation design would be required, such as "Rural Roads".

The *Plan* also misses several opportunities to further advance the thinking about creative zoning provisions and subdivision procedures for open space development design. Said another way, the *Plan* could have placed more emphasis on the potential of these techniques for becoming a major "form-giver" in shaping the patterns of new development, reserving linked systems of conservation land to protect community character much more effectively than do conventional regulations. I believe the *Plan's* recommendations in this chapter should be expanded upon to provide readers with more details of what specific kinds of refinements-- both substantive and procedural-- would be necessary to protect more open space during the development design process.

As an example of these shortcomings, the current *Plan* does not sufficiently advise readers that conservation design can be a major tool for protecting interconnected networks of open space and implementing key goals of the *Plan*, that land trusts can play an important role in preserving, owning, and maintaining conservation lands, that easements (rather than deed restrictions) are the much preferred way of protecting lands legally, and that the subdivision design and review process itself could benefit from an expanded *Context Map*, a more comprehensive *Existing Resources/Site Analysis Map*, a mandatory site visit by voting officials and staff, a tracing paper overlay sheet format for the *Sketch Plan*, and the four-step design process.

However, these shortcomings can be easily rectified. The easiest way to accomplish this might be to add a special chapter on implementation, such as by including some of the wording contained in the "Model Comprehensive Plan Language" appendix appearing in my fourth book, *Growing Greener: Putting Conservation into Local Plans and Ordinances*. Such amendments would give the Town a firmer legal foundation for implementing the specific kinds of ordinance refinements described in this memo and in my "General Memo". The sections in that model Comprehensive Plan language which might be added to your *Land Use and Transportation Plan* describe a few items appropriate for your zoning ordinance and six items for your Subdivision Regulations. Many of these items refer to specific things the Town is not yet providing requirements or standards for (such as TDRs, landowner compacts, and "traditional neighborhood

design"), while other items relate to things that it is already doing but which it could be doing better (a *Context Map*, site analysis plans, sketch plan overlay sheets, site visits, a prioritized list of natural features conservation standards, etc.). It does no harm to augment the language in your existing *Land Use and Transportation Plan* and could help in several ways, making it easier to defend innovative improvements to your ordinances, and pointing the way toward even more creative approaches that are worth considering as future ordinance amendments.

As recommended in my "General Memo", another critical element of an updated plan would be a new map, called the *Town-Wide Map of Potential Conservation Lands*. That kind of document would play a central role in ensuring that the open space designated in each new subdivision will form part of a larger open space network comprising parts of several contiguous parcels, helping to preserve the integrity of natural systems and also assisting in the maintenance of the neighborhood's character.

One final thought about the *Land Use and Transportation Plan*: Drawing from my experience in the Keystone State, the East Pikeland *Comprehensive Plan* contains a critical sentence stating that "The nature of existing development practices should be analyzed to determine the extent to which the municipality wishes to continue or discontinue selected practices." This is an excellent sentiment and I feel something like this should be printed in bold-face type in every such municipal plan. That passage recently led to the engagement of a planning consultant to personally visit and photograph the vast majority of subdivisions built there since the late 1950s, and to prepare a constructive critique of what he found, highlighting both positive aspects to encourage in the future, and negative features that should be avoided in new subdivision designs.

I would recommend that the officials visit past and current developments in their community and critically evaluate them, to learn first-hand how those subdivisions either succeeded or failed in terms of implementing the few policies in your current *Land Use and Transportation Plan* that address conservation concerns, such as this passage from page 58: "The preservation of existing natural features and the scenic beauty of the Town are paramount concerns of Town residents."

Learning from past mistakes or missed opportunities helps any community avoid repeating those errors, and also helps them to reach as high as their ideals. (To do this best, it is recommended that the applicant's original site analysis map showing all the property's existing features prior to development be retrieved from the files and studied, to appreciate the conservation opportunities which had been overlooked at the time and subsequently lost forever.)

With great prescience, your Plan states that "Existing zoning...provides little incentive for developers to practice environmentally sensitive development design."

The most hopeful sentences in your current plan are found on page 59:

"Open space overlay zoning will be developed to allow residential development while preserving sensitive natural areas."

"Places of rare natural beauty should be preserved."

"Mature vegetation...should be protected from indiscriminate removal." and

"Enhance existing mountain stream greenways with new greenways where appropriate."

Subdivision Regulations

Purpose. This section (103) is surprisingly devoid of language mentioning the importance of conserving natural or cultural features, but does contain the briefest mention of the need to conserve open space for recreation and the need to conserve water. Such brevity misses an important opportunity to say more about what makes the Town special and now these regulations are designed to protect those attributes. In light of these shortcomings, I would suggest that the Town consider adding several more purposes, such as:

- to provide for open spaces and environmental protection through the most efficient design and layout of the land,
- to preserve the natural beauty and rural landscape of the Town, to conserve its historic and cultural features, and to ensure appropriate development with regard to those special character-giving features,

-- to help protect interconnected networks of open space, to protect water resources, to sustain a diversity of native vegetation and wildlife, and

-- to help establish substantial buffers along boundaries with scenic roadways, existing protected land, and actively-worked farmland.

My point is that even conventional subdivisions can be designed with some greater degree of sensitivity to the natural and cultural landscape than they are at present and that the Town should not set its sights too low when dealing with non-conservation subdivisions.

One further idea is the following:

As many such "Purposes" sections speak of the need to "mitigate significant negative impacts of proposed development", it would be refreshing if this part of the code were worded to state that developments should produce positive environmental outcomes. As typically worded, success could be defined as "getting down to zero", which is an odd way for a community to define the future it wishes to create. For instance, habitat areas that have been degraded by forest clearance and/or agricultural drainage could be restored or at least enhanced through management practices within open space preserved in new conservation subdivisions. As an example, drain tiles from old farm fields converted into subdivision open space could be crushed, allowing the original hydrology to reappear, supporting wetland vegetation and attendant wildlife. And

cleared areas (either played-out croplands or abandoned mineral workings) could be planted up as conservation meadows providing habitat variety for local wildlife.

Subdivision Procedures and Plan Requirements. Most of the comments I would make with regard to subdivision procedures and plan requirements have also been covered in the "General Memo" accompanying this document. Key elements of those articles describe a fuller set of procedures and plan content requirements pertaining to more detailed *Context/Vicinity Maps* and *Existing Resources/Site Analysis Maps*, *Sketch Plans* as overlay sheets on top of the *Existing Resources/Site Analysis Maps*, an *On-Site Visit* by local officials with that detailed site analysis map in hand, and a four-step design process in which open space is identified from the outset (in relation to a *Town-wide Map of Potential Conservation Lands*).

Vicinity/Context Maps. The Vicinity Map required in Section 401.5 should, I believe, be substantially expanded in scope and content so that staff and Commission members may acquaint themselves with the resources and development patterns in the vicinity of the proposed development site at an early stage of the process. This expanded item would then be re-named as a *Context Map*. To minimize the cost involved, it would show only data that can easily be reproduced from existing published sources such as aerial photographs, USGS topo sheets, FEMA floodplain maps, and USFWS wetlands maps. These readily-available maps and photos should then be reproduced by the applicant's engineer to the same scale (1" = 400 feet), showing reviewing officials the location of natural features and development patterns on properties within one-half mile of the development site (expanding the document by about five inches around all four sides). The value of such an enhanced *Context Map* would be to help reviewers understand the relationship of resources on the subject property to natural and cultural features (and to possible development patterns) on adjacent and nearby lands. This kind of understanding is critical to planning for improved buffers and open space connections, and minimizing developmental impacts in the neighborhood.

Existing Resources and Site Analysis Map and Site Visit. Because it is impossible to completely understand a site only by examining a two-dimensional paper document inside a municipal building, it is essential that most of the Planning Commission members and staff walk the property with a comprehensive map analyzing all relevant site conditions and identifying the significant and noteworthy historic and cultural resources, to take the full measure of the proposed development site. I also recommend inviting the abutters along at this time, very early in the process, when their input might actually be able to make a difference. Waiting until the public hearing stage to solicit their views and recommendations is unfair to them because by that time so much money has been spent on engineering design details that the applicant is most unwilling to go back and make any substantive changes. I have also witnessed abutters taking a much more reasonable and sometimes even relatively positive view of the proposal, once they have experienced the site walks, and have seen how the proposed open space protects important features and buffers their properties. It also gives the applicant an early opportunity to modify some aspects of his proposal to

demonstrate his willingness to listen to their views and to make his peace with them while lines are still very fluid and easy to change.

Site visits really help provide a much better understanding of the best locations for potential conservation areas on the subject parcel, and their potential linkages to natural or cultural features on adjacent properties that might be sensitively developed sometime in the future, using conservation design techniques. It is impossible to understand any site and to make good decisions when the information base is incomplete. Applicants need more specificity, and the Town needs to be clearer about what it requires if it is to be able to reject applications not supplying enough detailed information to enable officials to make fully informed decisions. (Not having this vital information is like trying to play Gin Rummy with a 34-card deck.) One needs to know where the woodlands and hedgerows are located, for example, and within those areas where the trees of greatest magnitude are growing. With modern GPS (Global Positioning Systems) technology available to most engineering firms today, it is quite easy to pinpoint the location of individual objects in the field, such as trees, rock outcrops, etc. A number of communities with which I have worked routinely require that developers' plans show the location of every tree greater than a given diameter (which varies with species), and that these trees be identified by species on the drawing. In this way, reviewers can identify those parts of woods that are more worthy of conservation and "designing around" (which trees to hug and which to let go). However, I would not require this information for trees growing in areas that would not be disturbed because of their location within proposed conservation areas. I would not require invasive non-native trees to be identified unless the goal is to remove them (which would not be a bad idea). Similarly, one should definitely add vernal pools and their associated upland habitat areas (essential in the lifecycle of salamanders and other woodland amphibians) and "views into the property from public roads or highways", to enable those important considerations to be properly evaluated.

Another factor that is absolutely key at this point in the inventory process is soil data, specifically the location of the best soil available on the entire property. In the absence of sewers, and recognizing the disadvantages of stream discharge "package plants" (which fail to remove nitrogen and phosphorus pollutants, and which fail to recharge local aquifers), suitable soils are a basic necessity. Both individual and community systems need the deepest, best-drained soil that can be provided, and those areas must be "designed around" just as carefully-- and from the very beginning-- as any of the "Primary Conservation Areas", so they may be reserved for sewage treatment and effluent disposal and not be carelessly covered by foundations, driveways, or streets.

If we agree that these items are necessary and should be submitted at some point during the subdivision application process anyway, it doesn't increase the applicant's costs for them to be required up front where the important information they provide can be of the greatest use (helping to avoid wasting money on plans that do not take these features fully into account).

Regarding timing, I really like to walk the site with the applicant well before the *Sketch Plan* is prepared. Officials who choose not to attend Site Visits, and who do not have good reasons to miss them, should be offered other ways in which they might serve the Town -- because (in my judgment) they cannot serve the Town well without walking potential development sites. In many communities this is a brandnew concept, and it is often a "hard sell" among municipal officials who are already very busy with many other matters. However, I maintain it is simply not possible to make an informed decision without experiencing the site in question-- unless the application is clearly deficient for certain obvious reasons.

Sketch Plan Overlay Sheet. This document, which would be required, is absolutely essential for the subdivision process to proceed smoothly and efficiently. If the first document to be submitted is the so-called "Preliminary Plan", the process is farcical. I say that because any "Preliminary Plan" which requires street profiles, sewer profiles, manholes, and inverts; water line size and location; and drainage calculations for stormwater retention (as your code does) ensures that applicants will arrive at their first official meeting with a plans that have been so expensive to produce, with such great engineering detail, that they will be absolutely (and quite understandably) totally unwilling to make any substantial changes in his layout. (It is almost as if one were bringing a \$75,000 diamond ring on one's first date.)

A proper *Sketch Plan Overlay Sheet* is far more informative and useful than the bare bones "rough sketch" which is optional and simply "encouraged" in Section 201.1 (an entirely inadequate provision that does not even list the data items which must be included so that the Town may begin to understand the proposal). The *Sketch Plan* that I earnestly advocate should be prepared on tracing paper as a very useful "overlay sheet", to the same scale as the ER/SA Map. As mentioned in the "General Memo", this format would enable reviewing officials and staff to see clearly how well (or how poorly) the proposed layout avoids impacting the underlying resources, and what opportunities have been taken (or missed) to actually improve site conditions (such by helping to restore habitats degraded by prior agricultural practices).

I believe that this plan (and other more detailed plans submitted later in the process) should be required to be prepared by either a landscape architect or by a physical planner experienced in applying landscape architecture principles to development design. It is relevant to note that South Kingstown RI regularly hires a landscape architect or planner of its choice, with applicants' fees, to walk the site with the developer, to understand the developer's building program (in terms of house widths, etc.), and to prepare a *Sketch Plan* for the developer, so that the planning process gets off to a positive start. I think this a terrific idea and commend it to you most highly. A site designer with a working knowledge of ecological planning principles would probably be the best choice.

The combined influence of the expanded *Context Map*, the *Existing Resources/Site Analysis Maps*, the *Site Visit* (by the entire Planning Commission and relevant staff), the *Sketch Plan overlay sheet*, and the four-step design approach (described in

Conservation Design for Subdivisions: A Practical Guide to Creating Open Space Networks) would make a significant difference in the way that sites are approached by developers, their engineers, and Town officials, and in the quality of the resulting layout of conservation areas, houselots, and streets.

A number of other procedural items on which I have comments are listed below:

1. At a new non-voluntary *Sketch Plan* stage, I would require applicants to submit an *Existing Resources/Site Analysis Map*, which would identify the locations of the healthiest woodlands and trees larger than a selected diameter (according to species, as suggested in the *General Memo*), laurel and rhododendron stands (if any), significant wildlife habitat (such as vernal pools and their associated upland habitat), historic or cultural features (at least including cemeteries and military earthworks), geologic features, and public viewsheds. Without this information, Town officials cannot make a truly informed decision about whether the *Sketch Plan* layout has been intelligently drawn, or whether it has missed important opportunities to design around certain noteworthy features.

It is quite impossible to judge the quality of a *Sketch Plan* layout without knowing exactly where all of these existing features are located. Since that information must be submitted sooner or later, it only makes sense to have it in hand from the beginning-- in fact from the very beginning, even before the *Sketch Plan* is submitted, way back in the process when the Site Visit occurs. As mentioned elsewhere in these memos, further details are also needed, such as the location of large trees by species and size, and even ephemeral but critical features such as vernal pools. Relying on an incomplete data-set, having only part of the information that is needed to render a truly informed decision, the only kind of decision which can be made is an uninformed one.

2. As mentioned above, of the engineering informational pieces necessary at the *Sketch Plan* stage, the most fundamental is detailed soils data from test pits or borings, unless the site is to be sewered. My experience in dealing with soils is that they can often be highly variable over even relatively short distances. For that reason I recommend that a "high intensity soil survey" (as defined by the UDSA NRCS) accurate down to 1/10th of an acre be prepared and submitted from the very beginning (as compared with accuracy down to two acres available from the survey books published by the government). I would definitely retain and upgrade this requirement, and would encourage this critical part of the puzzle to be sorted out as early on in the design process as possible (definitely at the *Sketch Plan* stage), because it really drives so many other project design aspects.

Streets

The following comments are based upon my long standing philosophies, which have evolved over decades of experience working with local governments around the country. As I was not given a copy of the Town's "New Street Criteria" for review, these comments might or not apply specifically to Signal Mountain.

Cul-de-Sacs.

Most codes limit cul-de-sacs to something like 1000 feet in length, regardless of the number of lots served. Regarding maximum length, public safety rationale has historically been based on the fact that cul-de-sacs began to appear in the 1920's, when most subdivisions were still built as infill or extensions to established neighborhoods in or at the edges of older towns, often supplied with public water and fire hydrants. The genesis of the more typical 600-foot maximum length is that this corresponded with the standard length of fire hose that fire engines carried. Seen in that historic context, such a standard loses its rationale when developments are built well away from the fire hydrant service area.

Rather than limiting street length *per se*, I recommend limiting the number of lots cul-de-sacs may serve, because it is the number of residents potentially at risk in the event of an emergency when the single-access street is blocked that is important, not the length of asphalt leading up to their homes.

The national standard advocated by the American Society of Civil Engineers (ASCE) in its excellent volume *Residential Streets* is 25 households, before a second ("emergency") access is required. The idea is that if, for example, 25 households were located along a 1000-foot cul-de-sac, that situation would not be more risky than 25 households living along a 2000-foot cul-de-sac (for example).

I highly recommend requiring central planting islands within cul-de-sac turnarounds, according to several basic design standards. First, these should be planted with canopy shade trees, whose graceful spreading branches will, upon maturity, fill the large "celestial space" that lies above these huge turning circles. Second, a growing number of planners are beginning to recommend that cul-de-sac planting islands be designed to perform double-duty as "bio-retention areas" designed to promote groundwater recharge through infiltration trenches, and I concur with them on that important point. A requirement that cul-de-sac turnaround pavements be pitched inward toward the center would be a good start in this direction.

An alternative to standard short cul-de-sacs is the "loop lane" or "close" (graphics appended). Instead of there being a 50-foot wide ROW leading up to a turnaround with a 130' outer-edge diameter, the street would be designed as two parallel lanes 16 feet wide within a 130-foot wide ROW separated by a central bio-retention area or planting strip perhaps 60 feet wide. Such streets or boulevards could be limited in length to 800 or 1000 feet, if desired.

I would also recommend requiring developers to erect signs reading "Temporary Cul-de-sac" whenever a future street connection has been required. This would put all lot purchasers on notice that street connections will ultimately be established, thereby making it harder for them to argue to the Town that they had assumed the cul-de-sac would remain as such forever, when they made the decision to buy their lot or house.

Also, requiring developers to fully pave such extensions right up to their perimeter boundary line (instead of simply reserving space for them on their paper plans) would also be a wise and prudent move.

Finally, regarding maximum length (typically 600-1000 feet), the public safety rationale based on the fact that cul-de-sacs began to appear in the 1920's, when most subdivisions were still built as infill or extensions to established neighborhoods in or at the edges of older towns, often supplied with public water and fire hydrants. The genesis of the 600-foot rule is that this corresponded with the standard length of fire hose that fire engines carried. Seen in that historic context, such a standard loses its rationale when developments are built well away from the fire hydrant service area.

Rather than limiting length *per se*, I recommend limiting the number of lots cul-de-sacs may serve, because it is the number of residents potentially at risk in the event of an emergency when the single-access street is blocked that is important, not the length of asphalt leading up to their homes.

The national standard advocated by the American Society of Civil Engineers (ASCE) in its excellent volume *Residential Streets* is 25 households, before a second ("emergency") access is required. The idea is that if, for example, 25 households were located along a 1500-foot cul-de-sac, that situation would not be more risky than 25 households living along a 2500-foot cul-de-sac (for example).

Pavement Width: In my professional judgment, minimum pavement widths of 18-20 feet are ideal for local (service) streets and 22 feet is fine for collector streets, with sufficient off-street parking in driveways and garages. When densities rise and lot sizes decrease to below 10,000 sq. ft., on-street parking provision becomes a legitimate issue, and the addition of an eight-foot parking lane becomes justifiable.

Reverse Curves: Many codes prohibit reverse curves (without straight tangent sections between them) for local and collector streets, thereby also prohibiting graceful meanderings. On arterial streets with speed limits of 35 mph or more. I would suggest allowing reverse curves when the horizontal radii of the curves are very long and gentle, 350 or more feet in radius.

Roadway Grading and Shoulder Standards Many codes contain a truly counter-productive requirement calling for the clearing of the full width of street rights-of-way (50 and 60 feet for local/service and collectors). In my view, this is an excessive and unnecessary practice ensuring that new streets constructed through wooded areas will resemble airfield landing strips. The origin of such requirements is probably the highway design manual again, when engineers were worried about people travelling at highway speeds crashing their cars into trees growing within the rights-of-way. In most rural communities with which I am familiar, the old rural roads running through wooded areas are almost never graded out to the right-of-way lines, and it is likely that residents would complain loudly and most bitterly if that kind of clearing were to be undertaken. With the lower and more reasonable street geometry and design speeds

advocated in this memo, the potential occurrence of serious accidents involving trees is greatly diminished. I would suggest that you insert wording specifically prohibiting the clearing and grading of more land than is essential for the construction of the street and utilities. By clearing fewer trees, the stump dumps required to be located within new subdivisions could be reduced in size, meaning less site disturbance in those locations as well.

Regarding shoulder requirements, I would recommend three feet of sand and gravel sub-base. I also recommend loaming and seeding shoulders, providing a firm base for pulling partway off the road when parking. It is usually not necessary to pull completely off the road unless one is interested in moving vehicles through subdivisions at the greatest possible speed and with the fewest impediments. When vehicles are parked partly on and partly off the road, they tend to slow down the traffic, because when opposing vehicles approach each other in such situations, in which two moving vehicles cannot both pass at the same time, one slows down and lets the other one through. This kind of "traffic-calming" is becoming increasingly recognized as a positive thing, especially in residential neighborhoods with many children and pets.

An excellent example of a new subdivision street where the grading was minimal and roadside trees were preserved can be seen on page 334 of *Rural by Design* (Fig. 20-9b), from Guilford, CT.

Curbs and Stormwater. In a rural community with low-density development, my view is that curbing is quite unnecessary (also counterproductive). However, in sewered areas with lot sizes that might well be in the range of 8,000 to 13,000 sq. ft. (if conservation design and 40% usable open space is adopted, as recommended in these memos), curbs could well be justified. Conservation planners such as me generally favor open swales rather than curb-and-gutter, except in situations where lots are in the village/hamlet size range (as stated above). Besides imparting a needlessly urban aspect to residential streets, curbs in rural subdivisions channel all stormwater into pipes and detention basins, rather than allowing part of the stormwater to infiltrate into the ground as it flows along grassy swales. Such infiltration could be increased through the construction of so-called "rain gardens" to intercept stormwater runoff at various points along the street (say for every 4-6 lots), which are designed to serve as infiltration areas landscaped with moisture-tolerant trees and flowers. Another effective stormwater management technique is to require that downspouts be connected to "French drains" located in yards.

I would suggest that aquifer replenishment is another worthy reason why the Town should take a strongly affirmative stance encouraging creative alternatives to typical "bomb crater" detention basins providing virtually no infiltration, and which are often ugly to look at and more difficult and expensive to maintain, compared with newer, smarter approaches suggested in this memo.

If some form of curbing is unavoidable, may I suggest the technique called the "thickened edge" (illustrated in *Rural by Design*, Fig. ____). My local public works

department recently repaved my street in this manner, and it is highly effective in containing the stormwater. It is far less expensive than standard curbing, and is visually much less intrusive, and important consideration in rural areas.

Stormwater standards should apply to both the rate and to the total volume of runoff. I have read Article 11 and am not sure if it requires postdevelopment runoff volume to be no greater than pre-development runoff volume. Certainly runoff rate is regulated, but possibly not volume. A simple clear declarative sentence, without technical jargon (such as "hydrologic response") would help readers understand this section better, in this regard.

Controlling only the runoff rate prevents downstream flooding, streambank erosion, and sedimentation resulting from that erosion, which are all commendable goals. These are necessary objectives; however, they alone are not sufficient. These good regulations could be made even better by mentioning a few of the ways to achieve on-site infiltration and aquifer recharge, a practice which helps to attain the ideal goal of zero increase in runoff volume. Fortunately, conservation design offers many opportunities to disperse stormwater over much broader areas, so that deep engineered structures with steep sides and spillways are not needed in most situations. Even more important than the aesthetic advantage is the groundwater recharge benefit that such infiltration focused stormwater design brings.

The design flexibility in the *Growing Greener* system permits extensive areas to be utilized for on-site infiltration, such as in conservation meadows or through infiltration trenches carefully located to snake between the larger trees in a woodland setting. If your engineering advisors are not yet familiar with the concept of "rain gardens" and bio-retention areas, I recommend that you obtain descriptive materials for them from the Center for Watershed Protection, in Ellicott City, MD (www.cwp.org). Written by nationally-known environmental engineers who conduct workshops on this topic around the country, the booklets they publish contain a wealth of relevant and helpful information.

Sidewalks. Another important concern involves sidewalks. Section 301.C appears to require them everywhere (except in very low-density situations, with lots of three acres or larger). I absolutely favor sidewalks, but feel they are not necessarily essential on both sides of every local access street and cul-de-sac, particularly if an extensive, well-connected off-street trail system is also being provided. Usually the situation is reversed, and sidewalks are not required in as many places as they should be provided. Many times the rule book takes an extremely myopic view, requiring sidewalks only under certain circumstances, such as within the vicinity of schools, shops, and playgrounds, as if schoolchildren were the only residents possessing working legs (and as if people shopped on foot anymore). Few pupils nowadays live anywhere near the schools they attend, and even if they lived near schools they would probably be driven to the bus-stop and bussed to school. In my experience, village residents tend to drive whenever they can, because no one wishes to lug heavy grocery bags back home, as a pedestrian.

This is to say there are far, far more important reasons to require sidewalks other than to favor walking schoolchildren or pedestrian shoppers. I believe that sidewalks are important for all residents. Numerous surveys have revealed the No. 1 recreational pastime of Americans is walking. Sidewalks provide basic separation between motor vehicles and pedestrians (children walking to/from the school bus, parents pushing baby carriages, couples out for an evening stroll around the neighborhood, etc.), not to mention joggers. In rural situations, sidewalks may take the form of curving asphalt surfaced footpaths, if desired. My earnest recommendation is therefore that sidewalks be required with a grassy "tree-lawn" separating them from the street pavement in nearly every instance. Sidewalks constructed adjacent to curbs are extremely ugly and provide little psychological or actual protection to pedestrians.

Street Trees. Shade tree planting is arguably the single most important design standard, in terms of ultimate appearance I might have missed them, but I did not see any such standards in your ordinance, except for Conservation Design (Zoning Section 616)... Some communities exempt tree planning requirements when the street is on a wooded parcel. Allowing existing trees along subdivision streets to substitute for new shade tree planting is extremely short-sighted, in my view. Even with the reduced clearing and grading standards I recommend, planting shade trees within the denuded street rights-of-way in new subdivisions will be essential if you hope the new neighborhoods in The will ultimately acquire a stately appearance in years to come. Therefore the presence of many trees on a thickly wooded site should never be taken as demonstrating no need for proper shade tree planting along new streets. When swaths are cleared through existing woodlands in preparation for street grading and construction, the trees remaining along the edges tend to be tall and spindly, having grown up in a forested situation with sunlight coming only from above. For that reason, such trees are not round and full in shape, and will not become so for many years (if ever) after being exposed to daylight as a result of the road clearing. These existing trees along the roadside edges are therefore no substitute for new canopy shade tree plantings.

Your code should also provide detailed guidance as to the appropriate species to be planted. Based on many years experience, I favor spacing shade trees at 30-50 feet. My very strong recommendation is that canopy shade trees are one of the most important improvements any community can require of developers. They should be deciduous varieties of hardy species capable of attaining a mature height of at least 60 feet (not flowering ornamentals, which are more suited to courtyard situations and areas of lawn decoration), they should be planted with a minimum dbh of 2-1/2", at intervals of about 40 feet on both sides of each street, in "treelawns" at least five feet wide located between the sidewalk and the curb or edge of pavement.

Utilities can and should be located either within the roadway or in a special utility easement located beyond the sidewalk. Such standards will ensure that residential streets created in The will be leafy and shady in future years. Maintenance requirements are also very important, with replacement assured within 18 months after

planting, through a performance guarantee (such as a bond). I feel that shade trees are the single most important aspect of subdivision design, second only to open space preservation

The perceived threat that tree roots might possibly crack and lift sidewalks or rupture footpaths after decades of growth can be greatly diminished-- if not altogether eliminated -- by new techniques devised by urban foresters. One approach involves the developer installing vertical barriers 12 inches deep along the inside edge of sidewalks, to deflect root growth down deep under the sidewalk. The second approach requires that developers install a special "structural soil mix" developed at Cornell University, consisting of large stones with sizable gaps or spaces between them through which the roots would grow. For further details, see:
<http://www.hort.cornell.edu/department/faculty/bassuk/uhi/ssoils/index.htm>

Recommended species are listed in Section 702.B.3 of the model *Growing Greener* subdivision ordinance, and specifically exclude invasive exotics such as Norway maple and structurally weak trees such as silver maple and Bradford Callery pear (which is unsuitable due to structural weakness causing massive limb failure in ice storms and wet snow conditions). I also exclude the Gingko, which is a non-native tree that looks very out-of-place in the traditional New England landscape, with an ungainly shape for many years until it attains a height of 40 or 50 feet, at which time it begins to fill out and look a bit more like a Northamerican tree, rather than an Asian variety dating from prehistoric times (which is in fact the case). The reason to specifically exclude Norway maple is that it invades adjacent woodlands, rapidly proliferating and outcompeting native species, so that ultimately it completely dominates the area, shading out saplings of other trees species, as well as shading out native shrubs and wildflowers.

With respect to standards for protecting existing trees during construction, any filling, re-grading, or movement of heavy equipment should be prohibited anywhere within one foot of the outer edge of the canopy "drip zone". Such a standard might help encourage applicants to utilize the flexible conservation design options which give their site designers increased maneuverability to avoid impacting significant trees that should really be saved. The best way to save trees is to give them a wide berth when laying out streets, sidewalks, houses, driveways, and garages. Such care in site planning is far better than constructing tree wells.

Shared Driveways and "Country Lanes". I typically recommend allowing shared driveways for up to three or four homes, and private "country lanes" for up to six or eight homes. Shared drives can be 12 feet wide, and country lanes 15feet, in rural situations. Standards should also be stated with regard to important considerations such as the depth and type of base and sub-base material, the wearing course, crowning, drainage, maximum gradient, and minimum horizontal curvature (to permit long fire engines to negotiate sharp turns, e.g.). Such standards exist in the *Growing Greener* model codes. A graphic showing how shared drives can vastly improve a situation where a handful of houselots is created from a small roadside farm is shown in Fig. 12-5 on page 206 of *Rural by Design*.

Alleys. Many times communities adopt alley standards that are nearly street-like, mandating 16 feet of pavement width. I suggest 12 feet, or perhaps 10 if one-way. Wide pavement requirements (16 ft.) encourage these back lanes to be used for parking, while narrower ones do not invite that. I consider alleys (or back lanes) to be essentially a form of common driveways, and they could be regulated as such, without maintenance by the Town. Of course, alleys should also be planted with shade trees in the same way that streets are, if these back lanes are to become shady, inviting places instead of remaining boring, treeless strips of asphalt.

"Single-loaded" Street Design. As a way of improving the appearance and functionality of neighborhood design, I have long advocated the use of "single-loaded" streets as part of the overall circulation network. (This term refers to street segments bounded by houselots on one side only, the other side being abutted by open space. In less rigid layouts, neighborhood greens bordered by such streets could be introduced into new developments without increasing overall street length and cost by the simple technique of shaving a bit off the width of the proposed lots. In other words, the same street length can easily be designed to accommodate the same number of homes with added greenspace along some of the alignment if each of the lots is reduced in width by 10, 15, or more feet. I have done this on numerous occasions, to transform standard conventional plans into more interesting layout. For those with access to the book *Conservation Design for Subdivisions* (Island Press, 1996), all of the seven examples I designed contain significant lengths of single-loaded streets, with total street length at least somewhat shorter than the double-loaded streets serving fatter lots. In the 18-page *Growing Greener* booklet, Figures 4, 7, 8, 11, 12, and 19 illustrate the same point.

Lots Backing Up to Public Streets. Many ordinances prohibit "double-frontage" lots but do allow them in situations where they would back up to arterials and to collector streets. I recommend discouraging or prohibiting this form of lotting, and favor such restrictions, particularly in open field situations. I also recommend not allowing a certain kind of exception that is commonly granted by some municipalities, which is to permit this kind of lot layout when the second street is a state highway. Sometimes this exception is dealt with (unsatisfactorily) by requiring buffer strips to be planted along the back lot lines, in open field situations. However, a superior design approach would be to lay out the development so homes would face forward toward the existing public road system, with access via a "parallel access street", keeping backyards more private and the view from the existing road system more attractive (housefronts are always more nicely designed than "housebacks", with their sliding glass doors and pressure-treated decks). Please see Fig. 5-13 in *Growing Greener* to see how a "fanny-first" layout in an open field situation was redesigned to be much more attractive for both residents and passersby through the use of parallel access street concept, with a conservation meadow located between the existing road and the new access street. In such layouts, the depth of the "foreground meadow" could be reduced from 500 feet (cited above) to 300 feet. (In totally wooded situations, a no-cut buffer at least

150 feet deep should be required along back lot lines that face toward existing public roads or highways, to buffer the viewsheds from these thoroughfares.)

Interior Lots (or "Flag Lots"). The absolute prohibition of "flag lots" in Section 304.2 is an example of overkill, in my professional judgment. Certainly this form of lot design has been abused in the past. However, it remains a most useful tool when designing conservation subdivisions. Due to past abuses of the flag-lot design approach, many communities have taken the easy step of banishing this form of lot configuration, not even allowing them in special situations where they would make great sense, such as at the ends of cul-de-sacs or along tight road bends. As a site designer I can tell you how valuable this aspect of design flexibility is when laying out conservation subdivisions minimizing the impact on natural and historic resources. The flag lot concept can be overdone unless it is carefully controlled. In my book *Conservation Design for Subdivisions* there are flag lot locations at the ends of cul-de-sacs appear in numerous cases (pp, 68, 88, 94 and 110). In the 18-page *Growing Greener* summary booklet, flag lots may be seen in Figures 7, 8, 11, and 12. I cannot see any problem with that kind of spatial arrangement, and as it reduces overall street length it would seem to be desirable to encourage rather than prohibit.

On-Lot Septic and Wells. It is unclear to me whether the Town (or County) requires that septic system drainage fields be located within the lots they serve, or whether they may be located under the common open space. It is reasonable to expect that each lot must have an approved soil suitability determination from state agencies, but that leaves open the question of whether the actual site of that "determination" must be located within the confines of each lot or whether it may be located within the common open space in a place convenient to the lots whose systems would be situated there.

Whether individual wells and septic systems must be located on-lot or whether they may be located off-lot has enormous implications for the ability of site designers to produce high-quality conservation layouts in your community. I favor the latter approach, and would clarify that wording to specifically state that individual wells and drain fields may be so situated. In Pennsylvania, where I have worked for nine years, both Chester Town and the state DEP permit individual septic systems situated within common open space in cluster layouts, and if this not yet the case in The, I would encourage you to allow such arrangements to encourage smaller lots and higher percentages of conservation land. I would also explicitly allow individual wells to be located within the common open space too, in areas specifically reserved for them on the *Final Plan*. This would enable such individual utility systems to be located under "conservation meadows", playing fields, or village green-type areas that could also serve as an invaluable buffer area between suburban back yards and working farmland next door. This very important concept is more fully explained (and illustrated) on pages 47-48 of *Growing Greener*. It is also depicted in Figures 8 and 20 in the 18-page *Growing Greener* summary booklet.

ZONING ORDINANCE

Overall. The most critical deficiency of the Zoning Ordinance, in my view, is that it does not appear to allow flexible lot sizes (essentially precluding conservation design) as a by-right Permitted Use, and that submission standards and review criteria for Planned Unit Developments (PUDs) are wholly inadequate in terms of data requirements and design standards for open space. This deficiency is related to a continuing reliance on conventional platting techniques that are actually inconsistent and at odds with the kinds of policies, goals, and objectives for open space and natural resources protection that are the foundation of Comprehensive Plans in most other communities.

(Note: I have also read the more recent zoning amendments which were adopted in 2004 and later rescinded. The chief difference between the older and the newer versions, as I perceive the situation, is that the more recent one increased the legal building density – in sewerred locations – from about two du/ gross acre for "Conservation Design" developments in the older version (Section 616.C), to about four du/gross acre for "open space subdivisions" in the newer version. However, as the older (and once again current) version originally allowed and now continues to allow sewerred PUDs at four du/gross acre (in Section 613.07.01), the density standard would seem to be four du/gross acre in either case. As an outside observer, I do not feel it is my place to recommend any particular density to people living in other communities. However, the way that density is applied and put on the ground is a central concern of mine professionally, and forms the basis for many of the comments in the ensuing section of this memo.)

Purposes. Of all the zoning ordinances I have reviewed over the years, I cannot recall ever reading a Purposes section such as the one in yours (102), where there is absolutely no mention whatsoever of the desire to protect scenic character, environmental resources, historical or cultural features, or even to promote the creation of attractive neighborhoods and ensure harmonious development.

Below is a list of a dozen purposes taken from the section of my model Zoning, illustrating just how many concepts could be incorporated into Signal Mountain's zoning, if this were the community's desire.

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1. To conserve open land, including those areas containing unique and sensitive natural features such as woodlands, steep slopes, streams, floodplains and wetlands, by setting them aside from development;
 2. To provide greater design flexibility and efficiency in the siting of services and infrastructure, including the opportunity to reduce length of roads, utility runs, and the amount of paving required for residential development;
 3. To reduce erosion and sedimentation by the retention of existing vegetation, and the minimization of development on steep slopes;
 4. To provide for a diversity of lot sizes, building densities, and housing choices to accommodate a variety of age and income groups, and residential preferences, so that the community's population diversity may be maintained;
 5. To implement adopted municipal policies to conserve a variety of irreplaceable and environmentally sensitive resource lands as set forth in the municipality's *Open Space Plan*, including provisions for reasonable incentives to create a greenway system for the benefit of present and future residents;
 6. To implement adopted land use, transportation, and community policies, as identified in the municipality's Comprehensive plan;
 7. To protect areas of the municipality with productive agricultural soils for continued or future agricultural use, by conserving blocks of land large enough to allow for efficient farm operations;

8. To create neighborhoods with direct visual access to open land, with amenities in the form of neighborhood open space, and with a strong neighborhood identity;
9. To provide for the conservation and maintenance of open land within the municipality to achieve the above-mentioned goals and for active or passive recreational use by residents;
10. To provide multiple options for landowners in order to minimize impacts on environmental resources (sensitive lands such as wetlands, floodplain, and steep slopes) and disturbance of natural or cultural features (such as mature woodlands, hedgerows and tree lines, critical wildlife habitats, historic buildings, and fieldstone walls);
11. To provide standards reflecting the varying circumstances and interests of individual landowners, and the individual characteristics of their properties; and
12. To conserve scenic views and elements of the municipality's rural character, and to minimize perceived density, by minimizing views of new development from existing roads.

Minimum Lot Sizes: Signal Mountain, like many other municipalities, commits the fundamental error of regulating density through the indirect method of setting minimum lot sizes. This counter-productive approach unintentionally robs the community of the very resource lands that give it its special rural character. Instead, I have long advocated regulating density directly, by stating that no more than one house may be built per X amount of buildable land on any given property. And I then address the open space conservation issue by setting a maximum lot size (or an average maximum lot size) -- smaller than the current minimum lot size -- in order to be able to set aside land during the development design process, while still attaining the normal building density. When regulating density directly in this way (rather than indirectly via minimum lot size), the issue of minimum lot size becomes far less important. In fact, the smaller the lots become, the greater the open space becomes, as density is established by tables stating the overall land requirements per dwelling unit.

By-Right Designation: One can hardly overstate the importance of classifying Conservation Subdivisions as by-right Permitted Uses, and also classifying conventional developments as Special Permit uses, or Conditional Uses.

Many local ordinances which allow flexible design approaches unwittingly sandbag them by classifying them as Special Permit uses or as Conditional Uses. When your Zoning is again updated, these issues will come to the forefront of discussion. Although your dysfunctional PUDs require Special Exceptions (in Section 603.04), conservation design (in Section 616) apparently does not. The next logical step would be to abolish or reform PUDS and to re-classify conventional development as Special Exceptions (or CUs).

Classifying flexible developments as requiring Conditional Uses or Special Exception permits typically produces a chilling effect upon many applicants, frequently discouraging them from opting for the flexible design approach that municipalities actually want to encourage. I have found that local governments can control as much, if not more, with detailed standards in the subdivision ordinance as they can with the Conditional Use process.

Conservation Design subdivisions with lots smaller than those typical in conventional developments can be made to "perform" well through a set of detailed and strict "performance standards" relating to the quantity, quality, and configuration of the protected open space. Extra measures of protection for the Town, such as those guiding the design process (the "four-step" method, plus the detailed "Resource Conservation and Greenway Delineation Standards", both contained in my model subdivision ordinance -- Sections 402.C.3 and 603) should give officials a greater feeling of security that this new approach will produce superior results. These recommended standards are more comprehensive than those contained in your current ordinance.

Minimum Tract Size and Requiring Clustering. The common zoning requirement that conservation subdivisions occur on tracts of at least 20 acres effectively ensures that many parcels will be denied the advantages of flexible site design. This is a pitfall that Signal Mountain has avoided, with its 10-acre minimum. Small minimum tract sizes such as that are a healthy attribute (in my view), as conservation subdivisions can sometimes serve very beneficial purposes on surprisingly small parcels. For example, in Lower Merion Twp., (Montgomery Town, PA), the Board of Commissioners ten years ago decided to mandate this design approach and to apply it to every parcel containing five or more acres. They recognized that even parcels at the lower end of the size spectrum could contribute a greenway link (such as along a stream valley), providing connections between open spaces on each side. Even if only two acres of flat dry ground were to be conserved on a four-acre tract, that would be plenty to serve as neighborhood green (or informal playing field), significantly enhancing the quality of life for nearby residents. In more rural districts, clustering can be extremely important as an implementation tool in a potential Scenic Overlay District and other potential overlay districts pertaining to riparian areas, groundwater recharge, constrained soils or steep slopes. In a Scenic Overlay District, for example, significant open space can be required to be located within the public viewshed. For that reason, Newcastle Town, DE, ten years ago mandated clustering in the Red Clay Valley, a particularly scenic part of the Brandywine Hundred (as described in *Rural by Design*, pp. 193-96).

Determining Density. In the model conservation zoning provisions I have developed over the past two decades, I recommend that applicants be given two alternative methods for determining density. I have always favored offering applicants the choice between a purely mathematical approach (in which certain types of constrained lands are deducted) and a map-based approach called the "Yield Plan". I actually favor the latter for its simplicity and directness (as contrasted with sometimes controversial ways of calculating actual buildable land and basing density on that net acreage only). "Yield Plans" demonstrate the maximum number of units that could be built in a prudent and responsible configuration, conforming to the standard dimensional criteria. They must, of course, be realistic, without make-believe lots that would be unbuildable in the real world due to site constraints. In other words, "Yield Plans" must pass the "straightface" test. (This is explained on page 43 of *Growing Greener*.)

There is a need in my judgment, for the Town to be specific as to how such "Yield Plans" must be prepared. Town In unsewered areas, for example, applicants would be required to submit deep-hole test pits to demonstrate septic suitability on a 10% sample of lots selected by the Town (the most dubious lots, based on soils map data, the elevation of the land within the property, vegetation patterns, etc.). If any of the sample lots fail, the Yield number is reduced and the applicant waits four weeks to submit a second 10% sample. This process continues until all the lots in a given sample pass the test for septic suitability. Developers who recognize the time value of money will not horse around with fictitious lots and will be forthcoming with a realistic Yield Plan. (Model ordinance language describing "Yield Plans" in greater detail can be found in the *Growing Greener* book -- and on the CD-ROM of the same name).

Calculating Open Space Areas Perhaps I missed it, but I did not see any specific minimum percentage of open space for PUDs (one very big reason I consider them to be dysfunctional), except that open space shall be provided to some unspecified degree, and that it must not be either unbuildable or inaccessible (!). For this and many other reasons, I strongly suggest that the PUD section of your ordinance be given a speedy and decent burial, to be superseded entirely by the Conservation Design approach, which at least possesses some explicit-- if minimal -- open space requirements. (Another reason for dispatching the PUD regs: the underlying zoning density of two du/acre is inexplicably more than doubled to four du/acre, based on gross tract area, which often includes completely unbuildable land, quietly conferring a sometimes very large and not-so-obvious density bonus to developers who have bought difficult parcels containing much unbuildable land.)

In the Conservation Design Overlay District, the 25% open space requirement is flawed in two ways. First, it does not reflect the potential for easily preserving 40% of buildable land as open space (simply by reducing lot sizes proportionately). Second, it appears to contain absolutely minimal standards for ensuring the quality of the resulting open space, allowing the conservation land to be almost entirely wet or steep -- inherently unbuildable and practically unusable except by bullfrogs and mountain goats. (Only 2% of the 25% open space must be relatively flat and usable for active recreation, amounting to a mere 0.5% of the total tract area.) I address this issue in my model regulations by specifying that the minimum required open space must be in addition to wetlands and steep slopes. It cannot be said too many times that this kind of approach does not represent a "taking", because the open space typically remains in private hands, and because the applicant's overall building density remains completely undisturbed.

In a district where two du/acre is the norm, lots that would ordinarily run about 22,000 sq. ft in area could be resized to about 13,000 to achieve 40% open space. In districts where (for example) three du/ac might be the goal, normal sized lots of about 13,000 sq. ft. could be redrawn to be about 8,000 sq. ft. Elegant ways to design such neighborhoods would ideally blend conservation design with the principles of "New Urbanism", as described and extensively illustrated in my fifth book, *Crossroads, Hamlet, Village, Town: Traditional Neighborhoods Old and New*

(Again, I should re-iterate my standard position of neither endorsing nor criticizing any particular locally-adopted density level. I leave that up to local residents to decide, although I feel professionally obliged to comment constructively on the way that this density is actually arranged on the land. In my experience, it is often possible to arrange greater density so that substantially more open space and conservation land is protected with smaller lots than would be the case with larger lots and lower overall density. If there is a sound public purpose for supporting greater density in any given area, then I feel that area should be zoned in such a manner that unfragmented, usable land is set aside for conservation purposes. And I usually turn to the principles of the "New Urbanism" to achieve that result, even in rural areas -- where the hamlet or village model becomes very relevant.)

If a simple Yield Plan were required of applicants-- to demonstrate how many regular-sized lots could actually be created on their property (given its physical constraints)-- that same number of lots could still be created with 40% of the unconstrained land being preserved as open space, in addition to the unbuildable land where the Yield Plan would of course show no development. That is because the resizing of the lots could create the potential for 40% of the buildable land area to be preserved as value enhancing neighborhood greens, squares, parks, ballfields, and greenways.

Permanent Protection of Open Space: I suggest requiring conservation easements rather than just covenants or deed restrictions. These easements would typically be held by conservation groups such as land trusts, Conservation Commissions, and Soil & Water Conservation Districts. Designating multiple holders of such easements is also a wise idea, to ensure protection if one organization wavers in its commitment. I saw permissive wording in Section 616 allowing easements to be created, but I did not see any language requiring them. If this is indeed missing, it is a significant omission in the ordinance.

Open Space Ownership Options: Regarding ownership options, in addition to HOAs, I recommend land trusts and public bodies as designated holders of the open space as well as "non-common" open space owners such as wholesale nurserymen, operators of equestrian facilities, operators of Community-Support Agricultural operations, etc.

The concept of non-common ownership is an idea I have been advocating for years. In southeastern PA, I know of conservation subdivision open space having been sold to individuals who use it for specific purposes, such as wholesale nurseries, orchards, and equestrian facilities. I have examples of all of the above in my slide collection, and frequently include them in my presentations. Another non-common ownership is the "conservancy lot", typically at least 10 or more acres in size, which would support a principal dwelling, perhaps a barn or stable, and also an accessory dwelling unit (such as a caretaker's cottage, which could also be rented out as a granny flat). The uses allowed on non-common open space must be strictly limited and regulated, and they should be subject to the same kinds of permanent easements and Management Plans as any other kinds of open space.

Non-common ownership not only relieves HOAs of acreage they would otherwise have to maintain, but also provides developers with an additional bonus for doing the right thing and opting for conservation design.

HOAs work well with mandatory or automatic membership (which is required in 616) and would function even more effectively if the Town were to require that their bylaws be drafted to specifically state that the HOA possesses legal authority to place alien on the property of any member who fails to pay his dues, after being issued three notices. Quite frankly, few people enjoy being known as deadbeats, cheapskates, or free-loaders among their own neighbors, but sometimes a cantankerous old curmudgeon might decide to withhold dues payment for some reason. Not to worry, as he cannot sell his property without paying all back dues, with full interest, to the HOA. Another word on HOA's: I believe they should regulate only the common open space, not the land within houselots (as does the HOA where my brother lives, in Sonoma, CA). Individuals' houselots should be their own domain, in my judgment, and regulating what people do on their own lots simply invites internal strife. I recommend that HOAs authority be limited to common lands such as village greens, playing fields, trails, etc, plus the woodland conservation areas and any farmland that might be leased out to local farmers.

Perimeter Buffers. I believe that conservation subdivisions should be subject to the same buffering requirements as pertain to conventional large-lot subdivisions. In other words, no special setbacks should be required, other than the standard ones for homes on standard-sized lots. If buildings on the normal half-acre lots are required to be set back by a certain distance in a particular rural district, that would also be the appropriate building setback for use in conservation subdivisions. For multi-family housing, which constitutes a different house type, an exception could be made in terms of size and bulk, often with different parking provisions. The common 100-foot landscaped buffer requirement found in many cluster ordinances might be appropriate if the land use were a quarry, sandpit, junkyard, or mobile home park. But it is counterproductive for conservation subdivisions. On a 36-acre tract, for example, such a requirement could consume fully 44% of the total acreage, not a sensible way to distribute the limited open space. Conservation lands should be designated according to other criteria other than buffering new single family dwellings from pre-existing single-family dwellings.

Streamside Buffers. The 30-foot naturally vegetated streamside buffers required in Section 616.F.c could easily be increased to a more standard 75-foot no-cut buffer by implementing the recommended re-sizing of lots and consequent increase in the percentage of open space able to be conserved. Similarly, the 50-foot streamside buffer in steep-slope situations could just as easily be increased to 100 feet, applying the same design techniques.

Lot Size Reduction Potential The best conservation design regulations do not set any minimum lot sizes or frontage requirements, which I believe is very progressive, as density is strictly capped in other more direct ways, as it properly should be.

The most progressive code provisions I have seen, such as contained in parts of the Lower Merion (PA) zoning ordinance, essentially dismiss the notion of minimum lot size and concentrate instead on the really important elements: the maximum number of dwellings permitted, the minimum percentage of quality open space required, and minimum separations between buildings. A basic tenet of conservation planning under *Growing Greener* is that lot size minima are almost irrelevant, as overall density and minimum open space are both established in another way. In fact, the smaller the lot, the more open space there is. In Lower Merion, where similar ordinances have been in effect for about ten years, the absence of lot size minima has not led to abuses in that direction. Developers there have routinely produced the largest lot they can under that community's ordinance while still meeting the basic 50-60% open space minimum standard. In conservation design, the *maximum* lot size is the critical element, as it really defines the minimum open space that must be conserved. I would be pleased to discuss with you how the idea of "maximum lot sizes" for conservation subdivisions could help the Town achieve a greener future, with interconnected networks of open space permanently protected for future generations to enjoy.

A New Look at Density Incentives One central question hovering over the subject of using conservation design to protect significant parts of one's Town concerns how to ensure that developers will utilize the preferred approach, and not continue to stamp out the familiar pattern of "wall-to-wall" houselots. Most of the older cluster ordinances on the books today include density bonuses as a "carrot" to entice developers to select this option. However, my experience is that density incentives (when unaccompanied by density *disincentives*) typically need to be rather huge, in order to persuade many developers to do anything different from the standard cookie-cutter in situations where they can easily continue to build these land-consumptive layouts at full density, by right.

As you probably already realize, large incentives often set up a certain negative community dynamic inadvertently, wherein local residents (often abutters) vent their displeasure at having to put up with a significantly higher number of people living nearby, not to mention more schoolchildren to educate, and more traffic to congest the roadways. Rather than face such opposition, most developers usually opt for the simple and relatively hassle-free route, with standard full density in standard lots and no open space.

For many years I have advocated *reversing this dynamic*, so that developers must "earn" their basic full standard density through conservation design with significant open space. Under this approach, there is no density bonus for the standard conservation subdivision with the percentages recommended above for the unconstrained land designated as open space. That kind of development becomes the basic standard, and is the only way for developers to achieve full density. Those who

wish to continue with cookie-cutter designs covering the entire development tract with houselots and streets may do so, but only at a substantially lower overall density, such as one-half or one-third the normal lot yield. Or they decide to work in other municipalities with lower standards instead.

However, if such density disincentives are not politically feasible in Signal Mountain, the community could effect much the same result by classifying Conservation Design as a by-right Permitted Use, and re-classifying conventional land-hog development as a Conditional Use which is structured so as to be extremely difficult to attain, as described above.

Density Bonuses for Special Public Interest Goals I would also recommend considering density bonuses to encourage the public dedication of conservation land, or at least public access to parts of the conservation land (e.g., existing trails and also new trails, such as along streamside greenway corridors). Additional density bonuses to provide endowments for land trusts which may eventually own and manage the open space are also advisable, as described on pages 48-49 of *Growing Greener*. A third kind of density bonus could encourage age-restricted housing, which represents a positive cash-flow for the Town because it generates no schoolchildren requiring costly education, and which provides opportunities for older residents (including empty nesters as well as retirees) to remain living in Town.

Requiring Conservation Design in Certain Situations As noted above, the Town might consider *requiring* conservation design (instead of conventional plats) in situations where parcels are proposed for development along the Town's pre-determined *Map of Potential Conservation Lands*, to ensure that possible future greenway connection opportunities are not lost. Other areas where conservation design could be required are on properties abutting scenic roads, public parks, Town or state forests, conservancy lands, working farms, etc., as well as in groundwater recharge or aquifer protection districts. This approach would ensure that the interconnected network of open space would become a reality, and not simply be another good idea which is seldom implemented.

Signal Mountain Public Meeting Comments: Strengths, Opportunities, Weaknesses

Note: Every comment recorded at the public meeting is listed as it was written (with some minor edits).

Public meeting participants were given the opportunity to "vote" on the issues they felt were most important. Numbers in parentheses represent the number of people that marked that a comment was a priority.

General headings (bolded) sum the individual comments. Comments were grouped under general headings to organize the data with some comments crossing several categories. This method is used to get an idea of participants' priorities and will be used as a general guide in creating the land use plan.

STRENGTHS

General

Sense of Community/Community Involvement (1)

Pride of our history & future

Level of citizen interest and concern, voter turnout meeting attendance - good quality of citizens

Community involvement in school system (1)

Community involvement

Community has sense of history

Sense of community – running into people, community activities

Small Town Feel (6)

Small town atmosphere, warm, friendly, people know people

Small township – know neighbor

Small town character has been preserved

Small town feeling-knowing people wherever you go (small population contributes to this)

Small town atmosphere (4)

Small town atmosphere (2)

Small community

Village atmosphere – low density

Family-oriented (2)

Family oriented/ family friendly.

Family oriented (2)

Great family community

A good place to raise children

Children and education are valued – family oriented

Traditional values

Multi-generational (1)

Multi-generational residents

Range of ages in population

Variety of people – different age groups, educational backgrounds, socio-economic

Diversity of age – elementary age to elderly

Location

Geographic location

Quiet – away from Chattanooga

Separation

Bedroom community – proximity to Chattanooga

Convenient location

Safety (5)

Safety (5)

Safety

Safety

Safety (crime)

Safety

Safety

Safety

Lack of crime – people feel safe

Safe

Feeling of safety and security

Other (1)

Intelligent, caring, committed people (town attracts these)

Historic district

Inclusive community

Active athletic program for youth

Stable and rising property values

Growth should progress slowly to maintain character

Capacity/Ratio

High educational level – high expectations

Diversity of churches

Low density population,

Geography, playgrounds, accessible officials and government, golf course

Plan development

Rural nature

Media – better feedback on issues

Non urban – trees, woods, low traffic, quiet, low noise level

Good police and fire department

High quality of life- safety/natural beauty/rustic/ recreation/arts

Low population

Well planned land use plan

Low population- x total of people

Quiet, calm environment-lack of noise from roads, industry etc

Climate – cool, hospitable (1)

Residential Strengths

Low Density (12)

Low population density, large lots, retention of trees
Low density residential areas – privacy at home (11)
Growth should progress to maintain character 1-2 house per buildable acre
Max 4 condos/houses an acre-limited development
Maintain low density – Single family housing
Low density-residential development, contributes to character (1)
Size of yards- Low density
Small community with large lots (3/4) acre plus
Low density residential compared to other towns (Walden is better)

Senior Housing

Alexian Village
Alexian Village and retirement diversity
Alexian Village – age in place
Enough senior housing on the mountain

Housing Diversity

Diverse types of neighborhoods. i.e. Old Town's bungalows
Diversity of housing
Varied Neighborhoods
Diverse neighborhoods/mixed income neighborhoods
Range of residential property values
Number of existing neighborhoods
Established neighborhoods

Residential developments

Old Town
Old Town – stability, commitment
Hidden Brook, Old Town, Birnam Woods, Carriage Hill
Fox Run has good community – younger, active families, cul-de-sacs

Other (1)

Close proximity of neighborhoods fosters safety, sense of community
Long term residents promote sense of place and stability
Density fosters neighborly atmosphere/block parties
People know their neighbors
Presentation of older homes and sidewalks
No large apt. complexes (easily degraded) (1)
Good subdivision planning

Nonresidential Strengths

Businesses Type and Location (3)

Minimal business district/ small numbers dustered together/ small stores (3)

No big box businesses (Home Depot, Lowes)

Focused location of commercial areas, not spread out, easy to keep a handle on it.

Contributes to small town ambience

Lack of heavy commercial development

Retail – Convenient

Good diversity of restaurants

Awareness of present commercial development

Business Signage

Minimal commercial signage/ordinance

Limited commercial signage

Other

Good environment for small businesses

Environmental Strengths

Natural Beauty (17)

Natural resources/streams, forests, views (4)

Natural beauty's unique location

Location to natural features and services.

Natural beauty of mountain-bird sanctuary (1)

Natural beauty- places: woods on Shackleford Ridge Road, Prentice Cooper, Rainbow Lake, creeks, Shoal Creek, Signal Point, viewshed off mountain, Mabbitt Springs(3)

Natural beauty- trees, creeks, plants, nature, climate

Natural beauty (6)

Natural beauty, trees, green spaces (1)

Natural beauty (2)

Trees

Trees

Trail, trees, wooded areas.

Trees, open space, flowers, birds- Palisades, Green Gorge, etc. near Alexian access to Prentice Cooper

Large amount of trees (greening)

Lots of trees (strength), lots of space yet know our neighbors and can't just cut down all the trees for growth.

Other (4)

Open space is a treasure we need to honor

Better air quality, climate and less noise

Ecological diversity (flora and fauna) (2)

Shoal Creek, Palisades, Green Gorge, Signal Point

Waterfalls and watersheds (Mabbitt Springs)

The terrain is a strength

Mountain – View – Environment – Woods (Trees, Creeks) (1)
Town location as part of Cumberland Plateau, natural areas like Rainbow Lake, Green Gorge (1)
Natural Areas
Biological diversity
Plants & animals
Environment is asset: clean air, water

Civic Strengths

Schools

Schools with great playgrounds and walking paths
Safety and security in schools
Excellent schools
School system involvement
Schools – parent involvement due to small community
Schools and parents participation in schools
Schools
Education opportunity
Opportunities for public/private quality schools
Quality School

Community Involvement

Community involvement
Community interest in development process
Loyalty of community – civic activities
Civic pride
Opportunity to participate in government
Community spirit strong
Volunteer Town Council – need more citizen participation than in the past
Ability to solve problems

Town Services

All needed services available in town
Self-contained community – services available
Town services – recreation – town police
Fire, police, EMS
Excellent police force
Enforce leash law

Town Amenities (1)

Public pool, tennis, library, parks, ball fields
Great 4th of July
Signal Mountain Playhouse
Great Churches
Boy Scout Troops
Recycling Center, Library
Walden, Pumpkin Patch
Summertown & Little Brown Church

Amateur sports program for kids
Playhouse & MACC & Bachman
Recycle system
Recycling center (1)
Recreational sports program
Boy scouts, girl scouts, daycares, church programs
Cultural facilities
Recycling center
Sports programs and activities for children-diverse, competitive recreational-baseball,
swimming, tennis
Tennis, pool, ballparks
Recreation – baseball, soccer, basketball, town gym, swimming etc
Excellent youth programs
Diversity of activities
4th of July

Other

Churches
Zoning is strength

Parks and Open Space Strengths (1)

Public pull offs for vistas living conditions as N. Palisades
Prentice Cooper
Trails, public open space and community (Signal Point and Rainbow Lake)
Open space – trees
Proximity to state forest
Family friendly, recreation facilities
Outdoor activity – Need lakes
Green space and trails (1)
Park – Natural and recreation (Golf Course)
Swimming pool, opportunities for activities
Tennis courts, ball fields, hiking trails
Outdoor recreation-hiking, mountain biking, unimproved public areas
Golf and country club (sledding area) and tennis, softball, Althaus Park, Rainbow Lake,
Green Gorge

Transportation Strengths (3)

Sidewalks

Need Sidewalks
Sidewalks (though torn up)
Sidewalks (old strength) (1)

Other

One traffic light
Only one traffic light
Narrow roads, low speeds, scenic, pleasant
No more trucks – traffic lights – congestion – loss of small town feel
Easily to get to places

Small size of community – concern growth will increase traffic (2)
Courtesy/tolerance of bikes from general public especially off 127

OPPORTUNITIES

General Opportunities

Planned Growth (21)

Chance to limit growth (2)

Manage development and growth

Set example of how to manage growth and quality of life

Implement state of art growth plan (1)

Protect integrity (1)

Preserve qualities and strengths (1)

High quality development – Shackleford Ridge-central focus of commercial (6)

Controlled development – Quality and location (2)

Carefully plan development to preserve character of town

Develop 100 year visionary plan

Opportunity to plan growth instead of haphazard development (1)

Can make Shackleford Ridge something special, not cookie cutter (1)

Leverage high school to develop regulations that benefit town, not developers (5)

Strength as well as opportunity, nature, spirit, family sense of community, school system to maintain this for future. (1)

Study Capacity (30)

Once the moratorium is lifted how is the city going to provide water and other infrastructure? (2)

What is the capacity of the mountain? to keep it a nice place to live? Traffic, school, density of population, trees, green space, safety. (7)

Do not have to accept growth limit population. Numbers addressing density opportunity. (2)

Need environmental/topographical study of this area to determine how much growth our town can sustain in terms of sewage, transportation, water quality (e-coli in streams, runoff) (7)

Determine realistic population density-conservative (5)

Look at mountain soils, hydrology & other natural features (slopes etc.) to determine density. (7)

Control Population Growth (10)

Maintain current population density (7)

Population growth – Opportunity to limit population

Keep the population in check

Preserve the strengths we have by controlling population (3)

Maintain Small Town Atmosphere (1)

Keep small town atmosphere

Make more of a town rather than a bedroom community (1)

Maintain the small town

Citizen Involvement (1)

Good folks interested in town

Citizens need more voice

Let landowner have more voice (1)
People making the decisions are more responsible to people

Other

St. Simon's Island good example
Bad development
Opportunity due to lack of development
Landscape protection – Landscape ordinance (2)
Window of opportunity to act with some urgency
Creative ways of zoning vs. current approach (1)
Limit building permits with a cap (1)
Developers to pay impact fees (1)
Growth to support the new high school
Solar and wind options; land use priorities for horses, rural environment.

Residential Opportunities

Housing Diversity (5)

Economic housing for entry level profession (e.g. Policemen, etc.)
Need housing choice- types/balance/price
Zoning for varying home types (3)
Improve housing opportunities for young families, empty nesters
Denser development around the new school: town homes, condos not in existing neighborhoods
Places for singles and senior citizens near town – quiet
Put condos where SMMS is.
Zero lot line housing development (2)
Smaller homes- Like the ideas of Randall Arendt
Demand for homes for first time buyers, retirees that would like a smaller place
Need more affordable housing
Need for down-sizers- low maintenance (offer similar arrangement as Westfield)
Large lot sites

Cluster Development/Conservation Subdivisions (1)

Adopting Randall Arendt's vision for new neighborhoods: open space, mixed housing types, trails, green space, congregating areas
Cluster development possibilities (1)
New development does not have history, character; clustering homes with green area can help provide character
Improve zoning to reduce focus on lot size and focus on density (per last month's presentation)
Cluster development needed.

Density

Low density development
Adding density on Taft?
Four condos/houses – acre – limited development

Old Town

Old Towne with open space
Zoning that would allow Old Town to be built today

Green Space in Neighborhoods

Developers contribute green space when they develop subdivisions
Preserve the existing open space in established neighborhoods

Other

Control residential growth (1)

Nonresidential Opportunities

Planned Growth (4)

Control business growth
Planned commercial growth
Develop new commercial areas with interest and character like Savannah, Charlestown, Highlands, Hinsdale, IL. (1)
Limit commercial property to Taft
In future commercial will be built- in doing this it should respect the terrain of the mountain.
(3)

Façade Improvements (1)

Improve facades of existing commercial properties (1)
CVS Pharmacy not good – looks bad – traffic ugly

Expanded Non-residential Opportunities (4)

Expand commercial zoning opportunity (liquor store) (3)
Need more restaurants (is there the population to support these?)
Quality restaurants
Need more retail establishments: clothing, extensions of major stores: Kathy's Closet an example
More retail, tax base, medical clinic
Consider mixed use developments
Teen center – Old Middle School, old CVS (1)
Need more commercial

Other

Have empty spaces
Retail left b/c of increase in taxes
Street Zoning Laws: sewers, parking setbacks, greater soft beds
Trees on commercial properties

Environmental Opportunities

Tree Preservation (4)

Opportunity to preserve trees – no clear cutting (1)

Ordinances to prevent clear cutting (3)

Enact tree ordinance specifying which trees can be cut and enforce it.

Kudzu control

Kudzu control

Kudzu eradication program

Too much kudzu

No goats

Protect Natural Environment (2)

Maximize green areas for environment (1)

Protect integrity of environment

Plan for preservation of natural environment

Plan ecologically sustainable development (1)

Protect Water Resources

Preserve the wetland and stream corridors

Restore Rainbow Lake to "safe" conditions

Civic Opportunities

Sewer Service/Septic (4)

Improvement of sewers

Enforce septic tank codes

Connect existing homes to sewer lines

Better sewage treatment or can't accommodate growth efficiently

Develop preventive maintenance plan, septic, sewer

Comprehensive sewage treatment plan (4)

Separate density – sewers first to existing development

Offer option to connect to sewer line along Timberlinks when new line installed

Governmental Cooperation (2)

County, Walden and Signal Mountain intergovernmental cooperation

Keep working together

More coordination w/Walden and unincorporated county regarding services

Integrate local governments (1)

Consolidate towns (1)

Infrastructure

Expand services as town expands i.e. development fees to pay for cost of extending services to new development (1)

Maintain current infrastructure

Other

Retain strong education system

Maintain Toll House and Historical places
Monument at James/Timberlinks
Elected Planning Commission- bad development (1)
Storm water control
Need more fire trucks in case of forest fires (outside town limits)
Maintain our public properties better 1. roadsides 2. parks
Curbside recycling
Create more athletic fields/recreational fields

Parks and Open Space Opportunities

Trails (4)

Build more trails
Bike/Hike trail down mountain – non-motorized (4)
More hiking and biking trails

Green Space Expansion and Promotion (5)

Green space preservation
Town could get involved in land conservation through conservation easements, tax breaks for donations, agreements not to develop (4)
Pursue grants for public land acquisition
Create more parks
Planned green space
Promote the green spaces (1)
A park where SMMS is: Theatre – Bowling Alley

Other (2)

Rainbow Lake – new dam-cleaning – service projects – restoring – safety (1)
More help in parks and town facilities (1)

Transportation Opportunities

Trails, Sidewalks, Bicycling (10)

New neighborhoods have greenways, sidewalks (2)
Add new sidewalks
Biking/jogging trails among new communities
Developers contribute to costs of sidewalks, bike paths
Dedicated trails – bicycle
Greenways –mixed use trails – not concrete- Old Town sidewalks changed to natural materials – recycled materials (6)
Hiking trails at the beginning and throughout new developments/neighborhoods
Opportunity to make community more walkable and bikeable and family friendly (2)

New Road (7)

A new road could be a useful possibility (1)
Another road up the mountain
Another way to outside world
Improve and/or add road and access up mountain (4)
Review additional transportation access (2 access roads may not be sufficient)

Improve road up and down mountain

Another road up and down mountain

Determine maximum population of town in terms of traffic capacity (ingress/egress from mountain)

New road off mountain (2)

Truck Traffic (7)

By-pass for Signal Mountain, find an alternative to traffic around mountain (Suck Creek?) (4)

Legislate 14 wheelers, truck traffic (3)

Bus Stops (1)

Carefully think school drop off and pick up

Plan bus stops – safer for young children (1)

Other (2)

Emergency plan for access

Revisit speed limit changes

Cul-de-sacs and designs can contribute to community

Access to Shakleford Ridge from Timesville Road (1)

Seek funds for restoring roads after construction other than taxpayers

What is the true capacity for growth, mainly automobile? (1)

WEAKNESSES

General Weaknesses

Lack of Planned Growth (7)

Past development did not always consider long term effects (e.g. e. coli in streams, sewer system)

Haphazard past planning – current constraints (2)

Traditional planning process driven by greed and arrogance

Current zoning regulations do not protect natural resources and small town character (1)

Concern about what county will do density, transportation. (3)

Lack of orderly growth pattern (1)

Lack of foresight

Lack of Information (1)

Lack of information – i.e. environment, traffic studies, etc

Lack of adequate citizen input (1)

Lack of understanding of citizens regarding growth issues

Lack of Diversity

Lack of social, economic, ethnic diversity

Signal Mountain lacks diversity of culture

Other (4)

Increasing property values – younger generation won't be able to afford mountain.

Uncertainty of what the H.S. will bring

Seclusion – escape – keep out

Strength – increase in home value also a weakness

History

Development can provide discord

Geographic location creates physical limitations for growth

Rapid intense growth

Impact (negative) of growth on infrastructure- roads, sewer, utilities, schools- unmatched capacity? (1)

Losing agricultural areas (3)

Residential Weaknesses

Sense of Community

Large homes can breed isolation

Promotes cooperation, neighborhood interaction

Subdivisions that lack a sense of community development house size, clear cut land for development

Old Town has sense of community, architecture, Arts & Crafts, new development that is compatible and complementary

New residential development seems to attract “pass through” residents

Other

High density development leads to problems

Poor subdivision regulation and lack of landscape ordinance
Construction on St. Charles Avenue
Remove all the trees, cookie cutter development
Diversity of future housing opportunities

Nonresidential Weaknesses

Vacant Property

Could use old CVS
Could use old SMMS
Do not use all commercial now available

Lack of Commercial Design Standards (3)

Lack of strong commercial design
Lack of control of control of the architecture of the commercial buildings
Commercial areas lack character because of zoning restrictions
No design standards for commercial (3)
Need commercial buildings to blend into neighborhoods as in Brentwood, Tennessee

Development Not Concentrated

Commercial zoning is spotty- there are "strange areas" zoned commercial in between residential zones
Lack of concentration of commercial areas
Too much commercial on Taft Hwy – Group commercial

Other (3)

Lack of support for community-Retail establishments (restaurants fail, etc.)
Weak business growth plan
CVS Parking lot is stupid and dangerous
Lack of entertainment in commercial development (2)
Lack of sales tax revenue due to stagnant/declining commercial base (1)

Environmental Weaknesses

Clear-cutting of Trees (1)

Clear cut development
All trees cut down, storm water run off to creeks and sewer
Lack of protection for trees and green space (ordinances to limit clear cutting)(1)
Clear cutting – county land

Water Pollution (5)

Water pollution
Ground water problem
Water pollution – health issues (1)
Water quality – polluted streams, related to sewer/septic (4)

Other (2)

Thin soil, slopes, physical limitations
Extended not burning – county burning

Abusing natural resources: Rainbow Lake, creeks (pollution), vandalism of trees, rocks
Bluff beautification
Need to preserve natural habitats-plants (2)

Civic Weaknesses

Sewer/Septic (18)

Sewage/ septic tanks (2)
Septic and sewer problems
Lack of sewers in existing neighborhoods
Aging septic systems causing seepage into streams, e.g. deterioration of Rainbow Lake
Sewer system (2)
Inadequate sewer system – Perc rate problems (3)
Sewer treatment plant
Inadequate sewage treatment and access (4)
Sewer infrastructure (leaky)
Lack of good terrain for septic systems
Water, sewage drainage issues (3)
Quality of life issue: Septic/sewer weakness in the sense that prior planning could be inadequate and has already been inadequate. (4)
Hidden Brook follow-up to previous septic comment. Built on rock, but home owners gave money for future sewage system then gave money back to developers. What do we do?

Town Services/Roles

Lack of building inspectors- Need more inspectors
Too many police- poor resource allocation-need to develop regulation
Waste Management: Solid Household
Road obstructions -leaves (code not enforced)
Water system inadequate
Litter and trash, streets and public spaces-
Trash on roads – Shackleford Ridge Rd.
Services overextended?
Trash service projects
Police service – negative comments

Utilities' Services

Need underground utilities

Governmental (6)

Elected officials that yield to development pressures
Current Planning Commission self serving developers (1)
Too many municipalities – lack of coordination
Planning should be elected – conflict of interest (5)
Pro-Growth Planning Commission (town)
Lack of combination/coordination with Walden

Other

Potential for new high school to use excessive resources/ sewer/ \$ BOND(3)
Property taxes high

Parks and Open Space Weaknesses (1)

Destruction of trail system in Shackleford Park was tremendous lack of planning (1)
No input into county park – use for recreation, independent use
Not many neighborhood playgrounds
No teen center or opportunities
Nothing for teenagers to do

Transportation Weaknesses

Sidewalks (9)

Limited sidewalks in neighborhoods
Not pedestrian friendly
Transportation system not friendly to pedestrians, children, bicyclists and animals (4)
Lack of repair of old sidewalks- (Old Town), need code changed on books
Lack of neighborhood sidewalks – no linkages – Shackleford Ridge Road (2)
Need sidewalks and other paths
Sidewalks – lack there of (2)
Lack of pedestrian access – need more sidewalks – James Blvd- Ridgeway Ave (1)
Connect neighborhoods with sidewalks
Lack of sidewalks and bike paths

Access on/off mountain (6)

Limited highways down mountain
New road off mountain
Transportation infrastructure up and down mountain a problem
No extra road up mountain (1)
No coordination with Sequoyah – need another way off
Lack of quick ingress/egress, not very easy to access
Access from off mountain (affects emergency response getting people to hospital, etc.)
Road up and down mountain – safety issue, another lane
Limited major traffic arteries up and down mountain, Timberlinks Rd. ability to handle additional traffic (5)

Transit (1)

Poor public transportation
Transit – Traffic (1)
Lack of public transportation
No bus service
Lack of public transportation

Bicycling Facilities/Hiking Trails/Greenways (5)

No bike paths- 2002 Bicycle Master Plan (1)
Lack of bicycle path
Bikeways – need more safe bike lanes on Timberlinks, James, Taft, Palisades,
Signal Mountain Road
Lack of Greenways

Less than ideal bike safety and pedestrian and cars-traffic in general on major roads-
Taft and James (1)

Inadequate walking and biking trails (try to encourage use for exercise and recreation)
(3)

Walking and biking trails not networked together- Have to drive to where you can walk
or bike

Bikes riding up and down mountain

Need to accommodate low/high speed bikers

Lack of sidewalks and bike paths

Traffic Congestion/Road Capacity (4)

Traffic congestion (2)

Capacity of the main road to handle additional residential/commercial traffic

Can't accommodate increase in traffic

Traffic from Timberlinks will go through residential areas

Traffic congestion – (too many cars for the roads- James, Rolling Way and other cross
streets)

Rush hour traffic in particular – traffic contributes to accidents (2)

Roadway Maintenance (1)

Street maintenance

Road system capacity and maintenance. (1)

Road repair

Shackleford Ridge Rd. (1)

Lack of crossroad connection with Shackleford Ridge

Single road going to the new middle/high school

Management of traffic from Shackleford Ridge area (need to avoid cut-through in
residential areas) (1)

Other (2)

Widening of roads????

Roads

Too many commercial trucks on side streets

Speed limit too low on main roads (2)

No good way to get on/off mountain except car

Lack of turning lanes

Hard to read street signs

Address Roberts Mill

Heavy trucks that carry lumber, noise.

Glossary

Active Park

A park designed for active recreation. Active recreation typically requires intensive development and often involves cooperative or team activity, including playgrounds and playing fields.

Activity Center

A concentration of mixed-use or multi-use areas containing commercial, office, civic and institutional uses, parks and open space, and medium to high-density residential dwellings arranged in a compact, pedestrian friendly environment.

ADT

Average Daily Traffic. An average count of the number of vehicles passing a specific point during a 24- hour period.

Arterial, Major

A major thoroughfare characterized by high vehicular capacity and continuity of movement used primarily for through traffic rather than for access to abutting land.

Arterial, Minor

In rural areas, roads linking cities and larger towns. In urban areas, roads distributing trips to small geographic areas without penetrating identifiable neighborhoods.

CARTA

Chattanooga Area Regional Transportation Authority

Character

Specific features or traits of a community or region developed over time that distinguish it from adjacent development.

Cluster Development

A development design technique that concentrates buildings on a part of the site to allow the remaining land to be used for recreation, common open space, or preservation of environmentally sensitive areas.

The open space may be owned by either a private or public entity.

Collector, Minor

In rural areas, routes that serve intra-county uses rather than statewide travel. In urban areas, streets that provide direct access to neighborhoods and arterials.

Condominium

A structure that is connected to at least one other structure with a firewall on a single lot, but also shares common land with the other lots in the structure. The common land is to be communal and must be owned in common by all the owners of the individual units in the structure. The owner owns interior of his or her unit in the structure.

Conditional Zoning

A type of zoning ordinance that allows additional stipulations on the type(s) and manner of uses that may occur on a particular property. These conditions apply in addition to any requirements stated by the standard zoning ordinance.

Covenants

Rules set forth in a private agreement with the land owners or potential land owners which is to be stated and recorded in the deed. This is a way regulate a development with emphasis on physical and economic integrity. Covenants are to be enforced by the land owners and are not enforced city or other public agencies.

Crossroads Development

An emerging growth center, usually located at the intersection of arterial and/or collector streets. These centers include small-scale, neighborhood-oriented establishments.

Deed Restriction

A limitation on the use of a lot or parcel of land that is set forth in the deed and recorded with the county register of deeds. It is binding on subsequent owners.

Dwelling Unit

Any building or portion thereof that contains sleeping, cooking, and sanitary facilities for one household. This definition specifically excludes hotels, motels, and other similar short-term lodging types.

Dwellings, Attached Units- Attached units are attached on one or more sides by a wall, and situated on the same parcel of land with the exception of a townhouse.

Dwelling, two-family (duplex)

An attached structure that contains two units separated by a firewall situated on a single lot.

Dwelling, three-family (triplex)

An attached structure contains three units separated by a firewall on the adjoining walls with the said structure being situated on a single lot.

Dwelling, four-family (quadplex)

An attached structure contains four units separated by a firewall on the adjoining walls with the said structure being situated on a single lot.

Dwelling, multi-family (apartments)

A single room or suite of rooms with restroom accommodations located in a single structure devoted primarily for one family per unit use. This building will contain no less than two units and a reasonable number of units being the maximum for the character of the surrounding area. Apartments are typically seen as multi-family buildings.

Townhouse

Buildings that can be different stories in height with at least one side being connected to another structure and open space in the front and rear of the units to provide for light, air, and access. Townhouses typically have the main entrance on the ground level. The owner owns lot, interior and exterior of structure.

Townhouses and other attached dwellings should generally be located in or near transitional areas or areas that are more urban in character. Transitional areas are typically located between business districts and residential districts and act as a buffer between uses of different density, intensity or compatibility. Urban character areas are generally characterized by moderate and higher residential density in or near commercial development and business centers.

Dwellings, Detached Units

Detached units consist of one unit that is not attached to any other units excluding accessory units (i.e. sheds or garages) and is situated on the same lot.

Dwelling, Single-family detached

A single house that is situated on one lot with one family living on the premises. Patio homes are single family dwellings that are permitted to have a zero lot line, and they may or may not be attached to other patio homes. A zero lot line means that one side of the structure may be placed on the lot line with no setback. A double wide manufactured home and a modular home are considered a single family unit by Tennessee state law.

Easement

A legal interest in land, granted by the owner to another person or entity which allows the use of all or a

portion of such land for a specific use such access or placement of utility lines.

Flood Zone, 100-year

The low land near a watercourse which has been, or may be covered by water of a flood of 100-year frequency. It also means a flood of this magnitude has a one percent chance of occurring in any given year.

Goal

The end state of affairs that a plan intends to achieve and/or maintain

Greenway

A linear park, or open space conservation area acquired and maintained by a municipality providing passive recreational opportunities, pedestrian and / or bicycle paths.

Gross Density

The numerical value obtained by dividing the total number of dwellings in a development by the gross area of the tract of land in acres.

Historic District

The Register is part of a nationwide program to support public and private efforts to identify and protect historic and archaeological resources.

Impervious Surface - A hard surface area that either prevents or retards the entry of water into the soil mantle or causes water to run off the surface in greater quantities or at an increased rate of flow. Common impervious surfaces include, but are not limited to, rooftops, walkways, patios, driveways, parking lots, storage areas, concrete or asphalt paving, and gravel roads.

Incentive Zoning

The granting of additional development capacity in exchange for providing a public benefit or amenity such as preservation of greater than the minimum required open space.

Intensity

The degree to which land is utilized or the density of the development as determined by measures such as the number of dwelling units per acre, amount of traffic generated, or amount of site coverage. Facilities and services needed to sustain development and land-use activities including utility lines, fire and police stations, parks, schools, and other public facilities.

Infill Development

The development of vacant or underutilized parcels which are surrounded by or in close proximity to areas that are either substantially or fully developed.

Land Use Plan

A long-range plan for the desirable use of land in a municipality as officially adopted and amended from time-to-time by the planning commission and elected body.

Level of Service (LOS)

A scale that measures the amount of traffic that a roadway or intersection can accommodate, based on such factors as maneuverability, driver dissatisfaction, and delay.

Lot of Record

A parcel of land with dimensions of which are shown on a document or map on file with the Register of Deeds.

L RTP

Long Range Transportation Plan. TransPlan 2030 seeks to identify improvements and establish transportation policy that will be needed by the target year 2030. Adopted in June 2005, the plan's goal is to promote the efficient movement of people and goods,

while also supporting the CHCNGA TPO area's land use and economic development goals.

Mixed Use Development

Developments intended to encourage an integrated, diverse blend of compatible land uses.

Multi-Use Development

The development of a tract of land or building with two or more different uses such as but not limited to residential, office, retail, public, or entertainment in a compact urban form.

Multi-use path

A linear park located in a right-of-way or easement. Often but by no means exclusively located adjacent to waterways in the floodway, multi-use paths are multi-purpose, though some types serve one purpose to a greater extent than others. Multi-use paths provide protection for environmental areas, recreational opportunities for the community, and, frequently, enhanced neighborhood connectivity for walkers, runners, and bikers.

Neighborhood Center

Neighborhood shopping centers generally provide convenience shopping for the day-to-day needs of consumers in nearby residential neighborhoods.

Node

Discrete concentrations of relatively higher-density development. Nodes are often appropriate at major intersections.

Open Space

Any parcel of land or portion thereof essentially unimproved and dedicated or reserved for public or private use.

Open Space Subdivision

A site design technique that concentrates dwelling units in a compact area in one portion of the development site in exchange for providing open space and natural areas elsewhere on the site. The minimum lot sizes, setbacks, and frontage distances for the residential zone are relaxed in order to create additional open space at the site.

Parcel

A piece of land that can be owned, sold, and developed. Parcels have legal descriptions which not only describe their boundaries but also contain information concerning rights and interests.

Patio Home

A single-family detached unit located on a reduced size, zero-lot line parcel and situated to provide for efficient use of available land.

Policy

The principles, plan or procedures established by an agency, institution, or government, generally with the intent of reaching a long-term goal.

Preserve

Open space that is currently protected from development. It includes areas under environmental protection by law or standard, as well as land acquired for conservation through purchase, or by easement.

Reserve

Environmentally sensitive areas such as the 100-year flood plain and steep slopes that may require special considerations for development. Additionally, through special efforts, many of these areas could be added to the Preserve category in the future.

Riparian Habitat

Lands comprised of the vegetative and wildlife areas adjacent to perennial and intermittent streams.

Riparian habitats are delineated by the natural existence of plant species normally found near freshwater.

Sanitary Sewer

A system usually operated by a municipality, consisting of a system of conduits, pumps and underground pipes designed to convey wastewater from its source to a treatment center before discharge into open waterways.

Scale

The relative size of a development when compared to others of its kind, to its environment, or to humans.

Septic System

A subsurface wastewater treatment system commonly found in rural areas consisting of a settling tank and a subsurface disposal field.

Setback

The minimum distance any building or structure must be separated from the lot lines of the parcel on which it is located.

Shared Parking

The development and use of parking areas on two or more separate properties for joint use by the businesses or residents on those properties.

Slope

The deviation of a land surface from horizontal, usually expressed in percent or degrees. Many municipalities consider slopes of 25% or greater to be steep slopes.

Spot Zone

The zoning of a small area of land or parcel for a use that is substantially different from the zoning of land in the surrounding area. Spot zoning is normally invalid if the permitted use is very different from the surrounding area; the area involved is small; or it can be shown that it primarily promotes the private interest of the owner rather than the general public welfare. Spot zoning may be valid if a land use plan calls for such zoning changes as part of the plan's implementation as a benefit to the community at large.

Streetscape

The combination of building facades, signage, landscaping, street furnishings, sidewalks, and other elements along a street.

Strip Commercial

A form of commercial land use in which each establishment is afforded direct access to a major thoroughfare; generally associated with intensive use of signage.

Stormwater - That portion of rainfall runoff that does not infiltrate into the soil, but instead flows through culverts, ditches and streams into progressively larger channels until it reaches a larger body of water such as the Tennessee River.

Subdivision

The division of a tract of land into two or more lots.

Suburban Development

A form of development, generally beginning after World War II that is characterized by a distinct separation of land uses. The street network deviates from the historical grid system as cul-de-sacs and curvilinear routes are common.

TDEC

Tennessee Department of Environment and Conservation.

303(d) List

The list of streams and lakes that are not meeting their designated uses (impaired waters) because of excess pollutants. States must update this list every two years.

Traditional Neighborhood Development

A type of development that emulates early 20th Century urban conventions in the United States by diversifying and integrating land uses while attempting to preserve a human-scale design.

Transition Area

An area in, near, or between a significant change in land uses.

Total Maximum Daily Load

The maximum level (plus a margin of safety) of a particular pollutant a waterway can withstand without endangering its designated use.

Townhouse, see Dwelling, Townhouse

TPO

Transportation Planning Organization. A policymaking board comprised of representatives from local government and transportation authorities who review transportation issues and develop transportation plans and programs for the metropolitan area. Analogous to Metropolitan Planning Organization (MPO).

Vehicle Miles Traveled (VMT)

Miles of travel by all types of motor vehicles as determined by the states based on actual traffic counts and established estimating procedures.

Viewshed

Those segments of a landscape that can be seen from a particular point.

Watershed

The land area from which surface runoff drains into a stream, channel, lake, reservoir, or other body of water; also called a drainage basin.

Zoning

The legal mechanism for the creation of districts in certain specified areas within a municipality land uses with other limitations such as height, lot coverage, density, and other stipulations in order to protect the health, safety and welfare of residents.

Rezoning Proposals

Properties which are not currently zoned for commercial, office, industrial, or multi-family uses will be evaluated for non-speculative land uses based on a rezoning proposal prepared by the developer. The elements of the rezoning proposal are described below and much of the information is similar to those required by the Regional Planning Agency in its Site Plan Requirement Policy.

The intent of the rezoning proposal process is to promote well-planned, sustainable development that is in keeping with the intent of the adopted land use plan. The proposals will help elected officials make well-informed decisions about rezonings for development that may have substantial impacts, both positive and negative, on the community. A pre-proposal conference with Regional Planning Agency and town staff is strongly recommended.

Recommended elements of a comprehensive zoning proposal:

1. A written narrative describing:
 - the proposed development,
 - the suitability of the property for the proposed development including a brief description of road frontage, access,
 - availability of infrastructure, and topography issues,
 - how the proposed development is (a) consistent with and (b) meets the objectives of the adopted land use plan, and
 - the compatibility of the proposed development with the uses of nearby properties and with the character of the surrounding neighborhood including, but not limited to, an impact analysis and proposed mitigation measures for things such as noise, light and glare, security, and privacy.
2. A copy of correspondence soliciting comments from area property owners or neighborhood associations.
3. A preliminary site plan including building footprints; pedestrian, bicycle, and vehicular access; parking; open space; pedestrian and bicycle amenities such as sidewalks, benches, plazas, and bike racks; existing natural vegetative buffers; wetlands; storm water management facilities; and any proposed cut and fill areas.
4. A landscaping plan.
5. A traffic impact study as required by the adopted Vehicular Access ordinance (Ord. 98-5) and other traffic information as requested by town staff or Plannign Commission, and proposed mitigation measures if requested by RPA or town staff.
6. An environmental impact analysis and proposed mitigation measures if requested by RPA or town staff.

Rezoning Tips for Developers

At times, it may be necessary to demonstrate a project's consistency with an approved land use plan by amending the plan before the formal rezoning process can be initiated. The following tips may be helpful in preparing to request a rezoning:

- Work with community groups and neighbors to develop a consensus before initiating the formal rezoning process.

- Try presenting a conventional development plan or "by right" development plan to illustrate the advantages of your creative development concept.
- Use graphics and three-dimensional images such as perspective sketches, bird's-eye views, house elevations, cross-sectional views, or models to help others see your design concept.
- Look for ideas and successful examples in resource materials such as publications by the National Association of Home Builders, slide shows, videotapes, the Urban Land Institute's Project Reference File, and model ordinances; use them to show local planning and zoning officials innovative and creative approaches to land planning.

Source: Site Planning and Community Design for Great Neighborhoods, Frederick D. Jarvis, Home Builder Press.

Regional Planning Agency policy on Townhouses

The Regional Planning Agency uses this policy as a guide regarding appropriate locations for attached housing.

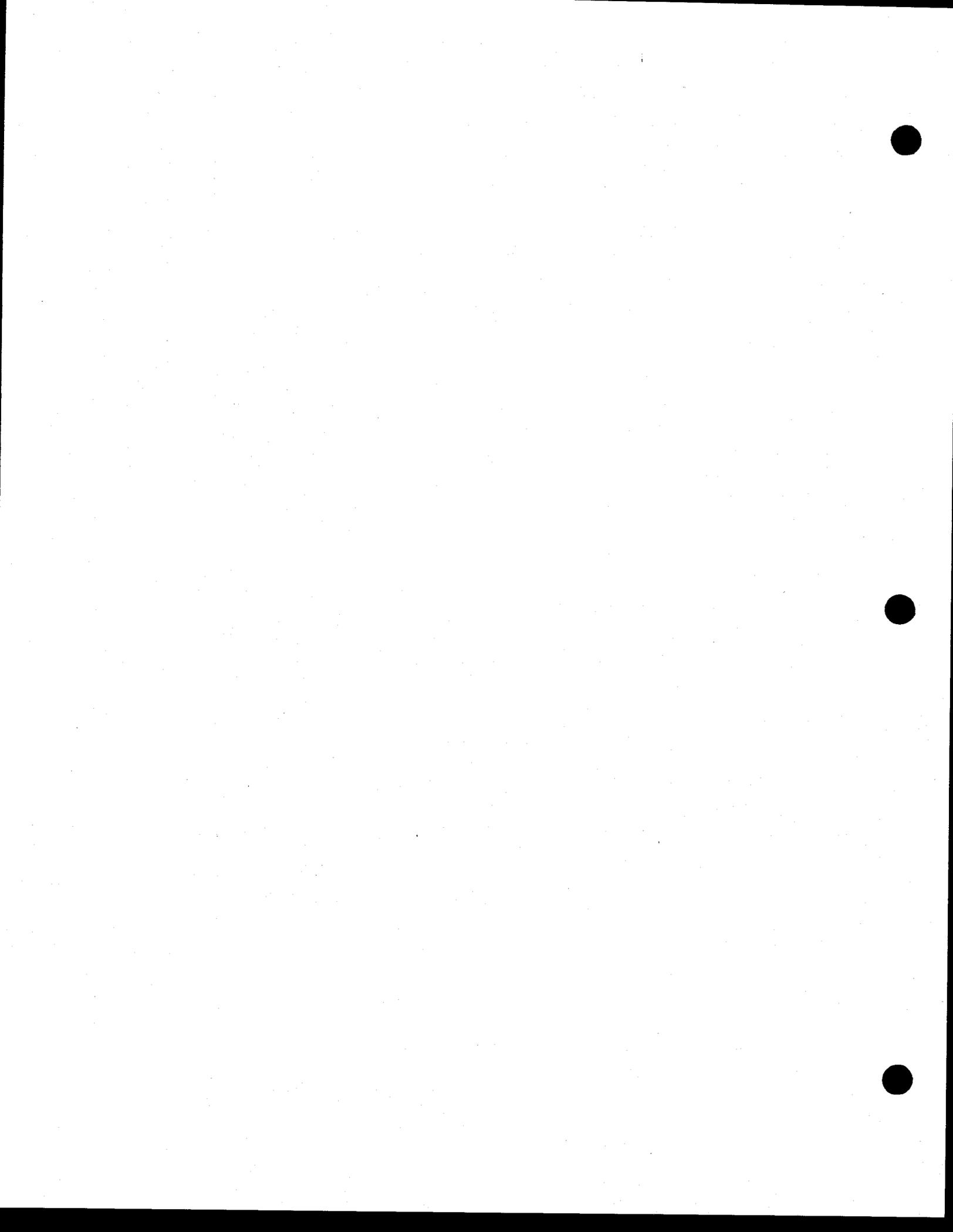
Definition: A townhouse is a single family dwelling unit attached by common walls to other similar housing type units, each unit having an open space for light, air, and access in front and rear.

Location: Townhouses have historically been located in the more densely populated urban areas, thus the name "town" house. Therefore, they are most appropriate in areas that are more urban in character. Urban character areas are generally characterized by moderate and high residential density in or near commercial development and business centers.

Townhouses are also appropriate in or adjacent to commercial, high density residential, or transitional areas. Transitional areas are typically located between business districts and residential districts and act as a buffer between uses of different density, intensity or compatibility.

Townhouses are also generally more acceptable and compatible with surrounding detached low-density single-family residential development if they are part of a Unified Development and sited to the interior of that development. A Unified Development is a single development consisting mostly of detached single-family residential dwellings with a smaller attached dwelling component.

Discretion: Townhouse-only developments have been approved in predominantly single family low-density residential areas. Some have been appropriate and compatible developments and some have not. Whether or not such a development fits into a low density residential area seems to depend on the quality and architectural compatibility of the townhouses as well as the degree of landscaping. Landscaping is the only one of these components that can be directly regulated by the zoning ordinance. Therein lies the problem in determining whether or not a townhouse development is appropriate. It is ultimately up to the developer to provide evidence of the quality of the product and to provide whatever assurances are possible as to the quality and compatibility of the proposed units.



Appendix

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Specific Memo

To: Signal Mountain Planning Commission

From: Randall Arendt

Date: April 3, 2007

Subject: **Constructive Comments on the *Land Use and Transportation Plan*, the Zoning Ordinance, and Subdivision Regulations Regarding Greenspace Protection**

As requested, I have reviewed the Town's *Land Use and Transportation Plan* and its zoning and subdivision ordinances from the perspective of a land-use planner who strives to blend conservation with new development in order to conserve interconnected networks of open space. However, because I am not an attorney, my recommendations should, of course, be reviewed by your legal counsel.

REGIONAL COMPREHENSIVE PLAN 2030

This document is very thorough and most commendable. It contains numerous policies concerning the environment and rural character, such as:

- retain scenic beauty and diverse wildlife habitats
- develop a Residential Conservation District of a contiguous greenbelt
- preserve open space in rural areas
- provide rural development options that cluster density while preserving...woodlands, hillsides, prime farmland, viewsheds...
- formulate new zoning tools allowing higher density or small lot developments in exchange for preservation of substantial areas of open space (above quotes are from pages 75 and 113)

LAND USE AND TRANSPORTATION PLAN

By contrast, this more local document is surprisingly deficient and incomplete. Rather than being comprehensively written, it appears to focus lopsidedly on development, as evidenced in chapter headings such as "Development Policy Plan", "Development Plan", and "Development Goals". A plan that is supposedly broad-based, reflecting the

full spectrum on interests in the community, would give equal (or almost equal) weight to the countervailing conservation objectives of community residents.

Although most such documents often go by the name of "Comprehensive Plan" (due to their more comprehensive nature), historically the local planning documents adopted by Connecticut towns were once known as the "Plan of Development". About a decade ago, however, the state legislature changed the enabling legislation to officially rename these documents as the "Plan of Conservation and Development". (This action was not unrelated to the publication of my first book-- *Dealing with Change in the CT River Valley: A Design Manual for Conservation and Development*-- which graphically illustrated exactly how those two seemingly conflicting goals could be blended through a technique that is now known as "conservation subdivision design".) The next time your Plan is updated, I suggest that the Town consider taking this more balanced approach.

Your current Plan appears to contain a seriously-below average amount of written information regarding natural and cultural features. As noted in the *General Memo*, it contains only just one single map with information about natural resources. And that map -- called *Natural Constraints in Developing Areas*-- is one where the natural features are viewed as obstacles (to development), rather than as the invaluable resources they are in terms of the environment, air quality, water quality, wildlife habitat, scenic viewsheds -- and the opportunities they represent for preserving community character.

This almost negative perception of natural resources is reinforced by the very revealing title chosen for a chapter on those parts of town rich in such natural resources: *Vacant Land/Open Space* (emphasis added), as if were land just waiting to be filled up with more houselots and streets

From this evidence, it appears that the philosophy of the community at the time this Plan was written was one which was focused almost entirely upon development. This is in marked contrast to the County's *2030 Comprehensive Plan*, which placed far more weight -- in a truly balanced manner -- upon environmental resources.

The current Plan's policies and implementation measures could greatly benefit by being expanded and updated, and among the kinds of additional goals it might embrace are the following:

- to protect undeveloped lands through flexible land-use controls that would become the norm rather than the exception
 - to use conservation design to locate houses and streets on the least productive farmland or the least significant woodland habitat, to locate septic sewage systems on soils best-suited for that purpose, and to provide for stormwater infiltration areas to recharge groundwater supplies (rather than permitting the "catch-and-release-downstream" method of stormwater management)
-

- to amend other development regulations to specifically and effectively protect historic and cultural features, and scenic viewsheds, and to restore degraded landscapes

In addition, I would suggest considering the following changes

- limiting the creation of impervious or graded surfaces, specifically including limiting woodland clearance for lawns, though conservation subdivision design (which effectively enforces a "maximum lot size"), and
- protecting key scenic resources and roadways, such as through a Scenic Road listing that creates a special category for roads where conservation design would be required, such as "Rural Roads".

The *Plan* also misses several opportunities to further advance the thinking about creative zoning provisions and subdivision procedures for open space development design. Said another way, the *Plan* could have placed more emphasis on the potential of these techniques for becoming a major "form-giver" in shaping the patterns of new development, reserving linked systems of conservation land to protect community character much more effectively than do conventional regulations. I believe the *Plan's* recommendations in this chapter should be expanded upon to provide readers with more details of what specific kinds of refinements-- both substantive and procedural-- would be necessary to protect more open space during the development design process.

As an example of these shortcomings, the current *Plan* does not sufficiently advise readers that conservation design can be a major tool for protecting interconnected networks of open space and implementing key goals of the *Plan*, that land trusts can play an important role in preserving, owning, and maintaining conservation lands, that easements (rather than deed restrictions) are the much preferred way of protecting lands legally, and that the subdivision design and review process itself could benefit from an expanded *Context Map*, a more comprehensive *Existing Resources/Site Analysis Map*, a mandatory site visit by voting officials and staff, a tracing paper overlay sheet format for the *Sketch Plan*, and the four-step design process.

However, these shortcomings can be easily rectified. The easiest way to accomplish this might be to add a special chapter on implementation, such as by including some of the wording contained in the "Model Comprehensive Plan Language" appendix appearing in my fourth book, *Growing Greener: Putting Conservation into Local Plans and Ordinances*. Such amendments would give the Town a firmer legal foundation for implementing the specific kinds of ordinance refinements described in this memo and in my "General Memo". The sections in that model Comprehensive Plan language which might be added to your *Land Use and Transportation Plan* describe a few items appropriate for your zoning ordinance and six items for your Subdivision Regulations. Many of these items refer to specific things the Town is not yet providing requirements or standards for (such as TDRs, landowner compacts, and "traditional neighborhood

design"), while other items relate to things that it is already doing but which it could be doing better (a *Context Map*, site analysis plans, sketch plan overlay sheets, site visits, a prioritized list of natural features conservation standards, etc.). It does no harm to augment the language in your existing *Land Use and Transportation Plan* and could help in several ways, making it easier to defend innovative improvements to your ordinances, and pointing the way toward even more creative approaches that are worth considering as future ordinance amendments.

As recommended in my "General Memo", another critical element of an updated plan would be a new map, called the *Town-Wide Map of Potential Conservation Lands*. That kind of document would play a central role in ensuring that the open space designated in each new subdivision will form part of a larger open space network comprising parts of several contiguous parcels, helping to preserve the integrity of natural systems and also assisting in the maintenance of the neighborhood's character.

One final thought about the *Land Use and Transportation Plan*: Drawing from my experience in the Keystone State, the East Pikeland *Comprehensive Plan* contains a critical sentence stating that "The nature of existing development practices should be analyzed to determine the extent to which the municipality wishes to continue or discontinue selected practices." This is an excellent sentiment and I feel something like this should be printed in bold-face type in every such municipal plan. That passage recently led to the engagement of a planning consultant to personally visit and photograph the vast majority of subdivisions built there since the late 1950s, and to prepare a constructive critique of what he found, highlighting both positive aspects to encourage in the future, and negative features that should be avoided in new subdivision designs.

I would recommend that the officials visit past and current developments in their community and critically evaluate them, to learn first-hand how those subdivisions either succeeded or failed in terms of implementing the few policies in your current *Land Use and Transportation Plan* that address conservation concerns, such as this passage from page 58: "The preservation of existing natural features and the scenic beauty of the Town are paramount concerns of Town residents."

Learning from past mistakes or missed opportunities helps any community avoid repeating those errors, and also helps them to reach as high as their ideals. (To do this best, it is recommended that the applicant's original site analysis map showing all the property's existing features prior to development be retrieved from the files and studied, to appreciate the conservation opportunities which had been overlooked at the time and subsequently lost forever.)

With great prescience, your Plan states that "Existing zoning...provides little incentive for developers to practice environmentally sensitive development design."

The most hopeful sentences in your current plan are found on page 59:

"Open space overlay zoning will be developed to allow residential development while preserving sensitive natural areas."

"Places of rare natural beauty should be preserved."

"Mature vegetation...should be protected from indiscriminate removal." and

"Enhance existing mountain stream greenways with new greenways where appropriate."

Subdivision Regulations

Purpose. This section (103) is surprisingly devoid of language mentioning the importance of conserving natural or cultural features, but does contain the briefest mention of the need to conserve open space for recreation and the need to conserve water. Such brevity misses an important opportunity to say more about what makes the Town special and now these regulations are designed to protect those attributes. In light of these shortcomings, I would suggest that the Town consider adding several more purposes, such as:

- to provide for open spaces and environmental protection through the most efficient design and layout of the land,
- to preserve the natural beauty and rural landscape of the Town, to conserve its historic and cultural features, and to ensure appropriate development with regard to those special character-giving features,

-- to help protect interconnected networks of open space, to protect water resources, to sustain a diversity of native vegetation and wildlife, and

-- to help establish substantial buffers along boundaries with scenic roadways, existing protected land, and actively-worked farmland.

My point is that even conventional subdivisions can be designed with some greater degree of sensitivity to the natural and cultural landscape than they are at present and that the Town should not set its sights too low when dealing with non-conservation subdivisions.

One further idea is the following:

As many such "Purposes" sections speak of the need to "mitigate significant negative impacts of proposed development", it would be refreshing if this part of the code were worded to state that developments should produce positive environmental outcomes. As typically worded, success could be defined as "getting down to zero", which is an odd way for a community to define the future it wishes to create. For instance, habitat areas that have been degraded by forest clearance and/or agricultural drainage could be restored or at least enhanced through management practices within open space preserved in new conservation subdivisions. As an example, drain tiles from old farm fields converted into subdivision open space could be crushed, allowing the original hydrology to reappear, supporting wetland vegetation and attendant wildlife. And

cleared areas (either played-out croplands or abandoned mineral workings) could be planted up as conservation meadows providing habitat variety for local wildlife.

Subdivision Procedures and Plan Requirements. Most of the comments I would make with regard to subdivision procedures and plan requirements have also been covered in the "General Memo" accompanying this document. Key elements of those articles describe a fuller set of procedures and plan content requirements pertaining to more detailed *Context/Vicinity Maps* and *Existing Resources/Site Analysis Maps*, *Sketch Plans* as overlay sheets on top of the *Existing Resources/Site Analysis Maps*, an *On-Site Visit* by local officials with that detailed site analysis map in hand, and a four-step design process in which open space is identified from the outset (in relation to a *Town-wide Map of Potential Conservation Lands*).

Vicinity/Context Maps. The Vicinity Map required in Section 401.5 should, I believe, be substantially expanded in scope and content so that staff and Commission members may acquaint themselves with the resources and development patterns in the vicinity of the proposed development site at an early stage of the process. This expanded item would then be re-named as a *Context Map*. To minimize the cost involved, it would show only data that can easily be reproduced from existing published sources such as aerial photographs, USGS topo sheets, FEMA floodplain maps, and USFWS wetlands maps. These readily-available maps and photos should then be reproduced by the applicant's engineer to the same scale (1" = 400 feet), showing reviewing officials the location of natural features and development patterns on properties within one-half mile of the development site (expanding the document by about five inches around all four sides). The value of such an enhanced *Context Map* would be to help reviewers understand the relationship of resources on the subject property to natural and cultural features (and to possible development patterns) on adjacent and nearby lands. This kind of understanding is critical to planning for improved buffers and open space connections, and minimizing developmental impacts in the neighborhood.

Existing Resources and Site Analysis Map and Site Visit. Because it is impossible to completely understand a site only by examining a two-dimensional paper document inside a municipal building, it is essential that most of the Planning Commission members and staff walk the property with a comprehensive map analyzing all relevant site conditions and identifying the significant and noteworthy historic and cultural resources, to take the full measure of the proposed development site. I also recommend inviting the abutters along at this time, very early in the process, when their input might actually be able to make a difference. Waiting until the public hearing stage to solicit their views and recommendations is unfair to them because by that time so much money has been spent on engineering design details that the applicant is most unwilling to go back and make any substantive changes. I have also witnessed abutters taking a much more reasonable and sometimes even relatively positive view of the proposal, once they have experienced the site walks, and have seen how the proposed open space protects important features and buffers their properties. It also gives the applicant an early opportunity to modify some aspects of his proposal to

demonstrate his willingness to listen to their views and to make his peace with them while lines are still very fluid and easy to change.

Site visits really help provide a much better understanding of the best locations for potential conservation areas on the subject parcel, and their potential linkages to natural or cultural features on adjacent properties that might be sensitively developed sometime in the future, using conservation design techniques. It is impossible to understand any site and to make good decisions when the information base is incomplete. Applicants need more specificity, and the Town needs to be clearer about what it requires if it is to be able to reject applications not supplying enough detailed information to enable officials to make fully informed decisions. (Not having this vital information is like trying to play Gin Rummy with a 34-card deck.) One needs to know where the woodlands and hedgerows are located, for example, and within those areas where the trees of greatest magnitude are growing. With modern GPS (Global Positioning Systems) technology available to most engineering firms today, it is quite easy to pinpoint the location of individual objects in the field, such as trees, rock outcrops, etc. A number of communities with which I have worked routinely require that developers' plans show the location of every tree greater than a given diameter (which varies with species), and that these trees be identified by species on the drawing. In this way, reviewers can identify those parts of woods that are more worthy of conservation and "designing around" (which trees to hug and which to let go). However, I would not require this information for trees growing in areas that would not be disturbed because of their location within proposed conservation areas. I would not require invasive non-native trees to be identified unless the goal is to remove them (which would not be a bad idea). Similarly, one should definitely add vernal pools and their associated upland habitat areas (essential in the lifecycle of salamanders and other woodland amphibians) and "views into the property from public roads or highways", to enable those important considerations to be properly evaluated.

Another factor that is absolutely key at this point in the inventory process is soil data, specifically the location of the best soil available on the entire property. In the absence of sewers, and recognizing the disadvantages of stream discharge "package plants" (which fail to remove nitrogen and phosphorus pollutants, and which fail to recharge local aquifers), suitable soils are a basic necessity. Both individual and community systems need the deepest, best-drained soil that can be provided, and those areas must be "designed around" just as carefully-- and from the very beginning-- as any of the "Primary Conservation Areas", so they may be reserved for sewage treatment and effluent disposal and not be carelessly covered by foundations, driveways, or streets.

If we agree that these items are necessary and should be submitted at some point during the subdivision application process anyway, it doesn't increase the applicant's costs for them to be required up front where the important information they provide can be of the greatest use (helping to avoid wasting money on plans that do not take these features fully into account).

Regarding timing, I really like to walk the site with the applicant well before the *Sketch Plan* is prepared. Officials who choose not to attend Site Visits, and who do not have good reasons to miss them, should be offered other ways in which they might serve the Town -- because (in my judgment) they cannot serve the Town well without walking potential development sites. In many communities this is a brandnew concept, and it is often a "hard sell" among municipal officials who are already very busy with many other matters. However, I maintain it is simply not possible to make an informed decision without experiencing the site in question-- unless the application is clearly deficient for certain obvious reasons.

Sketch Plan Overlay Sheet This document, which would be required, is absolutely essential for the subdivision process to proceed smoothly and efficiently. If the first document to be submitted is the so-called "Preliminary Plan", the process is farcical. I say that because any "Preliminary Plan" which requires street profiles, sewer profiles, manholes, and inverts; water line size and location; and drainage calculations for stormwater retention (as your code does) ensures that applicants will arrive at their first official meeting with a plans that have been so expensive to produce, with such great engineering detail, that they will be absolutely (and quite understandably) totally unwilling to make any substantial changes in his layout. (It is almost as if one were bringing a \$75,000 diamond ring on one's first date.)

A proper *Sketch Plan Overlay Sheet* is far more informative and useful than the bare bones "rough sketch" which is optional and simply "encouraged" in Section 201.1 (an entirely inadequate provision that does not even list the data items which must be included so that the Town may begin to understand the proposal). The *Sketch Plan* that I earnestly advocate should be prepared on tracing paper as a very useful "overlay sheet", to the same scale as the ER/SA Map. As mentioned in the "General Memo", this format would enable reviewing officials and staff to see clearly how well (or how poorly) the proposed layout avoids impacting the underlying resources, and what opportunities have been taken (or missed) to actually improve site conditions (such by helping to restore habitats degraded by prior agricultural practices).

I believe that this plan (and other more detailed plans submitted later in the process) should be required to be prepared by either a landscape architect or by a physical planner experienced in applying landscape architecture principles to development design. It is relevant to note that South Kingstown RI regularly hires a landscape architect or planner of its choice, with applicants' fees, to walk the site with the developer, to understand the developer's building program (in terms of house widths, etc.), and to prepare a *Sketch Plan* for the developer, so that the planning process gets off to a positive start. I think this a terrific idea and commend it to you most highly. A site designer with a working knowledge of ecological planning principles would probably be the best choice.

The combined influence of the expanded *Context Map*, the *Existing Resources/Site Analysis Maps*, the *Site Visit* (by the entire Planning Commission and relevant staff), the *Sketch Plan overlay sheet*, and the four-step design approach (described in

Conservation Design for Subdivisions: A Practical Guide to Creating Open Space Networks) would make a significant difference in the way that sites are approached by developers, their engineers, and Town officials, and in the quality of the resulting layout of conservation areas, houselots, and streets.

A number of other procedural items on which I have comments are listed below:

1. At a new non-voluntary *Sketch Plan* stage, I would require applicants to submit an *Existing Resources/Site Analysis Map*, which would identify the locations of the healthiest woodlands and trees larger than a selected diameter (according to species, as suggested in the *General Memo*), laurel and rhododendron stands (if any), significant wildlife habitat (such as vernal pools and their associated upland habitat), historic or cultural features (at least including cemeteries and military earthworks), geologic features, and public viewsheds. Without this information, Town officials cannot make a truly informed decision about whether the *Sketch Plan* layout has been intelligently drawn, or whether it has missed important opportunities to design around certain noteworthy features.

It is quite impossible to judge the quality of a *Sketch Plan* layout without knowing exactly where all of these existing features are located. Since that information must be submitted sooner or later, it only makes sense to have it in hand from the beginning--in fact from the very beginning, even before the *Sketch Plan* is submitted, way back in the process when the Site Visit occurs. As mentioned elsewhere in these memos, further details are also needed, such as the location of large trees by species and size, and even ephemeral but critical features such as vernal pools. Relying on an incomplete data-set, having only part of the information that is needed to render a truly informed decision, the only kind of decision which can be made is an uninformed one.

2. As mentioned above, of the engineering informational pieces necessary at the *Sketch Plan* stage, the most fundamental is detailed soils data from test pits or borings, unless the site is to be sewered. My experience in dealing with soils is that they can often be highly variable over even relatively short distances. For that reason I recommend that a "high intensity soil survey" (as defined by the UDSA NRCS) accurate down to 1/10th of an acre be prepared and submitted from the very beginning (as compared with accuracy down to two acres available from the survey books published by the government). I would definitely retain and upgrade this requirement, and would encourage this critical part of the puzzle to be sorted out as early on in the design process as possible (definitely at the *Sketch Plan* stage), because it really drives so many other project design aspects.

Streets

The following comments are based upon my long standing philosophies, which have evolved over decades of experience working with local governments around the country. As I was not given a copy of the Town's "New Street Criteria" for review, these comments might or not apply specifically to Signal Mountain.

Cul-de-Sacs.

Most codes limit cul-de-sacs to something like 1000 feet in length, regardless of the number of lots served. Regarding maximum length, public safety rationale has historically been based on the fact that cul-de-sacs began to appear in the 1920's, when most subdivisions were still built as infill or extensions to established neighborhoods in or at the edges of older towns, often supplied with public water and fire hydrants. The genesis of the more typical 600-foot maximum length is that this corresponded with the standard length of fire hose that fire engines carried. Seen in that historic context, such a standard loses its rationale when developments are built well away from the fire hydrant service area.

Rather than limiting street length *per se*, I recommend limiting the number of lots cul-de-sacs may serve, because it is the number of residents potentially at risk in the event of an emergency when the single-access street is blocked that is important, not the length of asphalt leading up to their homes.

The national standard advocated by the American Society of Civil Engineers (ASCE) in its excellent volume *Residential Streets* is 25 households, before a second ("emergency") access is required. The idea is that if, for example, 25 households were located along a 1000-foot cul-de-sac, that situation would not be more risky than 25 households living along a 200-foot cul-de-sac (for example).

I highly recommend requiring central planting islands within cul-de-sac turnarounds, according to several basic design standards. First, these should be planted with canopy shade trees, whose graceful spreading branches will, upon maturity, fill the large "celestial space" that lies above these huge turning circles. Second, a growing number of planners are beginning to recommend that cul-de-sac planting islands be designed to perform double-duty as "bio-retention areas" designed to promote groundwater recharge through infiltration trenches, and I concur with them on that important point. A requirement that cul-de-sac turnaround pavements be pitched inward toward the center would be a good start in this direction.

An alternative to standard short cul-de-sacs is the "loop lane" or "close" (graphics appended). Instead of there being a 50-foot wide ROW leading up to a turnaround with a 130' outer-edge diameter, the street would be designed as two parallel lanes 16 feet wide within a 130-foot wide ROW separated by a central bio-retention area or planting strip perhaps 60 feet wide. Such streets or boulevards could be limited in length to 800 or 1000 feet, if desired.

I would also recommend requiring developers to erect signs reading "Temporary Cul-de-sac" whenever a future street connection has been required. This would put all lot purchasers on notice that street connections will ultimately be established, thereby making it harder for them to argue to the Town that they had assumed the cul-de-sac would remain as such forever, when they made the decision to buy their lot or house.

Also, requiring developers to fully pave such extensions right up to their perimeter boundary line (instead of simply reserving space for them on their paper plans) would also be a wise and prudent move.

Finally, regarding maximum length (typically 600-1000 feet), the public safety rationale based on the fact that cul-de-sacs began to appear in the 1920's, when most subdivisions were still built as infill or extensions to established neighborhoods in or at the edges of older towns, often supplied with public water and fire hydrants. The genesis of the 600-foot rule is that this corresponded with the standard length of fire hose that fire engines carried. Seen in that historic context, such a standard loses its rationale when developments are built well away from the fire hydrant service area.

Rather than limiting length *per se*, I recommend limiting the number of lots cul-de-sacs may serve, because it is the number of residents potentially at risk in the event of an emergency when the single-access street is blocked that is important, not the length of asphalt leading up to their homes.

The national standard advocated by the American Society of Civil Engineers (ASCE) in its excellent volume *Residential Streets* is 25 households, before a second ("emergency") access is required. The idea is that if, for example, 25 households were located along a 1500-foot cul-de-sac, that situation would not be more risky than 25 households living along a 2500-foot cul-de-sac (for example).

Pavement Width: In my professional judgment, minimum pavement widths of 18-20 feet are ideal for local (service) streets and 22 feet is fine for collector streets, with sufficient off-street parking in driveways and garages. When densities rise and lot sizes decrease to below 10,000 sq. ft., on-street parking provision becomes a legitimate issue, and the addition of an eight-foot parking lane becomes justifiable.

Reverse Curves: Many codes prohibit reverse curves (without straight tangent sections between them) for local and collector streets, thereby also prohibiting graceful meanderings. On arterial streets with speed limits of 35 mph or more. I would suggest allowing reverse curves when the horizontal radii of the curves are very long and gentle, 350 or more feet in radius.

Roadway Grading and Shoulder Standards Many codes contain a truly counter-productive requirement calling for the clearing of the full width of street rights-of-way (50 and 60 feet for local/service and collectors). In my view, this is an excessive and unnecessary practice ensuring that new streets constructed through wooded areas will resemble airfield landing strips. The origin of such requirements is probably the highway design manual again, when engineers were worried about people travelling at highway speeds crashing their cars into trees growing within the right-of-way. In most rural communities with which I am familiar, the old rural roads running through wooded areas are almost never graded out to the right-of-way lines, and it is likely that residents would complain loudly and most bitterly if that kind of clearing were to be undertaken. With the lower and more reasonable street geometry and design speeds

advocated in this memo, the potential occurrence of serious accidents involving trees is greatly diminished. I would suggest that you insert wording specifically prohibiting the clearing and grading of more land than is essential for the construction of the street and utilities. By clearing fewer trees, the stump dumps required to be located within new subdivisions could be reduced in size, meaning less site disturbance in those locations as well.

Regarding shoulder requirements, I would recommend three feet of sand and gravel sub-base. I also recommend loaming and seeding shoulders, providing a firm base for pulling partway off the road when parking. It is usually not necessary to pull completely off the road unless one is interested in moving vehicles through subdivisions at the greatest possible speed and with the fewest impediments. When vehicles are parked partly on and partly off the road, they tend to slow down the traffic, because when opposing vehicles approach each other in such situations, in which two moving vehicles cannot both pass at the same time, one slows down and lets the other one through. This kind of "traffic-calming" is becoming increasingly recognized as a positive thing, especially in residential neighborhoods with many children and pets.

An excellent example of a new subdivision street where the grading was minimal and roadside trees were preserved can be seen on page 334 of *Rural by Design* (Fig. 20-9b), from Guilford, CT.

Curbs and Stormwater. In a rural community with low-density development, my view is that curbing is quite unnecessary (also counterproductive). However, in sewered areas with lot sizes that might well be in the range of 8,000 to 13,000 sq. ft. (if conservation design and 40% usable open space is adopted, as recommended in these memos), curbs could well be justified. Conservation planners such as me generally favor open swales rather than curb-and-gutter, except in situations where lots are in the village/hamlet size range (as stated above). Besides imparting a needlessly urban aspect to residential streets, curbs in rural subdivisions channel all stormwater into pipes and detention basins, rather than allowing part of the stormwater to infiltrate into the ground as it flows along grassy swales. Such infiltration could be increased through the construction of so-called "rain gardens" to intercept stormwater runoff at various points along the street (say for every 4-6 lots), which are designed to serve as infiltration areas landscaped with moisture-tolerant trees and flowers. Another effective stormwater management technique is to require that downspouts be connected to "French drains" located in yards.

I would suggest that aquifer replenishment is another worthy reason why the Town should take a strongly affirmative stance encouraging creative alternatives to typical "bomb crater" detention basins providing virtually no infiltration, and which are often ugly to look at and more difficult and expensive to maintain, compared with newer, smarter approaches suggested in this memo.

If some form of curbing is unavoidable, may I suggest the technique called the "thickened edge" (illustrated in *Rural by Design*, Fig. ____). My local public works

department recently repaved my street in this manner, and it is highly effective in containing the stormwater. It is far less expensive than standard curbing, and is visually much less intrusive, and important consideration in rural areas.

Stormwater standards should apply to both the rate and to the total volume of runoff. I have read Article 11 and am not sure if it requires post-development runoff volume to be no greater than pre-development runoff volume. Certainly runoff rate is regulated, but possibly not volume. A simple clear declarative sentence, without technical jargon (such as "hydrologic response") would help readers understand this section better, in this regard.

Controlling only the runoff rate prevents downstream flooding, streambank erosion, and sedimentation resulting from that erosion, which are all commendable goals. These are necessary objectives; however, they alone are not sufficient. These good regulations could be made even better by mentioning a few of the ways to achieve on-site infiltration and aquifer recharge, a practice which helps to attain the ideal goal of zero increase in runoff volume. Fortunately, conservation design offers many opportunities to disperse stormwater over much broader areas, so that deep engineered structures with steep sides and spillways are not needed in most situations. Even more important than the aesthetic advantage is the groundwater recharge benefit that such infiltration focused stormwater design brings.

The design flexibility in the *Growing Greener* system permits extensive areas to be utilized for on-site infiltration, such as in conservation meadows or through infiltration trenches carefully located to snake between the larger trees in a woodland setting. If your engineering advisors are not yet familiar with the concept of "rain gardens" and bio-retention areas, I recommend that you obtain descriptive materials for them from the Center for Watershed Protection, in Ellicott City, MD (www.cwp.org). Written by nationally-known environmental engineers who conduct workshops on this topic around the country, the booklets they publish contain a wealth of relevant and helpful information.

Sidewalks. Another important concern involves sidewalks. Section 301.C appears to require them everywhere (except in very low-density situations, with lots of three acres or larger). I absolutely favor sidewalks, but feel they are not necessarily essential on both sides of every local access street and cul-de-sac, particularly if an extensive, well-connected off-street trail system is also being provided. Usually the situation is reversed, and sidewalks are not required in as many places as they should be provided. Many times the rule book takes an extremely myopic view, requiring sidewalks only under certain circumstances, such as within the vicinity of schools, shops, and playgrounds, as if schoolchildren were the only residents possessing working legs (and as if people shopped on foot anymore). Few pupils nowadays live anywhere near the schools they attend, and even if they lived near schools they would probably be driven to the bus-stop and bussed to school. In my experience, village residents tend to drive whenever they can, because no one wishes to lug heavy grocery bags back home, as a pedestrian.

This is to say there are far, far more important reasons to require sidewalks other than to favor walking schoolchildren or pedestrian shoppers. I believe that sidewalks are important for all residents. Numerous surveys have revealed the No. 1 recreational pastime of Americans is walking. Sidewalks provide basic separation between motor vehicles and pedestrians (children walking to/from the school bus, parents pushing baby carriages, couples out for an evening stroll around the neighborhood, etc.), not to mention joggers. In rural situations, sidewalks may take the form of curving asphalt surfaced footpaths, if desired. My earnest recommendation is therefore that sidewalks be required with a grassy "tree-lawn" separating them from the street pavement in nearly every instance. Sidewalks constructed adjacent to curbs are extremely ugly and provide little psychological or actual protection to pedestrians.

Street Trees. Shade tree planting is arguably the single most important design standard, in terms of ultimate appearance. I might have missed them, but I did not see any such standards in your ordinance, except for Conservation Design (Zoning Section 616)... Some communities exempt tree planning requirements when the street is on a wooded parcel. Allowing existing trees along subdivision streets to substitute for new shade tree planting is extremely short-sighted, in my view. Even with the reduced clearing and grading standards I recommend, planting shade trees within the denuded street rights-of-way in new subdivisions will be essential if you hope the new neighborhoods in The will ultimately acquire a stately appearance in years to come. Therefore the presence of many trees on a thickly wooded site should never be taken as demonstrating no need for proper shade tree planting along new streets. When swaths are cleared through existing woodlands in preparation for street grading and construction, the trees remaining along the edges tend to be tall and spindly, having grown up in a forested situation with sunlight coming only from above. For that reason, such trees are not round and full in shape, and will not become so for many years (if ever) after being exposed to daylight as a result of the road clearing. These existing trees along the roadside edges are therefore no substitute for new canopy shade tree plantings.

Your code should also provide detailed guidance as to the appropriate species to be planted. Based on many years experience, I favor spacing shade trees at 30-50 feet. My very strong recommendation is that canopy shade trees are one of the most important improvements any community can require of developers. They should be deciduous varieties of hardy species capable of attaining a mature height of at least 60 feet (not flowering ornamentals, which are more suited to courtyard situations and areas of lawn decoration), they should be planted with a minimum dbh of 2-1/2", at intervals of about 40 feet on both sides of each street, in "treelawns" at least five feet wide located between the sidewalk and the curb or edge of pavement.

Utilities can and should be located either within the roadway or in a special utility easement located beyond the sidewalk. Such standards will ensure that residential streets created in The will be leafy and shady in future years. Maintenance requirements are also very important, with replacement assured within 18 months after

planting, through a performance guarantee (such as a bond). I feel that shade trees are the single most important aspect of subdivision design, second only to open space preservation

The perceived threat that tree roots might possibly crack and lift sidewalks or rupture footpaths after decades of growth can be greatly diminished-- if not altogether eliminated -- by new techniques devised by urban foresters. One approach involves the developer installing vertical barriers 12 inches deep along the inside edge of sidewalks, to deflect root growth down deep under the sidewalk. The second approach requires that developers install a special "structural soil mix" developed at Cornell University, consisting of large stones with sizable gaps or spaces between them through which the roots would grow. For further details, see:

<http://www.hort.cornell.edu/departments/faculty/bassuk/uh/ssoils/index.htm>

Recommended species are listed in Section 702.B.3 of the model *Growing Greener* subdivision ordinance, and specifically exclude invasive exotics such as Norway maple and structurally weak trees such as silver maple and Bradford Callery pear (which is unsuitable due to structural weakness causing massive limb failure in ice storms and wet snow conditions). I also exclude the Gingko, which is a non-native tree that looks very out-of-place in the traditional New England landscape, with an ungainly shape for many years until it attains a height of 40 or 50 feet, at which time it begins to fill out and look a bit more like a North American tree, rather than an Asian variety dating from prehistoric times (which is in fact the case). The reason to specifically exclude Norway maple is that it invades adjacent woodlands, rapidly proliferating and outcompeting native species, so that ultimately it completely dominates the area, shading out saplings of other tree species, as well as shading out native shrubs and wildflowers.

With respect to standards for protecting existing trees during construction, any filling, re-grading, or movement of heavy equipment should be prohibited anywhere within one foot of the outer edge of the canopy "drip zone". Such a standard might help encourage applicants to utilize the flexible conservation design options which give their site designers increased maneuverability to avoid impacting significant trees that should really be saved. The best way to save trees is to give them a wide berth when laying out streets, sidewalks, houses, driveways, and garages. Such care in site planning is far better than constructing tree wells.

Shared Driveways and "Country Lanes". I typically recommend allowing shared driveways for up to three or four homes, and private "country lanes" for up to six or eight homes. Shared drives can be 12 feet wide, and country lanes 15 feet, in rural situations. Standards should also be stated with regard to important considerations such as the depth and type of base and sub-base material, the wearing course, crowning, drainage, maximum gradient, and minimum horizontal curvature (to permit long fire engines to negotiate sharp turns, e.g.). Such standards exist in the *Growing Greener* model codes. A graphic showing how shared drives can vastly improve a situation where a handful of house lots is created from a small roadside farm is shown in Fig. 12-5 on page 206 of *Rural by Design*.

Alleys. Many times communities adopt alley standards that are nearly street-like, mandating 16 feet of pavement width. I suggest 12 feet, or perhaps 10 if one-way. Wide pavement requirements (16 ft.) encourage these back lanes to be used for parking, while narrower ones do not invite that. I consider alleys (or back lanes) to be essentially a form of common driveways, and they could be regulated as such, without maintenance by the Town. Of course, alleys should also be planted with shade trees in the same way that streets are, if these back lanes are to become shady, inviting places instead of remaining boring, treeless strips of asphalt.

"Single-loaded" Street Design. As a way of improving the appearance and functionality of neighborhood design, I have long advocated the use of "single-loaded" streets as part of the overall circulation network. (This term refers to street segments bounded by houselots on one side only, the other side being abutted by open space. In less rigid layouts, neighborhood greens bordered by such streets could be introduced into new developments without increasing overall street length and cost by the simple technique of shaving a bit off the width of the proposed lots. In other words, the same street length can easily be designed to accommodate the same number of homes with added greenspace along some of the alignment if each of the lots is reduced in width by 10, 15, or more feet. I have done this on numerous occasions, to transform standard conventional plans into more interesting layout. For those with access to the book *Conservation Design for Subdivisions* (Island Press, 1996), all of the seven examples I designed contain significant lengths of single-loaded streets, with total street length at least somewhat shorter than the double-loaded streets serving fatter lots. In the 18-page *Growing Greener* booklet, Figures 4, 7, 8, 11, 12, and 19 illustrate the same point.

Lots Backing Up to Public Streets. Many ordinances prohibit "double-frontage" lots but do allow them in situations where they would back up to arterials and to collector streets. I recommend discouraging or prohibiting this form of lotting, and favor such restrictions, particularly in open field situations. I also recommend not allowing a certain kind of exception that is commonly granted by some municipalities, which is to permit this kind of lot layout when the second street is a state highway. Sometimes this exception is dealt with (unsatisfactorily) by requiring buffer strips to be planted along the back lot lines, in open field situations. However, a superior design approach would be to lay out the development so homes would face forward toward the existing public road system, with access via a "parallel access street", keeping backyards more private and the view from the existing road system more attractive (housefronts are always more nicely designed than "housebacks", with their sliding glass doors and pressure-treated decks). Please see Fig. 5-13 in *Growing Greener* to see how a "fanny-first" layout in an open field situation was redesigned to be much more attractive for both residents and passersby through the use of parallel access street concept, with a conservation meadow located between the existing road and the new access street. In such layouts, the depth of the "foreground meadow" could be reduced from 500 feet (cited above) to 300 feet. (In totally wooded situations, a no-cut buffer at least

150 feet deep should be required along back lot lines that face toward existing public roads or highways, to buffer the viewsheds from these thoroughfares.)

Interior Lots (or "Flag Lots"). The absolute prohibition of "flag lots" in Section 304.2 is an example of overkill, in my professional judgment. Certainly this form of lot design has been abused in the past. However, it remains a most useful tool when designing conservation subdivisions. Due to past abuses of the flag-lot design approach, many communities have taken the easy step of banishing this form of lot configuration, not even allowing them in special situations where they would make great sense, such as at the ends of cul-de-sacs or along tight road bends. As a site designer I can tell you how valuable this aspect of design flexibility is when laying out conservation subdivisions minimizing the impact on natural and historic resources. The flag lot concept can be overdone unless it is carefully controlled. In my book *Conservation Design for Subdivisions* there are flag lot locations at the ends of cul-de-sacs appear in numerous cases (pp, 68, 88, 94, and 110). In the 18-page *Growing Greener* summary booklet, flag lots may be seen in Figures 7, 8, 11, and 12. I cannot see any problem with that kind of spatial arrangement, and as it reduces overall street length it would seem to be desirable to encourage rather than prohibit.

On-Lot Septic and Wells. It is unclear to me whether the Town (or County) requires that septic system drainage fields be located within the lots they serve, or whether they may be located under the common open space. It is reasonable to expect that each lot must have an approved soil suitability determination from state agencies, but that leaves open the question of whether the actual site of that "determination" must be located within the confines of each lot or whether it may be located within the common open space in a place convenient to the lots whose systems would be situated there.

Whether individual wells and septic systems must be located on-lot or whether they may be located off-lot has enormous implications for the ability of site designers to produce high-quality conservation layouts in your community. I favor the latter approach, and would clarify that wording to specifically state that individual wells and drain fields may be so situated. In Pennsylvania, where I have worked for nine years, both Chester Town and the state DEP permit individual septic systems situated within common open space in cluster layouts, and if this not yet the case in The, I would encourage you to allow such arrangements to encourage smaller lots and higher percentages of conservation land. I would also explicitly allow individual wells to be located within the common open space too, in areas specifically reserved for them on the *Final Plan*. This would enable such individual utility systems to be located under "conservation meadows", playingfields, or village green-type areas that could also serve as an invaluable buffer area between suburban back yards and working farmland next door. This very important concept is more fully explained (and illustrated) on pages 47-48 of *Growing Greener*. It is also depicted in Figures 8 and 20 in the 18-page *Growing Greener* summary booklet.

ZONING ORDINANCE

Overall. The most critical deficiency of the Zoning Ordinance, in my view, is that it does not appear to allow flexible lot sizes (essentially precluding conservation design) as a by-right Permitted Use, and that submission standards and review criteria for Planned Unit Developments (PUDs) are wholly inadequate in terms of data requirements and design standards for open space. This deficiency is related to a continuing reliance on conventional platting techniques that are actually inconsistent and at odds with the kinds of policies, goals, and objectives for open space and natural resources protection that are the foundation of Comprehensive Plans in most other communities.

(Note: I have also read the more recent zoning amendments which were adopted in 2004 and later rescinded. The chief difference between the older and the newer versions, as I perceive the situation, is that the more recent one increased the legal building density -- in sewerred locations -- from about two du/ gross acre for "Conservation Design" developments in the older version (Section 616.C), to about four du/gross acre for "open space subdivisions" in the newer version. However, as the older (and once again current) version originally allowed and now continues to allow sewerred PUDs at four du/gross acre (in Section 613.07.01), the density standard would seem to be four du/gross acre in either case. As an outside observer, I do not feel it is my place to recommend any particular density to people living in other communities. However, the way that density is applied and put on the ground is a central concern of mine professionally, and forms the basis for many of the comments in the ensuing section of this memo.)

Purposes. Of all the zoning ordinances I have reviewed over the years, I cannot recall ever reading a Purposes section such as the one in yours (102), where there is absolutely no mention whatsoever of the desire to protect scenic character, environmental resources, historical or cultural features, or even to promote the creation of attractive neighborhoods and ensure harmonious development.

Below is a list of a dozen purposes taken from the section of my model Zoning, illustrating just how many concepts could be incorporated into Signal Mountain's zoning, if this were the community's desire.

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1. To conserve open land, including those areas containing unique and sensitive natural features such as woodlands, steep slopes, streams, floodplains and wetlands, by setting them aside from development;
 2. To provide greater design flexibility and efficiency in the siting of services and infrastructure, including the opportunity to reduce length of roads, utility runs, and the amount of paving required for residential development;
 3. To reduce erosion and sedimentation by the retention of existing vegetation, and the minimization of development on steep slopes;
 4. To provide for a diversity of lot sizes, building densities, and housing choices to accommodate a variety of age and income groups, and residential preferences, so that the community's population diversity may be maintained;
 5. To implement adopted municipal policies to conserve a variety of irreplaceable and environmentally sensitive resource lands as set forth in the municipality's *Open Space Plan*, including provisions for reasonable incentives to create a greenway system for the benefit of present and future residents;
 6. To implement adopted land use, transportation, and community policies, as identified in the municipality's Comprehensive plan;
 7. To protect areas of the municipality with productive agricultural soils for continued or future agricultural use, by conserving blocks of land large enough to allow for efficient farm operations;

8. To create neighborhoods with direct visual access to open land, with amenities in the form of neighborhood open space, and with a strong neighborhood identity;
9. To provide for the conservation and maintenance of open land within the municipality to achieve the above-mentioned goals and for active or passive recreational use by residents;
10. To provide multiple options for landowners in order to minimize impacts on environmental resources (sensitive lands such as wetlands, floodplain, and steep slopes) and disturbance of natural or cultural features (such as mature woodlands, hedgerows and tree lines, critical wildlife habitats, historic buildings, and fieldstone walls);
11. To provide standards reflecting the varying circumstances and interests of individual landowners, and the individual characteristics of their properties; and
12. To conserve scenic views and elements of the municipality's rural character, and to minimize perceived density, by minimizing views of new development from existing roads.

Minimum Lot Sizes: Signal Mountain, like many other municipalities, commits the fundamental error of regulating density through the indirect method of setting minimum lot sizes. This counter-productive approach unintentionally robs the community of the very resource lands that give it its special rural character. Instead, I have long advocated regulating density directly, by stating that no more than one house may be built per X amount of buildable land on any given property. And I then address the open space conservation issue by setting a maximum lot size (or an average maximum lot size) -- smaller than the current minimum lot size -- in order to be able to set aside land during the development design process, while still attaining the normal building density. When regulating density directly in this way (rather than indirectly via minimum lot size), the issue of minimum lot size becomes far less important. In fact, the smaller the lots become, the greater the open space becomes, as density is established by tables stating the overall land requirements per dwelling unit.

By-Right Designation: One can hardly overstate the importance of classifying Conservation Subdivisions as by-right Permitted Uses, and also classifying conventional developments as Special Permit uses, or Conditional Uses.

Many local ordinances which allow flexible design approaches unwittingly sandbag them by classifying them as Special Permit uses or as Conditional Uses. When your Zoning is again updated, these issues will come to the forefront of discussion. Although your dysfunctional PUDs require Special Exceptions (in Section 603.04), conservation design (in Section 616) apparently does not. The next logical step would be to abolish or reform PUDS and to re-classify conventional development as Special Exceptions (or CUs).

Classifying flexible developments as requiring Conditional Uses or Special Exception permits typically produces a chilling effect upon many applicants, frequently discouraging them from opting for the flexible design approach that municipalities actually want to encourage. I have found that local governments can control as much, if not more, with detailed standards in the subdivision ordinance as they can with the Conditional Use process.

Conservation Design subdivisions with lots smaller than those typical in conventional developments can be made to "perform" well through a set of detailed and strict "performance standards" relating to the quantity, quality, and configuration of the protected open space. Extra measures of protection for the Town, such as those guiding the design process (the "four-step" method, plus the detailed "Resource Conservation and Greenway Delineation Standards", both contained in my model subdivision ordinance -- Sections 402.C.3 and 603) should give officials a greater feeling of security that this new approach will produce superior results. These recommended standards are more comprehensive than those contained in your current ordinance.

Minimum Tract Size and Requiring Clustering. The common zoning requirement that conservation subdivisions occur on tracts of at least 20 acres effectively ensures that many parcels will be denied the advantages of flexible site design. This is a pitfall that Signal Mountain has avoided, with its 10-acre minimum. Small minimum tract sizes such as that are a healthy attribute (in my view), as conservation subdivisions can sometimes serve very beneficial purposes on surprisingly small parcels. For example, in Lower Merion Twp., (Montgomery Town, PA), the Board of Commissioners ten years ago decided to mandate this design approach and to apply it to every parcel containing five or more acres. They recognized that even parcels at the lower end of the size spectrum could contribute a greenway link (such as along a stream valley), providing connections between open spaces on each side. Even if only two acres of flat dry ground were to be conserved on a four-acre tract, that would be plenty to serve as neighborhood green (or informal playing field), significantly enhancing the quality of life for nearby residents. In more rural districts, clustering can be extremely important as an implementation tool in a potential Scenic Overlay District and other potential overlay districts pertaining to riparian areas, groundwater recharge, constrained soils or steep slopes. In a Scenic Overlay District, for example, significant open space can be required to be located within the public viewshed. For that reason, Newcastle Town, DE, ten years ago mandated clustering in the Red Clay Valley, a particularly scenic part of the Brandywine Hundred (as described in *Rural by Design*, pp. 193-96).

Determining Density. In the model conservation zoning provisions I have developed over the past two decades, I recommend that applicants be given two alternative methods for determining density. I have always favored offering applicants the choice between a purely mathematical approach (in which certain types of constrained lands are deducted) and a map-based approach called the "Yield Plan". I actually favor the latter for its simplicity and directness (as contrasted with sometimes controversial ways of calculating actual buildable land and basing density on that net acreage only). "Yield Plans" demonstrate the maximum number of units that could be built in a prudent and responsible configuration, conforming to the standard dimensional criteria. They must, of course, be realistic, without make-believe lots that would be unbuildable in the real world due to site constraints. In other words, "Yield Plans" must pass the "straightface" test. (This is explained on page 43 of *Growing Greener*.)

There is a need in my judgment, for the Town to be specific as to how such "Yield Plans" must be prepared. In unsewered areas, for example, applicants would be required to submit deep-hole test pits to demonstrate septic suitability on a 10% sample of lots selected by the Town (the most dubious lots, based on soils map data, the elevation of the land within the property, vegetation patterns, etc.). If any of the sample lots fail, the Yield number is reduced and the applicant waits four weeks to submit a second 10% sample. This process continues until all the lots in a given sample pass the test for septic suitability. Developers who recognize the time value of money will not horse around with fictitious lots and will be forthcoming with a realistic Yield Plan. (Model ordinance language describing "Yield Plans" in greater detail can be found in the *Growing Greener* book -- and on the CD-ROM of the same name).

Calculating Open Space Areas Perhaps I missed it, but I did not see any specific minimum percentage of open space for PUDs (one very big reason I consider them to be dysfunctional), except that open space shall be provided to some unspecified degree, and that it must not be either unbuildable or inaccessible (!). For this and many other reasons, I strongly suggest that the PUD section of your ordinance be given a speedy and decent burial, to be superseded entirely by the Conservation Design approach, which at least possesses some explicit -- if minimal -- open space requirements. (Another reason for dispatching the PUD regs: the underlying zoning density of two du/acre is inexplicably more than doubled to four du/acre, based on gross tract area, which often includes completely unbuildable land, quietly conferring a sometimes very large and not-so-obvious density bonus to developers who have bought difficult parcels containing much unbuildable land.)

In the Conservation Design Overlay District, the 25% open space requirement is flawed in two ways. First, it does not reflect the potential for easily preserving 40% of buildable land as open space (simply by reducing lot sizes proportionately). Second, it appears to contain absolutely minimal standards for ensuring the quality of the resulting open space, allowing the conservation land to be almost entirely wet or steep -- inherently unbuildable and practically unusable except by bullfrogs and mountain goats. (Only 2% of the 25% open space must be relatively flat and usable for active recreation, amounting to a mere 0.5% of the total tract area.) I address this issue in my model regulations by specifying that the minimum required open space must be in addition to wetlands and steep slopes. It cannot be said too many times that this kind of approach does not represent a "taking", because the open space typically remains in private hands, and because the applicant's overall building density remains completely undisturbed.

In a district where two du/acre is the norm, lots that would ordinarily run about 22,000 sq. ft. in area could be resized to about 13,000 to achieve 40% open space. In districts where (for example) three du/ac might be the goal, normalized lots of about 13,000 sq. ft. could be redrawn to be about 8,000 sq. ft. Elegant ways to design such neighborhoods would ideally blend conservation design with the principles of "New Urbanism", as described and extensively illustrated in my fifth book, *Crossroads, Hamlet, Village, Town: Traditional Neighborhoods Old and New*

(Again, I should re-iterate my standard position of neither endorsing nor criticizing any particular locally-adopted density level. I leave that up to local residents to decide, although I feel professionally obliged to comment constructively on the way that this density is actually arranged on the land. In my experience, it is often possible to arrange greater density so that substantially more open space and conservation land is protected with smaller lots than would be the case with larger lots and lower overall density. If there is a sound public purpose for supporting greater density in any given area, then I feel that area should be zoned in such a manner that unfragmented, usable land is set aside for conservation purposes. And I usually turn to the principles of the "New Urbanism" to achieve that result, even in rural areas -- where the hamlet or village model becomes very relevant.)

If a simple Yield Plan were required of applicants-- to demonstrate how many regular-sized lots could actually be created on their property (given its physical constraints)-- that same number of lots could still be created with 40% of the unconstrained land being preserved as open space, in addition to the unbuildable land where the Yield Plan would of course show no development. That is because the resizing of the lots could create the potential for 40% of the buildable land area to be preserved as value enhancing neighborhood greens, squares, parks, ballfields, and greenways.

Permanent Protection of Open Space: I suggest requiring conservation easements rather than just covenants or deed restrictions. These easements would typically be held by conservation groups such as land trusts, Conservation Commissions, and Soil & Water Conservation Districts. Designating multiple holders of such easements is also a wise idea, to ensure protection if one organization wavers in its commitment. I saw permissive wording in Section 616 allowing easements to be created, but I did not see any language requiring them. If this is indeed missing, it is a significant omission in the ordinance.

Open Space Ownership Options: Regarding ownership options, in addition to HOAs, I recommend land trusts and public bodies as designated holders of the open space as well as "non-common" open space owners such as wholesale nurserymen, operators of equestrian facilities, operators of Community-Support Agricultural operations, etc.

The concept of non-common ownership is an idea I have been advocating for years. In southeastern PA, I know of conservation subdivision open space having been sold to individuals who use it for specific purposes, such as wholesale nurseries, orchards, and equestrian facilities. I have examples of all of the above in my slide collection, and frequently include them in my presentations. Another non-common ownership is the "conservancy lot", typically at least 10 or more acres in size, which would support a principal dwelling, perhaps a barn or stable, and also an accessory dwelling unit (such as a caretaker's cottage, which could also be rented out as a granny flat). The uses allowed on non-common open space must be strictly limited and regulated, and they should be subject to the same kinds of permanent easements and Management Plans as any other kinds of open space.

Non-common ownership not only relieves HOAs of acreage they would otherwise have to maintain, but also provides developers with an additional bonus for doing the right thing and opting for conservation design.

HOAs work well with mandatory or automatic membership (which is required in 616) and would function even more effectively if the Town were to require that their bylaws be drafted to specifically state that the HOA possesses legal authority to place lien on the property of any member who fails to pay his dues, after being issued three notices. Quite frankly, few people enjoy being known as deadbeats, cheapskates, or free-loaders among their own neighbors, but sometimes a cantankerous old curmudgeon might decide to withhold dues payment for some reason. Not to worry, as he cannot sell his property without paying all back dues, with full interest, to the HOA. Another word on HOA's: I believe they should regulate only the common open space, not the land within houselots (as does the HOA where my brother lives, in Sonoma, CA). Individuals' houselots should be their own domain, in my judgment, and regulating what people do on their own lots simply invites internal strife. I recommend that HOAs authority be limited to common lands such as village greens, playing fields, trails, etc, plus the woodland conservation areas and any farmland that might be leased out to local farmers.

Perimeter Buffers. I believe that conservation subdivisions should be subject to the same buffering requirements as pertain to conventional large-lot subdivisions. In other words, no special setbacks should be required, other than the standard ones for homes on standard-sized lots. If buildings on the normal half-acre lots are required to be set back by a certain distance in a particular rural district, that would also be the appropriate building setback for use in conservation subdivisions. For multi-family housing, which constitutes a different house type, an exception could be made in terms of size and bulk, often with different parking provisions. The common 100-foot landscaped buffer requirement found in many cluster ordinances might be appropriate if the land use were a quarry, sandpit, junkyard, or mobile home park. But it is counterproductive for conservation subdivisions. On a 36-acre tract, for example, such a requirement could consume fully 44% of the total acreage, not a sensible way to distribute the limited open space. Conservation lands should be designated according to other criteria other than buffering new single family dwellings from pre-existing single-family dwellings.

Streamside Buffers. The 30-foot naturally vegetated streamside buffers required in Section 616.F.c could easily be increased to a more standard 75-foot no-cut buffer by implementing the recommended re-sizing of lots and consequent increase in the percentage of open space able to be conserved. Similarly, the 50-foot streamside buffer in steep-slope situations could just as easily be increased to 100 feet, applying the same design techniques.

Lot Size Reduction Potential The best conservation design regulations do not set any minimum lot sizes or frontage requirements, which I believe is very progressive, as density is strictly capped in other more direct ways, as it properly should be.

The most progressive code provisions I have seen, such as contained in parts of the Lower Merion (PA) zoning ordinance, essentially dismiss the notion of minimum lot size and concentrate instead on the really important elements: the maximum number of dwellings permitted, the minimum percentage of quality open space required, and minimum separations between buildings. A basic tenet of conservation planning under *Growing Greener* is that lot size minima are almost irrelevant, as overall density and minimum open space are both established in another way. In fact, the smaller the lot, the more open space there is. In Lower Merion, where similar ordinances have been in effect for about ten years, the absence of lot size minima has not led to abuses in that direction. Developers there have routinely produced the largest lot they can under that community's ordinance while still meeting the basic 50-60% open space minimum standard. In conservation design, the *maximum* lot size is the critical element, as it really defines the minimum open space that must be conserved. I would be pleased to discuss with you how the idea of "maximum lot sizes" for conservation subdivisions could help the Town achieve a greener future, with interconnected networks of open space permanently protected for future generations to enjoy.

A New Look at Density Incentives One central question hovering over the subject of using conservation design to protect significant parts of one's Town concerns how to ensure that developers will utilize the preferred approach, and not continue to stamp out the familiar pattern of "wall-to-wall" houselots. Most of the older cluster ordinances on the books today include density bonuses as a "carrot" to entice developers to select this option. However, my experience is that density incentives (when unaccompanied by density *disincentives*) typically need to be rather huge, in order to persuade many developers to do anything different from the standard cookie-cutter in situations where they can easily continue to build these land-consumptive layouts at full density, by-right.

As you probably already realize, large incentives often set up a certain negative community dynamic inadvertently, wherein local residents (often abutters) vent their displeasure at having to put up with a significantly higher number of people living nearby, not to mention more schoolchildren to educate, and more traffic to congest the roadways. Rather than face such opposition, most developers usually opt for the simple and relatively hassle-free route, with standard full density in standard lots and no open space.

For many years I have advocated *reversing this dynamic*, so that developers must "earn" their basic full standard density through conservation design with significant open space. Under this approach, there is no density bonus for the standard conservation subdivision with the percentages recommended above for the unconstrained land designated as open space. That kind of development becomes the basic standard, and is the only way for developers to achieve full density. Those who

wish to continue with cookie-cutter designs covering the entire development tract with houselots and streets may do so, but only at a substantially lower overall density, such as one-half or one-third the normal lot yield. Or they decide to work in other municipalities with lower standards instead.

However, if such density disincentives are not politically feasible in Signal Mountain, the community could effect much the same result by classifying Conservation Design as a by-right Permitted Use, and re-classifying conventional land-hog development as a Conditional Use which is structured so as to be extremely difficult to attain, as described above.

Density Bonuses for Special Public Interest Goals I would also recommend considering density bonuses to encourage the public dedication of conservation land, or at least public access to parts of the conservation land (e.g., existing trails and also new trails, such as along streamside greenway corridors). Additional density bonuses to provide endowments for land trusts which may eventually own and manage the open space are also advisable, as described on pages 48-49 of *Growing Greener*. A third kind of density bonus could encourage age-restricted housing, which represents a positive cash-flow for the Town because it generates no schoolchildren requiring costly education, and which provides opportunities for older residents (including empty nesters as well as retirees) to remain living in Town.

Requiring Conservation Design in Certain Situations As noted above, the Town might consider *requiring* conservation design (instead of conventional plats) in situations where parcels are proposed for development along the Town's pre-determined *Map of Potential Conservation Lands*, to ensure that possible future greenway connection opportunities are not lost. Other areas where conservation design could be required are on properties abutting scenic roads, public parks, Town or state forests, conservancy lands, working farms, etc., as well as in groundwater recharge or aquifer protection districts. This approach would ensure that the interconnected network of open space would become a reality, and not simply be another good idea which is seldom implemented.

Glossary

Active Park

A park designed for active recreation. Active recreation typically requires intensive development and often involves cooperative or team activity, including playgrounds and playing fields.

Activity Center

A concentration of mixed-use or multi-use areas containing commercial, office, civic and institutional uses, parks and open space, and medium to high-density residential dwellings arranged in a compact, pedestrian friendly environment.

ADT

Average Daily Traffic. An average count of the number of vehicles passing a specific point during a 24- hour period.

Arterial, Major

A major thoroughfare characterized by high vehicular capacity and continuity of movement used primarily for through traffic rather than for access to abutting land.

Arterial, Minor

In rural areas, roads linking cities and larger towns. In urban areas, roads distributing trips to small geographic areas without penetrating identifiable neighborhoods.

CARTA

Chattanooga Area Regional Transportation Authority

Character

Specific features or traits of a community or region developed over time that distinguish it from adjacent development.

Cluster Development

A development design technique that concentrates buildings on a part of the site to allow the remaining land to be used for recreation, common open space, or preservation of environmentally sensitive areas.

The open space may be owned by either a private or public entity.

Collector, Minor

In rural areas, routes that serve intra-county uses rather than statewide travel. In urban areas, streets that provide direct access to neighborhoods and arterials.

Condominium

A structure that is connected to at least one other structure with a firewall on a single lot, but also shares common land with the other lots in the structure. The common land is to be communal and must be owned in common by all the owners of the individual units in the structure. The owner owns interior of his or her unit in the structure.

Conditional Zoning

A type of zoning ordinance that allows additional stipulations on the type(s) and manner of uses that may occur on a particular property. These conditions apply in addition to any requirements stated by the standard zoning ordinance.

Covenants

Rules set forth in a private agreement with the land owners or potential land owners which is to be stated and recorded in the deed. This is a way regulate a development with emphasis on physical and economic integrity. Covenants are to be enforced by the land owners and are not enforced city or other public agencies.

Crossroads Development

An emerging growth center, usually located at the intersection of arterial and/or collector streets. These centers include small-scale, neighborhood-oriented establishments.

Deed Restriction

A limitation on the use of a lot or parcel of land that is set forth in the deed and recorded with the county register of deeds. It is binding on subsequent owners.

Dwelling Unit

Any building or portion thereof that contains sleeping, cooking, and sanitary facilities for one household. This definition specifically excludes hotels, motels, and other similar short-term lodging types.

Dwellings, Attached Units- Attached units are attached on one or more sides by a wall, and situated on the same parcel of land with the exception of a townhouse.

Dwelling, two-family (duplex)

An attached structure that contains two units separated by a firewall situated on a single lot.

Dwelling, three-family (triplex)

An attached structure contains three units separated by a firewall on the adjoining walls with the said structure being situated on a single lot.

Dwelling, four-family (quadplex)

An attached structure contains four units separated by a firewall on the adjoining walls with the said structure being situated on a single lot.

Dwelling, multi-family (apartments)

A single room or suite of rooms with restroom accommodations located in a single structure devoted primarily for one family per unit use. This building will contain no less than two units and a reasonable number of units being the maximum for the character of the surrounding area. Apartments are typically seen as multi-family buildings.

Townhouse

Buildings that can be different stories in height with at least one side being connected to another structure and open space in the front and rear of the units to provide for light, air, and access. Townhouses typically have the main entrance on the ground level. The owner owns lot, interior and exterior of structure.

Townhouses and other attached dwellings should generally be located in or near transitional areas or areas that are more urban in character. Transitional areas are typically located between business districts and residential districts and act as a buffer between uses of different density, intensity or compatibility. Urban character areas are generally characterized by moderate and higher residential density in or near commercial development and business centers.

Dwellings, Detached Units

Detached units consist of one unit that is not attached to any other units excluding accessory units (i.e. sheds or garages) and is situated on the same lot.

Dwelling, Single-family detached

A single house that is situated on one lot with one family living on the premises. Patio homes are single family dwellings that are permitted to have a zero lot line, and they may or may not be attached to other patio homes. A zero lot line means that one side of the structure may be placed on the lot line with no setback. A double wide manufactured home and a modular home are considered a single family unit by Tennessee state law.

Easement

A legal interest in land, granted by the owner to another person or entity which allows the use of all or a

portion of such land for a specific use such access or placement of utility lines.

Flood Zone, 100-year

The low land near a watercourse which has been, or may be covered by water of a flood of 100-year frequency. It also means a flood of this magnitude has a one percent chance of occurring in any given year.

Goal

The end state of affairs that a plan intends to achieve and/or maintain

Greenway

A linear park, or open space conservation area acquired and maintained by a municipality providing passive recreational opportunities, pedestrian and / or bicycle paths.

Gross Density

The numerical value obtained by dividing the total number of dwellings in a development by the gross area of the tract of land in acres.

Historic District

The Register is part of a nationwide program to support public and private efforts to identify and protect historic and archaeological resources.

Impervious Surface - A hard surface area that either prevents or retards the entry of water into the soil mantle or causes water to run off the surface in greater quantities or at an increased rate of flow. Common impervious surfaces include, but are not limited to, rooftops, walkways, patios, driveways, parking lots, storage areas, concrete or asphalt paving, and gravel roads.

Incentive Zoning

The granting of additional development capacity in exchange for providing a public benefit or amenity such as preservation of greater than the minimum required open space.

Intensity

The degree to which land is utilized or the density of the development as determined by measures such as the number of dwelling units per acre, amount of traffic generated, or amount of site coverage. Facilities and services needed to sustain development and land-use activities including utility lines, fire and police stations, parks, schools, and other public facilities.

Infill Development

The development of vacant or underutilized parcels which are surrounded by or in close proximity to areas that are either substantially or fully developed.

Land Use Plan

A long-range plan for the desirable use of land in a municipality as officially adopted and amended from time-to-time by the planning commission and elected body.

Level of Service (LOS)

A scale that measures the amount of traffic that a roadway or intersection can accommodate, based on such factors as maneuverability, driver dissatisfaction, and delay.

Lot of Record

A parcel of land with dimensions of which are shown on a document or map on file with the Register of Deeds.

L RTP

Long Range Transportation Plan. TransPlan 2030 seeks to identify improvements and establish transportation policy that will be needed by the target year 2030. Adopted in June 2005, the plan's goal is to promote the efficient movement of people and goods,

while also supporting the CHCNGA TPO area's land use and economic development goals.

Mixed Use Development

Developments intended to encourage an integrated, diverse blend of compatible land uses.

Multi-Use Development

The development of a tract of land or building with two or more different uses such as but not limited to residential, office, retail, public, or entertainment in a compact urban form.

Multi-use path

A linear park located in a right-of-way or easement. Often but by no means exclusively located adjacent to waterways in the floodway, multi-use paths are multi-purpose, though some types serve one purpose to a greater extent than others. Multi-use paths provide protection for environmental areas, recreational opportunities for the community, and, frequently, enhanced neighborhood connectivity for walkers, runners, and bikers.

Neighborhood Center

Neighborhood shopping centers generally provide convenience shopping for the day-to-day needs of consumers in nearby residential neighborhoods.

Node

Discrete concentrations of relatively higher-density development. Nodes are often appropriate at major intersections.

Open Space

Any parcel of land or portion thereof essentially unimproved and dedicated or reserved for public or private use.

Open Space Subdivision

A site design technique that concentrates dwelling units in a compact area in one portion of the development site in exchange for providing open space and natural areas elsewhere on the site. The minimum lot sizes, setbacks, and frontage distances for the residential zone are relaxed in order to create additional open space at the site.

Parcel

A piece of land that can be owned, sold, and developed. Parcels have legal descriptions which not only describe their boundaries but also contain information concerning rights and interests.

Patio Home

A single-family detached unit located on a reduced size, zero-lot line parcel and situated to provide for efficient use of available land.

Policy

The principles, plan or procedures established by an agency, institution, or government, generally with the intent of reaching a long-term goal.

Preserve

Open space that is currently protected from development. It includes areas under environmental protection by law or standard, as well as land acquired for conservation through purchase, or by easement.

Reserve

Environmentally sensitive areas such as the 100-year flood plain and steep slopes that may require special considerations for development. Additionally, through special efforts, many of these areas could be added to the Preserve category in the future.

Riparian Habitat

Lands comprised of the vegetative and wildlife areas adjacent to perennial and intermittent streams.

Riparian habitats are delineated by the natural existence of plant species normally found near freshwater.

Sanitary Sewer

A system usually operated by a municipality, consisting of a system of conduits, pumps and underground pipes designed to convey wastewater from its source to a treatment center before discharge into open waterways.

Scale

The relative size of a development when compared to others of its kind, to its environment, or to humans.

Septic System

A subsurface wastewater treatment system commonly found in rural areas consisting of a settling tank and a subsurface disposal field.

Setback

The minimum distance any building or structure must be separated from the lot lines of the parcel on which it is located.

Shared Parking

The development and use of parking areas on two or more separate properties for joint use by the businesses or residents on those properties.

Slope

The deviation of a land surface from horizontal, usually expressed in percent or degrees. Many municipalities consider slopes of 25% or greater to be steep slopes.

Spot Zone

The zoning of a small area of land or parcel for a use that is substantially different from the zoning of land in the surrounding area. Spot zoning is normally invalid if the permitted use is very different from the surrounding area; the area involved is small; or it can be shown that it primarily promotes the private interest of the owner rather than the general public welfare. Spot zoning may be valid if a land use plan calls for such zoning changes as part of the plan's implementation as a benefit to the community at large.

Streetscape

The combination of building facades, signage, landscaping, street furnishings, sidewalks, and other elements along a street.

Strip Commercial

A form of commercial land use in which each establishment is afforded direct access to a major thoroughfare; generally associated with intensive use of signage.

Stormwater - That portion of rainfall runoff that does not infiltrate into the soil, but instead flows through culverts, ditches and streams into progressively larger channels until it reaches a larger body of water such as the Tennessee River.

Subdivision

The division of a tract of land into two or more lots.

Suburban Development

A form of development, generally beginning after World War II that is characterized by a distinct separation of land uses. The street network deviates from the historical grid system as cul-de-sacs and curvilinear routes are common.

TDEC

Tennessee Department of Environment and Conservation.

303(d) List

The list of streams and lakes that are not meeting their designated uses (impaired waters) because of excess pollutants. States must update this list every two years.

Traditional Neighborhood Development

A type of development that emulates early 20th Century urban conventions in the United States by diversifying and integrating land uses while attempting to preserve a human-scale design.

Transition Area

An area in, near, or between a significant change in land uses.

Total Maximum Daily Load

The maximum level (plus a margin of safety) of a particular pollutant a waterway can withstand without endangering its designated use.

Townhouse, see Dwelling, Townhouse

TPO

Transportation Planning Organization. A policymaking board comprised of representatives from local government and transportation authorities who review transportation issues and develop transportation plans and programs for the metropolitan area. Analogous to Metropolitan Planning Organization (MPO).

Vehicle Miles Traveled (VMT)

Miles of travel by all types of motor vehicles as determined by the states based on actual traffic counts and established estimating procedures.

Viewshed

Those segments of a landscape that can be seen from a particular point.

Watershed

The land area from which surface runoff drains into a stream, channel, lake, reservoir, or other body of water; also called a drainage basin.

Zoning

The legal mechanism for the creation of districts in certain specified areas within a municipality land uses with other limitations such as height, lot coverage, density, and other stipulations in order to protect the health, safety and welfare of residents.

Rezoning Proposals

Properties which are not currently zoned for commercial, office, industrial, or multi-family uses will be evaluated for non-speculative land uses based on a rezoning proposal prepared by the developer. The elements of the rezoning proposal are described below and much of the information is similar to those required by the Regional Planning Agency in its Site Plan Requirement Policy.

The intent of the rezoning proposal process is to promote well-planned, sustainable development that is in keeping with the intent of the adopted land use plan. The proposals will help elected officials make well-informed decisions about rezonings for development that may have substantial impacts, both positive and negative, on the community. A pre-proposal conference with Regional Planning Agency and town staff is strongly recommended.

Recommended elements of a comprehensive zoning proposal:

1. A written narrative describing:
 - the proposed development,
 - the suitability of the property for the proposed development including a brief description of road frontage, access,
 - availability of infrastructure, and topography issues,
 - how the proposed development is (a) consistent with and (b) meets the objectives of the adopted land use plan, and
 - the compatibility of the proposed development with the uses of nearby properties and with the character of the surrounding neighborhood including, but not limited to, an impact analysis and proposed mitigation measures for things such as noise, light and glare, security, and privacy.
2. A copy of correspondence soliciting comments from area property owners or neighborhood associations.
3. A preliminary site plan including building footprints; pedestrian, bicycle, and vehicular access; parking; open space; pedestrian and bicycle amenities such as sidewalks, benches, plazas, and bike racks; existing natural vegetative buffers; wetlands; storm water management facilities; and any proposed cut and fill areas.
4. A landscaping plan.
5. A traffic impact study as required by the adopted Vehicular Access ordinance (Ord. 98-5) and other traffic information as requested by town staff or Plannign Commission, and proposed mitigation measures if requested by RPA or town staff.
6. An environmental impact analysis and proposed mitigation measures if requested by RPA or town staff.

Rezoning Tips for Developers

At times, it may be necessary to demonstrate a project's consistency with an approved land use plan by amending the plan before the formal rezoning process can be initiated. The following tips may be helpful in preparing to request a rezoning:

- Work with community groups and neighbors to develop a consensus before initiating the formal rezoning process.

- Try presenting a conventional development plan or "by right" development plan to illustrate the advantages of your creative development concept.
- Use graphics and three-dimensional images such as perspective sketches, bird's-eye views, house elevations, cross-sectional views, or models to help others see your design concept.
- Look for ideas and successful examples in resource materials such as publications by the National Association of Home Builders, slide shows, videotapes, the Urban Land Institute's Project Reference File, and model ordinances; use them to show local planning and zoning officials innovative and creative approaches to land planning.

Source: Site Planning and Community Design for Great Neighborhoods, Frederick D. Jarvis, Home Builder Press.

Regional Planning Agency policy on Townhouses

The Regional Planning Agency uses this policy as a guide regarding appropriate locations for attached housing.

Definition: A townhouse is a single family dwelling unit attached by common walls to other similar housing type units, each unit having an open space for light, air, and access in front and rear.

Location: Townhouses have historically been located in the more densely populated urban areas, thus the name "town" house. Therefore, they are most appropriate in areas that are more urban in character. Urban character areas are generally characterized by moderate and high residential density in or near commercial development and business centers.

Townhouses are also appropriate in or adjacent to commercial, high density residential, or transitional areas. Transitional areas are typically located between business districts and residential districts and act as a buffer between uses of different density, intensity or compatibility.

Townhouses are also generally more acceptable and compatible with surrounding detached low-density single-family residential development if they are part of a Unified Development and sited to the interior of that development. A Unified Development is a single development consisting mostly of detached single-family residential dwellings with a smaller attached dwelling component.

Discretion: Townhouse-only developments have been approved in predominantly single family low-density residential areas. Some have been appropriate and compatible developments and some have not. Whether or not such a development fits into a low density residential area seems to depend on the quality and architectural compatibility of the townhouses as well as the degree of landscaping. Landscaping is the only one of these components that can be directly regulated by the zoning ordinance. Therein lies the problem in determining whether or not a townhouse development is appropriate. It is ultimately up to the developer to provide evidence of the quality of the product and to provide whatever assurances are possible as to the quality and compatibility of the proposed units.

