

ATTACHMENT 2

REFERENCE COPY

“Compact Community Considerations / Recommendations”

DRAFT FOR FEBRUARY PUBLIC OUTREACH

LAND USE PLAN IMPLEMENTATION COMMITTEE

Attached please find LUPIC's *Compact Community Considerations/Recommendations* document for your review and consideration. It is a compilation of recommendations to guide Chatham County in its review and approval of larger-scale development. It is *not* the final proposed ordinance, which is scheduled to be available for public input March 17th. Rather, this document helps guide the completion of the ordinance.

As you will note, there are quite a few recommendations, many of which are interrelated. You are encouraged to read the document in its entirety, prior to commenting on any particular recommendation(s). It is important that you gain an understanding of the interrelated nature of the recommendations, and the impact one change may have on others. At our work session, scheduled for February 25th, we request your comment and guidance on the recommendations.

Please keep in mind that these recommendations are a work in progress. Public comment and continued discussion can, and more than likely will affect the final outcome. Their input is not only important it is critical.

When we meet on the 25th, we will bring public input summaries. Our public meeting schedule is provided on the back of this memorandum, in case you have an interest in attending any of these sessions.

Due to the short timeline, it is my hope that we can leave the work session with clear guidance on what should and should not be included in the proposed ordinance. Most importantly, we will require your direction on the issues of density, scale, and location, as well as the critical issue of wastewater management. The primary recommendations can be found on page 8 and 9. Of equally critical importance, and in need of your decision, is recommendation #11, page 12, which will dictate the size of the required treated wastewater spray area. All of the recommendations are of importance, but these in particular have major influence on the ordinance.

All recommendations are designed to meet the stated objectives of the Land Conservation and Development Plan (LCDP), and the Watershed Protection Ordinance (WPO). These documents and copies of the *Considerations/Recommendations* will be available to the public at the County Planning Office, the County libraries, and on the County website at the following addresses:

Land Conservation and Development Plan

<http://www.co.chatham.nc.us/PlanningBoardItems/Land%20Use%20Development%20Plan.pdf>

Chatham County Water Protection Ordinance

<http://www.co.chatham.nc.us/PlanningBoardItems/Watershed%20Ordinance.pdf>

If you should have any questions beforehand, please let me know.

Thank you for this opportunity. I am looking forward to the discussion



Larry M. Hicks
Chair, Chatham County Land Use Plan Implementation Committee

FOR IMMEDIATE RELEASE

CHATHAM COUNTY LAND USE COMMITTEE CONDUCTS JOINT DISCUSSIONS AROUND THE COUNTY

The Chatham County Land Use Plan Implementation Committee (LUPIC) is conducting joint discussions with several organizations from across the County during the month of February on a future ordinance specific to high-density, mixed use developments in Chatham County. These joint discussions are open to the public and in many cases the hosting organization permits open public comment depending on attendance and the meeting rules of the organization. At two meetings this week the public will have more opportunity to participate in such discussions. Review the schedule below.

In July 2002, the LUPIC began its work fleshing out the Land Conservation and Development Plan, adopted by the Chatham County Board of Commissioners in November 2001. The committee's first charge was to provide options for the Board of Commissioners to consider in implementing a "Compact Communities" Ordinance. The LUPIC published an initial draft of *Compact Community Considerations/Recommendations* that offers a description of how a compact community might look and discusses major issues that the Board of Commissioners may want to consider. The *Compact Community Considerations/Recommendations* is available online (<http://www.co.chatham.nc.us/lupic/web/LandUse.htm>) and in print form in the County's public libraries.

The *Compact Community Considerations/Recommendations* and the public feedback the document generates in the month of February will lead to the drafting of a Compact Communities Ordinance. The Chatham County Board of Commissioners have tentatively set March 17th as a date for public hearing on the first reading of a proposed ordinance. Until March 17th LUPIC encourages the public to attend all joint discussions mentioned below as well as any regularly scheduled LUPIC meetings. The next LUPIC meeting is this Friday in the Chatham County Ag Auditorium in Pittsboro. Written public comment on the current draft can be submitted via the County's website or by letter to Chatham County Manager's Office, Attention: LUPIC Review, PO Box 87, Pittsboro, NC 27312. Please contact the Chatham County Manager's Office (542-8200) with questions about meeting times or locations.

Schedule of Joint Discussions

Feb 5	Solid Waste Advisory Board	--- Dunlap Classroom, Pittsboro	7:00pm
Feb 10	Pittsboro Town Council	--- Pittsboro Town Hall	7:00pm
Feb 11	Ag Advisory Board	--- Ag Auditorium	7:00pm
	Econ Dev Commission		
Feb 13	Water Advisory Board	--- Dunlap Classroom, Pittsboro	7:00pm
Feb 18	Southeast Chatham Advisory	--- Mt. Olive Baptist, Moncure	8:00pm
Feb 19	Rec. Board / Appear. Comm.	--- Dunlap Classroom, Pittsboro	7:30pm
Feb 20	Chatham Planning Board	--- CCCC-Building II, Pittsboro	7:00pm
Feb 21	LUPIC Meeting	--- Dunlap Classroom	7:00pm
Feb 27	LUPIC Meeting	--- Dunlap Classroom	7:00pm
Feb 24	Board of Education	--- Siler City Elementary	7:30pm
Feb 25	County Commissioners	--- District Courtroom, Pittsboro	6:00pm
Mar 3	Siler City Town Council	--- Siler City Town Hall	7:00pm
Mar 17	County Commissioners	--- District Courtroom, Pittsboro	6:00pm

Chatham County

Compact Community Considerations/Recommendations

February 2003

The Compact Community Ordinance is being developed as the principal official instrument for implementing those elements of the Chatham County Land Conservation and Development Plan, adopted November 2001, that pertain to 'compact communities'.

The Ordinance is being designed to be compatible with pertinent provisions and protections of Chatham County's Zoning Ordinance, Watershed Protection Ordinance, Subdivision Regulations, and the adopted Chatham County Strategic Plan.

This document, compiled under the directive of the Chatham County Board of Commissioners, offers recommendations crafted to accommodate the parameters and expectations of the adopted Land Conservation and Development Plan.

From these options, a compact community ordinance will be developed and available for further public comment, currently scheduled for public hearing March 17, 2003.



County Vision

Chatham County will be a place that cooperatively controls its own destiny to assure the state of well-being desired by all of our people, while proudly preserving diverse cultural heritages and the County's rural character.

Adopted April 15, 1995 by *Joint Chatham County Resolution*
Board of Commissioners, Board of Education,
Pittsboro, Siler City, and Goldston.

Land Use Plan Implementation Committee

On July 11, 2002, the Land Use Plan Implementation Committee (LUPIC) began its work fleshing out the Land Conservation and Development Plan, LCDP, adopted by the Chatham County Board of Commissioners in November 2001. Its first charge is to provide options for Board consideration in the implementation of the 'Compact Communities' section of the LCDP. This is but one component to be addressed, but has been determined to be the most critical, and thus the top priority for LUPIC.

The committee itself is comprised of members from appointed County boards, and also includes a component for water quality. Representation on this committee includes the Agriculture Advisory Board, Appearance Commission, Economic Development, Recreation Board, Planning Board, Solid Waste Advisory Committee, Strategic Plan Steering Team, Water Committee, and Water Quality. The chairs of each appointed County board were asked to provide a representative from his/her committee. Each committee appointed its representative.

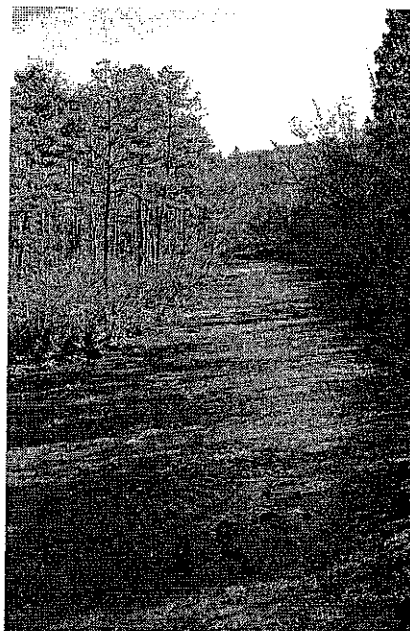
The design of the committee is to expedite and streamline the process, while bringing the best Chatham citizens have to offer to the challenge. By tying into existing appointed County boards, these respective boards are readily leveraged into the conversation, offering expertise, guidance, ideas, and feedback.

Three subcommittees were formed during LUPIC's inaugural meeting.

- Open Space/Rural Character – examine how the compact community relates to its surroundings and links to green space, exterior roadways, surrounding communities, etc. [Steve Seilkop, Clarence Durham, Fleming Fham]
- Community Design – examine how a community should be laid out, densities, design, mixed use, commercial centers, interconnectivity, etc. [Allen Baddour, Hal Milholen, Martin Spritzer]
- Water/Wastewater – examine alternatives and limits. [Hal House, Ray Greenlaw, Larry Hicks]

LUPIC identified quite a few stakeholder organizations, including the Homebuilders Association, Haw River Assembly, Chatham County Chamber of Commerce, the Affordable Housing Coalition, and the Southeast Chatham Citizens Alliance, among many others. It has actively sought stakeholder involvement, through direct contact as well as solicitation through its website. Several stakeholders were invited to join subcommittee discussions.

Major participants are listed at the end of the document.



Rocky River

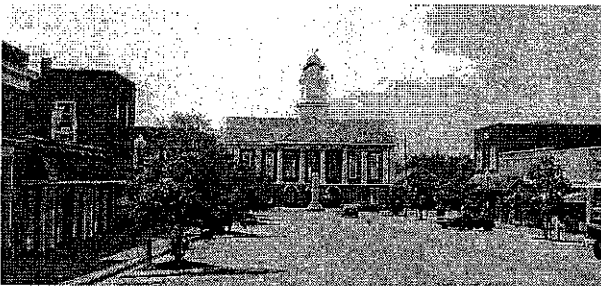
Land Conservation and Development Plan

- Adopted November 2001

- Land conservation and development in Chatham County will reflect balanced growth.
- New development is welcomed and accommodated, but in ways that ensure that:
 - benefits and burdens of growth are shared as much as possible
 - growth consists of a mix of different types of development
 - development is guided to appropriate locations and is designed appropriately for its setting
- Chatham County's approach to land development and conservation will be open, proactive, and cooperative.
- To control its destiny, the County will be prepared for growth and will work closely with other jurisdictions to meet citizens' aspirations.
- Six additional objectives ...
 - λ Preserve both the form and function of rural character
 - λ **Encourage compact communities with a mix of activities as development occurs**
 - λ Designate economic development centers
 - λ Protect and promote high-quality open space, recreation, historic and tourism locations.
 - λ Ensure the long-term quality and availability of groundwater and surface water resources.
 - λ Provide infrastructure that supports the land use, economic development and environmental objectives: water supply, wastewater treatment, transportation, and schools.

What are compact communities??

- A mix of *higher density* land uses, with residential, commercial, and civic components
- A mix of housing types
- An interconnected street network
- Walkable, pedestrian-friendly design
- A defined edge that marks the transition to the surrounding rural landscape
- Connection to transit
- Connection to open space and recreation
- A mix of commercial and residential components in multi-story buildings
- A net benefit to the county, relative to the conventional development, with respect to economic, environmental, and social considerations



Small Towns



Mill Villages



Crossroad Communities

Balanced Growth = Sustainability = Net Benefit to the County

Environmental Considerations

- ♣ Maintain / increase protection of water quality
- ♣ Reduce air pollution
- ♣ Conserve/preserve resources/land
- ♣ Encourage waste minimization

Economic Considerations

- ♣ Reduce infrastructure costs to County
 - λ Schools
 - λ Recreation
 - λ Emergency Services
- ♣ Encourage commercial/economic centers to the benefit of the County
- ♣ Provide employment opportunities
- ♣ Provide affordable housing

Social Considerations

- ♣ Design for 'community'
 - λ Pedestrian scale
 - λ Schools
 - λ Recreation
 - λ Commercial building, parking, landscaping and design
- ♣ Minimize impacts on surrounding communities
 - λ Traffic
 - λ Lighting
 - λ Community Buffering

Issues and Challenges

The following, in no particular order, are examples of the issues that LUPIC has been deliberating/debating. A compact community is only one form of residential development. Its potential size and scope, however, impacts schools, traffic, environment, services, and the economy. Therefore, its guidelines must integrate with other areas within the Land Conservation and Development Plan.

Existing ordinances not prohibitive of success

- As currently written, the existing watershed protection ordinance, county zoning and other related ordinances, for the most part, do not prohibit financially successful large community development.

Maintaining/enhancing existing protections

- At its inception, LUPIC was charged by the Board of Commissioners to develop a compact community ordinance that would not compromise the intent of current ordinance protections, particularly the Watershed Protection Ordinance. Based on this guidance, if greater densities are desired, alternatives to the current density protection must be developed. This may be in the form of greater buffering requirements, specific design criteria to minimize the affects of stormwater runoff, and/or greater than normal requirements on wastewater protections, among others.



American Tobacco Trail

Density, the true issue

- The real development pressure on county officials is density. Larger developments can bring economies of scale to the project. This can translate to a better design, better community amenities, and a greater profit for the developer. It also offers the county the opportunity of securing infrastructure concessions.
- If the county desires to permit greater development density, it should do so with the clear understanding of the cost/impact on services, schools, water, traffic, the environment, and so forth. Larger developments may present the county with a need for service unlike any the county has ever seen. Because the enormity of development with greater density may be unprecedented, so may be the expected level of service. Therefore, the county may underestimate the impact of this new challenge to provide highly dense services, if it relies on its historical cost per person data for providing services in a rural environment.
- If the county desires to permit greater development density, it should do so with the clear intent of extracting environmental, economic, and social concessions for the county. At a minimum, the development must be self-sustaining. Examples include school/school sites, recreation fields, an affordable housing mix, community design, economic development, traffic amelioration, and greater watershed protections.

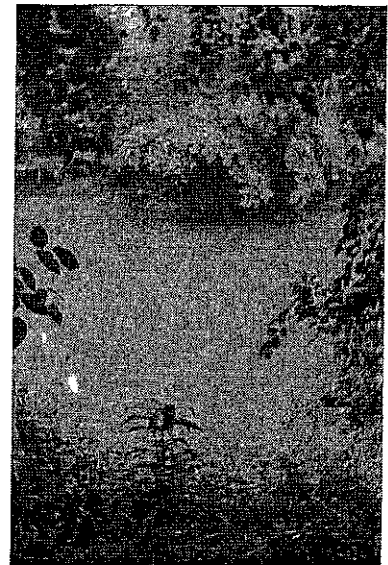
- Granting greater density credits in one area does not necessarily guarantee rural character protection in another. It may, conversely, serve to increase residential development and county population. Also, providing greater 'density pockets' through zoning may not be politically practical. If greater density is desired, the county should develop a way to accommodate it through guidelines, required concessions, and expectations as part of the tradeoff. This may include buffering and the transfer of development rights, to ensure the balance of growth and rural character.

Market driven development

- The market, for the most part, will drive large development. Proximity to employment (RTP, Greensboro), transportation, and buyer demand will drive the proposed locations of projects. East Chatham is the current desired location, commanding average home prices in excess of \$185K+, as compared to the Siler City area, at ~ \$85K. In accommodating growth and demand, Chatham County must be able to maintain its identity, and not sacrifice one area for the perceived sake of another. This includes the consideration of affordable housing.

Water quality, the critical factor

- Wastewater treatment may be the single most defining parameter in this discussion. It is certainly the most critical. The Department of Environmental Health and Natural Resources (DEHNR) has an anti stream degradation policy which discourages direct discharge of treated wastewater into streams, lakes and tributaries of Chatham County unless there are no other options available. This limits options for wastewater treatment; the most prevalent of which is spraying treated effluent onto the land. This will impact land use and land mass requirements, and will be a self-limiting factor in the size and scope of a development.



Deep River

- Treatment of wastewater through a proven system can be of benefit over conventional septic systems. Such systems can accommodate 'compact' cluster development. This can be potentially advantageous, compared to one-to-two acre lot development, in preserving open space, natural features, and buffers.
- Wastewater systems, however, must be professionally managed, with consideration given to the environmental implications. Larger systems are more complex, and the consequences of error are more critical. Performance bonding of such systems would be desirable, to ensure future protection to the county, if it is required to assume the system, due to failure.

Economic development opportunity

- Larger communities provide opportunity for economic development, such as neighborhood shops, stores, and services. This should be encouraged. However, large scale retail centers should still be relegated to already determined areas, to prohibit strip development.

Community design opportunity

- Community design must be cognizant of pedestrian scale and access. Street design, community centers and/or parks should be encouraged.

Primary Recommendations

This document outlines key options for consideration in the completion of the Compact Community Ordinance. Below are the major parameters proposed for the ordinance.

I. Maximum Scale, Residential

It is recommended that the maximum size of the **residential component** of a compact community **not exceed 1,000 acres**. This maximum conforms to the LCDP, with respect to *mitigated conventional development*, and desired maximum community size, providing walkability, accessibility, and 'community feel'. Helps minimize environmental stress.

II. Maximum Scale, Commercial

It is recommended that the maximum scale of the **commercial component** of a compact community **not exceed 10% of the scale of the residential component**, up to a maximum 100 additional acres. Commercial development is a recommended requirement of a compact community (see detailed recommendations). As an example, at 1,000 residential acres, the maximum allowable commercial development would be 100 acres; at 800 residential acres, up to an additional 80 acres would be permissible for commercial development.

III. Minimum Scale

It is recommended that market forces determine the minimum scale. Upon review of the requirements and concessions of the Compact Community Ordinance, the developer would determine the minimum lot count price-point in which the project would be financially viable under the ordinance.

IV. Density

It is recommended that the maximum residential density of a compact community **not exceed 2.0 homes per net acre, contingent on location, design, and developer concession requirements**. This maximum maintains the County's *Low Density Watershed Protection* option, as defined by the State, and, in conjunction with other requirements within this document ⁽¹⁾, maintains the county Board of Commissioner directive not to reduce the protections afforded by the Watershed Protection Ordinance, (WPO).

NOTE: Commercial acreage is not intended to be included in the residential density calculation.

It is anticipated that the above limits, in concert with recommendations/requirements within this document, will result in a maximum buildout of approximately 1,500 homes.

(1) Environmentally, greater density must be mitigated by other requirements contained within this document. These, include limiting the project's maximum scale, providing municipal water advanced/tertiary wastewater treatment, compliance with the maximum built upon area requirements of the Water Protection Ordinance, compact community spacing within the watershed, greater stream buffering, among other recommendations contained within this document. Reduction of these other protections can affect maximum density.

V. Location

It is recommended that compact community development be **restricted under the following location criteria:**

- **Current RA40 designated areas** - Further discussion/definition of the other components of the county LCDP, including zoning, should occur prior to expanding this provision.
- **Watershed areas designated as WS III - BW (Balance of Watershed), WS IV - PA (Protected Area), and Local Watershed Area (LWA).** Under the Compact Community Ordinance recommendations, residential and commercial development is required. This requirement narrows the location where *both* components are viable, (refer to definitions below). Attention to defined project and watershed buildout maximums contained in the Watershed Protection Ordinance WPO would be required.
- **Areas serviced by roadways no greater than one (1) mile from four lane thoroughfares;** includes routes 15-501, 64, and 421. Considerations include accessibility, availability of utility service, impact on roadways/traffic, mass transit, and protection of the form and function of rural character.
- The *exterior boundary* of a compact community **must be a minimum distance of two (2) miles from the exterior boundary of other compact communities** with similar density requirements. In addition to environmental advantages, minimum separation distance between communities is required to retain rural character, (characterized by relatively open spaces between more intensively developed tracts).

IV. Design

It is recommended that compact communities be **required to provide municipal/county water.** A development of this scale puts an extensive strain on groundwater resources.

It is recommended that compact communities be **required to provide an advanced/tertiary treated wastewater system.** Detailed recommendations within this document outline the environmental advantages. In addition, treatment systems help ameliorate greater density impact.

It is recommended that compact communities **cluster homes/residences and non-residential construction in one portion of the tract,** with the remainder of the tract set aside as permanent open space. This provides greater infrastructure efficiency, helps mitigate stormwater runoff, maintains greenspace, and promotes rural character. This recommendation is in response to the desires of the LCDP, with respect to *cluster development* and insures walkability, accessibility, and 'community feel'. It is also in accordance with the WPO requirement to cluster development, with lot sizes less than 40,000 sq. ft.

Watershed Protection Ordinance Buildout Provisions

- WS II - BW - University Lake Watershed – up to total 12% built upon area, project by project.
- WS III - CA, (Critical Area) – up to 12% total built upon area, project by project.
- **WS III - BW (Balance of Watershed) - up to 70% total built upon area, project by project, up to 5% of the balance of the watershed.**
- WS IV CA (Critical Area) - up to 24% total built upon area, project by project (non-residential limited to permitted uses).
- **WS IV - PA (Protected Area) up to 24% total built upon area sq. ft, project by project, up to 36% without curb and gutter.**
- River Corridor (RC) - no less than average five acre residential (3 acre minimum), with up to 12% total built upon area, project by project.
- River Corridor Special Area (RCSA)- no less than one acre residential, up to a total 24% residential built upon area, 36% without curb and gutter, or 50% non-residential build upon area, with special provisions and permissions.
- **Local Watershed Area (LWA) - all others, outside municipal watershed jurisdictions – up to 24% built upon on a project by project basis, 36% without curb & gutter, non-residential up to 70% built upon on project by project basis, with total watershed not to exceed 10%.**

Environmental Considerations

Maintain/Increase Protection of Water Quality

I. Water Quality Board

Recommendation #1: Create a volunteer citizen water quality technical board to review water, wastewater, stormwater plans and other water quality aspects of a planned community within both the current planning review process and time frame.

Rationale: The most critical components to a proposal are the water, wastewater, and stormwater plans. New development creates a permanent need for these services. Proper design is essential to ensure their continued availability and to protect environmental quality and public health in the county. If systems fail, there can be significant cost and public health implications for residents and county government. Yet the County does not currently have technical expertise to review such plans. The County also does not appear to have the resources to fund technical positions. A technical review board comprised of appointed citizens with technical expertise (required) would provide critical review of these proposals in a timely manner.

II. Water Supply

Recommendation #2: Require compact communities to use county or municipal water.

Rationale: Projects the size of compact communities must have a safe and sustainable drinking water source.

Recommendation #3: Encourage water conservation through water reuse and the use of well water sources for non-potable uses.

Rationale: Increased population simultaneously decreases water quality and increased demand for a vital and finite resource. Over the past several years the area has experienced drought conditions. Encouraging the use of treated water and/or well water for non-potable uses helps to balance and temper the demand on potable water.

Recommendation #4: Through design guidelines encourage water conservation in system and building design.

Rationale: Provides an important way to reduce water demand and help ensure adequate water supplies for current and future development in the county. ...

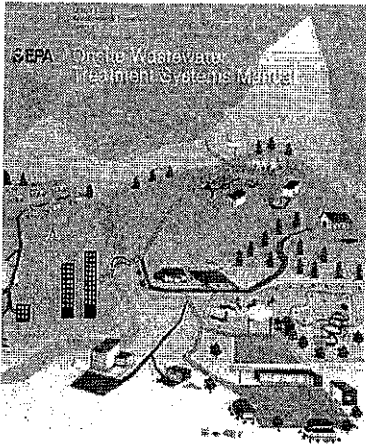


Jordan Lake

III. Wastewater Treatment Systems

Recommendation #5: Subsurface wastewater treatment and disposal systems will not be permitted.

Rationale: The decreased level of treatment required for subsurface sewage disposal systems, e.g. the difficulty of access to critical components for maintenance, and the decreased



opportunity for treatment and reuse of water, make this wastewater management approach unacceptable for large-scale developments. Note: The septic tank component may be a very useful part of a wastewater treatment and reuse system and should be distinguished from a “septic tank system”.

Recommendation #6: Wastewater treatment systems must provide advanced/tertiary treated water. The water should meet the standards for reuse as defined by the N. C. Division of Water Quality. Note: The State makes a distinction between irrigation water and reuse quality water. Reuse is of a higher quality.

Rationale: The pathogen, organics and nutrient removal provided by tertiary treatment are important for protecting water resources, especially in state-designated Nutrient Sensitive Waters such as Jordan Lake. The cost of treating water supply allocations from

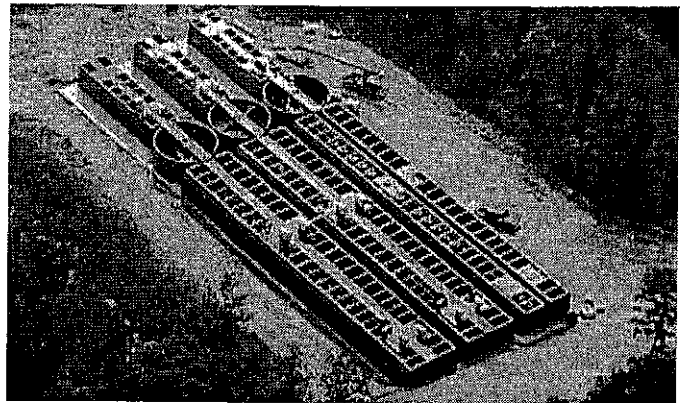
Jordan Lake will increase with its potential decreased water quality. Requiring the higher level of treatment decreases adverse public health and environmental impacts to all our surface and groundwater.

Recommendation #7: Wastewater treatment systems must meet current EPA and NC WQ standards.

Rationale: This is important to ensure adequate system performance, protection of the public and environmental health and to avoid penalties for violating standards.

Recommendation #8: Wastewater treatment systems must be designed for *full buildout*, including designation and identification of spray and/or drip areas.

Rationale: The County will only have one opportunity to review project plans. It is appropriate and desirable to be able to determine the full buildout requirements and scope during this review.



Recommendation #9: The entire wastewater treatment system must be located within the proposed development.

Rationale: The project should not burden the surrounding communities with its waste treatment facilities. These should be kept within the compact community. Improper sludge management has potential to displace the potential adverse public health and environmental impacts to another location.

Recommendation #10: Provisions must be made for sludge management and odor control that eliminate adverse impacts to the project's residents and neighbors.

Rationale: Odor associated with wastewater treatment process, lift stations and compromised valves and piping can adversely impact the quality of life of both the project and surrounding area.

IV. On-site Wastewater Treatment Spray Area (Note can be spray or drip technology)

DEHNR has a anti stream degradation policy which discourages the installation of new wastewater systems that directly discharge treated wastewater into streams, lakes and tributaries of Chatham County, unless there are no other options available. Below are the available options

1) *Off-site:* direct wastewater to existing municipal treatment plants or construct new centralized wastewater treatment facilities.

2) *Hybrid:* treat wastewater on-site and pipe treated water to an existing municipal treatment plant or new centralized wastewater treatment facilities. Note: There are means of constructing cost affordable centralized

County wastewater treatment facilities that have not been evaluated by the county.

3) *On-site:* treat wastewater on-site and distribute treated water onto the land surface via irrigation system(s).



Spray Treatment

Of the above alternatives, unless permitted opportunities exist; on-site spraying of treated effluent will be the system of choice. This is fairly new to the county. The following are options in calculating required land area for spray treatment.

Recommendation #11: Require one of the following options to determine required landmass for on-site spray treatment

Option 1: Safety factor approach: Decrease the calculated soil hydraulic loading rate with increase in wastewater system design.

Option 2: Vegetative-need approach: Design irrigation area based upon vegetation's need for water, not on soil's maximum hydraulic load acceptance.

Option 3: Repair area approach: Requires an area equal to that calculated as a maximum load acceptance rate to provide a back-up application area if primary area becomes saturated or is inadequate.

Option 4: Graduated approach: Requires a maximum of 20% of *net* open space to be used for spray irrigation. [Net open space is calculated as gross acreage - (wetlands + buffers + impervious surface)]

Rationale: As wastewater system volume increases and the design becomes more complex, the risk of failure increases, as does the potential public health, environmental and economic consequences of failure. Any of the above options avoid the tendency to minimize the required space and also provides a system buffer. Once a community is established, there is often no recourse available to add irrigation space.

V. Wastewater Treatment System Operation and Management

Recommendation #12: Water and wastewater service shall be managed by a public wastewater management utility or through a licensable community wastewater facility capable of handling the projected wastewater volume projected at the buildout of the project.

Rationale: The County must ensure that this critical service be professionally managed, for the health and welfare of County citizens.

Recommendation #13: Developer shall execute a bonded performance instrument in an amount prescribed by Chatham County, which fully insures against any failure of the wastewater facility to operate in accordance with the relevant statutes and regulations of the State of North Carolina. This performance instrument must be conveyed to an incorporated homeowners association responsible for the ongoing maintenance of the systems.

Rationale: The County must be assured that it will not have to assume responsibility for poor design or operation of systems, at the taxpayer's expense.

VI. Stormwater Management

Recommendation #14: Each proposed project shall provide a stormwater management plan which includes a combination of preventive measures, source reduction practices and control measures which maximize the use of the natural drainage ways of the site.

Rationale: Proper stormwater management techniques are needed to protect water quality and minimize flooding and flood damage. EPA's Phase II Stormwater regulations are extending the requirements to communities like Chatham County. An integrated system of approaches which work together to prevent pollution from being created at the source in combination with control measures within the natural drainage ways of the site are more effective than single and often large control measures placed at drainage concentration points at the project boundary.

Recommendation #15: Maximize the use of the natural drainage ways of the site. Natural or created drainageways, such as grassy swales, should not be used for the distribution of treated wastewater.

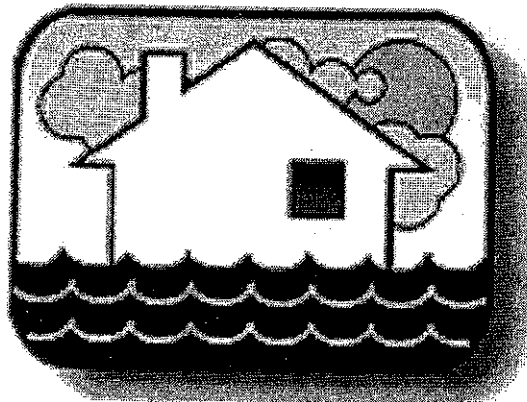
Rationale: Takes advantage of natural stormwater purification. Treated wastewater systems overlap overrides the protections of the stormwater system.

Recommendation #16: The stormwater system shall be designed to minimize stream bank erosion.

Rationale: Stream bank erosion is a major contributor of the sediment load of streams.

Recommendation #17: A stormwater Operation and Maintenance Plan shall be provided. The entity and the resources responsible to implement the plan shall be defined.

Rationale: All stormwater management components will require periodic maintenance. If the maintenance does not occur, the pollution prevention effectiveness and aesthetic qualities of the components will decrease. Also, insect vectors may increase within poorly maintained stormwater control features and create public health concerns.



Recommendation #18: All built upon area shall be designed and located to minimize stormwater runoff impact to the receiving waters and minimize concentrated stormwater flow.
Rationale: *Section 303, Cluster Development, (B) Chatham County Watershed Protection Ordinance*

Recommendation #19: The remainder of the tract shall remain in a vegetated natural state. Where the development has an incorporated property owners association, the title of the open space area shall be conveyed to the association for management. Where a property association is not incorporated, a maintenance agreement shall be filed with the property deeds.
Rationale: *Section 303, Cluster Development, (C) Chatham County Watershed Protection Ordinance*

VII. Stream Buffering

Recommendation #20: Stream buffers shall be a minimum of 100 ft. on all perennial and intermittent streams, and 50 ft. on ephemeral streams, when used in combination with preventative at-the-source controls. Stream buffers shall be 150 ft on all perennial and intermittent streams and 100 ft. on ephemeral streams, when preventative at-the-source controls are not utilized.

Rationale: Stream buffers serve a number of important functions including protecting water quality, providing important recreational resources, reducing the damage from flooding, and providing important corridors for wildlife. The intense land disturbance associated with high-density development requires a greater buffer distance than within less densely developed areas.

Recommendation #21: Wetlands associated with streams shall be buffered by 100 ft. of native vegetation.

Rationale: Though natural wetlands are effective water quality features, natural wetland functions are adversely impacted by pollutant runoff. Created wetlands to control pollution runoff may be used to gain the water quality benefits without the adverse natural wetland impacts.

Recommendation #22: Existing impervious space within a defined buffer distance cannot be counted as effective buffer space.



Cape Fear River

Rationale: Impervious space does not provide the decreased flow velocity and increased pollutant functions of buffer areas with native vegetation.

Recommendation #23: Require a public easement of at least 20 ft. wide in all stream buffers.

Rationale: Provides passive recreation opportunity, walking trails, and begins to establish a green network in the County.

VIII. Water Quality Monitoring Plan

Recommendation #24: A water quality monitoring plan shall be provided by the developer and evaluated by the Water Quality Board.

Rationale: Projects are presented with the premise that they will not have adverse impacts on surface and groundwater quality. Resources are not available at the state or county level to adequately monitor potential water quality impacts.



Haw River

Reduce Air Pollution

Recommendation #25: Provide walking and bike trails throughout the development to discourage use of automobiles for in-community travel.

Recommendation #26: Require a design that maximizes present and future mass transit accessibility.

Rationale: The American Lung Association's State of the Air 2002 report ranked the Triangle as the 13th worst metro area for ground-level ozone in the country.

Conserve/Preserve Resources/Land

Recommendation #27: Require a comprehensive and accurate environmental impact assessment.

Rationale: An assessment can identify potential risks and adverse conditions, and requires a plan to ameliorate such risk.

Recommendation #28: Require a resources and site analysis plan with a developer's initial application, that includes a detailed evaluation of existing topography, vegetative cover, geology, significant natural and historic/cultural features, and a prioritized list of resources to be conserved.

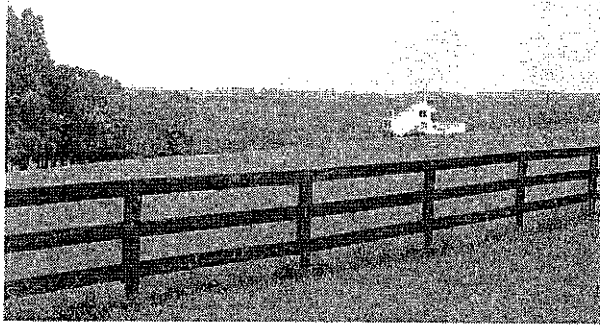
Rationale: Allows the County to see at an early stage the impact of the development on the natural and cultural resources in the area, and assists in the retention of significant features as described above.

Recommendation #29: Require the developer to consult the Triangle Greenprint to assist in identifying significant regional natural resources.

Rationale: The Triangle Greenprint, previously approved by the BOC, identifies significant regional natural resources in an attempt to preserve such natural corridors on a regional basis when possible.

Recommendation #30: Encourage planting of a variety of native species of trees, shrubs, etc.

Rationale: Native species are typically hardier, environmentally beneficial. Encourages shade/canopy trees, which are beneficial to pedestrians.



Recommendation #31: Require a minimum 30% permanently protected open space.

Rationale: To provide for passive recreational activities, and to preserve rural character. This can include viewshed, perimeter, stream, wetland, and natural buffers.

Recommendation #32: Require the developer will contribute to a mitigation fund that will be used for farmland and/or natural resources preservation in the County.

Rationale: As specified in the County's land Conservation and Development Plan, "all new residential development must preserve either the form or the function of the rural landscape, *or help protect these features elsewhere in the county.*"

Encourage Waste Minimization

Recommendation #33: Require a minimum three (3) acre space for a county recycling and waste collection site, if the Compact Community location is determined to be beneficial to the county.

Rationale: Landfill space is at a premium in the region, and much of Chatham's solid waste is being shipped significant distances outside the region. Additionally, providing such a site will allow nearby resident access to waste/recycling facilities, without having to drive great distances.

Recommendation #34: Require a minimum three (3) acre space for a county recycling and waste collection site.

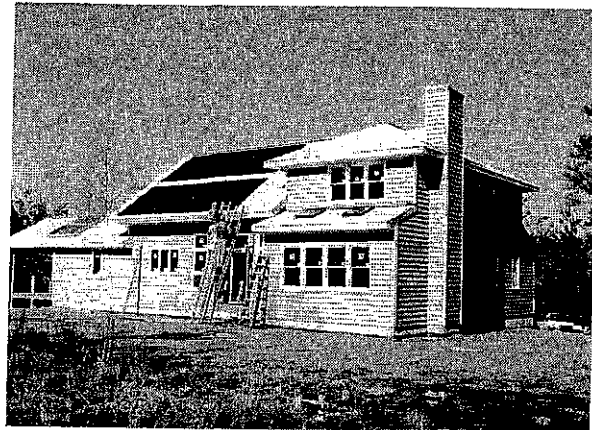
Rationale: Even if it is determined that no site is presently needed, requiring the site to be set aside allows for future growth and changes in the methods of recycling/waste collection, if for example, the County moved to unstaffed or volunteer staffed sites.

Encourage Energy Conservation

Recommendation #35: General construction practices shall maximize use and adoption of local materials and sources, whenever possible, to minimize secondary transportation impact, and promote local jobs.

Rationale: Supporting local shops and businesses helps Chatham County improve its commercial base, while reducing the total energy impact of a development/construction project. Example: specify Norlina bluestone (found near Asheboro) instead of Vermont slate.

Recommendation #36: No compact community development shall deny or prohibit the installation of solar panels, either electric or thermal, that are installed either in plane with the roof or in an unobtrusive manner not visible from the front of the house, and installed by licensed, professional installers, in a neat, workmanlike manner.



Rationale: The intent of these criteria is to encourage and facilitate zero energy home design, zero energy community design, and promote doing more with less in our own back yard. This contributes to fewer spent fuel rods, fewer red ozone alert days for children, better design, and higher standards of living, without necessarily incurring any additional cost at the building stage.

Recommendation #37: The development shall design the lot orientation to make available a minimum of 33% of “south facing” lots, and shall attempt to maximize southern elevations on the rear. A lot shall be considered “south facing” if its primary axis is within 10 degrees of due south.

Rationale: Taking advantage of solar orientation is the easiest, simplest, and cheapest way to save energy. Saving energy equates to lower living costs for the consumer, cleaner air for the community, and less energy usage.

Recommendation #38: All proposed construction shall be submitted to a primary and secondary pollution emission impact analysis. The development shall submit a comprehensive energy consumption plan. Every attempt shall be made to encourage less consumption and more local/distributed generation.



Rationale: We need to be aware of the future impacts of a development, and as we currently monitor the traffic and school children impact of proposed development, we are not far from having to monitor and account for energy impacts. Chatham should be proactive and set a visionary tone for our area and do this as a matter of course, going forward. With the pending change in the ozone standard, the entire Triangle area may be soon forced to do this.

Recommendation #39: All marketing material shall include reference to NC State Renewable Energy income tax credits.

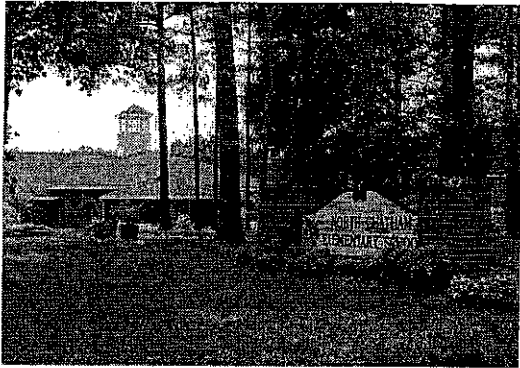
Rationale: The state of North Carolina has the best state tax credits to support renewable energy technology deployment in the nation, and few are aware of them. This is an easy way to promote “green” development and support local tradesmen (and women) who are learning skills applicable to tomorrow’s technology.

Economic Considerations

Reduce Infrastructure Costs to County

Recommendation #40: Require water system infrastructure to be provided by developer.

Rationale: Community is to be self-sustaining and not a burden on existing taxpayers.



Recommendation #41: Require a sufficient school site, with utilities, for school and/or recreation.

Rationale: The County's impact fee is inadequate to accommodate growing enrollment. Requiring a land set aside provides opportunity for a school site, as well as providing for County recreational needs.

Recommendation #42: Allow a payment in lieu of land for a school site, at the discretion of the County.

Rationale: Grants greater flexibility to the County and the Board of Education to locate schools where the need is greatest, not necessarily where compact communities are developed.

Recommendation #43: Require a minimum 3 acre site, with utilities, for emergency services, e.g. fire, police, substation, ambulance services, etc.

Rationale: While property tax dollars may cover the cost of services, infrastructure cost, particularly land, can be cost prohibitive.

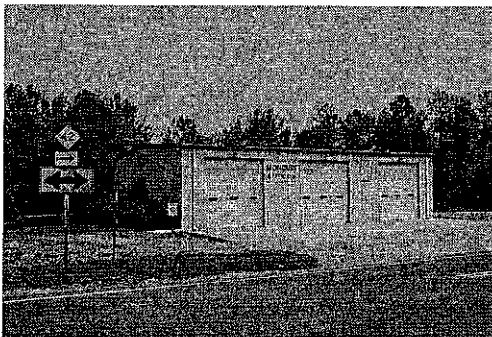
Recommendation #44: Allow a payment in lieu of land for emergency services, at the discretion of the County.

Rationale: Grants greater flexibility to the County to locate emergency services where the need is greatest, not necessarily where compact communities are developed.



Recommendation #45: Provide a sufficient site, with utilities, for the construction of a civic or community building to be used as a library or community center/meeting hall.

Rationale: While property tax dollars may cover the cost of services, infrastructure cost, particularly land, can be cost prohibitive.



Recommendation #46: Allow a payment in lieu of land for civic buildings, at the discretion of the County.

Rationale: Grants greater flexibility to the County to locate civic buildings where the need is greatest, not necessarily where compact communities are developed.

Encourage Commercial/Economic Centers

Recommendation #47: Require a commercial/economic district within the compact community.

Rationale: Mixing commercial uses with residential and institutional uses in a commercial center provides services to residents, promotes walkability and consumer convenience, helps avoid strip commercial development, supports efficient future transit service, and contributes positively to the county tax base.



Recommendation #48: Site commercial so that it extends up side roads off main thoroughfares rather than as strips along main thoroughfares.

Rationale: Allowing commercial near main thoroughfares, yet extending within the community allows for greater commercial viability with main thoroughfare access, yet still easily accessible and visible within the community. It also encourages rural, human scale commercial over strip commercial development.

Recommendation #49: Require a commercial/economic district within the center of the compact community.

Rationale: See above, with the additional rationale that requiring the district within the center of the compact community ensures the district is usable and easily accessible to the compact community residents.

Recommendation #50: Encourage commercial use that accommodates “neighborhood uses,” or those uses a typical family might use in a given week.

Rationale: Discourages commercial uses incompatible with a neighborhood, reduces commercial uses (and their parking lots) that are unused for periods of time (e.g., nights and weekends).

Recommendation #51: Encourage storefront downtown neighborhood look, requiring that the



commercial district be sited in such a way as to minimize the strip mall appearance.

Rationale: The neighborhood appearance is more conducive to a compact community.

Recommendation #52: Prohibit drive-through windows.

Rationale: Prohibiting drive-through windows discourages auto use and reduces pollution by eliminating lines of cars with their engines running.

Recommendation #53: Require applicant to submit list of permitted uses.

Rationale: This will assure a neighborhood appearance and allow the County to see what uses will be permitted by the developer at the time of development and in the future.

Recommendation #54: Require any commercial area near a major road to be adequately buffered and landscaped and to be easily, safely, and directly accessible to the residential district(s). Where feasible, require the commercial area to be within 1500 feet of three-quarters of the community's dwellings.

Rationale: This prevents the strip mall appearance; helps preserve the rural appearance; provides convenient, safe pedestrian access to commercial core.

Recommendation #55: Require, wherever possible, parking to be relegated to side and rear of buildings, with on-street parking permitted where feasible.

Rationale: This helps improve appearance in front of stores and for entire project, increases pedestrian safety since pedestrians/bicyclists will not have to navigate large parking lots to access stores.

Recommendation #56: Require size of buildings to be limited to reflect "neighborhood" type uses as distinguished from "highway" uses.

Rationale: Smaller buildings encourage a pedestrian scale, and encourage uses more consistent with a downtown appearance and less conducive to larger, traffic generating highway uses.

Recommendation #57: Require denser residential development in and around commercial centers.

Rationale: Maximizes opportunity for providing walkable access to businesses and civic buildings located in the village center; improves commercial viability of businesses; helps support potential future transit service; reduces auto trips; promotes greater physical activity of residents.

Recommendation #58: Require wider sidewalks, shorter blocks, benches, and bike racks in the commercial district.

Rationale: Facilitates walking and biking to businesses and civic buildings located in the village center; improves commercial viability of businesses; helps support potential future transit service; reduces auto trips; promotes greater physical activity of residents; promotes a small town atmosphere

Provide Employment Opportunities

Recommendation #59: Provide that a minimum of 15% of the lots in each phase within the compact community shall be made available to the "small builder." Small builder shall be defined as one who is fully licensed and insured to build within the appropriate price range, and builds 10 or fewer units per year. If the developer is unable to generate 15% small builder participation within 180 days of each phase opening, then it is under no further obligation to withhold the lots from the general marketplace.

Rationale: Many builders in Chatham County are "small." This will insure that those who live and work here can participate and benefit in the coming growth, and benefit there from. The developer is not hamstrung, however, if local participation is not forthcoming.

Recommendation #60: Allow for appropriate home-based businesses

Rationale: Promotes small business development; manages the impacts of these uses to make sure they are compatible with residential living.

Provide Affordable Housing

Recommendation #61: Require on-site housing opportunities for low-to-moderate income households.

Rationale: Provisions for affordable housing help address the need for safe, decent, affordable housing for residents in the county. Location in compact communities that might be served by mass transit in the future also provides the potential for more affordable and less polluting transportation.

Recommendation #62: Allow developer to provide affordable housing offsite or by making payments in lieu of developing affordable housing onsite.

Rationale: Developer flexibility and control over development, while still increasing affordable housing stock in Chatham County.

Social Considerations

Design for Community

Pedestrian Scale

Recommendation #63: Require main village green and several smaller public spaces, such as parks and playgrounds, within easy walking distance of residences.

Rationale: Community gains demonstrably public spaces with easy access, encourages walkability and a sense of community.

Recommendation #64: Require grid network of streets where practicable.

Rationale: Calms traffic speeds, promotes pedestrian and bicycle movement, and facilitates access for emergency vehicles.

Recommendation #65: Require bike lanes on all main and feeder roads within the compact community.

Rationale: Promotes safe bicycle transit.

Recommendation #66: Encourage front porches on single-family detached homes

Rationale: Promotes safe and neighborly streets; enhances neighborhood aesthetics

Recommendation #67: Locate homes within comfortable speaking distance of the sidewalk

Rationale: Promotes safe and neighborly streets; enhances neighborhood aesthetics

Recommendation #68: Encourage or require garages to be located on rear alleys

Rationale: Helps preserve a continuous sidewalk that is safer for pedestrians; improves neighborhood aesthetics by avoiding a "garagescape" and moving trash collection to the rear of homes

Recommendation #69: Encourage mixed use of housing types.

Rationale: Provides diversity and range of affordability.

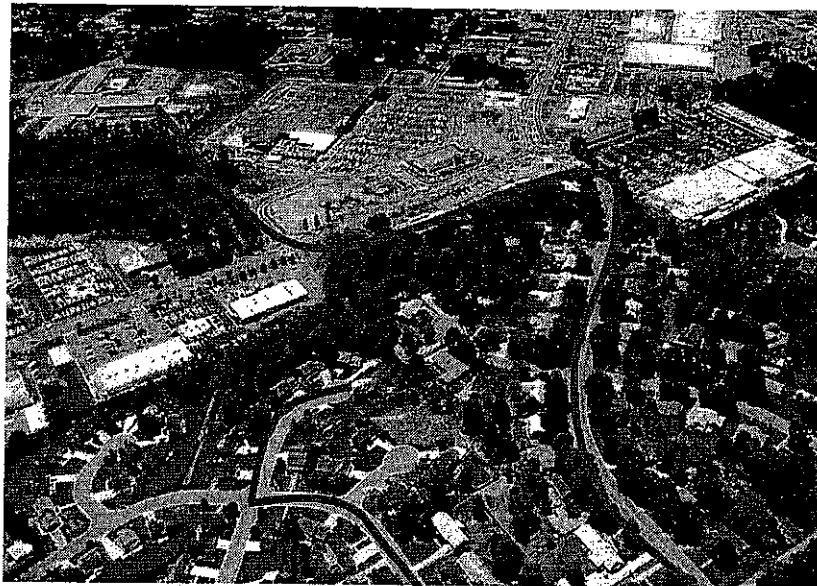
Recommendation #70: Permit above-garage apartments.

Rationale: Increases affordable housing stock, generates rental income for homeowner.

Conventional Pattern of Development

School

Stores



Homes

Commute to stores and school requires automobile or bus.
No interconnecting streets. Not pedestrian friendly.

Recommendation #71: Require underground utilities.

Rationale: Reduces interruptions of service due to natural disasters; improves neighborhood aesthetics.

Recommendation #72: Design streets that are safe for pedestrians and bicyclists, and adequate for emergency vehicles.

Rationale: Increases pedestrian and bicycle safety; promotes walking and biking; reduces auto use; promotes physical activity; ensures access by emergency vehicles.

Recommendation #73: Do not permit gated communities.

Rationale: Allows all Chatham residents access to “public” areas of compact communities; promote a sense of community and connectivity with Chatham County.

Recommendation #74: In cases where the compact community is subdivided into “pods,” or neighborhoods, require all residences in the commercial pod [core pod] to be within a 5 minute walk of the commercial district, and require all residences in other pods or neighborhoods to be within a 5 minute bike ride of the core pod, and require that all pods are accessible to each other and Chatham County by foot, bike, and vehicle.

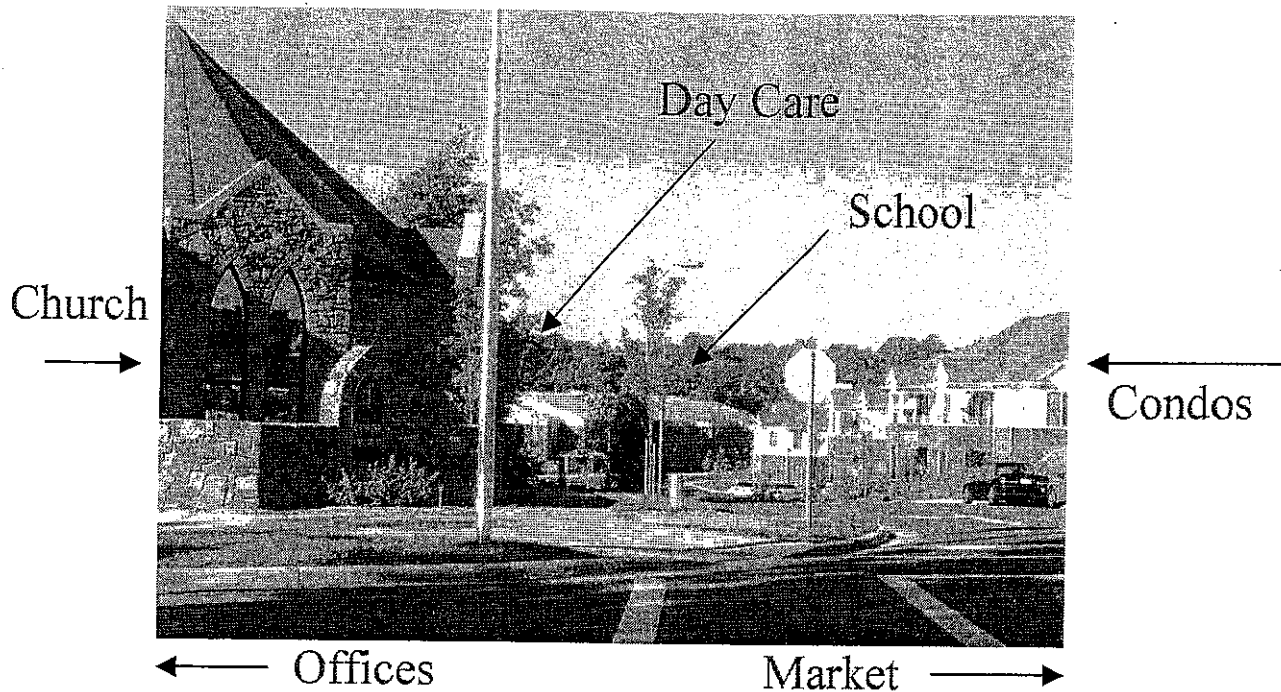
Rationale: Encourages walkability, connectivity and promotes a human scale.

Schools

Recommendation #75: Locate schools on a site accessible by foot

Rationale: Allows students to walk to school, reduces need for buses

Mix of Land Uses



Recreation

Recommendation #76: Require a linked pedestrian network of sidewalks and bike paths throughout the compact community.

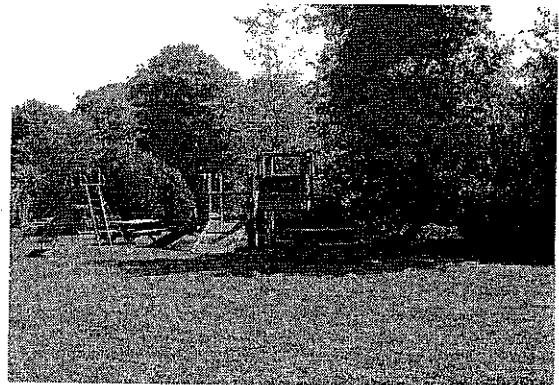
Rationale: Encourages walking and jogging. Improves health, fitness, and general well being of community. As more development comes, provides for a linked pedestrian network between compact communities.

Recommendation #77: Require sidewalks on at least one side of access streets and on both sides of internal streets.

Rationale: Provides completely linked, safe system connecting residential areas, commercial areas, parks, etc.

Recommendation #78: Require active and passive recreational areas with utilities, including at least one 10-acre contiguous site on land and in a location that is suitable for active recreation.

Rationale: Recreation exaction fee generates new recreational land or money, but not at a rate commiserate with the residential density of a compact community. In addition to the recreation exaction fee requirements, an additional 10-acre site will ensure that the compact community's relative recreational impact on the county is positive. The site should be of a sufficient size to satisfy the recreational needs of the compact community, if not the surrounding community, and should serve as a "community park" as defined by the Chatham County Parks and Recreation Master Plan.



Commercial building, parking, landscaping and accoutrements design

Recommendation #79: Architecture should use materials, colors, size and shape to promote harmony and avoid monotony and to be consistent with the residential units as well as the character of Chatham County. Architectural plans submitted must include renderings of buildings; and if conceptually approved, must be submitted in full detail for final approval.

Rationale: Ensures county review for appropriate design and function, and encourage the development of a community that is well integrated with the rest of the county.

Recommendation #80: Parking lots shall have internal landscaping as well as buffered landscaping on edge of lots in accordance with a submitted plan.

Rationale: Assists in stormwater management, reduces impervious surfaces, and is important for screening and visual effect.

Recommendation #81: Encourage foundation landscaping where feasible to be submitted with master landscaping plan together with screening plans for storage and loading areas.

Rationale: Assists in stormwater management, reduces impervious surfaces, and is important for screening and visual effect.

Recommendation #82: Require all free standing signs to be of monument type and to use a common size, color, pallet, font style, location and supporting structure for each tenant.

Rationale: Promotes aesthetics and attractiveness of project.

Recommendation #83: When the Commissioners have approved conceptual plans for a project, require that detailed design plans be reviewed and approved by Planning Board and other relevant county advisory boards.

Rationale: Assures final plans carry out conceptual plans in an appropriate manner.

Minimize Impacts on Surrounding Communities

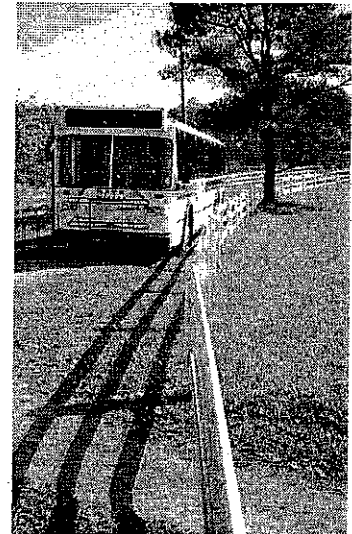
Traffic

Recommendation #84: Require a traffic impact analysis conducted by a certified Traffic Engineer to NC DOT standards. In addition, development of Traffic Safety Measures to minimize the potential number of accidents in the areas, traffic mitigation measures shall be required to assure that projected cumulative traffic volume to road capacity (V/C) ratios at intersections do not exceed acceptable levels.

Rationale: Increased traffic congestion potentially contributes to decreased roadway safety, increased commuter times and pollution, and a reduction in the form of rural character described in the county LCDP. Minimum standards for mitigation of these impacts should be part of the design requirements.

Recommendation #85: Encourage a design that maximizes present and future mass transit accessibility.

Rationale: The traffic impacts of increased density in a compact community (relative to conventional residential development) can be mitigated by utilization of mass transit, which is facilitated by increased density in the compact community.



Recommendation #86: Require the identification and preservation of at least one adequate, future mass transit stop, including consideration of a park and ride lot.

Rationale: Current preservation of a mass transit stop will provide significant future savings to the County.

Lighting

Recommendation #87: The compact community ordinance should reference the Chatham County lighting ordinance, currently under draft development, or develop base line expectations. Provisions should include stipulations of full cutoff lighting, parking lot lighting, signage lighting, etc.

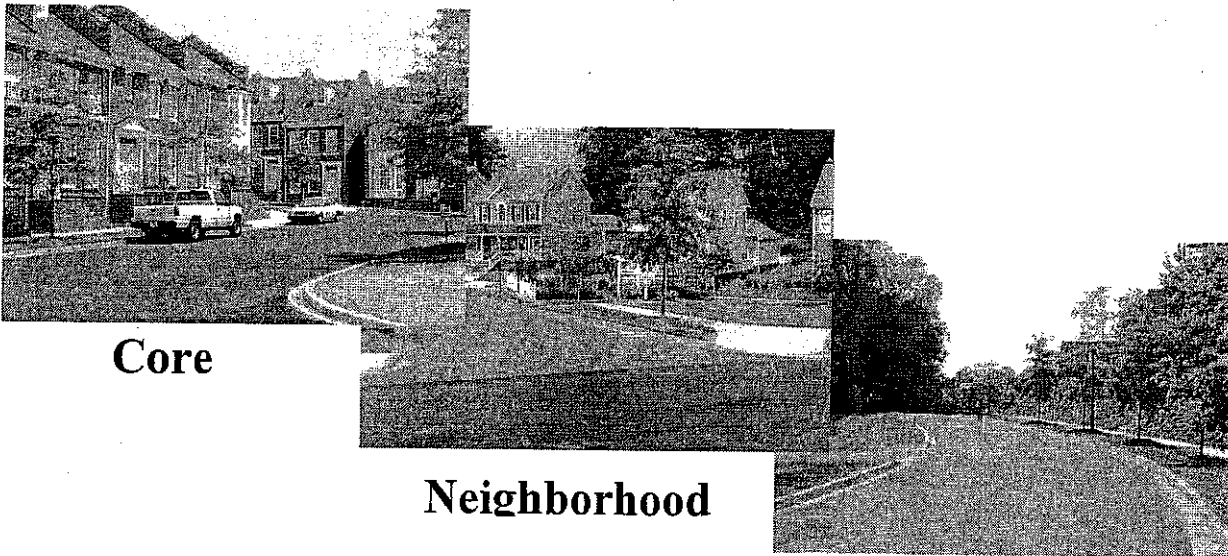
Recommendation #88: In lieu of a county lighting ordinance, outdoor lighting shall be designed to provide the minimum lighting necessary to ensure adequate safety, night vision, and comfort, and shall not create or cause excessive glare on adjacent properties and public street rights-of-way.

Rationale: Without lighting parameters, the county light sky will be compromised by large residential concentrations.

Community Buffering

Recommendation #89: Provide for greater densities in the core of the community, transecting to larger lot development at the perimeter.

Rationale: This provision helps to maintain rural character in the county, plus buffers against surrounding properties.



Core

Neighborhood

Edge

Recommendation #90: Create viewshed buffers to minimize the impacts of compact communities on pre-development roadway views using existing topography, land uses, and vegetation, or by incorporation of new vegetative planting that is consistent with natural and/or rural views in the surrounding area.

Rationale: This provision helps maintain rural character in the county.

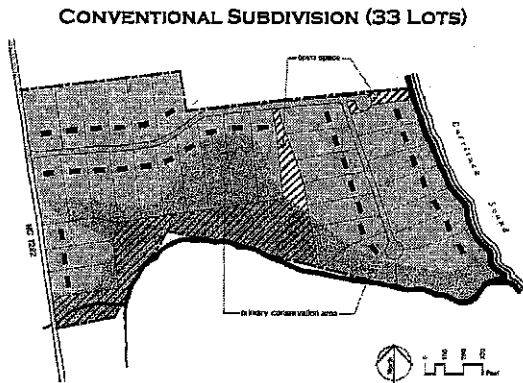
Recommendation #91: Create perimeter buffers to obscure or significantly soften the external view of the compact community from adjacent properties. These buffers are also employed to address safety related issues associated with certain compact community activities.

Rationale: As a result of increased density (relative to conventional development), compact communities have the potential to negatively affect neighboring properties with respect to visual impacts and increased activity levels. Buffer requirements provide a means to mitigate these impacts.

Recommendation #92: Perimeter buffers are not to be used for the distribution of treated wastewater.

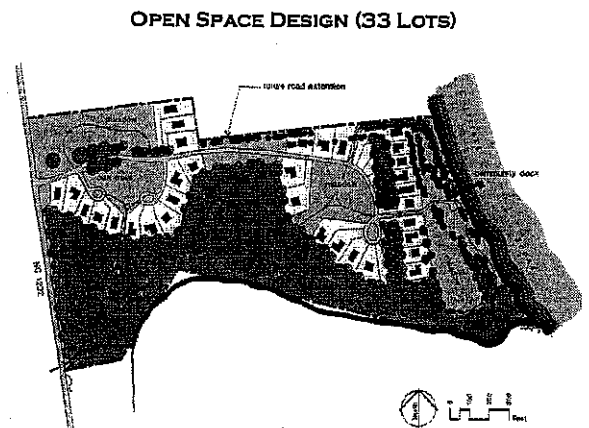
Rationale: As a result of increased density (relative to conventional development), compact communities have the potential to negatively affect neighboring properties with respect to visual impacts and increased activity levels. Buffer requirements provide a means to mitigate these impacts.

Example of buffering...



Note the larger lots, longer roadways, and limited public space.

Same number of lots, shorter roadway, plus greater buffering, public space, walking trails, and undisturbed natural vegetation.



LUPIC Membership and Stakeholder Involvement

1. **LUPIC members** include the following representatives of the listed appointed boards, leveraging the involvement of each respective board.

Strategic Plan Steering Team	Larry Hicks, Chair
Agriculture Advisory Board	Clarence Durham
Appearance Commission	Martin Spritzer
Economic Development Corporation	Hal Milholen
Planning Board	Steve Seilkop
Recreation Advisory Committee	Allen Baddour
Solid Waste Advisory Committee	Fleming Pfann
Water Advisory Committee	Ray Greenlaw
Water quality issues	Hal House

2. **Strategic Plan Steering Team** participants and advisors include:

Karl Ernst	Sharon LaPalme
Rachael Stevens	Howard Stier
Linda Stier	Ron Sidor

3. **County staff** participates as needed during the process. Participants include:

County Manager's Office	Paul Spruill
Planning Department	Keith Megginson

4. **Stakeholder participants** in the LUPIC have included:

Bruce Alexander, Chatham Citizen
Michael Burke, Chatham Citizen
Ben Campbell, Chatham Citizen
Elaine Chiosso, Haw River Assembly
John Delafield, Chatham County Homebuilders Association
Susan Faulkner, UNC, City and Regional Planning, graduate student
Robbie Howell, Chatham Citizen
Karl Kachergis, Chatham Citizen
Chris Ketchel, Chatham Citizen
Mark McBee, Chatham County Homebuilders Association
Josh Prokopy, Chatham County Affordable Housing Coalition
Jo Saunders, Chatham Citizen
Dennis Stacey, Chatham Citizen

5. **Additional support** provided by:

Ben Hitchings, Triangle J Council of Governments
John Hodges-Copple, Triangle J Council of Governments
Lanier Blum, TJCOG Center for Affordable Living