

# CHATHAM COUNTY

## 2021



# SCHEDULE

## OF

# VALUES

Schedule of rules, standards, and values to be used in appraising property in Chatham County for the reappraisal effective January 1, 2021.

**CHATHAM COUNTY  
BOARD OF COMMISSIONERS**

**Karen Howard, Chair (District 1)**  
**Diana Hales, Vice-Chair (District 3)**  
**Mike Dasher (District 2)**  
**Jim Crawford (District 4)**  
**Andy Wilkie (District 5)**

**Approved**

\_\_\_\_\_  
*Date*

**CHATHAM COUNTY BOARD OF COMMISSIONERS**

**Signed** \_\_\_\_\_

*Chair, Board of Commissioners*

## **COMPONENTS OF A REAPPRAISAL**

To accomplish the task of valuing all parcels within a county as of the January 1 reappraisal date, the methodology of mass appraisal rather than the methodology of single-property appraisals must be utilized. Mass appraisal is the systematic appraisal of groups of properties as neighborhoods. This is accomplished by using standardized procedures and statistical testing. In a mass appraisal system, the assessor must make valuation judgments about groups of properties rather than single properties. The assessor must be able to develop, support and explain standardized adjustments in a valuation model among use classes, construction types, neighborhoods and other property groups. The guide used for this is the uniform schedule of values. The schedule of values is made up of schedules, standards, rules, tables and other factors used to apply the correct value to parcels. The schedule of values serves as the county's mass appraisal model and is implemented by means of a computer assisted mass appraisal system (CAMA). Incorporated in the schedule may be building cost figures derived from national data that have been adjusted to reflect local costs, local cost studies, qualifying arms-length sales, and income and expense formulas. These schedule of values sets forth values for appropriate unit of measurement for use in appraising land and buildings. For example, land may be valued by a set amount per square foot, lot, acre, or home-site, depending on the highest and best use, while a dwelling is typically valued using an established amount per square foot. The land unit per appropriate unit of measurement also will vary depending on the neighborhood in which the land is situated. Factors that warrant adjustments are also set forth in the schedule of values for various types of property. The schedule typically authorizes adjustments to land value based on factors such as home-site size, excess acreage, road frontage, topography, zoning, the presence of easements and other factors. A county's schedule also typically prescribes ranges of characteristics and corresponding percentage adjustments for recognized factors.

Mass appraisal for ad valorem purposes entails many of the same principles as an independent fee, single-property appraisal. Mass appraisal techniques, however, emphasize valuation modules (expressed as equations, tables and schedules), standards of practice, and statistical quality control. A reassessment program consists of these subsystems:

1. A data management system
2. A sales analysis system
3. A valuation system
4. An administrative system

These subsystems are independent of each other. For example, the valuation system uses information maintained in the sales analysis and data management systems and produces output (valuations) required by the administrative system in the production of tax bills.

## **DATA MANAGEMENT SYSTEM**

The data management system has components for collection, entry, editing, organization, conversion, storage, and security of property characteristics and ownership. Quality control of this system is very important because the accuracy of the values determined depends on the reliability of the data from which they are generated. In addition, data collection, conversion, and maintenance are the most expensive aspect of any reappraisal program. Special care must be given to the thought and planning required of managing logic to minimize cost.

Data maintenance is the protocol for creating new parcels, capturing and valuing new construction, and making changes to the current property database. The maintenance protocol consists of three components:

1. County land records system: the daily creation of new parcels from the recording of “splits” (dividing of an existing parcel), combining existing parcels, and the recording of new subdivision plats feeds the second component.
2. Permits and inspections: as the appraisal staff receives notice of new permits and inspections, property record cards are accessed, and new data is collected. Staff receives this information and monitors the construction progress and makes determinations of the percentage of construction completed as of January 1 each calendar year.
3. Periodic re-inspection of all properties: routine field visits are supplemented with information obtained from the latest Orthophotography and provided by property owners as part of the annual listing abstracts and requests from taxpayers for review or appeal.

## **SALES ANALYSIS SYSTEM**

The sales analysis system has components for sales data collection, sales screening and processing, ratio studies, and sales reporting. Assessment/sales ratio studies are the primary tool for measuring mass appraisal performance. They are invaluable for monitoring appraisal results, identifying reappraisal priorities, adjusting valuations to the market, and assisting the administrative system in planning and scheduling.

Ratio studies and sales reports draw on values produced by the valuation system and on property characteristics maintained in data management.

**VALUATION SYSTEM**

The valuation system (CAMA) consists of mass appraisal applications of the three approaches to value and/or allows for various adjustments that recognize specific aspects of each approach. The three approaches are:

1. Cost Approach: requires maintenance and application of computerized cost schedules and equations, depreciation schedules, and indexing factors. This data comes from contractors, building material suppliers, etc.
2. Sales Comparison Approach: applications include multiple regression analysis and model building for automated comparable sales analysis.
3. Income Approach: will require income multipliers and overall rates. The information to generate this comes from rental, leasing, sales, etc., data provided by owners and tenants.

The optimum results of the valuation system will be to consider all three approaches to value, as appropriate to property type, and determine which method(s) produces the best results for the final appraisal. Properly executed, any of the three approaches to value will yield creditable results, however the sales comparison and income approaches are highly dependent on available data. Of the three approaches, only the cost approach can be uniformly applied with limited data.

The economy can affect the number of arm’s length sales occurring in the market. A general county-wide reappraisal depends on data being available from a wide variety of sources in order to properly apply each of the three approaches to value. Even when an abundance of relevant data is available for applying the sales comparison approach and the income approach, that data may also be utilized in refining the cost approach. In the absence of relevant data prior to the final determination of reappraisal values, the cost approach becomes the more reliable approach for all property types. Below is a comparison of the three approaches to value and when best to apply them.

<u>RESIDENTIAL</u>	<u>COMMERCIAL</u>	<u>INDUSTRIAL/ SPECIAL PURPOSE</u>
1.Sales Comparison	1.Sales Comparison	1.Cost
2.Cost	2.Income	2.Sales Comparison
3.Income	3.Cost	3.Income

**THE ADMINISTRATIVE SYSTEM**

The administrative system is comprised of a variety of functions and activities, each of which requires information from sales analysis, valuation, or data management systems and produces products used by the administrative system.

## **IN-HOUSE REAPPRAISAL**

An in-house reappraisal is a major effort requiring careful preparation, the support of county management and the Board of County Commissioners, adequate time, and sufficient funds. In preparing a schedule and reappraisal, the assessor's office should include the relationship between the daily operations of the assessor's office and the reappraisal program. Adequate time to cover probable delays and contingencies to deal with unforeseen problems must be taken into consideration. Even though the reappraisal process should be viewed as separate from daily operations, existing staff, duties, responsibilities, and priorities must be modified and additional staff may be required.

## **SUMMARY**

General reappraisals of real property are required, by statutory authority, to be performed on an octennial plan (eight-year cycle). Many counties adopt a shorter cycle via a resolution by their respective County Board of Commissioners. The current trend in North Carolina is a four-year cycle for reappraisal with counties to hire and train the staff in order to perform an "In-House" reappraisal as opposed to "contracted" from outside the county lines.

As understood by the assessor's office, an effective reappraisal requires careful planning, a realistic analysis of the present state of the assessment records and values, and the resources needed to conduct the appraisal. As such, reappraisals are a costly, highly visible and politically sensitive undertaking. However, since the real property staff in the assessor's office understands its own resources and the technical requirements of the task, they are committed to conducting the most fair and equitable reappraisal possible. The success of this endeavor depends on the leadership of the assessor's office, an informed public awareness, and committed management support.

For an assessor to undertake their responsibilities and duties properly, they must be familiar with the legal framework in which to perform their function. The legal framework sets the guidance and rules to follow for a reappraisal. Some general statutes, but not all, are included in this section. Others will be included throughout this schedule as applicable.

## STATUTORY REQUIREMENTS

### ***G S 105-286. Time for general reappraisal of Real Property.***

(a) Octennial Cycle. - Each county must reappraise all real property in accordance with the provisions of G.S. 105-283 and G.S. 105-317 as of January 1 of the year set out in the following schedule and every eighth year thereafter, unless the county is required to advance the date under subdivision (2) of this section or chooses to advance the date under subdivision (3) of this section.

- (1) Schedule of Initial Reappraisals.  
Division Eight - 1979: Chatham
- (2) Mandatory Advancement. - A county whose population is 75,000 or greater according to the most recent annual population estimates certified to the Secretary by the State Budget Officer must conduct a reappraisal of real property when the county's sales assessment ratio determined under G.S. 105-289(h) is less than .85 or greater than 1.15, as indicated on the notice the county receives under G.S. 105-284. A reappraisal required under this subdivision must become effective no later than January 1 of the earlier of the following years:
  - a. The third year following the year the county received the notice.
  - b. The eighth year following the year of the county's last reappraisal.
- (3) Optional Advancement. - A county may conduct a reappraisal of real property earlier than required by subdivision (1) or (2) of this subsection if the Board of County Commissioners adopts a resolution providing for advancement of the reappraisal. The resolution must designate the effective date of the advanced reappraisal and may designate a new reappraisal cycle that is more frequent than the octennial cycle set in subdivision (1) of this subsection. The Board of County Commissioners must promptly forward a copy of the resolution adopted under this subdivision to the Department of Revenue. A more frequent reappraisal cycle designated in a resolution adopted under this subdivision continues in effect after a mandatory reappraisal required under subdivision (2) of this subsection unless the board of county commissioners adopts another resolution that designates a different date for the county's next reappraisal.

*Note:* Under the provisions of ***G S 105-286(a)(3)***, for 2021 the Chatham County Board of Commissioners adopted a resolution to advance the reappraisal date to January 1, 2021, and continue on a four-year reappraisal cycle from this date.

## ***G S 105-273(13). Definitions***

Real property, real estate, or land. - Any of the following:

- a. The land itself.
- b. Buildings, structures, improvements, or permanent fixtures on land.
- c. All rights and privileges belonging or appertaining to the property.
- d. A manufactured home as defined in G.S. 143-143.9(6), unless it is considered tangible personal property for failure to meet all of the following requirements:
  1. It is a residential structure.
  2. It has the moving hitch, wheels, and axles removed.
  3. It is placed upon a permanent foundation either on land owned by the owner of the manufactured home or on land in which the owner of the manufactured home has a leasehold interest pursuant to a lease with a primary term of at least 20 years and the lease expressly provides for disposition of the manufactured home upon termination of the lease.

## ***G S 105-296(b). Powers and duties of assessor.***

Within budgeted appropriations, he shall employ listers, appraisers, and clerical assistants necessary to carry out the listing, appraisal, assessing, and billing functions required by law. The assessor may allocate responsibility among such employees by territory, by subject matter, or on any other reasonable basis. Each person employed by the assessor as a real property appraiser or personal property appraiser shall during the first year of employment and at least every other year thereafter attend a course of instruction in his area of work. At the end of the first year of their employment, such persons shall also achieve a passing score on a comprehensive examination in property tax administration conducted by the Department of Revenue.

## ***G S 105-299. Employment of experts.***

The Board of County Commissioners may employ appraisal firms, mapping firms or other persons or firms having expertise in one or more of the duties of the assessor to assist him or her in the performance of such duties. The county may make available to such persons any information it has that will facilitate the performance of a contract entered into pursuant to this section. Persons receiving such information shall be subject to the provisions of G.S. 105-289(e) and G.S. 105-259 regarding the use and disclosure of information provided to them by the county. Any person employed by an appraisal firm whose duties include the appraisal of property for the county shall be required to demonstrate that he or she is qualified to carry out such duties by achieving a passing grade on a comprehensive examination in the appraisal of property administered by the Department of Revenue. In the employment of such firms, primary consideration shall be given to the firms registered with the Department of Revenue pursuant to the provisions of G.S. 105-289(i). A copy of the specifications to be submitted to potential bidders and a copy of the proposed contract may be sent by the board to the Department of Revenue for review before the invitation or acceptance of any bids. Contracts for the employment of such firms or persons shall be deemed to be



contracts for personal services and shall not be subject to the provisions of Article 8, Chapter 143, of the General Statutes.

(1939, c. 310, s. 408; 1971, c. 806, s. 1; 1973, c. 476, s. 193; 1975, c. 508, s. 2; 1983, c. 813, s. 4; 1985, ARTICLE 19.

***G S 105-317. Appraisal of real property; adoption of schedules, standards, and rules.***

(a) Whenever any real property is appraised it shall be the duty of the persons making appraisals:

(1) In determining the true value of land, to consider as to each tract, parcel, or lot separately listed at least its advantages and disadvantages as to location; zoning; quality of soil; waterpower; water privileges; dedication as a nature preserve; conservation or preservation agreements; mineral, quarry, or other valuable deposits; fertility; adaptability for agricultural, timber-producing, commercial, industrial, or other uses; past income; probable future income; and any other factors that may affect its value except growing crops of a seasonal or annual nature.

(2) In determining the true value of a building or other improvement, to consider at least its location; type of construction; age; replacement cost; cost; adaptability for residence, commercial, industrial, or other uses; past income; probable future income; and any other factors that may affect its value.

(3) To appraise partially completed buildings in accordance with the degree of completion on January 1.

(b) In preparation for each revaluation of real property required by G.S. 105-286, It shall be the duty of the assessor to see that:

(1) Uniform schedules of values, standards, and rules to be used in appraising real property at its true value and at its present-use value are prepared and are sufficiently detailed to enable those making appraisals to adhere to them in appraising real property.

(2) Repealed by Session Laws 1981, c. 678, s. 1.

(3) A separate property record be prepared for each tract, parcel, lot, or group of contiguous lots, which record shall show the information required for compliance with the provisions of G.S. 105-309 insofar as they deal with real property, as well as that required by this section. (The purpose of this subdivision is to require that individual property records be maintained in sufficient detail to enable property owners to ascertain the method, rules, and standards of value by which property is appraised.)

(4) The property characteristics considered in appraising each lot, parcel, tract, building, structure and improvement, in accordance with the schedules of values, standards, and rules, be accurately recorded on the appropriate property record.

(5) Upon the request of the owner, the Board of Equalization and Review, or the Board of County Commissioners, any particular lot, parcel, tract, building, structure or improvement be actually visited and observed to verify the accuracy of property characteristics on record for that property.

(6) Each lot, parcel, tract, building, structure and improvement be separately appraised by a competent appraiser, either one appointed under the provisions of G.S. 105-296 or one employed under the provisions of G.S. 105-299.

(7) Notice is given in writing to the owner that he is entitled to have an actual visitation and observation of his property to verify the accuracy of property characteristics on record for that property.

(c) The values, standards, and rules required by subdivision (b)(1) shall be reviewed and approved by the Board of County Commissioners before January 1 of the year they are applied. The Board of County Commissioners may approve the schedules of values, standards, and rules to be used in appraising real property at its true value and at its present-use value either separately or simultaneously. Notice of the receipt and adoption by the Board of County Commissioners of either or both the true value and present-use value schedules, standards, and rules, and notice of a property owner's right to comment on and contest the schedules, standards, and rules shall be given as follows:

(1) The assessor shall submit the proposed schedules, standards, and rules to the Board of County Commissioners not less than 21 days before the meeting at which they will be considered by the board. On the same day that they are submitted to the board for its consideration, the assessor shall file a copy of the proposed schedules, standards, and rules in his office where they shall remain available for public inspection.

(2) Upon receipt of the proposed schedules, standards, and rules, the Board of County Commissioners shall publish a statement in a newspaper having general circulation in the county stating:

a. That the proposed schedules, standards, and rules to be used in appraising real property in the county have been submitted to the Board of County Commissioners and are available for public inspection in the assessor's office; and

b. The time and place of a public hearing on the proposed schedules, standards, and rules that shall be held by the Board of County Commissioners at least seven days before adopting the final schedules, standards, and rules.

(3) When the Board of County Commissioners approves the final schedules, standards, and rules, it shall issue an order adopting them. Notice of this order shall be published once a week for four successive weeks in a newspaper having general circulation in the county, with the last publication being not less than seven days before the last day for challenging the validity of the schedules, standards, and rules by appeal to the Property Tax Commission. The notice shall state:

a. That the schedules, standards, and rules to be used in the next scheduled reappraisal of real property in the county have been adopted and are open to examination in the office of the assessor; and

b. That a property owner who asserts that the schedules, standards, and rules are invalid may except to the order and appeal therefrom to the Property Tax Commission within 30 days of the date when the notice of the order adopting the schedules, standards, and rules was first published.

(d) Before the Board of County Commissioners adopts the schedules of values, standards, and rules, the assessor may collect data needed to apply the schedules, standards, and rules to each parcel in the county

***G S 105-283. Uniform appraisal standards.***

All property, real and personal, shall as far as practicable be appraised or valued at its true value in money. When used in this Subchapter, the words "true value" shall be interpreted as meaning market value, that is, the price estimated in terms of money at which the property would change hands between a willing and financially able buyer and a willing seller, neither being under any compulsion to buy or to sell and both having reasonable knowledge of all the uses to which the property is adapted and for which it is capable of being used. For the purposes of this section, the acquisition of an interest in land by an entity having the power of eminent domain with respect to the interest acquired shall not be considered competent evidence of the true value in money of comparable land.

**Authors Notes: The Machinery Act of North Carolina has been provided as an integral part of these Uniform Schedules of Value, Standards, and Rules. All applicable standards not recited in this text are included by reference.**

In addition to the specific statutory direction and appellate court rulings, it is necessary to be well-versed with the nature of appraised values of property and with the basic economic principles that serve as the foundation of the valuation process.

## **APPRAISAL THEORY**

An appraisal, in itself, is nothing more than an opinion of value. This does not imply, however, that one opinion is necessarily as good as another; there are valid and accurate appraisals, and there are invalid and inaccurate appraisals. The validity of an appraisal can be measured against the supporting evidence from which it was derived, and its accuracy against that very thing it is supposed to predict - the actual behavior of the market. Each is fully contingent upon the ability of the appraiser to record adequate data and to interpret that data into an indication of value.

Appraising real property, like the solving of any problem, is an exercise in reasoning. It is a discipline, and like any discipline, it is founded on fundamental economic and social principles. From these principles evolve certain premises which, when applied to the valuation of property, serve to explain the reaction of the market. This section concerns itself with those concepts and principles basic to the property valuation process. One cannot overstate the necessity of having a workable understanding of them.

## **CONCEPT OF PROPERTY**

The definition of property should begin the discussion of assessing value. Property is associated with the right of any person to possess, use, enjoy and dispose of a thing. Property, then, is a broad term expressing the relationship between owners and their rights in and to possessions. In appraising real property, the parcel to be appraised includes the rights inherent in ownership of the property and should be included in the opinion of value rendered by the reappraisal.

All property may be divided into two major categories-real property and personal property. Real property is defined as the sum of the tangible and intangible rights in land and improvements. This refers to the interest, benefits, and rights inherent in the ownership of physical real estate. Real estate is the physical land, and everything permanently attached to it. Personal property consists of moveable items not permanently affixed to, or part of, the real estate and is commonly known as "personal" or "chattels".

Real estate may be divided into two categories-land and improvements. Land is defined as the surface of the earth together with everything under its boundary and everything over it. Improvements (land improvements, such as paving, fencing, structures, and landscaping etc.) consist of immovable items affixed to and becoming part of the real estate. "Permanently affixed" refers to the original intent of the owner and economic life of the improvements.

Defining the term “affixed” has been the subject of much litigation, and the courts are subject to change the meaning. In general terms, personal property annexed to land is called a fixture. Chattels that have been annexed to land are called a fixture.

These chattels that have been annexed to the land, so as to lose their character as chattels, become real estate for ad valorem tax purposes. In determining the nature of the annexation of personal property, there are two basic considerations: first, the adaptability of the personal property to the use part of the realty; and second, the person by whom the annexation is made and his interest in the land and the personal property.

Courts have held that, if the chattel is affixed to the land so that it loses its original physical character and cannot be restored to its original condition as a practical matter; it loses its nature as personal property and becomes real property. Two tests relied upon to determine if personal property becomes real estate are: first the intention of the person who put the item in its place; and second, whether the item may be removed from the real estate without damaging either the item or the real estate. Also, to be considered are the use of the item and the generally accepted conveyance of the item in real estate transactions.

In identifying property, a distinction must be made between that of tangible and intangible property. Tangible property consists of actual physical property. Intangible property is evidence of ownership of property rights. Some examples of intangible property are patent rights, copyrights, notes, mortgages, deeds of trust, and stock certificates.

## **BUNDLE OF RIGHTS**

Real estate and real property are often used interchangeably. Generally speaking, real estate pertains to the real or fixed improvements to the land such as structures and other appurtenances, whereas real property encompasses all the interests, benefits and rights enjoyed by the ownership of the real estate.

Real property ownership involves the Bundle of Rights Theory which asserts that the owner has the right to enter it, use it, sell it, lease it, or give it away, as the owner so chooses. Law guarantees these rights, but they are subject to certain governmental and private restrictions.

The Governmental restrictions are found in its power to:

- Tax property
- Take property by condemnation for the benefit of the public, providing that just compensation is made to the owner (Eminent Domain)
- Police property by enforcing any regulations deemed necessary to promote the safety, health, morals and general welfare of the public
- Provide for the reversion of ownership to the state in cases where a competent heir to the property cannot be ascertained (Escheat)

Private restrictions imposed upon property are often in the form of agreements incorporated into the deed. The deed also spells out precisely which rights of the total bundle of rights the buyer is acquiring. Since value is related to each of these rights, the appraiser should know precisely which rights are involved in his appraisal.

Appraisals for Ad Valorem tax purposes generally assume the property is, owned in the "Fee Simple", meaning that the total bundle of rights is considered to be intact.

## THE NATURE AND MEANING OF VALUE

An appraisal is an opinion or estimate of value. The concept of value is basic to the appraisal process and calls for a thorough understanding. The American Institute of Real Estate Appraisers' Appraisal Terminology Handbook, 1981 edition, offers the following definitions of value:

"The measure of value is the amount (for example, of money) which the potential purchaser probably will pay for possession of the thing desired."

"The ratio of exchange of one commodity for another, for example, one bushel of wheat in terms of a given number of bushels of corn; thus the value of one thing may be expressed in terms of another thing. Money is the common denominator by which value is measured."

"It is the power of acquiring commodities in exchange, generally with a comparison of utilities - the utility of the commodity parted with (money) and that of the commodity acquired in the exchange (property)."

"Value depends upon the relation of an object to unsatisfied needs; that is, supply and demand."

"Value is the present worth of future benefits arising out of ownership to typical users and investors."

With these definitions, one can see that value is not an intrinsic characteristic of the commodity itself. On the contrary, value is determined by people, created by desire, modified by varying degrees of desire and reduced by lack of desire. Throughout the definitions a relationship between the purchase and the commodity (property) is implied; this relationship is "value". A purchaser desires a property because it is a useful commodity in that it has utility. Utility is a prerequisite to value, but utility standing alone does not sufficiently cause value. If a great supply of a useful commodity exists, as for example air, needs would be automatically satisfied, desire would not be aroused, and therefore value would not be created. Therefore, besides having utility, to effectively arouse desire, the commodity must also be scarce.

One additional factor is necessary to complete the value equation, the ability to become a buyer. A translation must be made of desire into a unit of exchange; a buyer must have purchasing power. The relationship is now complete; the commodity has utility and is relatively scarce, it arouses desire, and the buyer is able to satisfy that desire by trading for it; value is created. The question is how much value, and herein lays the job of the appraiser.

Numerous definitions of value have been offered, some simple and some complex. It would seem though that any valid definition of value would necessarily embody the elements of utility, desire, scarcity and purchasing power. Furthermore, the concept of value very rarely stands alone. Instead, it is generally prefixed by a descriptive term that serves to relate it to a specific appraisal purpose or activity such as "loan value". Since appraisals are made for a variety of reasons, it is important for the appraiser to clarify the specific purpose for the appraisal and the type of value that he seeks to estimate.

For Ad Valorem Tax purposes, the value sought is generally market value. North Carolina Machinery Act describes market value as follows:

***G S 105-283*** All property, real and personal, shall as far as practicable be appraised or valued at its true value in money. When used in this Subchapter, the words "true value" shall be interpreted as meaning market value, that is, the price estimated in terms of money at which the property would change hands between a willing and financially able buyer and a willing seller, neither being under any compulsion to buy or to sell and both having reasonable knowledge of all the uses to which the property is adapted and for which it is capable of being used. For the purposes of this section, the acquisition of an interest in land by an entity having the power of eminent domain with respect to the interest acquired shall not be considered competent evidence of the true value in money of comparable land.

## **VALUE IN USE AS OPPOSED TO VALUE IN EXCHANGE**

We have stated that there are a number of qualifying distinctions made in reference to the meaning of value. One of the most common and probably the most important relative to the purpose of this manual is the distinction between value in use and value in exchange. We have defined market value as a justifiable price which buyers, in general, will pay in the market. The question arises then as to the value of property which, by nature of its special and highly unique design, is useful to the present owner, but relatively less useful to buyers in the market. One can readily see that such a property's utility value may differ greatly from its potential sales price. It is even possible that no market for such a property exists. Such a property is said to have value in use, which refers to the actual value of a commodity to a specific person, as opposed to value in exchange, which aligns itself with market value, referring to the dollar-value of a commodity to buyers in general. In a sense, value in use embodies the object premise, which maintains that value is within the object. This concept easily accommodates cost. While with value in exchange the subjective element is accentuated. Value in exchange, being the primary concern for the assessor, reflects the actions and reactions of buyers, sellers and investors and is considered market value.

In any discussion of value, a comparison of the terms “cost” and “price” is useful. Cost may be defined as the sacrifice made in the acquisition of property and commonly reflects the perspective of the buyer. Either the purchase of an existing property or the construction of a new property may incur cost. Price may be defined as the amount of money given, expected or arrived at arranging for the exchange of property. Cost and price may be the same, but not necessarily. An example would be; a purchaser pays \$200,000 to buy a property, it may be stated that the property cost \$200,000. However, while price is defined in terms of money, cost is expressed as a sacrifice. A sacrifice may be in terms of money, labor, or time. Also, when property is sold, the price may be either above or below the owner’s cost.

## MARKET VALUE

The terms “value” and “market value” though similar are not the same. There are many different definitions for market value provided by statutes and constitutions of all fifty states for property taxation and realtors used to market property. The assessor must adhere to the definition of market value as stated in *G S 105-283* (see section on statutes) and decisions rendered by the North Carolina Appellate Courts.

The following important points regarding market value should be noted:

1. It is the most probable price.
2. It is not the highest, lowest, or average price.
3. It is expressed in terms of money.
4. It implies a reasonable time for exposure to the market.
5. It implies that both buyer and seller are well-informed of the uses to which the property may be put. It requires an arm’s length transaction in the open market.
6. It requires a willing buyer and willing seller, with no advantage being taken by either buyer or seller. Neither buyer nor seller placed in a position of having to purchase or sell to avoid legal action or dispose of property. This is a constraint against consideration of foreclosures and short sales.
7. It recognizes the present use as well as the potential use of property.

*Note:* In analyzing sales of property, close attention is paid to identifying all transactions that are the result of a foreclosure or short sale. Such sales are not retained for further consideration in determining the schedules set out elsewhere in this document, and neither will they be considered in analyzing the reappraisal results via the State-mandated assessment/sales ration study. For a complete list of conditions, that the North Carolina Department of Revenue distributes to all 100 counties to be used in determining qualified or disqualified sales (not consider an arm’s length transaction).



## **PRINCIPLE OF HIGHEST AND BEST USE**

The way in which property is used, or could be used, plays an essential role in determining its market value. An assessor recognizes this as the highest and best use. The highest and best use for a property is that use which will produce the highest net return to the land for a given period of time within the limits of those uses which are economically feasible, probable and legally permissible.

On a community-wide basis, the major determining factor in highest and best use is the maximum quantity of land that can be devoted to a specific use and still yield a satisfactory return. Once a suitable basic use has been chosen for a specific property, each increment of capital investment to the existing or planned improvement will increase the net return to the land only up to a certain point; after this point is reached; the net return to the land begins to diminish. This is the point at which the land is at its highest and best use.

For example, in planning a high-rise office building, each additional upper floor represents an extra capital expenditure that must yield a certain return to the investor. This return will be dependent upon the levels of economic rent that the market will bear at the time. An optimum number of floors can be calculated above which the income yield requirements of additional expenditures will no longer be satisfactorily met. This, notwithstanding the possibility of other more particular considerations, should determine the number of stories of the building.

Detailed analysis of this type is rarely thrust upon the property tax appraiser. Generally, the tax appraiser will find the most prudent course of action to consider the present use and follow development rather than anticipate it.

Just as everything changes with time, the highest and best use of property will change. The character of a neighborhood may be altered, thereby creating demands for different uses. The assessor periodically reviews conclusions as to highest and best use and revises them according to the data that are collected. As an example, zoning, one of the restraints on use, may be changed, which changes the allowable use.

## **BASIC PRINCIPLES OF VALUE**

Certain principles are generally accepted as having a direct effect on the modern concept of value evolving from economic doctrine. It should be emphasized that these principles rarely, if ever, can be considered in isolation. It is typical to conceive them in an interrelated setting, for they tend to complement and accompany one another. These principles, after considering the interrelationship among them, result in the highest and best use.

The following principles are essential to appraisal function:

## **PRINCIPLE OF ANTICIPATION**

Market value is the present worth of all the anticipated future benefits to be derived from the property. Income stream and amenities may be considered benefits. Anticipated future benefits are those benefits anticipated by the market. Past sales of the property and past income are important only when they are an indication of what may be expected in the future. The principle of change works in conjunction with the principle of anticipation.

## **PRINCIPLE OF BALANCE**

The principle of balance, when applied to a property, states that maximum market value is reached when the four agents of production – labor, coordination or management, capital, and land attain a state of equilibrium.

## **PRINCIPLE OF CHANGE**

The principle states that market value is never constant because economic, social, and governmental forces are at work to change property and its environment. Because change is continuous, the estimate of market value is valid only on the effective day for which it is made. This principle works in conjunction with the principle of anticipation.

The impact of change on the value of real property manifests itself in the life cycle of a neighborhood. The cycle is characterized by three stages of evolution: the development and growth evidenced by improving values; the leveling off stage evidenced by static values; and finally, the stage of infiltration of decay evidenced by declining values.

The highest and best use today is not necessarily the highest and best use tomorrow. The highest and best use of the land often lies in a succession of uses. A declining single-family residential neighborhood may be ripe for multi-family, commercial or industrial development. Whether it is or not depends upon the relationship of present or anticipated future demand with existing supply.

In estimating value, the appraiser is obligated to reasonably anticipate the future benefits, as well as the present benefits derived from ownership and to evaluate the property in light of the quality, quantity, and duration of these benefits based on actual data as opposed to speculative or potential benefits that may or may not occur.

## **PRINCIPLE OF COMPETITION**

This principle states that when substantial profits are being made, competition is created. This leads to the aphorism that profit tends to breed competition and that excess profit breeds ruinous competition.

## **PRINCIPLE OF CONFORMITY**

The principle of conformity states that maximum market value is reached when a reasonable degree of economic and social homogeneity is expected in the foreseeable future. As applied to improvements, reasonable homogeneity implies reasonable similarity, not monotonous uniformity. Similarity in age, income, background, etc., is conformity when applied to residents. In understanding the neighborhood concept in mass appraisal, conformity is essential and works with the principles of progression and regression.

## **PRINCIPLE OF CONSISTENT USE**

This principle states that the property must be valued with a single use for the entire property. Property valued on the basis on one use for land and another for the improvements is improper. The principle is especially applicable to a property in transition from one use to another. While the improvements on a parcel ready for a high use may theoretically have a long physical life, their economic life may have already terminated.

## **PRINCIPLE OF CONTRIBUTION**

This principle states that a value of an agent of production (or a property component) depends upon its contribution to the whole. This is another way of saying that cost does not necessarily equal value. Some examples are:

1. A garage is erected on an existing home at a cost of \$30,000. Based on comparable sales analysis, it is determined that such a garage adds \$35,000 to the overall market value of the property. In this case \$35,000 is the value contribution of the garage.
2. Cost does not always equal value. A stone fireplace cost \$10,000 to construct. Sales analysis in this neighborhood reflects a standard fireplace only adds \$5,000 of value to a home. A stone fireplace may only add \$6,000 of contribution to the value of the home, not the cost of \$10,000.

This principle is the basis for the adjustment process of the comparative sales approach to value and the direct sales comparison method of land valuation, for determining whether physical deterioration and functional obsolescence are curable or incurable, and for justifying remodeling and modernization. Many of the adjustments to value that are detailed herein for various property characteristics are based on their contribution to the whole property, not their actual cost. This principle works in conjunction with the principles of balance, increasing and decreasing returns, and surplus productivity.

## **PRINCIPLE OF INCREASING AND DECREASING RETURN**

This principle states that, when successive increments of one agent of production are added to fixed amounts of other agents, future net benefits (income or amenities) will increase up to a certain point, (the point of decreasing returns), after which successive increments will decrease future net benefits.

## **PRINCIPLE OF PROGRESSION AND REGRESSION**

The principles of progression and regression relate to how surroundings affect the value of an object. Progression indicates that the value of a lesser object is enhanced by association with better objects of the same type. The principle of regression states that, when there are dissimilar properties within the same general classification and in the same area, the better property will be adversely affected.

## **PRINCIPLE OF SUBSTITUTION**

Value is created by the marketplace. It is the function of translating demand into a commodity of exchange. When the benefits and advantages derived from two properties are equal, the lowest priced property receives the greatest demand, and rightfully so. The informed buyer is not justified in paying anything more for a property than it would cost to acquire an equally desirable property. That is to say that the value of a property is established as that amount for which equally desirable comparable properties are being bought and sold in the market. Herein lies an approach to value . . . and the basis of the valuation process.

## **PRINCIPLE OF SUPPLY AND DEMAND**

In order for property to have value, there must be desirability, utility, scarcity, and economic purchasing power. Utility is the capacity of goods to create desire and should not be confused with usefulness. While utility is a subjective concept, usefulness is an objective concept inherent in the property.

Scarcity helps to create desire. There are two economic forces which determine scarcity, supply and demand.

Among the forces which constantly operate to influence supply and demand are population growth, new techniques in transportation, purchasing power, price levels, wage rates, taxation, governmental controls, and scarcity. A sudden population growth in an area would create an increase in demand for housing. If the demand increased at a higher rate than the supply, this could soon be a scarcity of housing. If the demand was backed up by purchasing power, rentals and sale prices would tend to increase and ultimately reach a level which would tend to stimulate more builders to compete for the potential profits and thus serve to increase the supply toward the level of demand. As the supply is increased demand would begin to taper off. This would cause rentals and sale prices to level off. When builders, due to increases in labor and material rates, are no

longer able to build cheaply enough to meet the new level of prices and rents, competition would tend to taper off and supply would level off. The cycle is then complete.

Balance occurs when reasonable competition serves to coordinate supply with demand. When competition continues unchecked to produce a volume that exceeds the demand, the net returns to investors are no longer adequate to pay all the costs of ownership, resulting in loss rather than profit and consequently, a decline in values.

A community may well support two shopping centers, but the addition of a third shopping center may increase the supply to excess. If this occurs, one of two effects are caused; either the net dollar return to all the shopping centers will be reduced below that level necessary to support the investment, or one of the shopping centers will flourish at the others' expense.

Utility and scarcity by themselves do not confer value on an object, unless the desire by the purchaser is present, a desire backed by the economic purchasing power of the buyer(s).

### **PRINCIPLE OF SURPLUS PRODUCTIVITY**

This principle states that the net income remaining after the cost of the agents of production-labor, coordination, and capital has been paid is considered surplus productivity.

### **TRADITIONAL APPROACHES TO VALUE**

In the preceding paragraphs, it has been stated that value is an elusive item that occurs in many different forms, and that the forces and influences which combine to create, sustain, or destroy value are numerous and varied. It is the appraiser's function to define the type of value sought, to compile and to analyze all related data, and giving due consideration to all the factors which may influence the value, to process and translate that data into a final opinion or *estimate of value*. This he/she must do for each property he/she is to appraise.

The processing of this data into a conclusion of value generally takes the form of three recognized approaches to value: Cost Approach, Sales Comparison Approach and Income Approach. Underlying each of the approaches is the principle that the justifiable price of a property is no more than the cost of acquiring and/or reproducing an equally desirable substitute property. The use of one or all three approaches in the valuation of a property is determined by the quantity, quality, and accuracy of the data available to the appraiser.

The *COST APPROACH* involves making an estimate of the depreciated cost of reproducing or replacing the building and site improvements. *Reproduction Cost* refers to the cost at a given point in time of reproducing a replica property, whereas *Replacement Cost* refers to the cost of producing improvements of equal utility. Depreciation is deducted from this cost new for loss in value caused by physical deterioration, and functional or economic obsolescence. To this depreciated cost is then added to the estimated value of the land, resulting in an indication of value derived by the Cost Approach.

The significance of the Cost Approach lies in its extent of application . . . it is the one approach that can be used on all types of construction. It is a starting point for appraisers, and therefore it is a very effective “yardstick” in any equalization program for Ad Valorem taxes. Its widest application is in the appraisal of properties where the lack of adequate market and income data preclude the reasonable application of the other traditional approaches.

The *SALES COMPARISON APPROACH* involves the compiling of sales and offerings of properties that are comparable to the property being appraised. These sales and offerings are then adjusted for any dissimilarity, and a value range obtained by comparison of said properties. The approach is reliable to the extent that the properties are comparable, and the appraiser's judgment of proper adjustments is sound. The procedure for using this approach is essentially the same for all types of property with the only difference being the elements of comparison.

The significance of this approach lies in its ability to produce estimates of value, which directly reflect the attitude of the market. Its application is contingent upon the availability of comparable sales, and therefore finds its widest range in the appraisal of vacant land and residential properties. Some examples of applicable North Carolina Case Law are:

**Neither this section nor G S 105-317(a) requires the commission to value property according to its sale price in a recent arm's length transaction when competent evidence of a different value is presented.**

In re Greensboro Office Partnership, 72 N.C. App. 635, 235 S.E. 2d 24, cert. denied, 313 N.C. 602, 330 S.E. 2d 610 (1985)

**Where sale was not between a willing buyer and a willing seller, as contemplated by this section, sales price was not indicative of property's true value.**

In re Phoenix Ltd. Partnership, 134 N.C. App. 474, 517 S.E. 2d 903 (1999)

Essentially, North Carolina law prohibits the presumption that the sale price of any particular property must be the basis for its appraised value for ad valorem tax purposes. Instead, reliance is placed on the greater weight of evidence determined from a larger sampling of comparable properties and, as a result, the appraised value may be less than or greater than the sale price of any particular property.

The *INCOME APPROACH* measures the present worth of the future benefits of a property by the capitalization of the net income stream over the remaining economic life of the property. The approach involves making an estimate of the "effective gross income" of a property, derived by deducing the appropriate vacant and collection losses from its estimated economic rent, as evidenced by the yield of comparable properties. From this figure then is deducted applicable operating expenses, the cost of taxes and insurance, and reserve allowances for replacements resulting in an estimate of net income, which may then be capitalized into an indication of value.

The approach obviously has its basic application in the appraisals of properties universally bought and sold on their ability to generate and maintain a stream of income for their owners. The effectiveness of the approach lies in the appraiser's ability to relate to the changing economic environment and to analyze income yields in terms of their relative quality and durability.

**PROPERTY VALUATION TECHNIQUES**

**APPLYING THE COST APPROACH**

If the highest and best use of a property is its present use, a valid indication of value may be derived by estimating the value of the land, and adding the land value to the depreciated value of the structures on the land; the resulting equation being . . .

	Estimated Land Value
+	Estimated Replacement Cost New of Structures
-	Estimated Depreciation
<hr/>	
=	Indication of Property Value

Since estimating the land value is covered in a separate section, this section will address itself to the two remaining elements, Replacement Cost and Depreciation.

**REPLACEMENT COST**

Replacement Cost is the current cost of producing an improvement of equal utility to the subject property; it may or may not be the cost of reproducing a replica property. The distinction being drawn is one between *Replacement Cost*, which refers to a substitute property of equal utility, as opposed to *Reproduction Cost*, which refers to a substitute replica property. In a particular situation the two concepts may be interchangeable, but they are not necessarily so. They both, however, have application in the Cost Approach to value, the difference being reconciled in the consideration of depreciation allowances.

In actual practice, outside of a few historic type communities in this country, developers and builders, for obvious economic reasons, replace buildings, not reproduce them. It logically follows that if an appraiser's job is to measure the actions of knowledgeable persons in the market place, the use of proper replacement costs should provide an accurate point of beginning in the valuation of most improvements.

The Replacement Cost includes the total cost of construction incurred by the builder whether preliminary to, during the course of, or after completion of the construction of a particular building. Among these are material, labor, all subcontracts, builders' overhead and profit, architectural and engineering fees, consultation fees, survey and permit fees, legal fees, taxes, insurance, and the cost of interim financing.



## ESTIMATING REPLACEMENT COST

There are various methods that may be employed to estimate replacement cost new. The methods widely used in the appraisal field are the quantity-survey method, the unit-in-place or component part-in-place method, and the model method.

The *Quantity-Survey Method* involves a detailed itemized estimate of the quantities of various materials used, labor and equipment requirements, architect and engineering fees, contractor's overhead and profit, and other related costs. This method is primarily employed by contractors and cost estimators for bidding and budgetary purposes and is much too laborious and costly to be effective in every day appraisal work, especially in the mass appraisal field. The method, however, does have its place in that it is used to develop certain unit-in-place costs which can be more readily applied to estimating for appraisal purposes.

The *Unit-in-Place Method* is employed by establishing in-place cost estimates (including material, labor, overhead and profit) for various structural components. The prices established for the specified components are related to their most common units of measurement such as cost per yard of excavation, cost per lineal foot of footings, and cost per square foot of floor covering.

The unit prices can then be multiplied by the respective quantities of each as they are found in the composition of the subject building to derive the whole dollar component cost, the sum of which is equal to the estimated cost of the entire building, providing of course, that due consideration is given to all other indirect costs which may be applicable. The components part-in-place method of using basic units can also be extended to establish prices for larger components in-place such as complete structural floors (including the finish flooring, sub-floor, joists and framing) which are likely to occur repeatedly in a number of buildings.

The *Model Method* is still a further extension, in that unit-in-place costs are used to develop base unit square foot or cubic foot costs for total specified representative structures in place, which may then serve as "models" to derive the base unit cost of comparable structures to be appraised. The base unit cost of the model most representative of the subject building is applied to the subject building and appropriate tables of additions and deductions are used to adjust the base cost of the subject building to account for any significant variations between it and the model.

Developed and applied properly, these pricing techniques will assist the appraiser in arriving at valid and accurate estimates of replacement cost new as of a given time. The cost generally represents the upper limit of value of a structure. The difference between its replacement cost new and its present value is depreciation. The final step in completing the Cost Approach then is to estimate the amount of depreciation and deduct said amount from the replacement cost new.

## DEPRECIATION

Simply stated, depreciation can be defined as “a loss in value from all causes.” As applied to real estate, it represents the loss in value between market value and the sum of the replacement cost new of the improvements plus the land value as of a given time. The causes for the loss in value may be divided into three broad classifications: Physical Deterioration, Functional Obsolescence, and Economic Obsolescence.

*Physical Deterioration* pertains to the wearing out of the various building components, referring to both short-life and long-life terms, through the action of the elements, age, and use. The condition may be considered either “curable” or “incurable”, depending upon whether it may or may not be practical and economically feasible to cure the deficiency by repair and replacement.

*Functional Obsolescence* is a condition caused by either inadequacies or over-adequacies in design, style, composition, or arrangement inherent to the structure itself, which tends to lessen its usefulness. Like physical deterioration, the condition may be considered either curable or incurable. Some of the more common examples of functional obsolescence are excessive wall and ceiling heights, excessive structural construction, surplus capacity, ineffective layouts, and inadequate building services.

*Economic Obsolescence* is a condition caused by factors extraneous to the property itself, such as changes in population characteristics and economic trends, encroachment of inharmonious land uses, excessive taxes, and governmental restrictions. The condition is generally incurable in that the causes lie outside the property owner's realm of control.

## ESTIMATING DEPRECIATION

An estimate of depreciation represents an opinion of the appraiser as to the degree that the present and future appeal of a property has been diminished by deterioration and obsolescence. Of the three estimates necessary to the cost approach, it is the one most difficult to make. The accuracy of the estimate will be a product of the appraiser's experience in recognizing the symptoms of deterioration and obsolescence and the ability to exercise sound judgment in equating all observations to the proper monetary allowance to be deducted from the replacement cost new. There are several acceptable methods that may be employed:

Physical deterioration and/or functional obsolescence can be measured by observing and comparing the physical condition and/or functional deficiencies of the subject property as of a given time with either an actual or hypothetical, comparable, new and properly planned structure.

Curable physical deterioration and functional obsolescence can be measured by estimating the cost of restoring each item of depreciation to a physical condition as good as new or estimating the cost of eliminating the functional deficiency.

Functional and economic obsolescence can be measured by capitalizing the estimated loss in rental due to the structural deficiency, or lack of market demand.

Total accrued depreciation may be estimated by first estimating the total useful life of a structure and then translating its present condition, desirability, and usefulness into an effective age (rather than an actual age) which would represent that portion of its total life (percentage) which has been used up.

Total accrued depreciation may also be estimated by deriving the amount of depreciation recognized by purchasers as evidenced in the prices paid for property in the market place; the loss of value being the difference between the cost of replacing the structure now and its actual selling price (total property selling price less the estimated value of the land).

**APPLYING THE MARKET DATA APPROACH**

An indication of the value of a property can be derived through analysis of the selling prices of comparable properties. The use of this technique, often referred to as the “comparison approach” or “comparable sales approach”, involves the selection of a sufficient number of valid comparable sales and the adjustment of each sale to the subject property to account for variations in time, location, site and structural characteristics.

**INTRODUCTION TO THE SALES COMPARISON APPROACH**

For assessment purposes, market values are defined by constitutions, statutes and case law. When sales data is available, the sales comparison approach is generally considered the most reliable of the approaches to value. However, in North Carolina assessment litigation, under the “rules of evidence”, a bona fide sale of the subject property may not be considered the best evidence of market value “when competent evidence of different value is presented”. In re Greensboro Office Partnership, 72 N.C. App 635, 235 S.E. 2n 24, cert. denied, 313 N.C. 602,330 S.E. 2d 610 (1985).

Emphasizing uniformity and the equitable distribution of the tax burden relative to the premise that similar properties should share similarly in that burden, North Carolina statutory language and the interpretation of relating actual sales to market value by the North Carolina Courts both provide this guidance.

The sales comparison approach models the behavior of the market by comparing the properties being appraised (subject property) with similar properties that have recently sold (comparable properties). Comparable properties are selected for their similarity to the subject property. Their sales prices are then adjusted for their differences from the subject. Finally, a market value for the subject is determined from the adjusted sales prices of the comparable properties.

To understand the sales comparison approach, an appraiser must understand the principles of supply and demand. The interaction of supply and demand factors impacts property prices. Supply depends on current inventories and, in a larger sense, the availability of human skills, materials, and capital, while demand is influenced by population levels, mortgage rates, income levels, local services, housing trends, and the cost of substitutes. The principal of substitution is one demand factor that implies that the market will recognize differences in utility between the subject and its best alternatives by a difference in price.

The sales comparison approach requires the following steps:

1. Definition of the appraisal problem.
2. Data collection
3. Analysis of market data to develop units of comparison and select attributes for adjustment (model specifications)
4. Development of reasonable adjustments (model calibration).
5. Application of the model to adjust the sales price of comparable properties to the subject property.
6. Analysis of the adjusted sales price to indicate the value of the subject property.

The entire valuation process depends on accurately defining the subject property because the nature of the property determines the sources of information, methods of comparable selection, and adjustment techniques.

Defining the subject property includes:

1. Identifying the property (parcel number or pin for ad valorem tax purposes)
2. The rights to be appraised (generally Fee Simple for ad valorem tax purposes)
3. The date of appraisal (January 1 of the appraisal year for NC ad valorem tax purposes)
4. The use (highest and best use)
5. The type of value to estimate (market value, for NC ad valorem tax purposes)

This approach has a wide application as a method of estimating value; however, there are factors that can or do limit the usefulness of the sales comparison approach. In spite of these limitations, this approach has a broad application in all appraisal work. The value estimates found by the use of this approach are considered particularly significant because they are expressions of value as established by transactions in the market place.

Even though the sales comparison approach is mostly used for estimating market value for residential property, it may also be used for some commercial and industrial properties if sufficient data is available. Additionally, some valuation parameters of the other valuation approaches (cost and income) are influenced by the application of and observations learned from the sales comparison approach.

## SELECTING VALID COMPARABLES

Since market value has been defined as the price which an informed and intelligent buyer, fully aware of the existence of competing properties and not being compelled to act is justified in paying for a particular property, it follows that if market value is to be derived from analyzing comparable sales, that the sales must represent valid "arm's length" transactions. Due consideration must be given to the conditions and circumstances of each sale before selecting the sales for analysis. Some examples of sales that do not normally reflect valid market conditions are as follows:

Sales in connection with: foreclosures, bankruptcies, condemnations and other legal actions.

Sales to or by federal, state, county and local governmental agencies.

Sales to or by religious, charitable or benevolent, tax exempt agencies.

Sales involving family transfers, or "love and affection."

Sales involving intra-corporate affiliations.

Sales involving the retention of life interests.

Sales involving cemetery lots.

Sales involving mineral or timber rights, and access or drainage rights.

Sales involving the transfer of part interests.

In addition to selecting valid market transactions, it is equally important to select properties that are truly comparable to the property under appraisal. For instance, sales involving both real property and personal property or chattels may not be used unless the sale can be adjusted to reflect only the real property transaction, nor can sales of non-operating or deficient industrial plants be validly compared with operating plants. The comparable sales and subject properties must exhibit the same use, and the site and structural characteristics must exhibit an acceptable degree of comparability.

## PROCESSING COMPARABLE SALES

All comparable sales must be adjusted to the subject property to account for variations in time and location. The other major elements of comparison will differ depending upon the type of property being appraised. In selecting these elements, the appraiser must give prime consideration to the same factors that influence the prospective buyers of particular types of properties.

The typical homebuyer is interested in the property's capacity to provide the family with a place to live. A primary concern is with the living area, utility area, number of rooms, number of baths, age, structural quality and condition, and the presence of a modern kitchen and recreational conveniences of the house. Equally important is the location and neighborhood, including the proximity to and the quality of schools, public transportation, and recreational and shopping facilities.

In addition to the residential amenities, the buyer of agricultural property is primarily interested in the productive capacity of the land, the accessibility to the market place, and the condition and functional utility of the farm buildings and structures on the land.

The typical buyer of commercial property, including warehouses and certain light industrial plants, is primarily concerned with its capability to produce revenue. Of special interest will be the age, design and structural quality and condition of the improvements, the parking facilities, and the location relative to transportation, labor markets and trade centers.

In applying the market data approach to commercial/industrial property, the appraiser will generally find it difficult to locate a sufficient number of comparable sales, especially of properties that are truly comparable in their entirety. It will, therefore, generally be necessary to select smaller units of comparison such as price per square foot, per unit, per room, etc. In doing so, great care must be exercised in selecting a unit of comparison that represents a logical common denominator for the properties being compared. A unit of comparison that is commonly used and proven to be fairly effective is the Gross Rent Multiplier, generally referred to as G.R.M., which is derived by dividing the gross annual income into the sales price. Using such units of comparison enables the appraiser to compare two properties that are similar in use and structural features but differ significantly in size and other characteristics.

Having selected the major factors of comparison, it remains for the appraiser to adjust each of the factors to the subject property. In comparing the site, adjustments for size, location, accessibility, and site improvements must be made. In comparing the structures, adjustments for size, quality, design, condition, and significant structural and mechanical components also must be made. The adjusted selling prices of the comparable properties will establish a range in value in which the value of the subject property will fall. Further analysis of the factors should enable the appraiser to narrow the range down to the value level that is most applicable to the subject property.

## APPLYING THE INCOME APPROACH

### INTRODUCTION

The justified price paid for income producing property is no more than the amount of investment required to produce a comparably desirable return; and since the market can be analyzed in order to determine the net return actually anticipated by investors, it follows that the value of income producing property can be derived from the income which it is capable of producing. What is involved is an estimate of income through the collection and analysis of available economic data, the development of a property capitalization rate, and the processing of the net income into an indication of value by employing one or more of the acceptable capitalization methods and techniques.

### THE PRINCIPLES OF CAPITALIZATION

Capitalization is the process for converting the net income produced by property into an indication of value. Through the years of appraisal history, a number of procedures have been recognized and employed by appraisal authorities in determining the value of real estate by the income approach. Although present-day practice recommends only certain methods, we will at least touch on the other approaches to value - even though they may not be accepted in today's appraisal scene because they do not accurately reflect the current market conditions.

### EXPLORING THE RENTAL MARKET

The starting point for the appraiser is an investigation of current economic rent in a specific area in order to establish a sound basis for estimating the gross income that should be returned from competitive properties. The appraiser must make a distinction between Economic Rent, the rent which property is normally expected to produce on the open market, as opposed to Control Rent, the rent which property is actually realizing at the time of the appraisal due to lease terms established sometime in the past.

The first step then is to obtain specific income and expense data on properties that best typify normal market activity. The data is necessary to develop local guidelines for establishing the economic rent and related expenses for various types of properties.

The next step is to similarly collect income and expense data on individual properties, and to evaluate the data against the established guidelines. The collection of income and expense data (I & E) is an essential phase in the valuation of commercial properties. The appraiser is primarily concerned with the potential earning power of the property. The objective is to estimate its expected net income. Income and Expense Statements of past years are valuable only to the extent that they serve this end. The statements must not only be complete and accurate but must also stand the test of market validity. Consideration of the following factors should assist the appraiser in evaluating the income and expense (I & E) data in order to arrive at an accurate and realistic estimate of net income.



Chatham County did not send surveys soliciting income and expense data from property owners and lessees of commercial (income-producing) property. Typically, the return results for these surveys are limited at best. A significant amount of information is made available as part of the appeal process. This data (income and expense) is generally provided in support of a claim seeking a decrease in appraisal value. The quality/worth of the data is dependent on the documentation provided. Lease information (lease rates, terms, and other stated considerations) is best, with undocumented statements the least useful.

The county may utilize other outside sources of information. Even though this may be done on a limited basis it could be useful during the appeal process.

**QUESTIONS RELATING TO INCOME DATA**

- A. Was the reported income produced entirely by the subject property? Very often the rent will include an amount attributable to one or more additional parcels of real estate. In this case, it would be necessary to obtain the proper allocations of rent.
- B. Was the income attributable to the subject property as it physically existed at the time of the appraisal, or did the appraisal include the value of leasehold improvements and remodeling for which the tenant paid in addition to rent? If so, it may be necessary to adjust the income to reflect economic rent.
- C. Does the reported income represent a full year's return? It is often advisable to obtain both monthly and annual amounts as verification.
- D. Does the income reflect current economic rent? Is either part or all of the income predicated on old leases? If so, what are the provisions for renewal options and rates?
- E. Does the reported income reflect 100% occupancy? What percentage of occupancy does it reflect? Is this percentage typical of this type of property, or is it due to special non-recurring causes?
- F. Does the income include rental for all marketable space? Does it include an allowance for space, if any, which is either owner or manager occupied? Is the allowance realistic?
- G. Is the income attributable directly to the real estate and conventional amenities? Is some of the income derived from furnishings and appliances? If so, it will be necessary to adjust the income or make provisions for reserves to eventually replace them, whichever local custom dictates.
- H. In many properties an actual rental does not exist because the real estate is owner occupied. In this event it is necessary to obtain other information to provide a basis to estimate economic rent. The information required pertains to the business operation using the property. Proper analysis of the annual operating statements of the business, including gross sales or receipts, can provide an accurate estimate of economic rent. Information requirements for a few of the more common property uses are as follows:

- Retail Stores - The annual net gross sales. (Gross sales less returned merchandise)
- Hotels and Motels – The annual operating statement of the business. If retail or office space is leased in these properties, obtain the actual rent paid.
- Theaters – The annual gross receipts (including admissions and concessions) and seating capacity.
- Automobile Parking – The annual gross receipts.

## ANALYSIS OF EXPENSE DATA

The appraiser must consider only those expenses that are applicable to the cost of ownership; that is, those expenses that are normally owner incurred. Any portion of the expenses incurred directly or indirectly by the tenant should not be considered. Each expense item must stand the test of both legitimacy and accuracy. How do they compare with the established guidelines and norms? Are they consistent with the expenses incurred by comparable properties?

*Management* - refers to the cost of administration. These charges should realistically reflect what a real estate management company would actually charge to manage the property. If no management fee is shown on the statement; an allowance must be made, by the appraiser. On the other hand, if excessive management charges are reported, as is often the case, the appraiser must disregard the reported charges and use an amount that he/she deems appropriate and consistent with comparable type properties. The cost of management bears a relationship with the risk of ownership and will generally range between 4 to 10% of the gross income.

*General expenses* - may include such items as the cost of services and supplies not charged to a particular category. Unemployment and F.I.C.A. taxes, Workmen's Compensation, and other employee insurance plans are usually legitimate deductions when employees are a part of the building operation.

*Reimbursed expenses* - refer to the cost associated with the maintenance of public or common areas of the commercial property. This expense is passed on to the tenants and should, therefore, only be considered when the amount of reimbursement is included as income.

*Miscellaneous expenses* - is the “catch-all” category for incidentals. This item should reflect a very nominal percentage of the income. If expenses reported seem to be excessive, the appraiser must examine the figures carefully in order to determine if they are legitimate expenses, and if so, to allocate them to their proper category.

*Cleaning expenses* - are legitimate charges. They are for such items as general housekeeping and maid service; and include the total cost of labor and related supplies. All or a portion of the cleaning services may be provided by outside firms working on a "contract" basis. Cleaning expenses vary considerably and are particularly significant in operations such as offices and hotels. "Rule of thumb" norms for various operations are made available through national management associations. The appraiser should have little difficulty in establishing local guidelines.

*Utilities* - are generally legitimate expenses and if reported accurately, need very little reconstruction by the appraiser, other than to determine if the charges are consistent with comparable properties. Local utility companies can provide the appraiser with definite guidelines.

*Heat and Air Conditioning* - costs are often reported separately and in addition to utilities. The expenses would include the cost of fuel other than the fore mentioned utilities, and may include, especially in large installations, the cost of related supplies, inspection fees, and maintenance charges. These are generally legitimate costs, and the same precautions prescribed for "utilities" are in order.

*Elevator expenses* - including the cost of repairs and services, are legitimate deductions, and are generally handled through service contracts. These fees can generally be regarded as fairly stable annual recurring expenses.

*Decorating and minor alterations* - are necessary to maintain the income stream of many commercial properties. In this respect they are legitimate expenses. However, careful scrutiny of these figures is required. Owners tend to include the cost of major alterations and remodeling which are, in fact, capital expenditures, and as such are not legitimate operating expenses.

*Repairs and Maintenance* - expenses reported for any given year, are not necessarily a true indication of the average or typical annual expense for these items. For example, a statement could reflect a substantial expenditure for a specific year (possibly because the roof was replaced; and/or several items of deferred maintenance were corrected); yet the statement for the following year may indicate that repairs and maintenance charges were practically nil. It is necessary for the appraiser to either obtain complete economic history on each property in order to make a proper judgment as to the average annual expense for these items, or include a proper allowance based on norms for the type and age of the improvements to cover annual expenses. Since it is neither possible nor practical to obtain enough economic history on every property, the latter method is generally used: and the amounts reported for repairs and maintenance are then estimated by the appraiser.

*Insurance* - Caution must be used in accepting insurance expense figures. Cost shown may be for more than one year: or may be for blanket policies including more than one building. It is generally more effective for the appraiser to establish his/hers own guidelines for insurance. He/She must also be careful to include only items applicable to the real estate. Fire extended coverage and owner's liability are the main insurance expense items. Separate coverage on special component parts of the buildings, such as elevators and plate glass, are also legitimate expenses.

*Real Estate Taxes* - In making appraisals for tax purposes, the appraiser must exclude the actual amount reported for real estate taxes. Since future taxes will be based on his appraised value, the appraiser must express the taxes as a factor of the estimated value. This can be done, by including an additional percentage in the capitalization rate to account for real estate taxes.

*Depreciation* - The figure shown for depreciation on an operating statement is a "bookkeeping figure" which the owner uses for Internal Revenue purposes and should not be considered in the income approach. This reflects a tax advantage that is one of the benefits of ownership.

*Interest* - Although interest is considered a legitimate expense, it is always included in the Capitalization Rate. Most property is appraised as if it were "free and clear"; however, the appraiser does consider the interest of a current mortgage in the Capitalization Rate build-up.

*Land Rent* - When appraising for real estate tax purposes, only the sum of the leasehold and the leased fee is usually considered. Land rent is not deducted as an expense. Considered separately, rent from a ground lease would be an expense to the leasehold interest and an income to the leased fee. However, if land were rented from another property to supply additional parking for example, that land rent would be an allowable expense.

It is obvious that there are some expense items encountered on operating statements that the appraiser should not consider as allowable. This is because he/she is interested in legitimate cash expenses only. Income statements are usually designed for income tax purposes where credit can be taken for borrowing costs and theoretical depreciation losses.

It is virtually impossible and certainly not always practical to obtain a complete economic history on every commercial property being appraised. On many properties, however, detailed economic information can be obtained through the use of Income and Expense forms. One must realistically recognize the fact that the data obtainable on some properties is definitely limited.

In most cases, the gross income and a list of the services and amenities furnished can be obtained during the data gathering operation. However, in order to insure a sound appraisal, it may be necessary to estimate the fixed and operating expenses. This is best accomplished by setting guidelines for expenses, based on a percent of Effective Gross Income or a cost per square foot of leased area. These percentages or costs will vary depending on the services supplied and the type of property.

### CAPITALIZATION METHODS

The most prominent methods of capitalization are Direct, Straight Line, Sinking Fund, and Annuity. Each of these is a valid method for capitalizing income into an indication of value. The basis for their validity lies in the action of the market, which indicates that the value of income producing property can be derived by equating the net income with the net return anticipated by informed investors. This can be expressed in terms of a simple equation:

Value = Net Income divided by Capitalization Rate

The *Straight Line* and *Sinking Fund* methods are both actual forms of Straight Capitalization, with one using Straight Line recapture and the other using Sinking Fund recapture. Both methods follow the same basic principles as Direct Capitalization, differing only in that they provide for separate capitalization rates for land and buildings; the building rate differing from the land rate in that it includes an allowance for recapture.

*Straight Line Capitalization* allows for “recapture” based on remaining economic life of the building - implying that at the end of that period of time, there would be no improvement value. There are three fallacies in this thinking. First, the potential buyer (investor) has no intention of holding the property that long. The average investment period might average ten years. Second, the investor anticipates that at the end of that period he will either get all his money back or will make a profit. And third, is the depreciation allowance possible in connection with federal income taxes.

Depreciation allowances begin to “run out” between seven and ten years, so the advantages of owning the property are reduced considerably. A prudent owner may choose to sell the property at this point and re-invest in another property so that he may begin the depreciation cycle again and continue to take full advantage of the favorable tax laws.

For these reasons, the Straight- Line Capitalization Method does not usually follow what the market indicates.

*Straight Line* recapture calls for the return of investment capital in equal increments or percentage allowances spread over the estimated remaining economic life of the building.

*Sinking Fund recapture* calls for the return of invested capital in one lump sum at the termination of the estimated remaining economic life of the building. This is accomplished by providing for the annual return of a sufficient amount needed to invest and annually re-invest in “safe” interest-bearing accounts, such as government bonds or certificates of deposit, which will ultimately yield the entire capital investment during the course of the building's economic life.

*Annuity Capitalization* lends itself to the valuation of long-term leases. In this method, the appraiser determines, by the use of annuity tables, the present value of the right to receive a certain specified income over stipulated duration of the lease. In addition to the value of the income stream, the appraiser must also consider the value that the property will have once it reverts back to the owner at the termination of the lease. This reversion is valued by discounting its anticipated value against its present worth. The total property value then is the sum of the capitalized income stream plus the present worth of the reversion value.

### **CURRENT TECHNIQUES**

There are two methods, however, that do lend themselves to an accurate measure of market value based on potential income. These are Direct Capitalization, utilizing the Direct Comparison Method of Rate Selection, and Mortgage Equity Capitalization.

In *Direct Capitalization*, the appraiser determines a single “overall” capitalization rate. This is done through analysis of actual market sales of similar types of properties. He develops the net income of each property: and divides the net income by the sales price to arrive at an overall rate to provide an indication of value.

*Mortgage Equity Capitalization* is a form of direct capitalization with the major difference in the two approaches being the development of the overall capitalization rate.

In this method, equity yields, and mortgage terms are considered influencing factors in construction of the interest rate. In addition, a plus or minus adjustment is required to compensate for anticipated depreciation or appreciation. This adjustment can be related to the recapture provisions used in other capitalization methods and techniques.

## RESIDUAL TECHNIQUES

It can readily be seen that any one of the factors of the Capitalization Equation (Value = Net Income divided by Capitalization Rate) can be determined if the other two factors are known. Furthermore, since the value of property is the sum of the land value plus the building value, it holds that either of these can be determined if the other is known. The uses of these mathematical formulas in capitalizing income into an indication of value are referred to as the residual techniques, or more specifically, the property residual, the building residual, and the land residual techniques.

The *Property Residual Technique* is an application of Direct Capitalization. In this technique, the total net income is divided by an overall capitalization rate (which provides for the return on the total investment) to arrive at an indicated value for the property. This technique has received more popular support in recent years because it closely reflects the market. With this technique, the capitalization rate may be developed by either “direct comparison” in the market or by the Mortgage Equity Method.

The *Building Residual Technique* requires the value of the land to be a known factor. The amount of net income required to earn an appropriate rate of return on the land investment is deducted from the total net income. The remainder of the net income (residual) is divided by the building capitalization rate (which is composed of a percentage for the return on the investment, plus a percentage for the recapture of the investment) to arrive at an indicated value for the building.

The *Land Residual Technique* requires the value of the building to be a known factor. The amount of net income required to provide both, a proper return on and the recapture of the investment is deducted from the total net income. The remainder of the net income (residual) is then divided by the land capitalization rate (which is composed of a percentage for the return on the investment) to arrive at an indicated value for the land.

## MORTGAGE EQUITY METHOD EXAMPLE

For purposes of illustration, assume an investment financed with a 70% loan at 14.0% interest. The term of the mortgage is 20 years, paid off in level monthly payments. The total annual cost for principal and interest on such a loan can be determined by referring to the mortgage equity tables. Select the Constant Annual percent for an interest rate of 14.0% and a term of 20 years. Note that the constant is 14.92% of the amount borrowed, or .92% more than the interest rate alone.

Assume that the equity investor will not be satisfied with less than an 18% yield. The income necessary to satisfy both Lender and Equity can now be shown. The product of the percent portion and the rate equals the weighted rate. The total of each weighted rate equals the weighted average.

	<b>PORTION</b>	<b>RATE</b>	=	<b>WEIGHTED RATE</b>
Mortgage loan (principle interest)	70%	.1492	=	.1044
Equity (down payment)	30%	.18	=	.0540
Weighted Average	100%			100%

*Note* that the “constant annual percent” is used for the rate of the loan.

Since there is a gain in equity's position through the years by the loan being paid off little by little, it is necessary to calculate the credit for “Equity Build-Up”. Assume that the investor plans to hold the property for ten years. Since the mortgage is for 20 years, only a portion of the principal will be paid off and this amount must be discounted, as it won't be received for ten years. From the Table of Loan Balance and Debt Reduction, at the end of ten years for a twenty- year mortgage at 14%, the figure is .199108. Consulting the sinking fund tables indicates that the discount factor for 18% and 10 years is .0425.

The credit for Equity Build-Up can now be deducted from the basic rate, thus . . .

$$\begin{array}{rclcl}
 .199108 & & 70\% & & .0425 & = & .0059 \\
 (\% \text{ of loan paid in 10 yrs.}) & \times & (\text{loan rate}) & \times & (\text{sinking fund 18\% for 10 yrs.}) & & \\
 \text{Resulting Net Rate} & & & & & = & .1525
 \end{array}$$

**LAND VALUATION TECHNIQUES**

In making appraisals for Ad Valorem Tax purposes, it is generally necessary to estimate separate values for the land and the improvements on the land. In actuality, the two are not separated and the final estimate of the property as a single unit must be given prime consideration. However, in arriving at that final estimate of value, aside from the requirements for property tax appraisals, there are certain other reasons for making a separate estimate of value for the land:

An estimate of land value is required in the application of the Cost Approach.

An estimate of land value is required to be deducted, from the total property sales price in order to derive indications of depreciation through market-data analysis. (Depreciation being equal to the difference between the replacement cost new of a structure and the actual price paid in the market place for the structure.)

As land is not a depreciable item, a separate estimate of land value is required for bookkeeping and accounting purposes; likewise, the total capitalization rate applicable to land will differ from the rate applicable to the improvements on the land.



Since land may or may not be used to its highest potential, the value of land may be completely independent of the existing improvements on the land.

Real Estate is valued in terms of its highest and best use. The highest and best use of the land (or site), if vacant and available for use, may be different from the highest and best use of the improved property. This will be true when the improvement is not an appropriate use and yet makes a contribution to total property value in excess of the value of the site. Highest and Best Use (Highest and Most Profitable Use; Optimum Use) is that reasonable and probable use which will support the highest present value as of the date of the appraisal. Alternatively, it is the most profitable likely use to which a property can be put. It may be measured in terms of the present worth of the highest net return that the property can be expected to produce over a stipulated long run period of time. (American Institute of Real Estate Appraisers' Appraisal Terminology Handbook, 1981 edition.)

As appraisers' opinions are based on data derived from the market, it is necessary to study and adapt, if possible, procedures used by those closest to everyday transactions.

## COMPARABLE SALES METHOD

The most frequently used method in estimating the value of land is the comparable sales method in which land values are derived from analyzing the selling prices of similar sites. This method is in essence the application of the market data approach to value and all the considerations pertaining thereto are equally applicable here.

The appraiser must select comparable and valid market transactions; and must weigh and give due consideration to all the factors significant to value, adjusting each to the subject property. The comparable sites must be used in the same way as is the subject property; and subjected to the same zoning regulations and restrictions. It is also preferable, whenever possible, to select comparable sales from the same or a similar neighborhood. The major adjustments will be to account for variations in time, location, and physical characteristics to include size, shape, topography, landscaping, access, as well as other factors which may significantly influence the selling price, such as the productivity of farm land.

Although it is always preferable to use sales of unimproved lots for comparison, it is not always possible to do so. Older neighborhoods are not likely to yield a sufficient number of representative sales of unimproved lots to permit a valid analysis. In such cases, in order to arrive at an estimate of land values using the comparable sales approach, it is necessary to consider improved property sales and to estimate the portion of the selling price applicable to the structure. The procedure would be to estimate the replacement

cost of the buildings as of the date of sale, estimate the accrued depreciation and deduct that amount from the replacement cost resulting in the estimated selling price of the buildings, which can be deducted from the total selling price of the property to derive the portion of the selling price which can be allocated to the land. The equation is as follows:

$$\begin{array}{r} \text{Selling Price of Property} \\ - \text{Estimated Depreciated Value of Buildings} \\ \hline = \text{Indication of Land Value} \end{array}$$

In some of these older neighborhoods, vacant lots will exist often as a result of fire or normal deterioration. Since the desirability as a new building site is restricted, value is generally determined by adjoining property owners who have a desire for additional land area.

In order to apply the comparable sales method, it is first necessary to establish a common unit of comparison. The units generally used in the valuation of land are price per front foot, price per square foot, price per acre, price per lot, site or home site, price per apartment unit, and price per motel unit. The selection of any one particular unit depends upon the type of property being appraised; frontage being commonly used for platted, uniform type residential lots, and square footage and acreage for larger, un-platted tracts, as well as irregularly shaped lots lacking in uniformity. Use of square footage is especially desirable in Central Business Districts where the entire lot maintains the same level of value: depth factor adjustments have a tendency to distort this concept. Commercial arteries are also best valued on a square foot basis.

The utility of a site will vary with the frontage, width, depth, and overall area. Similarly, the unit land values should be adjusted to account for differences in size and shape between the comparable and the subject property. Since such an adjustment is generally necessary for each lot, it is beneficial that the appraiser adopts and/or develops standardized procedures for adjusting the lot size and the unit values to account for the variations. It is not uncommon for all lots within a development to market at the same price. Should data indicate this, it is necessary to make alterations or adjustments to maintain this value level. In some cases, a "site value" concept has advantages. Site value tables provide for uniform pricing of standard sized lots within homogenous neighborhoods or subdivisions. Some of the techniques commonly employed are as follows:

*Standard lot sizing techniques* provide for the adjustment of the frontage, width, and depth of irregular shaped lots to make the units of measurement more comparable with uniform rectangular lots. Incremental and decremented adjustments can be applied to account for size differences.

*Standard Depth Tables* provide for the adjustment of front foot unit values to account for variations in depth from a predetermined norm.

*Frontage Tables* provide for the adjustment of front footage unit values to account for variations in the relative utility value of excessive or insufficient frontage as compared to a predetermined norm.

*Acreage or Square Footage Tables* provide for the adjustment of unit values to account for variations in the relative utility value of excessive or insufficient land sizes as compared to a predetermined norm.

During the process of adjusting the comparable sales to account for variations between them and the subject property, the appraiser must exercise great care to include all significant factors and to properly consider the impact of each of the factors upon the total value. If done properly, the adjusted selling prices of the comparable properties will establish a range in value in which the value of the subject property will fall. Further analysis of the factors should enable the appraiser to narrow the range down to the value level that is most applicable to the subject property.

## **THE LAND RESIDUAL TECHNIQUE**

In the absence of sufficient market data, income-producing land may be valued by determining the portion of the net income attributable to the land and capitalizing the net income into an indication of value. The procedure is as follows:

1. Determine the highest and best use of the land, which may be either its present use or hypothetical use.
2. Estimate the net income which the property can be expected to yield.
3. Estimate the replacement cost new of the improvements.
4. If the case involves the present use, estimate the proper allowance for depreciation, and deduct that amount from the replacement cost new of the improvements to arrive at an estimate of their depreciated value.
5. Develop appropriate capitalization rates.
6. Calculate the income requirements of the improvements; and deduct the amount from the total net income to derive that portion of the income that can be said to be attributable to the land.
7. Capitalize the residual income attributable to the land to an indication of value.

**RATIO METHOD**

A technique useful for establishing broad indications of land values is a “typical” allocation or ratio method. In this technique, the ratio of the land value to the total value of improved properties is observed in situations where there is good market and/or cost evidence to support both the land values and total values. This market abstracted ratio is then applied to similar properties where the total values are known, but the allocation of values between land and improvements are not known. The ratio is usually expressed as a percentage that represents the portion of the total improved value that is land value, or as a formula:

$$\frac{\text{Total Land Value}}{\text{Total Property Value}} \times 100\% = \% \text{ Land Is of Total Property Value}$$

This technique can be used on most types of improved properties, with important exceptions being farms and recreational facilities, provided that the necessary market and/or cost information is available. In actual practice, available market information limits this technique primarily to residential properties, and to a much lesser extent, commercial and industrial properties such as apartments, offices, shopping centers, and warehouses. The ratio technique cannot give exact indications of land values. It is nevertheless useful, especially when used in conjunction with other techniques of estimating land values because it provides an indication of the reasonableness of the final estimate of land value.

The ratio should be extracted from available market information and applied to closely similar properties. It should be noted that any factor that affects the value could also affect the ratio of values. Zoning is particularly important because it may require more or less improvements be made to the land; or may require a larger or smaller minimum size. This tends to have a bearing on the land values and may influence the ratio of values considerably from community to community.

The following is an example of a residential land valuation situation:

Market information derived from an active new subdivision

Typical Lot Sale Price (most lots equivalent)				\$15,000
Improved Lot Sales (range)				\$65,000 to \$75,000
Indicated Ratio	$\frac{\$15,000}{75,000}$	To	$\frac{15,000}{65,000}$	X 100% 20% to 23%

Similar subdivision, but 100% developed

Typical Lot Sale Price (most lots equivalent)	Unavailable
Improved Lot Sales (range)	\$85,000 to \$105,000
Broadest Indicated Range of Lot Values (20% x \$85,000 to 23% x \$105,000)	\$17,000 to \$24,150
Narrowest Indicated Range of Lot Values (23% x \$85,000 to 20% x \$105,000)	\$19,550 to \$21,000

If both lots and improvements vary considerably, the broadest range is most appropriate. If most lots vary little and are judged equivalent but the improvements vary somewhat, the narrowest range is appropriate. Most subdivisions exhibit a combination of the two ranges, showing a narrow typical range, but a wider actual range of land values.

## MASS APPRAISING

In preceding sections, we have outlined the fundamental concepts, principles, and valuation techniques underlying the Appraisal Process. We will now approach the problem at hand; the reappraisal of certain specified real property within a total taxing jurisdiction, be it an entire county or any subdivision thereof; and to structure a systematic mass appraisal program to affect the appraisal of said properties in such a way as to yield valid, accurate, and equitable property valuations at a reasonable cost dictated by budgetary limitations, and within a time span totally compatible with assessing administration needs.

The key elements of the program are validity, accuracy, equity, economy, and efficiency. To be effective, the program must:

- incorporate the application of proven and professionally acceptable techniques and procedures;
- provide for the compilation of complete and accurate data and the processing of that data into an indication of value approximating the prices actually being paid in the market place;
- provide the necessary standardization measures and quality controls essential to promoting and maintaining uniformity throughout the jurisdiction;
- provide the appropriate production controls necessary to execute each phase of the operation in accordance with a carefully planned budget and work schedule; and;

- provide techniques especially designed to streamline each phase of the operation, eliminating superfluous functions, and reducing the complexities inherent in the Appraisal Process to more simplified but equally effective procedures.

In summary, the objective of an individual appraisal is to arrive at an opinion of value, the key elements being the validity of the approach and the accuracy of the estimate. The objective of a mass appraisal for tax purposes is essentially the same. However, in addition to being valid and accurate, the value of each property must be equitable to that of each other property, and what's more, these valid, accurate, and equitable valuations must be generated as economically and efficiently as possible.

## OVERVIEW

The prime objective of mass appraisals for tax purposes is to equalize property values. Not only must the value of one residential property be equalized with another, but it must also be equalized with each agricultural, commercial, and industrial property within the political unit.

The common denominator or the basis for equalization is market value; that price which an informed and intelligent person, fully aware of the existence of competing properties and not being compelled to act, is justified in paying for a particular property.

The job of the appraiser is to arrive at a reasonable estimate of that justified price. To accomplish this, the coordination of approaches to the valuation of the various classes of property must be made so that they are related one to another in such a way as to reflect the motives of the prospective purchasers of each type of property.

A prospective purchaser of a residential property is primarily interested in its capacity to render service to the family as a place to live. Its location, size, quality, design, age, condition, desirability and usefulness are the primary factors to be considered in making a selection. By relying heavily upon powers of observation and inherent intelligence, knowing what could be afforded and simply comparing what is available, one property will eventually stand out to be more appealing than another. So, it is likewise the job of the appraisers to evaluate the relative degree of appeal of one property to another for tax purposes.

The prospective purchaser of agricultural property will be motivated somewhat differently. The primary interest will be in the productive capabilities of the land. It is reasonable to assume that the purchaser will be familiar, at least in a general way, with the productive capacity of the farm. It might be expected that the prudent investor will have compared one farm's capabilities against another. Accordingly, the appraiser for local tax equalization purposes must rely heavily upon prices being paid for comparable farmland in the community.

The prospective purchaser of commercial property is primarily interested in the potential net return and tax shelter the property will provide. That price which is justified to pay for the property is a measure of the prospects for a net return from the investment. Real estate, as an investment then, must not only compete with other real estate, but also with stocks, bonds, annuities, and other similar investment areas. The commercial appraiser must explore the rental market and compare the income-producing capabilities of one property to another.

The prospective purchaser of industrial property is primarily interested in the overall utility value of the property. Of course, in evaluating the overall utility, individual consideration must be given to the land and each improvement thereon. Industrial buildings are generally of special purpose design, and as such, cannot readily be divorced from the operation for which they were built. As long as the operation remains effective, the building will hold its values. If the operation becomes obsolete, the building likewise becomes obsolete. The upper limit of its value is its replacement cost new, and its present value is some measure of its present usefulness in relation to the purpose for which it was originally designed.

Any effective approach to valuations for tax purposes must be patterned in such a way as to reflect the “modus operandi” of buyers in the market place. As indicated above, the motives influencing prospective buyers tend to differ depending upon the type of property involved. It follows that the appraiser's approach to value must differ accordingly.

The residential appraiser must rely heavily upon the market data approach to value; analyzing the selling prices of comparable properties and considering the very same factors of location, size, quality, design, age, condition, desirability, and usefulness, which were considered by the buyer.

The commercial appraiser will find that since commercial property is not bought and sold as frequently as is residential property, the sales market cannot be readily established. By relying heavily on the income approach to value, the net economic rent that the property is capable of yielding can be determined, and the amount of investment required to affect that net return at a rate commensurate with that normally expected by investors could also be determined. This can only be achieved through a comprehensive study of the income-producing capabilities of comparable properties and an analysis of present-day investment practices.

The industrial appraiser will not be able to rely on the market data approach because of the absence of comparable sales, each sale generally reflecting different circumstances and conditions. Also, it is not possible to rely upon the income approach; again because of the absence of comparable investments, and because of the inability to accurately determine the contribution of each unit of production to the overall income produced. Therefore, by relying heavily on the cost approach to value, a determination must be made of the upper limit or replacement cost new of each improvement and the subsequent loss of value resulting overall from physical, functional and economic factors.

The fact that there are different approaches to value, some of which are more applicable to one class of property than to another, does not, by any means, preclude equalization between classes. Remember that the objective in each approach is to arrive at a price which an informed and intelligent person, fully aware of the existence of competing properties and not being compelled to act, is justified in paying for any one particular property. Underlying, and fundamental to each of the approaches is the comparison process. Regardless of whether the principal criteria are actual selling prices, income-producing capabilities, or functional usefulness, like properties must be treated alike. The primary objective is equalization. The various approaches to value, although valid in themselves, must nevertheless be coordinated one to the other in such a way as to produce values that are not only valid and accurate, but are also equitable. The same “yardstick” of values must be applied to all properties; and must be applied by systematic and uniform procedures.

It is obvious that sales on all properties are not required to effectively apply the market data approach. The same is true regarding any other approach. What is needed is a comprehensive record of all the significant physical and economic characteristics of each property in order to compare the properties of “unknown” values with the properties of “known” values. All significant differences between properties must in some measure, either positively or negatively, be reflected in the final estimate of value.

Each property must be given individual treatment, but the treatment must be uniform and standardized, and essentially no different than that given to any other property. All the factors affecting value must be analyzed and evaluated for each and every property within the entire political unit. It is only by doing this that equalization between properties and between classes of properties can be ultimately affected.

All this, at best, is an oversimplification of the equalization process underlying the entire Mass Appraisal Program. The program itself consists of various operational phases, and its success depends primarily upon the systematic coordination of collecting and recording data, analyzing the data, and processing the data to an indication of value.

### **DATA INVENTORY**

Basic to the appraisal process is the collecting and recording of pertinent data. The data will consist of general supporting data, referring to the data required to develop the elements essential to the valuation process; neighborhood data, referring to information regarding pre-delineated neighborhood units; and specific property data, referring to the data compiled for each parcel of property to be processed into an indication of value by the cost, market and/or income approach.



The data must be comprehensive enough to allow for the adequate consideration of all factors that significantly affect property values. In keeping with the economics of a mass appraisal program, it is costly and impractical to collect, maintain, and process data of no or marginal contribution to the desired objectives. The axiom “too much data is better than insufficient data” does not apply. What does apply is the proper amount of data, no more or no less, which is necessary to provide the database necessary to generate the desired output.

*Cost data* must be sufficient enough to develop or select and validate the pricing schedules and cost tables required to compute the replacement cost new of improvements needed to apply the cost approach to value.

All data pertaining to the cost of total buildings in place should include the parcel identification number, property address, and date of completion, construction cost, name of builder, source of information, structural characteristics, and other information pertinent to analysis.

Cost information may be recorded on the same form (unassigned property record card) used to record specific property data.

The principal sources for obtaining cost data are builders, suppliers, and developers, and it is generally advisable to collect cost data in conjunction with new construction pick-ups.

*Sales data* must be sufficient enough to provide a representative sampling of comparable sales needed to apply the market data approach, to derive unit land values and depreciation indicators needed to apply the cost approach, and to derive gross rent multipliers and elements of the capitalization rate needed to apply the income approach.

All sales data should include the parcel identification number, property qualification code, month and year of sale, selling price, source of information, i.e., buyer, seller, agent, or fee, and a reliable judgment as to whether or not the sale is representative of a true arm's length transaction.

Sales data should be recorded on the same form (assigned property record card) used to record specific property data; and verified during the property-listing phase.

The principal source for obtaining sales data is the County Register of Deeds Office, MLS, Sales Letters, Fee Appraisers and the real estate transfer returns. Other sources may include developers, realtors, lending institutions, and individual owners during the listing phase of the operation.

*Income and expense data* must be sufficient enough to derive capitalization rates and accurate estimates of net income needed to apply the income approach. Income and expense data should include both general data regarding existing financial attitudes and practices, and specific data regarding the actual incomes and expenses realized by specific properties.

The general data should include such information as equity return expectations, gross rentals, vacancy and operating cost expectations and trends, prevailing property management costs, and prevailing mortgage costs.

Specific data should include the parcel identification number, property address (or building ID), source of information, the amount of equity, the mortgage and lease terms, and an itemized account of the annual gross income, vacancy loss, and operating expenses for the most recent two-year period.

The general data should be documented in conjunction with the development of capitalization procedural guidelines. The specific data, since it is often considered confidential and not subject to public access, should be recorded on special forms, designed in such a way as to accommodate the property owner or agent thereof in submitting the required information. The forms should also have space reserved for the appraiser's analysis and calculations.

The principal sources for obtaining the general financial data are investors, lending institutions, fee appraisers and property managers. The primary sources for obtaining specific data are the individual property owners and/or tenants during the listing phase of the operation.

*Neighborhood data.* At the earliest feasible time during the data inventory phase of the operation, and after a thorough consideration of the living environment and economic characteristics of the overall county, or any political sub-division thereof, the appraisal staff should delineate the larger jurisdictions into smaller "neighborhood units," each exhibiting a high degree of homogeneity in residential amenities, land use, economic trends, and housing characteristics such as structural quality, age, and condition. The neighborhood delineation should be outlined on an index (or comparable) map and each assigned an arbitrary Neighborhood Identification Code, which when combined with the parcel identification numbering system, will serve to uniquely identify it from other neighborhoods.

Neighborhood data must be comprehensive enough to permit the adequate consideration of value-influencing factors to determine the variations in selling prices and income yields attributable to benefits arising from the location of one specific property as compared to another. The data should include the taxing district, the school district, the neighborhood identification code, special reasons for delineation (other than obvious physical and economic boundaries), and various neighborhood characteristics such as the type (urban, suburban, etc.), the predominant class (residential, commercial, etc.), the

trend (whether it is declining, improving, or relatively stable), its accessibility to the central business district, shopping centers, interstate highways and primary transportation terminals, its housing characteristics, the estimated range of selling prices for residentially-improved properties, and a rating of its relative durability.

All neighborhood data should be recorded on a specially designed form during the delineation phase. The existing property record card can serve in this capacity as it contains the current data on file.

Specific property data must be comprehensive enough to provide the data base needed to process each parcel of property to an indication of value, to generate the tax roll requirements, to generate other specified output, and to provide the assessing officials with a permanent record to facilitate maintenance functions and to administer taxpayer assistance and grievance proceedings.

The data should include the parcel identification number, ownership and mailing address, legal description, property address, property classification code, local zoning code, neighborhood identification code, site characteristics, and structural characteristics.

All the data should be recorded on a single, specially-designed property record card customized to meet individual assessing needs. Each card should be designed and formatted in such a way as to accommodate the listing of information and to facilitate data processing. In addition to the property data items noted above, space must be provided for a building sketch, land and building computations, summarization, and memoranda. In keeping with the economy and efficiency of a mass appraisal program, the card should be formatted to minimize writing by including a sufficient amount of site and structural descriptive data that can be checked and/or circled. The descriptive data should be comprehensive enough to be suitable for listing any type of land and improvement data regardless of class, with the possible exception of large industrial, institutional, and utility complexes that require lengthy descriptions. In these cases, it will generally be necessary to use a specially- designed supplemental property record document, keyed and indexed to the corresponding property record card. The property record card should be made a permanent part of the assessing system, and used not only in conjunction with the revaluation, but also to update the property records for subsequent assessments.

The specific property data should be compiled from existing assessing records and field inspections. The parcel identification number, ownership, mailing address, and legal description may be obtained from existing tax rolls. Property classification codes may also be obtained from existing tax rolls (whenever available) and verified in the field. Local zoning codes may be obtained from existing zoning maps. Neighborhood identification codes may be obtained from the neighborhood delineation maps. Lot sizes and acreage may be obtained from existing tax maps. The property address, and the site and structural characteristics may be obtained by making a physical inspection of each property.

In transferring lot sizes from the tax maps to the property record cards, the personnel performing the tasks must be specially trained in the use of standardized lot sizing techniques and depth tables, may be used, which are necessary to adjust irregular shaped lots and abnormal depths to account for variations from predetermined norms. In regard to acreage, the total acreage may be transferred, but the acreage breakdowns required to affect the valuation of agricultural, residential, forestry, commercial, and industrial properties must be obtained in the field from the property owner and verified by personal observation and aerial photographs, if available.

Field inspections must be conducted by qualified listers under the close supervision of the appraisal staff. During this phase of the operation, the lister must visit each property and attempt personal contact with the occupant. In the course of the inspection, the following procedures must be adhered to.

Identification of the property.

Recording the property address.

Interviewing the occupant of the building and recording all pertinent data.

Inspection, when possible, of the interior of the building and recording of all pertinent physical data.

Measuring and inspecting the exterior of the building, as well as all other improvements on the property, and recording the story height, and the dimensions and/or size of each.

Recording a sketch of the principal building(s), consisting of a plan view showing the main portion of the structure along with any significant attached exterior features, such as porches, etc. All components must be identified; and the exterior dimensions shown for each.

Selection of and recording the proper quality grade of the improvement.

Selection of and recording of the proper adjustments for all field priced items.

Reviewing the property record card for completeness and accuracy.

After the field inspection is completed, the property record cards must be submitted to clerical personnel to review the cards for completeness, calculate the areas, and make any necessary mathematical extensions.

Complete and accurate data are essential to the program. Definite standardized data collection and recording procedures must be followed if these objectives are to be met.

## PROCESSING THE DATA

This phase of the operation involves the analysis of data compiled during the data inventory phase and the processing of that data to an indication of value through the use of the cost, market, and income approaches to value.

During the analytical phase, it will be necessary to analyze cost, market, and income data in order to provide a basis for validating the appropriate cost schedules and tables required to compute the replacement cost new of all buildings and structures; for establishing comparative unit land values for each class of property; for establishing the appropriate depreciation tables and guidelines for each class of property; and for developing gross rent multipliers, economic rent and operating expense norms, capitalization rate tables and other related standards and norms required to effect the mass appraisal of all the property within an entire political unit on an equitable basis.

After establishing the appropriate standards and norms, it remains to analyze the specific data compiled for each property by giving due consideration to the factors influencing the value of that particular property as compared to another, and then to process the data into an indication of value by employing the techniques described in the section of the manual dealing with the application of the traditional approaches to value.

Any one, or all three of the approaches, if applied properly, should lead to an indication of market value; of primary concern is applying the approaches on an equitable basis. This will require the coordinated effort of a number of individual appraisers, each appraiser acting as a member of a team, with the team effort directed toward a valid, accurate and equitable appraisal of each property within the political unit. Each property must be physically reviewed, during which time the following procedures must be adhered to.

- Verification of the characteristics recorded on the property record card.
- Certification that the proper schedules and cost tables were used in computing the replacement cost of each building and structure.
- Determination of the proper quality grade and design factor to be applied to each building to account for variations from the base specifications.
- Making a judgment of the overall condition, desirability, and usefulness of each improvement in order to arrive at a sound allowance for depreciation.
- Capitalization of net income capabilities into an indication of value in order to determine the loss of value attributable to functional and economic obsolescence.
- Addition of the depreciated value of all improvements to the land value; and reviewing the total property value in relation to the value of comparable properties.

At the completion of the review phase, the property record cards must be, once again, submitted to clerical personnel for final mathematical calculations and extensions, and a final check for completeness and accuracy.

Once the final values have been established for each property, the entire program should be evaluated in terms of its primary objectives: do the values approximate a satisfactory level of market value, and what's more important, are the values equitable? Satisfactory answers to these questions can best be obtained through a statistical analysis of recent sales in an appraisal-to-sale ratio study, if sufficient sales are available.

To perform the study, it is necessary to take a representative sampling of recent valid sales and compute the appraisal-to-sale ratio for each of the sales. If the sample is representative, the computed median appraisal-to-sale ratio will give an indication of how close the appraisals within each district approximates the market value. This is providing, of course, that the sales included represent true market transactions. It is then necessary to determine the deviation of each individual appraisal-to-sale ratio from the median ratio, and to compute either the average or the standard deviation, which will give an indication of the degree of equity within each individual district. What remains then is to compare the statistical measures across property classes in order to determine those areas, if any, which need to be further investigated, revising the appraisal, if necessary, to attain a satisfactory level of value and equity throughout the entire jurisdiction.

The techniques and procedures set forth herein, if applied skillfully, should yield highly accurate and equitable property valuations, and should provide a sound property tax base. It should be noted, however, that no program, regardless of how skillfully administered, can ever be expected to be error-free. The appraisal must be "fine-tuned" and this can best be done by giving the taxpayer an opportunity to question the value placed upon his property and to produce evidence that the value is inaccurate or inequitable. During this time, the significant errors will be brought to light, and taking the proper corrective action will serve to further the objectives of the program. What's important in the final analysis is to use all these measures as well as any other resources available to produce the highest degree of accuracy and equity possible.

## **ESTIMATING REPLACEMENT COST NEW**

The informed buyer is not justified in paying anything more for a property than what it would cost him/her to acquire an equally desirable substitute property. Likewise, the upper limit of value of most improvements is the cost of reproducing an equally desirable substitute improvement. It follows, then, that a uniform starting point for an Equalization Program is to determine the Replacement Cost New of each and every improvement.

## **REPLACEMENT COST**

Replacement Cost is the current cost of producing an improvement of equal utility to the subject property; it may or may not be the cost of reproducing a replica property. The distinction being drawn is one between Replacement Cost, which refers to a substitute property of equal utility, as opposed to Reproduction Cost, which refers to a substitute replica property.

The Replacement Cost of an improvement includes the total cost of construction incurred by the builder, whether preliminary to, during the course of, or after completion of its construction. Among these are materials, labor, all sub-contracts, builder's overhead and profit, architectural and engineering fees, consultation fees, survey and permit fees, legal fees, taxes, insurance and the cost of interim financing.

## **PRICING SCHEDULES**

Pricing schedules and related cost tables are included in this manual to assist the appraiser in arriving at accurate estimation of Replacement Cost New. They have been developed by applying unit-in-place costs to the construction of specified hypothetical or model buildings. Application of the schedules involves the selection of the model which most nearly resembles the subject building and adjusting its price to compensate for all significant variations.

Pricing schedules are included for various types of Residential, Agricultural, Institutional, Commercial and Industrial structures.

Cost adjustments for the variations which are most frequently encountered in a particular type building are included. Adjustments for other variations may be made by using either the other Feature Cost Tables or other appropriate schedules.

**SELECTING THE PROPER QUALITY GRADE**

The quality of materials and workmanship is the one most significant variable to be considered in estimating the replacement cost of a structure. Two buildings may be built from the same general plan, each offering exactly the same facilities and with the same specific features, but with widely different costs due entirely to the quality of materials and workmanship used in their construction. For instance, the cost of a dwelling constructed of high quality materials and with the best of workmanship throughout can be more than twice that of one built from the same floor plan, but with inferior materials and workmanship.

The schedules included in this manual have been developed to provide the appraiser with a range of grades comprehensive enough to distinguish all significant variations in the quality of materials and workmanship which may be encountered; the basic specifications for each grade as to the type of facility furnished remain relatively consistent throughout, and the primary criterion for establishing the grade being the overall quality of materials and workmanship.

The majority of buildings erected fall within a definite class of construction, involving the use of average quality of materials with average quality of workmanship. This type of construction being the most common, it can readily be distinguished by the layman as well as the professional appraiser. Consequently, better or inferior quality of construction can be comparatively observed. The quality grading system and pricing schedules in this manual are keyed to this obvious condition; the basic grade being representative of that cost of construction using average quality of materials with average quality workmanship. The principal Quality Grade classifications are as follows:

Grade AAA	Superior Quality
Grade AA	Excellent Quality
Grade A	Very Good Quality
Grade B	Good Quality
Grade C	Average Quality
Grade D	Fair Quality
Grade E	Poor Quality

The seven grades listed above will cover the entire range of construction quality, from the poorest quality to the finest quality.



The general quality specifications for each grade are as follows:

- AAA Grade Buildings generally having an exceptional architectural style and design, constructed with the finest quality materials and custom workmanship. Superior quality interior finish, built-in features, deluxe heating system, plumbing and lighting fixtures.
- AA Grade Buildings generally having an outstanding architectural style and design, constructed with the finest quality materials and workmanship. Superior quality interior finish, built-in features, deluxe heating system, plumbing and lighting fixtures.
- A Grade Architecturally attractive buildings constructed with excellent quality materials and workmanship throughout. High quality interior finish and built-in features. Deluxe heating system and very good grade plumbing and lighting fixtures.
- B Grade Buildings constructed with good quality materials and above average workmanship throughout. Moderate architectural treatment. Good quality interior finish and built-in features. Good grade heating, plumbing and lighting fixtures.
- C Grade Buildings constructed with average quality materials and workmanship throughout, conforming to the base specifications used to develop the pricing schedule. Minimal architectural treatment. Average quality interior finish and built-in features. Standard grade heating, plumbing and lighting fixtures.
- D Grade Buildings constructed with economy quality materials and fair workmanship throughout. Void of architectural treatment. Cheap quality interior finish and built-in features. Low grade heating, plumbing and lighting fixtures.
- E Grade Buildings constructed with a very cheap grade of materials, usually “culls”, “seconds” and poor- quality workmanship; resulting from unskilled, inexperienced, “do-it-yourself” type labor. Low grade heating, plumbing, and lighting fixtures.

In order to facilitate using this grading system, and again to promote and maintain uniformity in approach, the value relationship of grade to grade as just described has been incorporated into the development of the base specifications relating to each schedule used in the manual.

Note: The appraiser must exercise extreme caution not to confuse the concepts “quality” and “condition” when selecting the proper grade. This is especially applicable to older buildings, wherein a deteriorated condition can have a noticeable effect on their physical appearance. A building will always retain its initial grade of construction, regardless of its existing deteriorated condition. The Quality Grade ultimately selected must reflect that original built-in quality, and the selection of that grade cannot be influenced in any way by the physical condition of the building.

**APPLYING THE PROPER GRADE FACTOR**

Grading would be a relatively simple process if all buildings were built to conform to the quality grade specifications outlined above. The fact is, however, that this ideal condition does not exist. It is not unusual for any conventional building to be built incorporating construction qualities that fall between the established grade levels. The grading system in this manual has been designed in such a way as to provide the appraiser with a method for accounting for such variations by establishing intermediate grades.

If the Subject building is judged to be of a better or inferior quality than the actual grade levels, a grade factor of plus (+) or minus (-) should be applied, i.e., C+ would be better than a straight “C” Grade, B- poorer than a straight “B” Grade, etc.

There is rarely a clear-cut designation of a specific grade factor. The appraiser will generally select a range, such as C+ to B-, and then weigh the various quality factors exhibited in the construction in order to select the proper factor.

Following the above procedures results in the full range of Quality Grade Factors, examples of these factors are listed below.

AAA (+) 350%	A (+) 165%	C (+) 110%	E (+) 65%
AAA 325%	A 155%	C 100%	E 55%
AAA (-) 300%	A (-) 145%	C (-) 95%	E (-) 45%
AA (+) 275%	B (+) 135%	D (+) 90%	
AA 250%	B 125%	D 85%	
AA (-) 200%	B (-) 120%	D (-) 75%	

Note: the quality factor ultimately selected should represent a composite judgement of the overall Quality Grade. Generally, the quality of materials and workmanship is fairly consistent throughout the construction of a specific building. However; since this is not always the case, it is frequently necessary to weight the quality of each major component in order to arrive at the proper “overall” Quality Grade. Equal consideration must also be given to any “Additions” which are constructed of materials and workmanship inconsistent with the quality of the main building.

## **APPLYING THE PROPER COST AND DESIGN FACTOR**

Architectural fees, material quantities, labor efficiency, and other factors influencing total construction costs may vary considerable from one building to another, depending upon its particular design. Two dwellings, for instance, showing no marked difference in size and quality may still show a measurable difference in cost, attributable primarily to a difference in design.

In computing the replacement cost of any building, therefore, it is necessary to adjust the cost to account for any features varying significantly from the base specifications from which the pricing schedules were developed.

The pricing schedules included in this manual, unless otherwise specified, have been developed to reflect perimeter-to-area wall ratios of rectangular shaped buildings, uniform eave lines and roof slopes, overhangs, ceiling heights, and other architectural features most typical of conventional designs.

The adjustment for variations in design must be made by applying a Cost and Design Factor denoting a percentage adjustment of the sub-total replacement cost, i.e., apply a +5% to indicate a 5% increase in the replacement cost, apply a +10% to indicate a 10% increase, etc.

The Cost and Design Factors applicable to dwellings will normally range from 0 to 15%. However, the Cost and Design Factors applicable to special architectural designs may range considerably higher. The selection of the proper Cost and Design Factor is largely a product of the experience and sound judgment of the appraiser, who must have the ability to analyze various construction components and determine the influence of each upon the overall cost.

## **PRICING SCHEDULES AND COST TABLES**

The Pricing Schedules and Cost Tables in this manual are provided to assist the appraiser in arriving at accurate and uniform valuations. Used properly, they should prove to be an invaluable tool. Quality valuations, however, are not the product of schedules and tables themselves, but rather of the appraiser's ability to use them effectively. In order to bring this about, a thorough understanding of the make-up and the capabilities and limitations of each schedule is essential. The appraiser must know the specifications, from which the base prices were derived, the composition of the prices, and the proper techniques and procedures for applying the prices. What's more important, the appraiser must be able to exercise good common sense and sound judgement in selecting and using them.

It should also be noted that the schedules and tables in the manual have been developed primarily for mass appraisal and tax equalization purposes. They have, therefore, been designed to provide the appraiser with an uncomplicated, fast, and effective method of arriving at an accurate estimate of replacement costs. In order to maintain simplicity in the schedules, techniques, and procedures, it is often necessary to make certain compromises from a strictly technical and engineering point of view. Extensive effort has been made in developing the schedules to minimize these compromises and limit them to variables that have minimal influence on the final value of the building. The schedules have been designed to reflect actual building costs and practices. Field tests have proven them to be both accurate and reliable, and when applied properly, highly effective in arriving at realistic replacement costs.

**GENERAL RESIDENTIAL PRICING SCHEDULES**

**QUALITY GRADE OR CLASS**

The quality grade of materials and workmanship is the one most significant variable to be considered in estimating the replacement cost of a structure. Two buildings may be built from the same general plan, each offering exactly the same facilities and with the same specific features, but with widely different cost due entirely to the quality of materials and workmanship used in their construction. For instance, the cost of a dwelling constructed of high-quality materials and with the best of workmanship throughout can be more than twice that of one built from the same floor plan but with inferior materials and workmanship prevailing.

The following schedule has been developed to distinguish between variations in cost. This schedule represents the full range of conventional dwelling construction. The basic specifications for each grade, as to type of facilities furnished is relatively constant; that is, each has a specific type of heating system, two bathrooms, kitchen unit, and other typical living facilities, but with variable quality of materials and workmanship prevailing.

The basic grade represents cost of construction using average quality materials, with average workmanship. The majority of dwellings erected fall within one class above and one class below the base grade of C. The layman or professional appraiser can readily distinguish between these classes. The three classes of grade of quality for this group of dwelling have been established as follows:

Grade B	Good	Quality 125%
Grade C	Average	Quality 100%
Grade D	Fair	Quality 85%

In order to justify variation in cost, maintain uniformity and retain complete control throughout the cost range, we have established these base grades. The pricing spread between each grade is based upon the use of better grade materials and higher quality workmanship from C Grade to B Grade. B Grade dwellings are found to have better individual features and interior finish, which reflects higher costs than a C Grade. Likewise, the D Grade dwelling would be constructed of lesser quality than C Grade, due to the type of materials used and workmanship. Consequently, better quality of construction or construction of cheaper quality can be comparatively observed.

To cover the entire range of dwelling construction, three additional classes of dwellings above the three base grade dwellings must be considered along with one grade dwelling below the base three grades.

The three base grades above are:

“A”	Excellent Quality	155%
“AA”	Superior Quality	250%
“AAA”	Ultimate Quality	325%

The A, AA and AAA Grade dwelling incorporates the best quality of materials and workmanship. Construction costs of AAA Grade dwellings usually run substantially higher than the cost of C Grade dwellings. The prestige type and the mansion, or country estate-type homes are usually in this class. The AA Grade dwellings having exceptional architectural style and design are generally the custom- built homes and are better in overall construction than the C Grade dwellings. The A Grade dwellings having outstanding architectural style and design are generally the custom-built homes and are 55% better in overall construction than the C Grade dwellings.

The dwelling of the cheapest quality construction built of low-grade materials and is the E Grade quality.

These seven (7) established base graded or classes of quality will cover the entire range of dwelling construction, from the cheapest to the finest in quality.

**USE OF GRADE FACTORS**

The grading method is based on C Grade as standards of quality and design. Quality adjustments are established by means of grade factor multipliers. Since not all dwellings are constructed to fall into one of the precise grade levels with no adjustments, it becomes necessary to further refine our grading system. It is not unusual for conventional houses to be built incorporating qualities that fall above or below these established grades. If the house that is being appraised does not fall exactly on a specific grade, but should be classified within that grade, the use of Grade Factor Symbols (+ or -) will accomplish this adjustment in the Grade AAA, AA, A, B, C, D and E Classes.

For a grading increase in the AA Grade category, a plus factor can be used, which will result in each factor being higher than the last.

A Sample Would Be –

A dwelling with outstanding architectural style and design, constructed with the finest quality materials and workmanship throughout, Superior quality interior, finish

with extensive built-in features, Deluxe heating system and high-grade lighting and plumbing fixtures may be graded A+. The A+ Grade places this house in the Superior Quality range. The + part of the A+ Grade places this house one level above the A Grade category. Grade A+ has a multiplier of 165%. Thus, once you have priced this house to the base level of C, a multiplier of 165% would be applied to adjust the C Grade base level up to the A+ Grade level you desired.

The same approach would apply should you have a house constructed with a very cheap grade of materials, usually culls and seconds, and very poor-quality workmanship resulting from unskilled, inexperienced, do-it-yourself type labor. Minimal code, low-grade mechanical features and fixtures may be graded E. The E Grade places this house in the Cheap Quality range. Grade E has a multiplier of 55%; once you have priced this house to the base level of "C", a multiplier of 55% would be applied to adjust the C Grade base level down to the E Grade level you desired.

NOTE: The quality factor ultimately selected is to represent a composite judgment of the overall Quality Grade. Generally, the quality of materials and workmanship is fairly consistent throughout the construction of a specific building; however, since this is not always the case, it is frequently necessary to weigh the quality of each major component in order to arrive at the proper overall Quality Grade. Equal consideration must also be given to any additions which are constructed of materials and workmanship inconsistent with the quality of the main building.

The appraiser must use extreme caution not to confuse Quality and Condition when establishing grades for older houses in which a deteriorated condition may have a noticeable effect on their appearance. Grades should be established on original built-in quality as new dwellings, and not be influenced by physical condition. Proper grading must reflect replacement cost of new buildings. Bear in mind a house will always retain its initial grade of construction, regardless of its present deteriorated condition.

## **AAA Quality Dwellings**

These dwellings are constructed of the finest quality materials and workmanship, exhibiting unique and elaborate architectural styling and treatment, and having all the features typically characteristic of mansion-type homes.

### **BASE SPECIFICATIONS**

**FOUNDATION:** Brick or reinforced concrete foundation walls on concrete footings with interior piers.

**EXTERIOR WALLS:** Stone, brick veneer, stucco, log, or frame siding. All exterior walls will be of high quality and constructed with much detail and workmanship. Ample insulation and numerous openings for windows and doors are typical.

**ROOF:** Slate, tile, cedar shake, or architectural asphalt shingles on quality sheathing with well braced rafters having various slopes and ridges.

**INTERIOR FINISH:** The interior of these homes is of the highest custom design and construction with much attention given to fine detail and master craftsmanship.

**FLOORS:** Heavy construction utilizing wood or steel joists and sub floor with the best quality combination of hardwoods, ceramic tile, terrazzo, marble or granite tile, vinyl, or luxurious carpeting.

**PLUMBING:** A combination of high quality fixtures, good quality materials, and skilled workmanship. Considered typically and adequate for the type of construction, generally exceeding a total of twelve fixtures.

**CLIMATE CONTROL:** A heating system equal to forced air with ample capacity and insulated ductwork throughout. Air conditioning is included as a part of the specifications; however, this item is considered an add-on item and is excluded from base pricing.

**ELECTICAL:** Good quality wiring, maximum electrical outlets and expensive light fixtures.





Grade  
AAA

## AA Quality Dwellings

These homes are architecturally designed; and custom built by contractors who specialize in good quality construction. Extensive detail is given to ornamentation with the use of good grade materials and skilled craftsmanship. Homes of this quality are located in affluent areas that will enhance and benefit the home the most.

### BASE SPECIFICATIONS

**FOUNDATION:** Brick or reinforced concrete foundation walls on concrete footings with interior piers.

**EXTERIOR WALLS:** Stone, brick veneer, stucco, log, or frame siding. All exterior walls will be of high quality and constructed with much detail and workmanship. Ample insulation and numerous openings for windows and doors are typical.

**ROOF:** Slate, tile, cedar shake, or architectural asphalt shingles on quality sheathing with well braced rafters having various slopes and ridges.

**INTERIOR FINISH:** The interior of these homes is of the highest custom design and construction with much attention given to fine detail and master craftsmanship.

**FLOORS:** Heavy construction utilizing wood or steel joists and sub floor with the best quality combination of hardwoods, ceramic tile, terrazzo, marble or granite tile, vinyl, or luxurious carpeting.

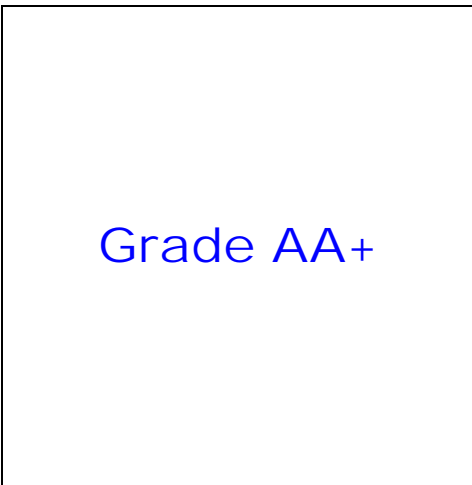
**PLUMBING:** A combination of high quality fixtures, good quality materials, and skilled workmanship. Considered typically and adequate for the type of construction, generally exceeding a total of twelve fixtures.

**CLIMATE CONTROL:** A heating system equal to forced air with ample capacity and insulated ductwork throughout. Air conditioning is included as a part of the specifications; however, this item is considered an add-on item and is excluded from base pricing.

**ELECTICAL:** Good quality wiring, maximum electrical outlets and expensive light fixtures.



Grade AA+



Grade AA+



Grade AA+



Grade AA

Grade AA

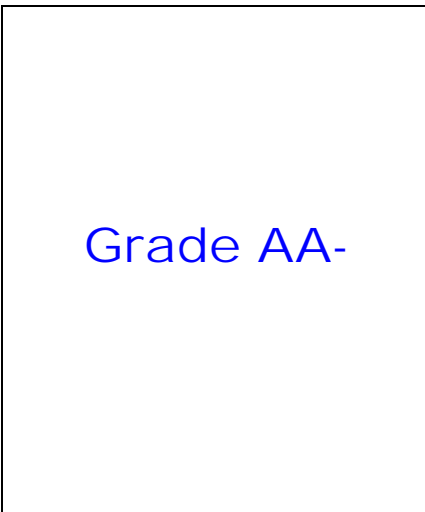


Grade AA





Grade AA-



Grade AA-



Grade AA-

## A Quality Dwellings

These homes are architecturally designed; and custom built by contractors who specialize in good quality construction. Extensive detail is given to ornamentation with the use of good grade materials and skilled craftsmanship. Homes of this type are located in areas that are specifically developed for this level of quality.

### BASE SPECIFICATIONS

**FOUNDATION:** Brick or reinforced concrete foundation walls on concrete footings with interior piers.

**EXTERIOR WALLS:** Stone, brick veneer, stucco, log, or frame siding. All exterior walls will be of good quality and constructed with detail and workmanship. Ample insulation and adequate openings for windows and doors is typical.

**ROOF:** Slate, tile, cedar shake, or architecture asphalt shingles on quality sheathing with well braced rafters having various slopes and ridges.

**INTERIOR FINISH:** The interior of these homes is of good design and good construction with much attention given to detail and good quality craftsmanship.

**FLOORS:** Heavy construction utilizing wood or steel joists and sub floor with a good quality combination of hardwoods, ceramic tile, marble or granite tile, vinyl, or good quality carpeting.

**PLUMBING:** A combination of good quality fixtures, good quality materials, and skilled workmanship. Considered typically and adequate for the type of construction, generally exceeding a total of twelve fixtures.

**CLIMATE CONTROL:** A heating system equal to forced air with ample capacity and insulated ductwork throughout. Air conditioning is included as a part of the specifications; however, this item is considered an add-on item and is excluded from base pricing.

**ELECTICAL:** Good quality wiring, maximum electrical outlets and expensive light fixtures.



Grade A+

Grade A+



Grade A+





Grade A

Grade A



Grade A







Grade A-

Grade A-



Grade A-

## B Quality Dwellings

These homes are architecturally designed and built by contractors who specialize in good quality construction. Much detail is given to ornamentation with the use of good grade materials and skilled workmanship. Custom built homes normally fall into this classification.

### BASE SPECIFICATIONS

**FOUNDATION:** Brick or reinforced concrete foundation walls on concrete footings with interior piers.

**EXTERIOR WALLS:** Stone, brick veneer, stucco, log, or frame siding. All exterior walls will be of good quality and constructed with detail and workmanship. Ample insulation and adequate openings for windows and doors is typical.

**ROOF:** Slate, tile, cedar shake, or architecture asphalt shingles on quality sheathing with well braced rafters having various slopes and ridges.

**INTERIOR FINISH:** The interior of these homes is of good design and good construction and good quality workmanship.

**FLOORS:** Moderate construction utilizing wood or steel joists and sub floor with a good combination of hardwoods, ceramic tile, vinyl, or good quality carpeting.

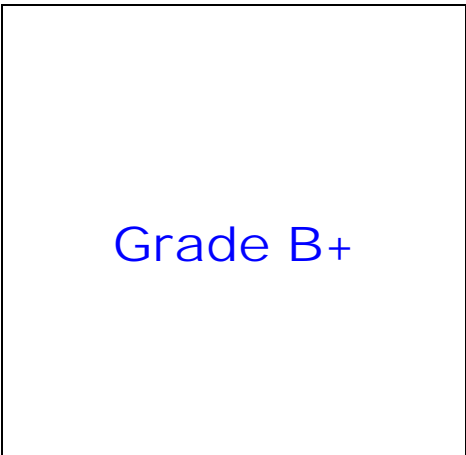
**PLUMBING:** A combination of quality fixtures, quality materials, and skilled workmanship. Considered typically and adequate for this type of construction, generally having at least eight fixtures.

**CLIMATE CONTROL:** A heating system equal to forced air with ample capacity and insulated ductwork throughout. Air conditioning is included as a part of the specifications; however, this item is considered an add-on item and is excluded from base pricing.

**ELECTICAL:** Good quality wiring, maximum electrical outlets and good light fixtures.



Grade B+



Grade B+



Grade B+



Grade B

Grade B



Grade B





Grade B-

Grade B-



Grade B-



## C Quality Dwellings

These homes are designed and built by contractors who specialize in average quality construction. Adequate detail is given to ornamentation with the use of average grade materials and typical workmanship. Homes of this type are located in areas that are specifically developed for this level of quality. These homes represent the prevalent quality.

### BASE SPECIFICATIONS

**FOUNDATION:** Brick or reinforced concrete foundation walls on concrete footings with interior piers.

**EXTERIOR WALLS:** Stone, brick veneer, stucco, log, or frame siding. All exterior walls will be average quality and constructed with detail and workmanship. Ample insulation and adequate openings for windows and doors is typical.

**ROOF:** Tile, cedar shake, or asphalt shingles on average quality sheathing with frame trusses and having typical slopes.

**INTERIOR FINISH:** The interior of these homes is of average design and average construction with attention given to detail and average quality workmanship.

**FLOORS:** Moderate construction utilizing wood or steel joists and sub floor with an average combination of hardwoods, ceramic tile, vinyl, or average quality carpeting.

**PLUMBING:** A combination of average quality fixtures, average quality materials, and workmanship. Considered typically and adequate for the type of construction, generally not exceeding a total of twelve fixtures.

**CLIMATE CONTROL:** A heating system equal to forced air with ample capacity and insulated ductwork throughout. Air conditioning is included as a part of the specifications; however, this item is considered an add-on item and is excluded

**ELECTICAL:** Average quality wiring, adequate electrical outlets and average light fixtures from base pricing.



Grade C+

Grade C+

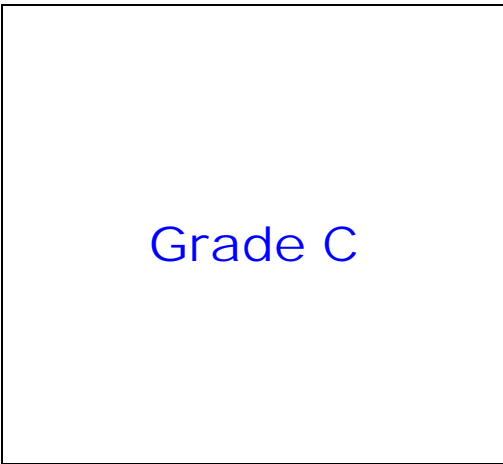


Grade C+





Grade C



Grade C



Grade C





Grade C-

Grade C-



Grade C-



## D Quality Dwellings

These homes are usually built of fair quality materials with expense-saving construction. Economy built homes would normally fall into this classification.

### BASE SPECIFICATIONS

**FOUNDATION:** Brick or concrete block walls on concrete footings.

**EXTERIOR WALLS:** Stone, brick veneer, stucco, log, or frame siding. All exterior walls are average quality or less and constructed with minimal detail and workmanship. Insulation is minimal and openings for windows and doors are typical.

**ROOF:** Light weight asphalt shingles on adequate sheathing and frame trusses with minimal slope.

**INTERIOR FINISH:** The interior of these homes is below average design and construction with limited attention given to detail and quality workmanship.

**FLOORS:** Low cost construction utilizing wood or steel joists and sub floor with some hardwoods, vinyl, and/or low- quality carpeting.

**PLUMBING:** A combination of fair quality fixtures and typical quality materials and workmanship. Considered typical and adequate for this type of construction, normally has eight fixtures or less.

**CLIMATE CONTROL:** A heating system equal to forced air with minimal capacity and ductwork throughout. Air conditioning is not a part of the specifications. This item is excluded from base pricing and should be added if applicable.

**ELECTICAL:** Adequate quality wiring, minimal electrical outlets and low- cost light fixtures.



Grade D+

Grade D+



Grade D+





Grade D

Grade D

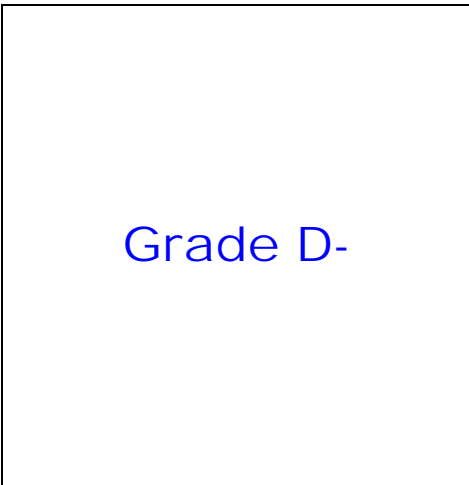


Grade D





Grade D-



Grade D-



Grade D-

## E Quality Dwellings

These homes are constructed of low quality materials and usually designed not to exceed minimal building code. Little detail is given to interior or exterior finish. They are usually built for functional use only. Homes of this type are not specifically located within housing developments but may be built as in-fill housing.

### BASE SPECIFICATIONS

**FOUNDATION:** Brick or concrete block foundation walls on concrete footings, piers, or concrete slab.

**EXTERIOR WALLS:** Stone, brick veneer, stucco, log, frame siding, or concrete block. All walls are cheaply constructed with minimal detail and workmanship. Little or no insulation and minimal windows and doors are typical.

**ROOF:** Light weight asphalt shingles, roll roofing, or metal on plywood sheathing and frame trusses with minimal slope.

**INTERIOR FINISH:** The interior of these homes is of fair design and construction with low cost materials. Little attention is given to detail and quality workmanship.

**FLOORS:** Low cost construction utilizing wood or steel joists and sub floor with some hardwoods, vinyl, and/or low -quality carpeting.

**PLUMBING:** A combination of fair quality fixtures, typical quality materials, and workmanship. Considered adequate for the type of construction. Generally, not have more than a total of five fixtures.

**CLIMATE CONTROL:** A heating system equal to forced air with minimal capacity and ductwork throughout. Air conditioning is not a part of the specifications. This item is excluded from base pricing and should be added if applicable.

**ELECTICAL:** Minimal quality wiring, limited electrical outlets and inexpensive lighting.



Grade E+

Grade E+

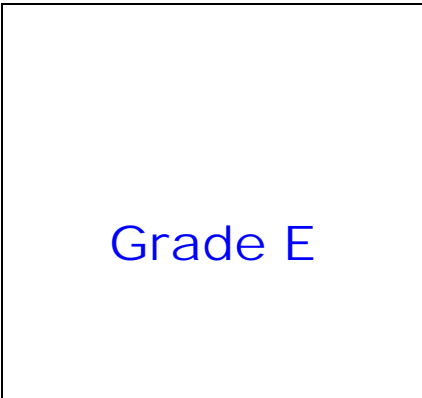


Grade E+





Grade E



Grade E



Grade E





Grade E-

**MANUFACTURED HOUSING**

## General

Manufactured housing can be single-wide mobile homes, double-wide mobile homes, multi-sectional homes, or modular homes. Non-modular structures are designed with a steel undercarriage and wheel assemblies for transporting to the site. Note: most modular homes have wood joist rather than a steel undercarriage. For mass appraisal purposes, both wood joist and steel undercarriage homes that are classified as modular are considered to be like stick-built homes.

As of June 15, 1976, all manufactured homes built, after that time, must meet or exceed Federal Standards outlined in Title VI, Housing and Community Development Act of 1974. These standards (building codes) are administered by United States Department of Housing and Urban Development (HUD). The HUD code, unlike conventional building codes, requires manufactured homes to be constructed on permanent chassis. Manufactured homes that are not consider modular homes must have a red/silver certification (HUD certification) on the exterior of each transportable section when transported from the factory.

Modular homes are constructed on the same state, local and regional building codes (conventional building codes) as site- built homes which exceed the HUD code and have a “State of North Carolina Modular Construction Validating Stamp” on the interior of the home. For mass appraisal purposes all factory constructed homes are to be classified as either manufactured (single-wide, double-wide, etc.) or modular.

**MODULAR HOME CLASSIFICATION STANDARDS**

All homes constructed in a factory may be considered a manufactured home, but only those that meet or exceed the North Carolina State Residential Building Code may be considered modular homes. North Carolina General Statute 105-164.3(21b) defines modular home as “a factory-built structure that is designed to be used as a dwelling, is manufactured in accordance with the specifications for modular homes under the North Carolina State Residential Building Code (NCSRBC), and bears a seal or label issued by the Department of Insurance pursuant to G.S. 143-139.1”. Also, in addition to NCSRBC, modular homes may be required to be constructed to local and/or regional building codes. North Carolina addresses the construction and definition of modular homes under the North Carolina State Building Code Volume VIII – Modular Construction Regulations. The quality of modular homes is considered to be the same as site- built homes per memorandum from the North Carolina Department of Insurance (see memorandum, page 383). For mass appraisal purposes structures that are considered modular must meet current general statute requirements. Note: All homes classified as modular will be considered as real property, even if on someone else’s land.

## MANUFACTURED HOME CLASSIFICATION STANDARDS

All manufactured homes not meeting the requirements of a modular home are to be considered using the term “manufactured home” for mass appraisal purposes. N.C.G.S. 105-273(13), in defining real property, provides for the inclusion of manufactured homes. Also, N.C.G.S. 105-316.7 defines mobile home and manufactured home.

Any manufactured home will be considered *real property* and will be valued in accordance with the schedule of values if the owner of the land and the owner of the home placed upon the land are the same, having the towing hitch and axle assembly removed and placed upon a permanent foundation as required by the Chatham County Building Department.

If the owner of the manufactured home does not own the land it occupies, the home will be considered a *personal property* item. If the manufactured home is considered a *personal* item, it will be noted within the miscellaneous items section of the property record card.



MA30S  
Single-Sect  
Manufactured  
Home

MA30W  
Multi-Sect  
Manufactured  
Home



MA37WMD  
Modular  
Home

## RESIDENTIAL COST SCHEDULES

The Cost Approach to value lends itself best to property valuation for tax purposes for two principle reasons.

- 1) Appraisals for Ad Valorem purposes require separate land value estimates.
- 2) The Cost Approach can be applied to all classes of property.

The use of one approach to the exclusion of others is contrary to the appraisal process. The approach outlined in this manual includes cost schedules which have been developed and are supported through analysis and incorporation of economic factors indicated by all three approaches to value; Cost, Income and Market.

The following cost schedules are based on a model residence constructed using typical components, average quality workmanship and materials, consisting of one thousand five hundred (1500) square feet, two full baths, central heating system and perim. foundation.

The general pricing procedure is as follows:

1. Determine the Main Area (**MA**) Code by exterior wall type and type of residential building. (Ex. Wood Siding ranch style homes is a MA 37W)
2. Multiply the base square footage of the first floor by the main area price and by the size factor for the MA code. (Ex. 1500 sq. ft. X \$92.25 X .84 = \$116,235)
3. For buildings with an upper floor, multiply the square footage of the upper floor by the main area price, then by the size factor for the MA code of the first- floor square footage and by the multiple story adjustment (**ST**) of 65% which is only applied to upper floor square footage. (Ex. 500 sq. ft. (upper floor area) X \$92.25 X .84 X .65 = \$25,184.25)
4. Apply Cost & Design % factor to the total main area price.
5. Adjustments to the main area are calculated from the norm of the base structure.
  - A. Heat type- the standard is central heat. Determine the heat type (Ex. heat pump HC 08) and multiply the square footage by the heat type code rate by the size adjustment for the main area of the first floor square footage. (Ex. 1500 sq. ft. X \$3.10 X .84 = \$3,906)
  - B. Foundation type- the standard is Perim Footing. Determine the foundation type (Ex. Continuous Slab FN 03) and multiply the square footage by the foundation type code by the size adjustment for the main area of the first- floor square footage. (Ex. 1500 sq. ft. X (-) \$4.35 X .84 = (-) \$5,481) Foundations were primarily only listed for manufactured homes.
  - C. Plumbing type-the standard is 2 baths. Determine the number of fixtures from the standard. (Ex. 2½ baths has five extra fixtures PL RS) Multiply the number of fixtures times the rate. (Ex. 2 X \$1,075 = \$2,150)

- D. Fireplace type- the standard is no fireplace. Determine the type of fireplace. (Ex. Prefab FP 03) Multiply the fireplace rate times the number of fireplaces. (Ex.  $1 \times \$1,850 = \$1,850$ )
- E. Basement Type- the standard is no basement. Determine the type of basement. (Ex. Basement is finished BA BF) Multiply the square footage by the basement type code by the size adjustment for the main area of the first floor square footage (Ex.  $1500 \text{ sq. ft.} \times \$62.20 \times .84 = \$78,372$ )
- F. Elevator type- the standard is no elevator. Determine the type of elevator and number of floors. (Ex. 2 story Hydraulic EL EH2) Multiply the elevator rate times the number of elevators. (Ex.  $1 \times \$10,000 = \$10,000$ )
6. Determine the addition code type (Ex. Porch AC 06) attached to the main structure. Multiply the base rate of the AC code by the size adjustment for that code. (Ex.  $80 \text{sq. ft.} \times \$28.70 \times 1.02 = \$2,342$ )
7. Sub-total all areas of the structure's components.
8. Apply the proper Quality Grade Factor to arrive at the Replacement Cost New. The standard pricing schedule is at a C grade building.
9. Apply the proper depreciation from the C.D.U. Chart. (Ex. A home built in 1975 that physically is in average condition with normal functional use, but is in a desirable neighborhood and the C.D.U. is Good, the depreciation is 81% of the value remaining)
10. If a market adjustment is to be applied, it is applied at this stage.
11. The final value for the building is finished.

All adjustments from base specifications are included in the following schedules

**BASE PRICE FOR RESIDENTIAL SCHEDULE MA 37W SINGLE FAMILY RESIDENCE**

WALL HEIGHT	BASE PRICE	BASE SPECIFICATIONS
10	\$ 92.25	STORY HEIGHT: FIRST FLOOR AREA  FOUNDATION/BASEMENT: CONTINUOUS FOOTING  EXTERIOR WALLS: VINYL SIDING OR EQUAL  PARTITIONS: ADEQUATE FOR SEPARATION OF ROOMS/STORAGE AREAS  FRAMING: WOOD JOIST  REMARKS/ADDITIONAL FEATURES:  ADD FOR FIREPLACES GARAGES/PORCHES/BASEMENT AREAS ADDITIONAL PLUMBING ADD FOR COOLING SYSTEM  FLOOR COVER/FINISH: VINYL/CARPET  INTERIOR FINISH: DRYWALL/PANEL  HEATING/COOLING: FORCED HOT AIR OR EQUAL  PLUMBING: 8 PLUMBING FIXTURES

**BASE PRICE FOR RESIDENTIAL SCHEDULE MA 18W DUPLEX/TRIPLEX**

WALL HEIGHT	BASE PRICE	BASE SPECIFICATIONS
10	\$ 101.50	STORY HEIGHT: FIRST FLOOR AREA  FOUNDATION/BASEMENT: CONTINUOUS FOOTING  EXTERIOR WALLS: VINYL SIDING OR EQUAL  PARTITIONS: ADEQUATE FOR SEPARATION OF ROOMS/STORAGE AREAS  FRAMING: WOOD JOIST  REMARKS/ADDITIONAL FEATURES:  ADD FOR ATTACHMENTS ADD FOR EXTRA PLUMBING ADD FOR COOLING SYSTEM  FLOOR COVER/FINISH: VINYL/CARPET  INTERIOR FINISH: DRYWALL/PANEL  HEATING/COOLING: FORCED HOT AIR  PLUMBING: 8 PLUMBING FIXTURES



# Schedule of Values

# Chatham County 2021

## BASE PRICE FOR RESIDENTIAL SCHEDULE MA 12W CONDO/TOWNHOUSE

WALL HEIGHT	BASE PRICE	BASE SPECIFICATIONS
10	\$ 92.25	STORY HEIGHT: FIRST FLOOR AREA  FOUNDATION/BASEMENT: CONTINUOUS FOOTING  EXTERIOR WALLS: VINYL SIDING OR EQUAL  PARTITIONS: ADEQUATE FOR SEPARATION OF ROOMS/STORAGE AREAS  FRAMING: WOOD JOIST  REMARKS/ADDITIONAL FEATURES:  ADD FOR ATTACHMENTS ADD FOR EXTRA PLUMBING ADD FOR COOLING SYSTEM  FLOOR COVER/FINISH: VINYL/CARPET  INTERIOR FINISH: DRYWALL/PANEL  HEATING/COOLING: FORCED HOT AIR  PLUMBING: 8 PLUMBING FIXTURES

**BASE PRICE FOR RESIDENTIAL SCHEDULE MA 37WMD MODULAR HOME**

WALL HEIGHT	BASE PRICE	BASE SPECIFICATIONS
10	\$ 87.70	STORY HEIGHT: FIRST FLOOR AREA  FOUNDATION/BASEMENT: CONTINUOUS FOOTING  EXTERIOR WALLS: VINYL SIDING OR EQUAL  PARTITIONS: ADEQUATE FOR SEPARATION OF ROOMS/STORAGE AREAS  FRAMING: WOOD JOIST  REMARKS/ADDITIONAL FEATURES:  ADD FOR ATTACHMENTS ADD FOR EXTRA PLUMBING ADD FOR COOLING SYSTEM  FLOOR COVER/FINISH: VINYL/CARPET  INTERIOR FINISH: DRYWALL/PANEL  HEATING/COOLING: FORCED HOT AIR  PLUMBING: 8 PLUMBING FIXTURES

## BASE PRICE FOR RESIDENTIAL SCHEDULE MA 30W MANUFACTURED HOME

WALL HEIGHT	BASE PRICE	BASE SPECIFICATIONS
10	\$ 62.25	STORY HEIGHT: FIRST FLOOR AREA  FOUNDATION/BASEMENT: CONTINUOUS FOOTING  EXTERIOR WALLS: VINYL SIDING OR EQUAL  PARTITIONS: ADEQUATE FOR SEPARATION OF ROOMS/STORAGE AREAS  FRAMING: WOOD JOIST  REMARKS/ADDITIONAL FEATURES:  ADD FOR ATTACHMENTS ADD FOR EXTRA PLUMBING ADD FOR COOLING SYSTEM
		FLOOR COVER/FINISH: VINYL/CARPET  INTERIOR FINISH: DRYWALL/PANEL  HEATING/COOLING: FORCED HOT AIR  PLUMBING: 8 PLUMBING FIXTURES

**BASE PRICE FOR RESIDENTIAL SCHEDULE MA 30S MANUFACTURED HOME**

WALL HEIGHT	BASE PRICE	BASE SPECIFICATIONS
10	\$ 27.20	STORY HEIGHT: FIRST FLOOR AREA  FOUNDATION/BASEMENT: CONTINUOUS FOOTING  EXTERIOR WALLS: VINYL SIDING OR EQUAL  PARTITIONS: ADEQUATE FOR SEPARATION OF ROOMS/STORAGE AREAS  FRAMING: WOOD JOIST  REMARKS/ADDITIONAL FEATURES:  ADD FOR ATTACHMENTS ADD FOR EXTRA PLUMBING ADD FOR COOLING SYSTEM
		FLOOR COVER/FINISH: VINYL/CARPET  INTERIOR FINISH: DRYWALL/PANEL  HEATING/COOLING: FORCED HOT AIR  PLUMBING: 8 PLUMBING FIXTURES

**MAIN AREA BASE RATES**

<b>MA Code</b>	<b>Description</b>	<b>Rate</b>
MA 12W	Condo Frame	\$92.25
MA 12M	Condo Mas.	\$97.80
MA 12C	Condo Conc.	\$97.80
MA 18W	Multiplex Frame	\$101.50
MA 18M	Multiplex Mas.	\$107.60
MA 18C	Multiplex Conc.	\$104.70
MA 30C	Manufactured Home Conc.	\$65.00
MA 30M	Manufactured Home Mas.	\$65.00
MA 30S	Manufactured Home Single	\$27.20
MA 30W	Manufactured Home Frame	\$62.25
MA 37W	Single Family Res Frame	\$92.25
MA 37M	Single Family Res Mas	\$97.35
MA 37C	Single Family Res Con.	\$97.85
MA 37CMB	Single Family Res Fr/Mas.	\$95.10
MA 37MMD	Modular Mas.	\$92.90
MA 37WMD	Modular Frame	\$87.70
MA 88W	Finished Fr 2 <sup>nd</sup> floor over Garage or any AC	\$60.00
MA 88M	Finished Mas 2 <sup>nd</sup> floor over Garage or any AC	\$63.28

**MAIN AREA BASE RATES**

**Base Rate Includes Central Heat, Two Baths, Perimeter Footing, One Kitchen**

HC Code	Heat A/C	SQ. FT. ADJ.
01	No Heat	(-) \$3.75
02	Flr/Wall Furnace	(-) \$1.75
03	Radiant/Elec/BB	BASE
04	Radiant/Water	BASE
05	Forced Hot Air	BASE
06	Unit Heat	(-) \$1.75
08	Heat Pump	(+) \$3.10
09	Colling w/Duct	(+) \$3.10
10	Mobile Home Cooling	(+) \$1.75

FN Code	Foundation	SQ. FT. ADJ
01	Earth	(-) \$4.00
02	Pier/Post	(-) \$4.00
03	Continuous Slab	(-) \$4.35
04	Perim. Footing	BASE
05	Metal/Vinyl Skirting	(-) \$1.75

EL Code	Elevator	Rate
EC2	Cable 2 Story	\$10,000
EC3	Cable 3 Story	\$14,500
EH2	Hydraulic 2 Story	\$10,000
EH3	Hydraulic 3 Story	\$14,500
EH4	Hydraulic 4 Story	\$19,000
EPC2	Poly Chain 2 Story	\$10,000
EPC3	Poly Chain 3 Story	\$10,500

FP Code	Fireplace	Rate
01	None	BASE
02	Wood Stove Flue	\$925
03	Prefabricated	\$1,850
04	1 Story Single	\$3,700
05	1 Story Double	\$5,500
06	2 Story Single	\$4,700
07	2 Story Double	\$6,150
08	2 Story Double	\$2,460
09	M.H Fireplace	\$1,850

PL Code	Plumbing	Rate
RS	Per Fixture Res.	\$1,075
01	None	BASE
MH	Per Fixture Man.	\$1,075
02	Number Of Fixtures	\$1,075
03	Extra Kitchen/Bar	\$4,500

BA Code	Basement	SQ. FT. Rate
BF	Basement Finished	\$62.20
BG	Basement Garage	\$2,500
BR	Recreation Room	\$44.20
BU	Basement Unfin.	\$27.20
FW	Finished Walkout	\$66.50
UW	Unfinished Walkout	\$28.60

ST	Story Height Adjust	65%
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**MAIN AREA SIZE ADJUSTMENTS**

<b>AREA</b>	<b>ADJ.</b>
0001-0299	175.00%
0300-0309	166.50%
0310-0319	164.75%
0320-0329	163.00%
0330-0339	161.25%
0340-0349	159.50%
0350-0359	157.75%
0360-0369	156.00%
0370-0379	154.25%
0380-0389	152.50%
0390-0399	150.75%
0400-0409	149.00%
0410-0419	147.75%
0420-0429	146.50%
0430-0439	145.25%
0440-0449	144.00%
0450-0459	142.75%
0460-0469	141.50%
0470-0479	140.25%
0480-0489	139.00%
0490-0499	137.75%
0500-0509	136.50%
0510-0519	135.25%
0520-0529	134.00%
0530-0539	132.75%
0540-0549	131.50%
0550-0559	130.25%
0560-0569	129.00%
0570-0579	127.75%
0580-0589	126.50%
0590-0599	125.25%
0600-0609	124.00%
0610-0619	122.90%
0620-0629	121.90%
0630-0639	120.90%
0640-0649	119.80%
0650-0659	118.80%
0660-0669	117.80%
0670-0679	116.70%
0680-0689	115.70%
0690-0699	114.70%
0700-0719	113.70%
0720-0739	112.66%
0740-0759	111.62%
0760-0779	110.58%

<b>AREA</b>	<b>ADJ.</b>
0780-0799	109.54%
0800-0819	108.50%
0820-0839	107.40%
0840-0859	106.30%
0860-0879	105.20%
0880-0899	104.10%
0900-0924	103.00%
0925-0949	102.25%
0950-0974	101.50%
0975-0999	100.75%
1000-1019	100.00%
1020-1039	99.00%
1040-1059	98.00%
1060-1079	97.00%
1080-1099	96.00%
1100-1124	95.00%
1125-1149	94.00%
1150-1174	93.00%
1575-1199	92.00%
1200-1224	91.00%
1225-1249	90.25%
1250-1274	89.50%
1275-1299	88.75%
1300-1349	88.00%
1350-1399	87.00%
1400-1449	86.00%
1450-1499	85.00%
1500-1574	84.00%
1575-1649	83.50%
1650-1724	83.00%
1725-1799	82.00%
1800-1899	81.00%
1900-1999	80.00%
2000-2099	79.00%
2100-2249	78.00%
2250-2399	77.00%
2400-2599	76.50%
2600-2799	76.00%
2800-2999	75.00%
3000-3249	74.00%
3250-3499	73.00%
3500-3999	72.00%
4000-4499	71.50%
4500-4999	70.50%
5000-UP	70.00%

**RESIDENTIAL MAIN BUILDING ATTACHMENT CODES**

<b>Code</b>	<b>Description</b>	<b>Rate</b>	<b>Size Adj</b>
01	Bk Addition	\$69.15	M12
02	Bk Garage Finished	\$30.75	M11
03	Bk Garage Unfinished	\$25.25	M11
04	Canopy	\$11.60	M21
05	Carport	\$18.90	M13
05A	Carport w/ Attic	\$21.75	M13
05U	Carport w/ Upper Floor	\$24.55	M12
06	Covered Porch	\$28.70	M21
08	Enclosed Frame Porch	\$47.15	M22
09	Enclosed Glass Porch	\$61.25	M22
10	Enclosed Masonry Porch	\$49.10	M22
11	Frame Addition	\$66.50	M12
12	Frame Deck	\$16.70	M21
13	Frame Garage Finished	\$28.80	M11
14	Frame Garage Unfinished	\$23.30	M11
15	Frame/Metal Storage	\$26.80	M22
16	Frame Garage w/ Living	\$61.70	M12
17	Full Screen Porch	\$30.25	M22
19	Half Screen Porch	\$31.26	M22
20	Masonry Stoop	\$15.40	M12
21	Masonry Storage	\$28.40	M22
25	Brick Garage w/ Living	\$64.80	M12
26	Concrete Slab	\$5.10	M14
27	Frame Overhang	\$45.60	M12
27M	Masonry Overhang	\$47.60	M12
28	Frame Bay	\$59.45	M12
28M	Masonry Bay	\$59.95	M12
33	Misc. Storage	\$22.50	M12
35	Sunroom	\$56.40	M22
36	Semi Interior Finish	\$8.90	M12
37	Patio/Terrace	\$11.35	M14
38	Finish Basement	\$49.40	M12
39	Enclosed Brick Carport/Garage	\$50.35	M12
40	Enclosed Frame Carport/Garage	\$47.50	M12
41	Brick Garage Finish Attic	\$52.60	M11
42	Frame Garage Finish Attic	\$50.65	M11
43	Frame Garage Unfinished Attic	\$33.70	M11
44	Brick Garage Unfinished Attic	\$35.70	M11
51	Lean To Shed	\$4.40	M14
52	Hot Tub/Sauna	\$3,850	-
53	2 Story Covered Porch	\$41.35	M21
54	2 <sup>nd</sup> Floor Frame Addition	\$42.90	M12
55	2 <sup>nd</sup> Floor Brick Addition	\$44.50	M12
56	Balcony	\$29.45	M21
59	Indoor Pool	\$64.50	M12
69	Greenhouse	\$54.20	M21
70	Unfinished Upper Level	\$13.80	M12
78	Unfinished Basement	\$26.30	M12



**ATTACHMENT CODE SIZE ADJUSTMENT**

M11	
AREA	ADJ
001-150	110
151-200	108
201-250	106
251-300	104
301-350	102
351-600	100
601-650	98
651-700	96
701-750	94
751-800	92
801-UP	90

M12	
AREA	ADJ
001-050	110
051-100	105
101-150	102
151-400	100
401-550	98
551-700	96
701-850	94
851-1000	92
1001-UP	90

M13	
AREA	ADJ
001-150	110
151-200	105
201-250	102
251-400	100
401-600	98
601-700	96
701-800	94
801-900	92
901-UP	90

M14	
AREA	ADJ
001-040	100
041-080	98
081-150	96
151-300	94
301-UP	90

M21	
AREA	ADJ
001-020	110
021-040	106
041-060	104
061-080	102
081-200	100
201-300	98
301-400	96
401-500	94
501-UP	90

M22	
AREA	ADJ
001-020	110
021-040	106
041-060	104
061-080	102
081-200	100
201-300	98
301-400	96
401-500	94
501-UP	90

**QUALITY GRADE**

QUALITY GRADE	PERCENT
AAA+	350%
AAA	325%
AAA-	300%
AA+	275%
AA	250%
AA-	200%
A+	165%
A	155%
A-	145%
B+	135%
B	125%
B-	120%
C+	110%
C	100%
C-	95%
D+	90%
D	85%
D-	75%
E+	65%
E	55%
E-	45%

**C.D.U. TABLE**

YEAR BUILT	EX	VG	GD	AV	FR	PR	VP	UN
2020	0	0	0	0	5	10	15	25
2019	0	0	0	0	6	12	18	30
2018	0	0	0	1	7	14	21	35
2017	0	0	0	1	8	16	24	40
2016	0	0	1	2	9	18	27	45
2015	0	0	1	3	10	20	30	50
2014	0	1	1	3	12	22	32	62
2013	0	1	1	4	14	24	34	70
2012	0	1	1	4	16	26	36	80
2011	0	1	2	5	18	28	38	90
2010	0	1	2	6	20	30	40	90
2009	0	1	2	7	22	32	42	90
2008	0	1	2	8	23	33	43	90
2007	0	1	2	9	24	34	44	90
2006	0	1	3	10	25	35	45	90
2005	1	2	3	11	26	36	46	90
2004	1	2	3	12	27	37	47	90
2003	1	2	4	13	28	38	48	90
2002	1	2	4	14	29	39	49	90
2001	1	2	5	15	30	40	50	90
2000	1	2	5	15	30	40	50	90
1999	1	2	6	16	31	41	51	90
1998	1	2	6	16	31	41	51	90
1997	1	2	7	17	32	42	52	90
1996	1	2	8	18	33	43	53	90
1995	2	2	8	18	33	43	53	90
1994	2	2	9	19	34	44	54	90
1993	2	2	9	19	34	44	54	90
1992	2	2	10	20	35	45	55	90
1991	2	3	10	20	35	45	55	90
1990	2	3	11	21	36	46	56	90
1989	2	3	11	21	36	46	56	90
1988	2	3	12	22	37	47	57	90
1987	2	3	12	22	37	47	57	90
1986	3	3	13	23	38	48	58	90
1985	3	3	14	24	39	49	59	90
1984	3	3	14	24	39	49	59	90
1983	3	3	15	25	40	50	60	90
1982	3	3	15	25	40	50	60	90
1981	3	4	16	26	41	51	61	90
1980	3	4	16	26	41	51	61	90

# Schedule of Values

# Chatham County 2021

YEAR BUILT	EX	VG	GD	AV	FR	PR	VP	UN
1979	3	4	17	27	42	52	62	90
1978	3	4	17	27	42	52	62	90
1977	3	4	18	28	43	53	63	90
1976	3	5	18	28	43	53	63	90
1975	3	5	19	29	44	54	64	90
1974	3	5	19	29	44	54	64	90
1973	3	5	20	30	45	55	65	90
1972	3	5	20	30	45	55	65	90
1971	3	5	21	31	46	56	66	90
1970	4	6	21	31	46	56	66	90
1969	4	6	22	32	47	57	67	90
1968	4	6	22	32	47	57	67	90
1967	4	6	23	33	48	58	68	90
1966	4	6	23	33	48	58	68	90
1965	5	7	24	34	49	59	69	90
1964	5	7	24	34	49	59	69	90
1963	5	7	25	35	50	60	70	90
1962	5	7	25	35	50	60	71	90
1961	5	7	25	36	51	61	71	90
1960	5	8	26	36	51	61	71	90
1959	5	8	26	37	52	62	72	90
1958	5	8	26	37	52	62	72	90
1957	5	8	26	38	53	63	73	90
1956	6	8	27	38	53	63	73	90
1955	6	9	27	39	54	64	74	90
1954	6	9	27	39	54	64	74	90
1953	6	9	27	39	54	64	74	90
1952	6	9	28	40	55	65	75	90
1951	7	9	28	40	55	65	75	90
1950	7	10	28	40	55	65	75	90
1949	7	10	28	41	56	66	76	90
1948	7	10	29	41	56	66	76	90
1947	7	10	29	41	56	66	76	90
1946	7	10	29	42	57	67	77	90
1945	7	11	29	42	57	67	77	90
1944	7	11	30	42	57	67	77	90
1943	7	11	30	43	58	68	78	90
1942	7	11	30	43	58	68	78	90
1941	8	11	30	43	58	68	78	90
1940	8	11	31	44	59	69	79	90
1939	8	12	31	44	59	69	79	90
1938	8	12	31	44	59	69	79	90
1937	8	12	31	45	60	70	80	90

# Schedule of Values

# Chatham County 2021

YEAR BUILT	EX	VG	GD	AV	FR	PR	VP	UN
1936	8	12	32	45	60	70	80	90
1935	8	12	32	45	60	70	80	90
1934	8	12	32	46	61	71	81	91
1933	8	13	32	46	61	71	81	91
1932	8	13	33	46	61	71	81	91
1931	9	13	33	47	62	72	82	92
1930	9	13	33	47	62	72	82	92
1929	9	13	33	47	62	72	82	92
1928	9	14	34	48	63	73	83	93
1927	9	14	34	48	63	73	83	93
1926	9	14	34	48	63	73	83	93
1925	9	14	34	49	64	74	84	94
1924	9	15	34	49	64	74	84	94
1923	9	15	34	49	64	74	84	94
1922	10	15	35	50	65	75	85	95
1921-Older	10	15	35	50	65	75	85	95

# Schedule of Values

# Chatham County 2021

## MANUFACTURED SINGLE SECTION C.D.U. TABLE

YEAR BUILT	MEX	MVG	MGD	MAV	MFR	MPR	MVP	MUN
2020	0	0	1	2	5	10	15	95
2019	0	1	3	4	7	12	17	95
2018	0	2	5	6	9	14	19	95
2017	1	4	7	10	13	18	23	95
2016	2	5	8	11	14	19	24	95
2015	3	6	9	12	15	20	25	95
2014	4	7	10	13	16	21	26	95
2013	5	8	11	14	17	22	27	95
2012	6	9	12	15	18	23	28	95
2011	7	10	13	16	19	24	29	95
2010	8	11	14	17	20	25	30	95
2009	9	12	15	18	21	26	31	95
2008	10	13	16	19	22	27	32	95
2007	11	14	17	20	23	28	33	95
2006	12	15	18	21	24	29	34	95
2005	13	16	19	22	25	30	35	95
2004	14	17	20	23	26	31	36	95
2003	15	18	21	24	27	32	37	95
2002	16	19	22	25	28	33	38	95
2001	17	20	23	26	29	34	39	95
2000	18	21	24	27	30	35	40	95
1999	19	22	25	28	31	36	41	95
1998	20	23	26	29	32	37	42	95
1997	21	24	27	30	33	38	43	95
1996	22	25	28	31	34	39	44	95
1995	23	26	29	32	35	40	45	95
1994	24	27	30	33	36	41	46	95
1993	25	28	31	34	37	42	47	95
1992	26	29	32	35	38	43	48	95
1991	27	30	33	36	39	44	49	95
1990	28	31	34	37	40	45	50	95
1989	29	32	35	38	41	46	51	95
1988	30	33	36	39	42	47	52	95
1987	31	34	37	40	43	48	53	95
1986	32	35	38	41	44	49	54	95
1985	33	36	39	42	45	50	55	95
1984	34	37	40	43	46	51	56	95
1983	35	38	41	44	47	52	57	95
1982	36	39	42	45	48	53	58	95
1981	37	40	43	46	49	54	59	95
1980	38	41	44	47	50	55	60	95

## Schedule of Values

## Chatham County 2021

YEAR BUILT	MEX	MVG	MGD	MAV	MFR	MPR	MVP	MUN
1979	39	42	45	48	51	56	61	95
1978	40	43	46	49	52	57	62	95
1977	41	44	47	50	53	58	63	95
1976	42	45	48	51	54	59	64	95
1975	43	46	49	52	55	60	65	95
1974	44	47	50	53	56	61	66	95
1973	45	48	51	54	57	62	67	95
1972	45	49	52	55	58	63	68	95
1971	45	50	53	56	59	64	69	95
1970	45	50	54	57	60	65	70	95
1969	45	50	55	58	61	66	71	95
1968	45	50	55	59	62	67	72	95
1967	45	50	55	60	63	68	73	95
1966	45	50	55	60	64	69	74	95
1965	45	50	55	60	65	70	75	95
1964 - Older	45	50	55	60	66	71	76	95

## OTHER BUILDING AND YARD ITEMS PRICING SCHEDULES

The Other Building and Yard Item pricing schedules are provided to calculate the replacement cost new of a variety of types of structures typically associated with residential property.

Base prices and adjustments are provided for swimming pools, detached garages, greenhouses, carports, canopies, utility buildings, tennis courts, boat houses, and boat docks. Each structure has been assigned a unique Structure Type Code to be utilized on Computer-Assisted Mass Appraisal (CAMA) programs.

Depreciation allowances, where applicable, are included on the appropriate schedule. Additional tables can be found in the Depreciation Schedules and Tables section of the Manual.

The general pricing procedure is as follows:

1. Determine the Miscellaneous Structure code that best describes the structure. (Ex. Detached frame garage is a MS 10)
2. Multiply the square footage of the building by the square foot rate times the size factor for that structure code. (Ex. 900 Sq. Ft X \$21.00 X .90 = \$17,010)
3. Apply the proper Quality Grade Factor to arrive at the Replacement Cost New. The standard pricing schedule is at a C grade building.
4. Apply the proper depreciation from the correct table. (Ex. A garage built in 2007 in normal condition is reduced by 25% to its final value)
5. The final value for the building is finished.





MS 04  
CANOPY

MS 05  
CARPORT



MS 10  
FRAME  
GARAGE



MS 28  
STORAGE  
BUILDING

MS 78  
BRICK  
GARAGE



MS 55  
SWIMMING  
POOL



MS 81  
CAR SHED

MS 81E  
ENCLOSED  
CAR SHED



MS 64  
BRICK  
GARAGE  
W/ATTIC

MS 17  
IMPLEMENT  
SHED



MS 21  
POULTRY  
HOUSE

MS 23  
POLE SHED





MS 25/59  
SILO  
CON. STAVE  
AND GLASS  
LINED



MS 26  
STABLE  
HORSE  
BARN

MS 03  
BARN





MS 80  
UTILITY  
BLDG.

**RESIDENTIAL OUTBUILDING AND YARD ITEMS**

<b>Code</b>	<b>Description</b>	<b>Rate</b>	<b>Size Adj</b>	<b>Deprec.</b>
02	Bath House	\$50.00	M12	D2
03	Bulk Tobacco Barn	\$20.00	M14	D2
04	Canopy	\$11.00	M21	D3
05	Carport	\$16.00	M21	D3
05U	Carport w/ Unfinished Upper Area	\$20.00	M21	D3
06	Concrete Paving (Parking)	\$3.50	M11	D3
06A	Patio	\$5.00	M11	D3
08	Egg/Apple House	\$22.00	M12	D2
10	Frame Garage	\$21.00	M11	D3
12	Grain Bin Metal	\$1.75	-	D1
14	Grainery/Crib	\$5.50	M14	D1
15	Greenhouse	\$7.50	M14	D2
16	Hog Parlor	\$9.75	M14	D1
17	Implement Shed 3 Side	\$7.00	M14	D2
18	Lumber Shed 3 Side	\$16.00	M14	D1
20	Milk Parlor	\$28.00	M14	D2
21	Poultry House w/ no equip.	\$5.50	M11	D1
21W	Poultry House w/ equip.	\$10.00	M11	D1
23	Shed Open Pole	\$7.00	M14	D2
23E	Shed Enclosed 3 Side	\$7.00	M14	D2
24	Shop	\$24.00	M11	D3
24A	Studio	\$50.00	M11	D3
25	Silo (Con/Stave)	\$8.50	-	D1
26	Stable/Horse Barn	\$23.50	M14	D2
26A	Stable/Finished Area	\$30.00	M14	D2
27	Stock Barn w/ Loft	\$12.50	M14	D2
28	Storage Bldg. Unfinished	\$11.00	M14	D2
282	2 Story Shed	\$22.85	M14	D2
29	Storage Bldg. Finished	\$15.00	M14	D2
30	Swimming Pool (Concrete)	\$35.00	M11	D1
32	Mobile Home Personal Property	-	-	-
32C	Camper	-	-	-
32S	Single Wide Storage Only	-	-	-
33	Dwelling Site	-	-	-
34	Deck	\$12.50	M21	D3
34P	Porch	\$18.00	M21	D3

**Schedule of Values****Chatham County 2021****RESIDENTIAL OUTBUILDING AND YARD ITEMS (continued)**

<b>Code</b>	<b>Description</b>	<b>Rate</b>	<b>Size Adj</b>	<b>Deprec.</b>
35	MH Attached Addition	\$40.00	M12	D1
36	Tobacco Barn	\$20.00	M14	D2
37	Well Residential	-	-	-
38	Septic Tank	-	-	-
39	Water Tank (Tower)	\$1.75	-	D2
40	Boat Dock	\$25.00	M21	D1
41	Boat House Enclosed	\$30.00	M11	D1
42	Boat Shelter	\$20.00	M14	D1
43	Mobile Home Space	\$4,000	-	-
44	Hay Shed Open	\$7.00	M14	D2
45	Dairy Barn	\$17.50	M14	D2
46	Lounging Shed	\$10.00	M14	D2
47	Pole Barn Open	\$7.00	M14	D2
48	Lean-to/Shelter	\$5.00	M14	D2
49	Utility R.S.F	\$12.85	M11	D3
50	Swimming Pool (Vinyl)	\$29.55	M11	D1
52	Lumber Shed R.S.F Open	\$7.50	M14	D2
53	Quonset Bldg.	\$17.00	M11	D3
55	Swimming Pool (Fiberglass)	\$29.55	M11	D1
56	Water Tank (No Tower)	\$.75	-	D2
57	Fruit Package Barn	\$17.50	M14	D2
59	Silo (Glasslined)	\$1,000	-	D1
61	Frame Garage Unfin. Attic	\$38.00	M11	D3
62	Frame Garage Fin. Attic	\$48.50	M11	D3
63	Brick Garage Unfin. Attic	\$40.45	M11	D3
64	Brick Garage Fin. Attic	\$51.25	M11	D3
68	Hot Tub/Sauna	\$3,500	-	D1
70	Misc. DWG Att	\$45.00	M12	D3
75	Cold Storage Bldg.	\$22.75	M14	D2
76	Finished Frame Garage	\$28.75	M11	D3
77	Brick Garage Unfin.	\$28.75	M11	D3
78	Brick Garage Fin.	\$36.00	M11	D3
79	Gazebo	\$1,500	-	D1



**RESIDENTIAL OUTBUILDING AND YARD ITEMS (continued)**

<b>Code</b>	<b>Description</b>	<b>Rate</b>	<b>Size Adj</b>	<b>Deprec</b>
80	Utility Bldg.	\$12.85	M11	D3
81	Car Shed Pole	\$7.00	M11	D1
81E	Car Shed Enclosed	\$10.00	M11	D1
82	Garage Apartment Frame	\$48.50	M11	D3
83	Garage Apartment Brick	\$51.25	M11	D3
84	Greenhouse (Glass)	\$15.95	M14	D2
85	Boat Slip	\$25.00	-	-
92	Plumbing Fixture	\$1,075	-	D3
93	Central A/C	\$3.00	-	D3
96	Outdoor Fireplace	\$4,000	-	D3
96A	Outdoor Kitchen	\$5,000	-	D3
97	Shoreline Improvement	\$100	-	D1
98	Construction in Progress	-	-	-
99	Miscellaneous	-	-	-
99001	Mineral Rights	\$5.00	-	-

**OTHER BUILDING AND YARD ITEMS CODE SIZE ADJUSTMENT**

M11		
AREA		ADJ
001-150		110
151-200		108
201-250		106
251-300		104
301-350		102
351-600		100
601-650		98
651-700		96
701-750		94
751-800		92
801-UP		90

M12		
AREA		ADJ
001-050		110
051-100		105
101-150		102
151-400		100
401-550		98
551-700		96
701-850		94
851-1000		92
1001-UP		90

M13		
AREA		ADJ
001-150		110
151-200		105
201-250		102
251-400		100
401-600		98
601-700		96
701-800		94
801-900		92
901-UP		90

M14		
AREA		ADJ
001-040		100
041-080		98
081-150		96
151-300		94
301-UP		90

M21		
AREA		ADJ
001-020		110
021-040		106
041-060		104
061-080		102
081-200		100
201-300		98
301-400		96
401-500		94
501-UP		90

M22		
AREA		ADJ
001-020		110
021-040		106
041-060		104
061-080		102
081-200		100
201-300		98
301-400		96
401-500		94
501-UP		90

**OTHER BUILDING AND YARD ITEMS DEPRECIATION**

<b>D1</b>	
AGE	DEPR.
01	10%
02	20%
03	25%
04	30%
05	35%
06	40%
07	45%
08-UP	50%

<b>D2</b>	
AGE	DEPR.
01	5%
02	10%
03	15%
04	20%
05	25%
06	30%
07	35%
08	40%
09	45%
10	50%
11	55%
12	60%
13	65%
14	70%
15-UP	75%

<b>D3</b>	
AGE	DEPR.
00--03	5%
04--06	10%
07--09	15%
10--12	20%
13--15	25%
16--18	30%
19--21	35%
22--24	40%
25--27	45%
28--30	50%
31--35	55%
36--40	60%
41--45	65%
46--50	70%
50--UP	75%

<b>D4</b>	
AGE	DEPR.
00--04	5%
05--08	10%
09--12	15%
13--16	20%
17--20	25%
21--24	30%
25--28	35%
29--32	40%
33--36	45%
37--40	50%
41--44	55%
45--48	60%
49--52	65%
53--56	70%
57--UP	75%

<b>D5</b>	
AGE	DEPR.
00--05	5%
06--10	10%
11--15	15%
16--20	20%
21--25	25%
26--30	30%
31--35	35%
36--40	40%
41--45	45%
46--50	50%
51--55	55%
56--60	60%
61--65	65%
66--70	70%
71--UP	75%

## **EXEMPT/INSTITUTIONAL BUILDINGS**

This section of the Manual includes basic procedures and applications to be utilized to determine the Replacement Cost New for a variety of institutional type structures. Prices are provided based on the structure type and exterior wall material.

### **BASE SPECIFICATIONS**

Base prices assume normal construction, mechanical, and other features such as plumbing, heating, air conditioning, interior finish, framing, elevators, etc., according to the designed building structure type.

### **SCHEDULE APPLICATION**

Select the structure type which is most representative of the subject building. Establish the Quality Grade of the building, which is contingent upon the exterior wall material of the structure type. Determine the total square feet of floor area and multiply the cost per square foot by the total area to establish the replacement cost.

Note: separate prices are provided for finished or unfinished basements.

### **PERCENT (%) GOOD GUIDELINES**

Physical deterioration of institutional buildings should be based on the effective age and condition. Structures of this type normally have an expected life which is longer than other types of similar structures. Actual age and life expectancy can be extended through continued maintenance and renovation. When establishing the percent (%) good, the adjustment should be based on anticipated additional life as compared to normal life guidelines.



MA 03  
ARMORY

MA 10  
CHURCH



MA 11  
CLASSROOM



MA 19  
GYMNASIUM

MA 20  
FIRE/POLICE  
STATION



MA 23  
HOSPITAL



MA 47  
GOVERNMENT  
BUILDING

MA 66  
POST  
OFFICE



MA 28  
LIBRARY



## COMMERCIAL/INDUSTRIAL SCHEDULES

Commercial and Industrial pricing schedules are provided for a variety of buildings based on the use of the property. The General Commercial Schedule is to be used as a guide for computing the replacement cost of mercantile type buildings, offices, and similar type structures, commercial living accommodations and associated support structures and manufacturing and warehouse storage type structures.

The general application of all the schedules is essentially the same; selecting the base price (per square foot) which is most representative of the subject building and adjusting the base price to account for any significant variation.

### SCHEDULE FORMAT - BASE PRICES

The schedules designate base prices by use type for a series of perimeter-area ratios and wall types. "C" Grade base prices are provided for various finish types at different floor levels with specified floor-to-floor heights, for fire resistant construction with brick (or equal), frame (or equal), and metal superstructure walls and reinforced concrete basement walls.

**Wood Frame (W)** – buildings that are constructed of combustible materials with wood framed exterior walls covered by shingles, wood siding, stucco, asbestos, aluminum, or vinyl. Roof structure is usually wood frame or pre-constructed trusses with wood sheathing and composition shingles, built-up or corrugated metal cover. Floor structure may be perimeter footing with reinforced concrete slab or wood joists and sheathing.

**Masonry (M)** – buildings that are constructed of double brick, brick on concrete block, stone or ornamental concrete block exterior walls which are usually load bearing. Roof structure is usually wood frame or pre-constructed trusses with wood sheathing and composition shingles, built-up or corrugated metal cover. Floor structure may be perimeter footing with reinforced concrete slab or wood joist and sheathing.

**Concrete (C)** – buildings that are constructed with poured reinforced concrete super structure, or reinforced concrete or pre-cast concrete panel load bearing exterior walls. Super structure may have a variety of exterior walls covers including pre-cast panels and masonry veneers, or steel frame and stationary glass. Roof structure may be steel joists with metal decking and poured concrete or concrete planks or other non-combustible construction. Floors are usually reinforced concrete slab on grade.



**Rigid Steel or Pre-Engineered (R)** – buildings that are constructed with pre-fabricated structural members with exterior wall cover of pre-constructed panels or sheet siding. Roof structure is steel joists or beams usually with corrugated metal cover. Floors are usually reinforced concrete slab on grade.

The base price is determined by selecting the appropriate square foot price based on exterior wall type, construction and use. The base price is driven by construction type and is adjusted for variations in wall height, and area perimeter ratio adjustments.

Base prices also include: normal footings and foundation construction for a building at grade level, normal parapets and coping, ground floor slab including base and cement finish, normal roof construction consisting of insulation, decking, framing, and utility service.

Basements include excavation and backfill and structural floor (for first floor) construction consisting of sub floor and framing.

Note: The cost of the basement exterior wall construction and spread footings exclude an allowance for the normal foundation construction included with the first floor.

Stairways (with enclosures in the finished use types) are included in the basement and upper floor prices.

Normal partitions, plumbing, and lighting are included for each floor level based on use type. Adjustments may be made for the various base price components if the component is greater or less than what is considered normal for the use type.

Example: For general retail, normal is considered a cross partition (separating the sales area from the stock area) and partitions for two toilet rooms. If the store would be divided into several sales areas, an addition for excessive partitions would be applicable.

## CONSTRUCTION TYPES

**Wood Frame/Joist/Beam** to indicate construction, which incorporates wood, stud balloon or platform framing or wood post and beam framing (mill construction). This category also includes masonry structures, which incorporate wood joist or plank floor systems, or wood joist, truss, or rafter roof systems.

**Fire Resistant** to indicate buildings with exposed structural steel, or reinforced concrete columns and beams. Multi-story structures will have steel floor joists with concrete plank or a reinforced concrete floor system. Exterior walls will typically be masonry or metal and glass panels.

**Fireproof** to indicate typically high- rise buildings with fabricated, heavy, structural steel column and beam framing which has been enveloped in a fire-proof material such as concrete or gypsum. Floors will be reinforced concrete or pre-cast concrete plank on steel joists protected by a gypsum-vermiculite plaster on metal lath ceiling. Exterior walls will be masonry or metal and glass panels.

## QUALITY GRADE SPECIFICATIONS

The base prices are for normal "C" Grade buildings erected with average quality materials and workmanship. A Table of Quality Factors is provided to adjust the "C" Grade prices in order to account for variations in construction quality.

**AAA Grade** Buildings generally having an outstanding architectural style and design, constructed with the finest quality materials and workmanship. Superior quality interior finish, built-in features, heating system, and very good grade plumbing and lighting fixtures.

**A Grade** Architecturally attractive buildings constructed with excellent quality materials and workmanship. High quality interior finish, built-in features, heating system, and very good grade plumbing and lighting fixtures.

**B Grade** Buildings constructed with good quality' materials and above average workmanship, moderate architectural treatment. Good quality interior finish, built-in features, heating, plumbing, and lighting fixtures.

**C Grade** Buildings constructed with average quality materials and workmanship conforming with the base specifications used to develop the pricing schedule. Minimal architectural treatment. Average quality interior finish and built-in features. Standard quality heating system, plumbing, and lighting fixtures.

D Grade Buildings constructed with economy quality materials and fair workmanship. Void of architectural treatment. Cheap quality interior finish and built-in features. Low grade heating, plumbing, and lighting fixtures.

E Grade Buildings constructed with a very cheap grade of materials, usually "seconds" and very poor- quality workmanship resulting from unskilled, inexperienced, "do-it-yourself" type labor. Low grade heating, plumbing, and lighting fixtures.

Note: The quality factor selected is to represent a composite judgment of the overall grade. Generally, the quality of materials and workmanship is consistent throughout the construction of a specific building. However, since this is not always the case, it is necessary to weigh the quality of each major component in order to arrive at the proper "overall" quality grade. Particular consideration must be given to "special features" such as elevators and banking features, since variations for quality are already considered in the respective pricing tables. Equal consideration must also be given to those "additions" which are constructed of materials and workmanship inconsistent with the quality of the main building.

**QUALITY GRADE FACTORS**

AAA+ 350%	A+ 165%	C+ 110%	E+ 65%
AAA 325%	A 155%	C 100%	E 55%
AAA- 300%	A- 145%	C- 95%	E- 45%
AA+ 275%	B+ 135%	D+ 90%	
AA 250%	B 125%	D 85%	
AA- 200%	B- 120%	D- 75%	

## GENERAL APPLICATION

The general pricing procedure is as follows:

1. Determine the Main Area (**MA**) Code by floor level and construction type.
2. Select the proper base price for each floor level; or
3. Calculate story height and add size of upper floors to base main floor area.
4. Apply story height adjustment (**STC**) to upper floor price.
5. Apply Cost & Design % factor to the total main area price.
6. Adjust for wall height, Table **H1** or **H2**.
7. Make necessary square foot adjustments for variations in the base price (heating and cooling, sprinkler system, etc.).
8. Determine the area perimeter ratio and apply to each main area section. (Note: for Apartments, Mini-Storage Buildings, Fast Food Restaurants, Hotels and Motels and Car Washes use a code **PP0** or 100% area perimeter ratio adjustment.
9. Add lump sum valued features (elevators, etc.).
10. Sub-total the replacement cost of all main area components.
11. Add the cost of attachments or additions to arrive at the total "C" Grade Replacement Cost.
12. Apply the proper Quality Grade Factor to arrive at the Replacement Cost New.
13. Deduct for physical depreciation and functional or economic obsolescence.

## SPECIAL APPLICATION

Although the General Commercial and Industrial schedules have been designed to be used primarily for computing the replacement cost of mercantile type buildings, offices, commercial apartments, warehouses, and manufacturing facilities, the schedules can also be effectively adapted to the pricing of other special purpose buildings. In order to maintain uniformity of the approach in pricing special purpose buildings, specific instructions and procedures have been developed and included in the schedules.



MA 05  
AUTO  
DEALERSHIP

MA 06  
BANK



MA 07  
BEAUTY  
BARBER  
SHOP



MA 09  
CAR WASH  
(AUTO.)

MA 13  
CONVERTED  
DWELLING



MA 14  
COUNTRY  
CLUB/CLUB  
HOUSE





MA 15  
DEPART.  
STORE

MA 16  
DISCOUNT  
STORE



MA 25  
INDUSTRIAL  
MANUFACT.

MA 27  
LAUNDRY



MA 42  
NURSING/  
RETIREMENT  
HOME

MA 31  
MOTEL







MA 89  
DOWNTOWN  
ROW



MA 35  
SERVICE  
GARAGE

MA 36  
SERVICE  
STATION



MA 38  
SUPER-  
MARKET



MA 39  
THEATER

MA 40  
WAREHOUSE



MA 41  
CONVEN.  
STORE



MA 71  
VET.  
CLINIC



MA 43  
BOWLING  
ALLEY

MA 44  
FUNERAL  
HOME



MA 45  
RADIO/TV  
STATION



MA 46  
MEDICAL  
OFFICE



MA 55  
MINI-  
LUBE

MA 58  
NEIGHBOR-  
HOOD  
SHOPS



MA 61  
SKATING  
RINK



MA 64  
DRIVE-  
THRU  
BANK

MA 67  
CARWASH  
SELF-  
SERV



MA 69  
DAY  
CARE

**BASE PRICE FOR COMMERCIAL SCHEDULE MA 05 AUTO DEALERSHIP**

WALL HEIGHT	BASE PRICE	BASE SPECIFICATIONS
14	\$ 72.25	STORY HEIGHT: FIRST FLOOR AREA  FOUNDATION/BASEMENT: CONTINUOUS FOOTING OR POURED CONCRETE SLAB  EXTERIOR WALLS: FACE BRICK OR EQUAL  PARTITIONS/COMMON WALLS: ADEQUATE FOR SEPARATION OF SHOWROOM/OFFICE/STORAGE  FRAMING: WOOD JOIST/STEEL TRUSS  REMARKS/ADDITIONAL FEATURES:  ABUNDANT FLUORESCENT LIGHTING  ADD FOR HEATING/COOLING ADD FOR SHOWROOM
		FLOOR COVER/FINISH: VINYL/CARPET FINISHED CONCRETE SLAB  INTERIOR FINISH: PAINTED BLOCK/DRYWALL/PANEL  PLUMBING: 10-12 PLUMBING FIXTURES  OTHER FEATURES: GARAGE DOORS/HOSE BIBS/ FLOOR DRAINS



**BASE PRICE FOR COMMERCIAL SCHEDULE MA 06 BANK**

WALL HEIGHT	BASE PRICE	BASE SPECIFICATIONS
12	\$108.88	STORY HEIGHT: FIRST FLOOR AREA  FOUNDATION/BASEMENT: CONTINUOUS FOOTING OR POURED CONCRETE SLAB  EXTERIOR WALLS: FACE BRICK OR EQUAL  PARTITIONS/COMMON WALLS: ADEQUATE FOR SEPARATION OF OFFICE AREAS  FRAMING: WOOD JOIST  REMARKS/ADDITIONAL FEATURES:  ABUNDANT FLUORESCENT LIGHTING  ADD FOR HEATING/COOLING
		FLOOR COVER/FINISH: VINYL/CARPET  INTERIOR FINISH: DRYWALL/PANEL  INTERIOR FINISH: PAINTED BLOCK/DRYWALL/PANEL  PLUMBING: 08-12 FIXTURES  OTHER FEATURES: DRIVE UP WINDOWS, RECORD VAULT, MONEY VALULT

**BASE PRICE FOR COMMERCIAL SCHEDULE MA 07 BEAUTY/BARBER SHOP**

WALL HEIGHT	BASE PRICE	BASE SPECIFICATIONS
12	\$ 67.55	STORY HEIGHT: FIRST FLOOR AREA  FOUNDATION/BASEMENT: CONTINUOUS FOOTING OR POURED CONCRETE SLAB  EXTERIOR WALLS: FACE/JUMBO BRICK  PARTITIONS/COMMON WALLS: ADEQUATE  FRAMING: WOOD JOIST  FLOOR COVER/FINISH: WOOD/VINYL/CARPET  INTERIOR FINISH: DRYWALL/PANEL  PLUMBING: 5-10 PLUMBING FIXTURES  OTHER FEATURES:
REMARKS/ADDITIONAL FEATURES:		
ADD FOR HEATING/COOLING		

**BASE PRICE FOR COMMERCIAL SCHEDULE MA 43 BOWLING ALLEY**

WALL HEIGHT	BASE PRICE	BASE SPECIFICATIONS
14	\$ 71.30	STORY HEIGHT: FIRST FLOOR AREA  FOUNDATION/BASEMENT: CONTINUOUS FOOTING OR POURED CONCRETE SLAB  EXTERIOR WALLS: FACE BRICK OR EQUAL  PARTITIONS/COMMON WALLS: ADEQUATE FOR SEPARATION OF SERVICE/STORAGE AREA  FRAMING: RIGID STEEL JOIST/TRUSS  FLOOR COVER/FINISH: VINYL/HEAVY LINOLEUM FINISHED CONCRETE SLAB  INTERIOR FINISH: DRYWALL/PANEL PAINTED BLOCK  PLUMBING: 10-15 FIXTURES  OTHER FEATURES: ALUM/GLASS ENTRANCE
REMARKS/ADDITIONAL FEATURES:		
ABUNDANT FLUORESCENT LIGHTING ADD FOR HEATING/COOLING  ADD FOR SPRINKLER SYSTEM		

**BASE PRICE FOR COMMERCIAL SCHEDULE MA 67 CAR WASH**

WALL HEIGHT	BASE PRICE	BASE SPECIFICATIONS
12	\$ 44.60	STORY HEIGHT: FIRST FLOOR AREA  FOUNDATION/BASEMENT: CONTINUOUS FOOTING OR POURED CONCRETE SLAB  EXTERIOR WALLS: JUMBO BRICK  PARTITIONS/COMMON WALLS: ADEQUATE FOR SEPARATION OF BAYS  FRAMING: RIGID STEEL JOIST/TRUSS  FLOOR COVER/FINISH: CONCRETE SLAB  INTERIOR FINISH: EXPOSED BRICK/BLOCK  PLUMBING: FLOOR DRAINS  OTHER FEATURES:
REMARKS/ADDITIONAL FEATURES:		
FLOURESCENT LIGHTING		

**BASE PRICE FOR COMMERCIAL SCHEDULE MA 09 CAR WASH-SELF SERVICE**

WALL HEIGHT	BASE PRICE	BASE SPECIFICATIONS
14	\$ 42.40	STORY HEIGHT: FIRST FLOOR AREA  FOUNDATION/BASEMENT: CONTINUOUS FOOTING OR POURED CONCRETE SLAB  EXTERIOR WALLS: JUMBO BRICK  PARTITIONS/COMMON WALLS: ADEQUATE FOR SEPARATION OF BAYS/SALES AREA  FRAMING: RIGID STEEL JOIST/TRUSS  REMARKS/ADDITIONAL FEATURES:  FLUORESCENT LIGHTING  ADD FOR HEATING/COOLING
		FLOOR COVER/FINISH: VINYL/CONCRETE SLAB  INTERIOR FINISH: EXPOSED BRICK  PLUMBING: 05-08 PLUMBING FIXTURES  OTHER FEATURES: FLOOR DRAINS

**BASE PRICE FOR COMMERCIAL SCHEDULE MA 78 COLD STORAGE FACILITIES**

WALL HEIGHT	BASE PRICE	BASE SPECIFICATIONS
14	\$ 56.60	STORY HEIGHT: FIRST FLOOR AREA  FOUNDATION/BASEMENT: CONTINUOUS FOOTING OR POURED CONCRETE SLAB  EXTERIOR WALLS: FACE BRICK/PRE-FAB PANELS LOAD BEARING WALLS  PARTITIONS/COMMON WALLS: SMALL OFFICE AREAS  FRAMING: STEEL BAR JOIST  REMARKS/ADDITIONAL FEATURES:  ADD FOR HEATING/COOLING (CREATURE COMFORT ONLY)
		FLOOR COVER/FINISH: CONCRETE SLAB  INTERIOR FINISH: EXPOSED BRICK/PANELS  PLUMBING: 5-10 FIXTURES  OTHER FEATURES: OVERHEAD/ROLLING DOORS METAL/STEEL

**BASE PRICE FOR COMMERCIAL SCHEDULE MA 41 CONVENIENCE STORE**

WALL HEIGHT	BASE PRICE	BASE SPECIFICATIONS
12	\$187.70	STORY HEIGHT: FIRST FLOOR AREA  FOUNDATION/BASEMENT: CONTINUOUS FOOTING OR POURED CONCRETE SLAB  EXTERIOR WALLS: FACE BRICK OR EQUAL  PARTITIONS/COMMON WALLS: MINIMAL  FRAMING: WOOD JOIST  FLOOR COVER/FINISH: VINYL/HEAVY LINOLEUM  INTERIOR FINISH: DRYWALL/PANEL EXPOSED BRICK  PLUMBING: 5 FIXTURES  OTHER FEATURES: ALUM/PLATE GLASS STORE FRONT AVERAGE DISPLAY AREA GLASS DOORS
REMARKS/ADDITIONAL FEATURES: ABUNDANT FLUORESCENT LIGHTING ADD FOR HEATING/COOLING ADD FOR SPRINKLER SYSTEM		

**BASE PRICE FOR COMMERCIAL SCHEDULE MA 13 CONVERTED DWELLING**

WALL HEIGHT	BASE PRICE	BASE SPECIFICATIONS
10	\$ 92.25	STORY HEIGHT: FIRST FLOOR AREA  FOUNDATION/BASEMENT: CONTINUOUS FOOTING  EXTERIOR WALLS: FACE BRICK OR EQUAL  PARTITIONS: ADEQUATE FOR SEPARATION OF ROOMS/STORAGE AREAS  FRAMING: WOOD JOIST  REMARKS/ADDITIONAL FEATURES:  ADD FOR FIREPLACES GARAGES/PORCHES/BASEMENT AREAS ADDITIONAL PLUMBING ADD FOR HEATING/COOLING SYSTEM  FLOOR COVER/FINISH: VINYL/LINOLEUM/CARPET  INTERIOR FINISH: DRYWALL/PANEL  HEATING/COOLING: FORCED HOT AIR OR EQUAL  PLUMBING: 8 PLUMBING FIXTURES



**BASE PRICE FOR COMMERCIAL SCHEDULE MA 14 COUNTRY CLUB/  
CLUBHOUSE**

WALL HEIGHT	BASE PRICE	BASE SPECIFICATIONS
14	\$ 84.95	STORY HEIGHT: FIRST FLOOR AREA  FOUNDATION/BASEMENT: CONTINUOUS FOOTING OR POURED CONCRETE SLAB  EXTERIOR WALLS: FACE BRICK OR EQUAL  PARTITIONS/COMMON WALLS: ADEQUATE FOR SEPARATION OF RETAIL/DINING AREA  FRAMING: WOOD JOIST  REMARKS/ADDITIONAL FEATURES:  ADD FOR SPRINKLER SYSTEM  ADD FOR HEATING/COOLING
		FLOOR COVER/FINISH: VINYL/LINOLEUM/CARPET  INTERIOR FINISH: DRYWALL/PANEL  PLUMBING: 15-20 PLUMBING FIXTURES  OTHER FEATURES: KITCHEN AREA/QUARRY TILE FLOOR DRAINS

**BASE PRICE FOR COMMERCIAL SCHEDULE MA 69 DAY CARE CENTER**

WALL HEIGHT	BASE PRICE	BASE SPECIFICATIONS
12	\$80.60	STORY HEIGHT: FIRST FLOOR AREA  FOUNDATION/BASEMENT: CONTINUOUS FOOTING OR POURED CONCRETE SLAB  EXTERIOR WALLS: FACE BRICK  PARTITIONS/COMMON WALLS: ADEQUATE TO SEPARATE OFFICE/ CLASSROOMS/KITCHEN AREA  FRAMING: WOOD JOIST  REMARKS/ADDITIONAL FEATURES:  ADD FOR HEATING/COOLING  ADD FOR SPRINKLER SYSTEM  FLOOR COVER/FINISH: CONCRETE SLAB/VINYL/CARPET  INTERIOR FINISH: PAINTED BLOCK/DRYWALL  PLUMBING: 10-15 FIXTURES  OTHER FEATURES:

**BASE PRICE FOR COMMERCIAL SCHEDULE MA 15 DEPARTMENT STORE**

WALL HEIGHT	BASE PRICE	BASE SPECIFICATIONS
14	\$74.85	STORY HEIGHT: FIRST FLOOR AREA  FOUNDATION/BASEMENT: CONTINUOUS FOOTING OR POURED CONCRETE SLAB  EXTERIOR WALLS: FACE BRICK OR EQUAL  PARTITIONS/COMMON WALLS: ADEQUATE FOR SEPARATION OF RETAIL/STORAGE AREA  FRAMING: WOOD JOIST  FLOOR COVER/FINISH: VINYL/HEAVY LINOLEUM  INTERIOR FINISH: DRYWALL/PANEL/PLASTER EXPOSED BRICK  PLUMBING: 10-15 FIXTURES  OTHER FEATURES: METAL/VITREOUS/GLASS STORE FRONT/DISPLAY
REMARKS/ADDITIONAL FEATURES		
ABUNDANT FLUORESCENT LIGHTING		
ADD FOR HEATING/COOLING ADD FOR SPRINKLER SYSTEM		

**BASE PRICE FOR COMMERCIAL SCHEDULE MA 16 DISCOUNT STORE**

WALL HEIGHT	BASE PRICE	BASE SPECIFICATIONS
14	\$ 54.41	<p>STORY HEIGHT: FIRST FLOOR AREA</p> <p>FOUNDATION/BASEMENT: CONTINUOUS FOOTING OR POURED CONCRETE SLAB</p> <p>EXTERIOR WALLS: FACE BRICK OR EQUAL</p> <p>PARTITIONS/COMMON WALLS: ADEQUATE FOR SEPARATION OF RETAIL/STORAGE AREA</p> <p>FRAMING: WOOD JOIST</p> <p>FLOOR COVER/FINISH: VINYL/HEAVY LINOLEUM</p> <p>INTERIOR FINISH: DRYWALL/PANEL/PLASTER PAINTED BLOCK</p> <p>PLUMBING: 8-10 FIXTURES</p> <p>OTHER FEATURES: ALUM/GLASS STORE FRONT AUTOMATIC DOORS</p>
REMARKS/ADDITIONAL FEATURES		
ABUNDANT FLUORESCENT LIGHTING		
ADD FOR HEATING/COOLING ADD FOR SPRINKLER SYSTEM		

**BASE PRICE FOR COMMERCIAL SCHEDULE MA 62 DISTRIBUTION WAREHOUSE**

WALL HEIGHT	BASE PRICE	BASE SPECIFICATIONS
14	\$ 41.75	STORY HEIGHT: FIRST FLOOR AREA  FOUNDATION/BASEMENT: CONTINUOUS FOOTING OR POURED CONCRETE SLAB  EXTERIOR WALLS: FACE BRICK OR EQUAL LOAD BEARING WALLS  PARTITIONS/COMMON WALLS: SMALL OFFICE AREAS  FRAMING: REINFORCED CONCRETE  REMARKS/ADDITIONAL FEATURES:  ADEQUATE LIGHTING  ADD FOR HEATING/COOLING  ADD FOR SPINKLER SYSTEM  FLOOR COVER/FINISH: CONCRETE SLAB  INTERIOR FINISH: EXPOSED CONCRETE/BLOCK  PLUMBING: 05-10 FIXTURES  OTHER FEATURES: OVERHEAD/ROLLING DOORS METAL/STEEL

**BASE PRICE FOR COMMERCIAL SCHEDULE MA 64 DRIVE THRU BANK  
(NO VAULT)**

WALL HEIGHT	BASE PRICE	BASE SPECIFICATIONS
12	\$108.20	STORY HEIGHT: FIRST FLOOR AREA  FOUNDATION/BASEMENT: CONTINUOUS FOOTING OR POURED CONCRETE SLAB  EXTERIOR WALLS: FACE BRICK OR EQUAL  PARTITIONS/COMMON WALLS: ADEQUATE FOR SEPARATION OF OFFICE AREAS  FRAMING: WOOD JOIST  REMARKS/ADDITIONAL FEATURES:  ABUNDANT FLUORESCENT LIGHTING  ADD FOR HEATING/COOLING
		FLOOR COVER/FINISH: VINYL/CARPET  INTERIOR FINISH: DRYWALL/PANEL  PLUMBING: 08-12 FIXTURES  OTHER FEATURES: DRIVE UP WINDOWS, RECORD VAULT

**BASE PRICE FOR COMMERCIAL SCHEDULE MA 44 FUNERAL HOME**

WALL HEIGHT	BASE PRICE	BASE SPECIFICATIONS
14	\$85.80	STORY HEIGHT: FIRST FLOOR AREA  FOUNDATION/BASEMENT: CONTINUOUS FOOTING OR POURED CONCRETE SLAB  EXTERIOR WALLS: FACE BRICK OR EQUAL  PARTITIONS/COMMON WALLS: ADEQUATE FOR SEPARATION OF SALES/VIEWING CHAPEL  FRAMING: WOOD JOIST  REMARKS/ADDITIONAL FEATURES:  ADD FOR HEATING/COOLING  FLOOR COVER/FINISH: CARPET/VINYL OR RUBBER TILE  INTERIOR FINISH: DRYWALL/PANEL  PLUMBING: 10-15 FIXTURES  OTHER FEATURES: FLOOR DRAINING/QUARRY TILE/PREPARATION AREA

**BASE PRICE FOR COMMERCIAL SCHEDULE MA 22 HANGER**

WALL HEIGHT	BASE PRICE	BASE SPECIFICATIONS
14	\$ 41.60	STORY HEIGHT: FIRST FLOOR AREA  FOUNDATION/BASEMENT: POURED CONCRETE SLAB  EXTERIOR WALLS: RIGID STEEL FRAME  PARTITIONS/COMMON WALLS: MINIMAL  FRAMING: RIGID STEEL FRAME  REMARKS/ADDITIONAL FEATURES  FLOOR COVER/FINISH: CONCRETE SLAB  ABUNDANT FLUORESCENT LIGHTING  INTERIOR FINISH: NONE  ADD FOR HEATING/COOLING ADD FOR SPRINKLER SYSTEM  PLUMBING: 1-3 FIXTURES  OTHER FEATURES: OVERHEAD DOORS



**BASE PRICE FOR COMMERCIAL SCHEDULE MA 53 HEALTH CLUB**

WALL HEIGHT	BASE PRICE	BASE SPECIFICATIONS
12	\$72.60	STORY HEIGHT: FIRST FLOOR AREA  FOUNDATION/BASEMENT: CONTINUOUS FOOTING OR POURED CONCRETE SLAB  EXTERIOR WALLS: FACE BRICK OR EQUAL  PARTITIONS/COMMON WALLS: ADEQUATE FOR SEPARATION OF SERVICE/STORAGE AREA  FRAMING: WOOD JOIST  FLOOR COVER/FINISH: VINYL/HEAVY LINOLEUM/CARPET  INTERIOR FINISH: PAINTED BLOCK/EXPOSED BRICK  PLUMBING: 03-10 FIXTURES  OTHER FEATURES: OVERHEAD DOORS (ABUNDANT) DOCK BUMPERS
REMARKS/ADDITIONAL FEATURES:		
GOOD FLUORESCENT LIGHTING		
ADD FOR HEATING/COOLING		

**BASE PRICE FOR COMMERCIAL SCHEDULE MA 24 HOTEL**

WALL HEIGHT	BASE PRICE	BASE SPECIFICATIONS
12	\$ 96.62	STORY HEIGHT: FIRST FLOOR AREA  FOUNDATION/BASEMENT: CONTINUOUS FOOTING OR POURED CONCRETE SLAB  EXTERIOR WALLS: FACE BRICK OR EQUAL  PARTITIONS/COMMON WALLS: ADEQUATE FOR SEPARATION OF SERVICE AREA/GUEST ROOMS  FRAMING: WOOD JOIST  FLOOR COVER/FINISH: VINYL/HEAVY LINOLEUM CARPET  INTERIOR FINISH: DRYWALL/PANEL/PLASTER PAINTED BLOCK  PLUMBING: 3-5 FIXTURES PER ROOM  OTHER FEATURES: QUARRY TILE/KITCHEN AREA
REMARKS/ADDITIONAL FEATURES		
ABUNDANT FLUORESCENT LIGHTING		
ADD FOR HEATING/COOLING ADD FOR SPRINKLER SYSTEM		

**BASE PRICE FOR COMMERCIAL SCHEDULE MA 25 INDUSTRIAL/  
MANUFACTURING**

WALL HEIGHT	BASE PRICE	BASE SPECIFICATIONS
14	\$ 34.15	STORY HEIGHT: FIRST FLOOR AREA  FOUNDATION/BASEMENT: CONTINUOUS FOOTING OR POURED CONCRETE SLAB  EXTERIOR WALLS: FACE/JUMBO BRICK  PARTITIONS/COMMON WALLS: SMALL OFFICE AREAS  FRAMING: STEEL FRAME  REMARKS/ADDITIONAL FEATURES  ADD FOR ENCLOSURES AND MEZZANINES  ADD FOR HEATING/COOLING  ADD FOR SPRINKLER SYSTEM
		FLOOR COVER/FINISH: VINYL/HEAVY LINOLEUM CARPET  INTERIOR FINISH: PAINTED BLOCK  PLUMBING: 10-15 FIXTURES  OTHER FEATURES: OVERHEAD DOORS/DOCK BUMPERS

**BASE PRICE FOR COMMERCIAL SCHEDULE MA 26 LABORATORY**

WALL HEIGHT	BASE PRICE	BASE SPECIFICATIONS
14	\$115.50	STORY HEIGHT: FIRST FLOOR AREA  FOUNDATION/BASEMENT: CONTINUOUS FOOTING OR POURED CONCRETE SLAB  EXTERIOR WALLS: FACE BRICK OR EQUAL LOAD BEARING WALLS  PARTITIONS/COMMON WALLS: SMALL OFFICE AREAS  FRAMING: REINFORCED CONCRETE  REMARKS/ADDITIONAL FEATURES  ADD FOR ENCLOSURES AND MEZZANINES  ADD FOR HEATING/COOLING  ADD FOR SPRINKLER SYSTEM  ABUNDANT FLORESCENT LIGHTING  ADD FOR CLEAN ROOMS
		FLOOR COVER/FINISH: CONCRETE SLAB  INTERIOR FINISH: PAINTED BLOCK OR EQUAL  PLUMBING: 10-15 FIXTURES  OTHER FEATURES: OVERHEAD DOORS/DOCK BUMPERS

**BASE PRICE FOR COMMERCIAL SCHEDULE MA 27 LAUNDRY/CLEANERS**

WALL HEIGHT	BASE PRICE	BASE SPECIFICATIONS
12	\$ 69.65	STORY HEIGHT: FIRST FLOOR AREA  FOUNDATION/BASEMENT: CONTINUOUS FOOTING OR POURED CONCRETE SLAB  EXTERIOR WALLS: FACE/JUMBO BRICK  PARTITIONS/COMMON WALLS: ADEQUATE  FRAMING: WOOD JOIST  FLOOR COVER/FINISH: WOOD/VINYL/CARPET  INTERIOR FINISH: DRYWALL/PANEL/UNFINISHED  PLUMBING: 5-10 PLUMBING FIXTURES  OTHER FEATURES:
REMARKS/ADDITIONAL FEATURES:	ADD FOR HEATING/COOLING	

**BASE PRICE FOR COMMERCIAL SCHEDULE MA 73 LUMBER STORAGE**

WALL HEIGHT	BASE PRICE	BASE SPECIFICATIONS
14	\$ 23.55	STORY HEIGHT: FIRST FLOOR AREA  FOUNDATION/BASEMENT: POURED CONCRETE SLAB  EXTERIOR WALLS: RIGID STEEL FRAME  PARTITIONS/COMMON WALLS: MINIMAL  FRAMING: RIGID STEEL FRAME  REMARKS/ADDITIONAL FEATURES:  ADD FOR SPRINKLER SYSTEM
		FLOOR COVER/FINISH: CONCRETE SLAB  INTERIOR FINISH: NONE  PLUMBING: NONE  OTHER FEATURES: OVERHEAD DOORS MINIMAL

**BASE PRICE FOR COMMERCIAL SCHEDULE MA 46 MEDICAL OFFICE**

WALL HEIGHT	BASE PRICE	BASE SPECIFICATIONS
10	\$127.05	STORY HEIGHT: FIRST FLOOR AREA  FOUNDATION/BASEMENT: CONTINUOUS FOOTING OR POURED CONCRETE SLAB  EXTERIOR WALLS: FACE BRICK OR EQUAL  PARTITIONS/COMMON WALLS: ABUNDANT FOR SEPARATION OF TREATMENT/EXAM ROOMS  FRAMING: WOOD FRAME  REMARKS/ADDITIONAL FEATURES:  ADD FOR HEATING/COOLING  ADD FOR SPRINKLER SYSTEM  FLOOR COVER/FINISH: VINYL/CARPET  INTERIOR FINISH: DRYWALL/PANEL  PLUMBING: 15-25 FIXTURES  OTHER FEATURES:

# Schedule of Values

# Chatham County 2021

## BASE PRICE FOR COMMERCIAL SCHEDULE MA 63 MINI WAREHOUSE

WALL HEIGHT	BASE PRICE	BASE SPECIFICATIONS
10	\$ 31.80	STORY HEIGHT: FIRST FLOOR AREA  FOUNDATION/BASEMENT: POURED CONCRETE SLAB  EXTERIOR WALLS: FACE BRICK OR EQUAL  PARTITIONS/COMMON WALLS: ADEQUATE FOR SEPARATION OF STORAGE UNITS  FRAMING: RIGID STEEL FRAME  REMARKS/ADDITIONAL FEATURES:  ADD FOR ENCLOSURES/PLUMBING  ADD FOR HEATING/COOLING  ADD FOR SPINKLER SYSTEM  FLOOR COVER/FINISH: CONCRETE SLAB  INTERIOR FINISH: UNFINISHED  PLUMBING: NONE  OTHER FEATURES: OVERHEAD/PEDESTRIAN DOORS METAL/WOOD



**BASE PRICE FOR COMMERCIAL SCHEDULE MA 31 MOTEL**

WALL HEIGHT	BASE PRICE	BASE SPECIFICATIONS
10	\$ 85.82	STORY HEIGHT: FIRST FLOOR AREA  FOUNDATION/BASEMENT: CONTINUOUS FOOTING OR POURED CONCRETE SLAB  EXTERIOR WALLS: FACE BRICK OR EQUAL  PARTITIONS/COMMON WALLS: ADEQUATE FOR SEPARATION OF SERVICE AREA/GUEST ROOMS  FRAMING: WOOD JOIST  FLOOR COVER/FINISH: VINYL/HEAVY LINOLEUM CARPET  INTERIOR FINISH: DRYWALL/PANEL PAINTED BLOCK  PLUMBING: 3-5 FIXTURES PER ROOM  OTHER FEATURES: ALUMINIUM/GLASS WINDOW WALLS
REMARKS/ADDITIONAL FEATURES:	ADD FOR HEATING/COOLING ADD FOR SPRINKLER SYSTEM	

**BASE PRICE FOR COMMERCIAL SCHEDULE MA 58 NEIGHBORHOOD SHOPS**

WALL HEIGHT	BASE PRICE	BASE SPECIFICATIONS
14	\$ 79.85	STORY HEIGHT: FIRST FLOOR AREA  FOUNDATION/BASEMENT: CONTINUOUS FOOTING OR POURED CONCRETE SLAB  EXTERIOR WALLS: FACE BRICK/PAINTED BLOCK  PARTITIONS/COMMON WALLS: ADEQUATE FOR SEPARATION OF RETAIL STORES  FRAMING: WOOD JOIST  REMARKS/ADDITIONAL FEATURES:  ABUNDANT FLOURESCENT LIGHTING  ADD FOR HEATING/COOLING  ADD FOR SPRINKLER SYSTEM
		FLOOR COVER/FINISH: VINYL/HEAVY LINOLEUM  INTERIOR FINISH: DRYWALL/PANEL PAINTED BLOCK  PLUMBING: 10-15 FIXTURES  OTHER FEATURES: ALUM/GLASS STORE FRONT AUTOMATIC DOORS

**BASE PRICE FOR COMMERCIAL SCHEDULE MA 42 NURSING  
RETIREMENT HOME**

WALL HEIGHT	BASE PRICE	BASE SPECIFICATIONS
14	\$136.10	STORY HEIGHT: FIRST FLOOR AREA  FOUNDATION/BASEMENT: CONTINUOUS FOOTING OR POURED CONCRETE SLAB  EXTERIOR WALLS: FACE BRICK OR EQUAL  PARTITIONS/COMMON WALLS: ADEQUATE FOR SEPARATION OF HOUSING/TREATMENT/KITCHEN  FRAMING: WOOD JOIST  REMARKS/ADDITIONAL FEATURES:  GOOD FLUORESCENT LIGHTING  ADD FOR HEATING/COOLING ADD FOR SPRINKLER SYSTEM  FLOOR COVER/FINISH: VINYL/HEAVY LINOLEUM  INTERIOR FINISH: DRYWALL/PANEL PAINTED BLOCK  PLUMBING: 3-5 FIXTURES PER ROOM  OTHER FEATURES: QUARRY TILE/KITCHEN AREA FLOOR DRAINS

**BASE PRICE FOR COMMERCIAL SCHEDULE MA 32 OFFICE**

WALL HEIGHT	BASE PRICE	BASE SPECIFICATIONS
10	\$78.85	STORY HEIGHT: FIRST FLOOR AREA  FOUNDATION/BASEMENT: CONTINUOUS FOOTING OR POURED CONCRETE SLAB  EXTERIOR WALLS: FACE BRICK OR EQUAL  PARTITIONS/COMMON WALLS: ADEQUATE FOR SEPARATION OF SERVICE AREA  FRAMING: WOOD JOIST  REMARKS/ADDITIONAL FEATURES:  ADD FOR HEATING/COOLING  FLOOR COVER/FINISH: VINYL/CARPET  INTERIOR FINISH: DRYWALL/PANEL  PLUMBING: 8-10 FIXTURES  OTHER FEATURES: ALUMINIUM/GLASS WINDOW WALLS

**BASE PRICE FOR COMMERCIAL SCHEDULE MA 81 OFFICE  
/WAREHOUSE/FLEX**

WALL HEIGHT	BASE PRICE	BASE SPECIFICATIONS
10	\$ 57.60	STORY HEIGHT: FIRST FLOOR AREA  FOUNDATION/BASEMENT: CONTINUOUS FOOTING OR POURED CONCRETE SLAB  EXTERIOR WALLS: FIRE BRICK OR EQUAL  PARTITIONS/COMMON WALLS: MINIMAL  FRAMING: WOOD JOIST  REMARKS/ADDITIONAL FEATURES:  ADD FOR HEATING/COOLING
		FLOOR COVER/FINISH: VINYL/CARPET  INTERIOR FINISH: DRYWALL/PANEL  PLUMBING: 08-10 FIXTURES  OTHER FEATURES:

**BASE PRICE FOR COMMERCIAL SCHEDULE MA 76 PARKING GARAGE**

WALL HEIGHT	BASE PRICE	BASE SPECIFICATIONS
14	\$ 39.25	STORY HEIGHT: FIRST FLOOR AREA  FOUNDATION/BASEMENT: CONTINUOUS FOOTING OR POURED CONCRETE SLAB  EXTERIOR WALLS: POURED CONCRETE COLUMNS  PARTITIONS/COMMON WALLS: MINIMAL  FRAMING: REINFORCED CONCRETE  REMARKS/ADDITIONAL FEATURES:  FLOOR COVER/FINISH: NONE  INTERIOR FINISH: NONE  PLUMBING: NONE  OTHER FEATURES:

**BASE PRICE FOR COMMERCIAL SCHEDULE MA 45 RADIO/TELEVISION STATION**

WALL HEIGHT	BASE PRICE	BASE SPECIFICATIONS
12	\$93.95	STORY HEIGHT: FIRST FLOOR AREA  FOUNDATION/BASEMENT: CONTINUOUS FOOTING OR POURED CONCRETE SLAB  EXTERIOR WALLS: FACE/JUMBO BRICK  PARTITIONS/COMMON WALLS: ADEQUATE TO SEPARATE BROADCAST/OFFICE AREAS  FRAMING: STEEL BAR JOIST  REMARKS/ADDITIONAL FEATURES:  ADD FOR HEATING/COOLING  ADD FOR SPRINKLER SYSTEM  FLOOR COVER/FINISH: CONCRETE SLAB/VINYL  INTERIOR FINISH: PAINTED BLOCK/DRYWALL  PLUMBING: 5-10 FIXTURES  OTHER FEATURES: SOUNDPROOF INSULATION

**BASE PRICE FOR COMMERCIAL SCHEDULE MA 59 REGIONAL SHOPPING**

WALL HEIGHT	BASE PRICE	BASE SPECIFICATIONS
14	\$ 88.70	STORY HEIGHT: FIRST FLOOR AREA  FOUNDATION/BASEMENT: CONTINUOUS FOOTING OR POURED CONCRETE SLAB  EXTERIOR WALLS: FACE BRICK/PAINTED BLOCK  PARTITIONS/COMMON WALLS: ADEQUATE FOR SEPARATION OF RETAIL STORES  FRAMING: WOOD JOIST  REMARKS/ADDITIONAL FEATURES:  ABUNDANT FLOURESCENT LIGHTING  ADD FOR HEATING/COOLING  ADD FOR SPRINKLER SYSTEM
		FLOOR COVER/FINISH: VINYL/HEAVY LINOLEUM CARPET  INTERIOR FINISH: DRYWALL/PANEL PAINTED BLOCK  PLUMBING: 15-20 FIXTURES  OTHER FEATURES: ALUM/GLASS STORE FRONT AUTOMATIC DOORS



**BASE PRICE FOR COMMERCIAL SCHEDULE MA 48 RESEARCH AND DEVELOPMENT**

WALL HEIGHT	BASE PRICE	BASE SPECIFICATIONS
14	\$ 65.36	STORY HEIGHT: FIRST FLOOR AREA  FOUNDATION/BASEMENT: CONTINOUS FOOTING OR POURED CONCRETE SLAB  EXTERIOR WALLS: FACE/JUMBO BRICK  PARTITIONS/COMMON WALLS: SMALL OFFICE AREAS  FRAMING: STEEL BAR JOIST  FLOOR COVER/FINISH: CONCRETE SLAB/VINYL  INTERIOR FINISH: PAINTED BLOCK WALLS OR EQUAL  PLUMBING: 10-15 FIXTURES  OTHER FEATURES: OVERHEAD DOORS/DOCK BUMPERS
REMARKS/ADDITIONAL FEATURES: ABUNDANT FLUORESCENT LIGHTING  ADD FOR SPRINKLER SYSTEM  ADD FOR HEATING/COOLING  ADD FOR MAJOR LAB/OFFICE ENCLOSURES		

**BASE PRICE FOR COMMERCIAL SCHEDULE MA 33 RESTAURANT**

WALL HEIGHT	BASE PRICE	BASE SPECIFICATIONS
12	\$90.75	STORY HEIGHT: FIRST FLOOR AREA  FOUNDATION/BASEMENT: CONTINUOUS FOOTING OR POURED CONCRETE SLAB  EXTERIOR WALLS: FACE BRICK OR EQUAL  PARTITIONS/COMMON WALLS: ADEQUATE FOR SEPARATION OF KITCHEN/DINING AREA  FRAMING: WOOD JOIST  REMARKS/ADDITIONAL FEATURES:  ABUNDANT FLUORESCENT LIGHTING  ADD FOR HEATING/COOLING ADD FOR SPRINKLER SYSTEM  FLOOR COVER/FINISH: VINYL/HEAVY LINOLEUM  INTERIOR FINISH: DRYWALL/PANEL  PLUMBING: 10-15 FIXTURES  OTHER FEATURES: QUARRY TILE/KITCHEN AREA FLOOR DRAINS

**BASE PRICE FOR COMMERCIAL SCHEDULE MA 34 RETAIL**

WALL HEIGHT	BASE PRICE	BASE SPECIFICATIONS
12	\$ 87.70	STORY HEIGHT: FIRST FLOOR AREA  FOUNDATION/BASEMENT: CONTINUOUS FOOTING OR POURED CONCRETE SLAB  EXTERIOR WALLS: FACE BRICK OR EQUAL  PARTITIONS/COMMON WALLS: MINIMAL  FRAMING: WOOD JOIST  REMARKS/ADDITIONAL FEATURES:  ADD FOR HEATING/COOLING
		FLOOR COVER/FINISH: CARPET/VINYL  INTERIOR FINISH: DRYWALL/PANEL  PLUMBING: 5 FIXTURES  OTHER FEATURES: ALUM/PLATE GLASS FRONT AVERAGE DISPLAY AREA GLASS DOORS

**BASE PRICE FOR COMMERCIAL SCHEDULE MA 35 SERVICE GARAGE**

WALL HEIGHT	BASE PRICE	BASE SPECIFICATIONS
14	\$ 68.38	STORY HEIGHT: FIRST FLOOR AREA  FOUNDATION/BASEMENT: CONTINUOUS FOOTING OR POURED CONCRETE SLAB  EXTERIOR WALLS: FACE BRICK OR EQUAL  PARTITIONS/COMMON WALLS: ADEQUATE FOR SEPARATION OF SERVICE/STORAGE AREA  FRAMING: WOOD JOIST  FLOOR COVER/FINISH: FINISHED CONCRETE SLAB  INTERIOR FINISH: PAINTED BLOCK  PLUMBING: 2-5 FIXTURES  OTHER FEATURES: GARAGE DOORS/HOSE BIBS/ FLOOR DRAINS
REMARKS/ADDITIONAL FEATURES:		
GOOD FLUORESCENT LIGHTING ADD FOR HEATING/COOLING		

**BASE PRICE FOR COMMERCIAL SCHEDULE MA 36 SERVICE STATION**

WALL HEIGHT	BASE PRICE	BASE SPECIFICATIONS
12	\$83.75	STORY HEIGHT: FIRST FLOOR AREA  FOUNDATION/BASEMENT: CONTINUOUS FOOTING OR POURED CONCRETE SLAB  EXTERIOR WALLS: STEEL OR EQUAL PAINTED  PARTITIONS/COMMON WALLS: ADEQUATE FOR SEPARATION OF OFFICE/SERVICE AREA  FRAMING: WOOD JOIST  REMARKS/ADDITIONAL FEATURES:  GOOD FLUORESCENT LIGHTING  ADD FOR HEATING/COOLING
		FLOOR COVER/FINISH: FINISHED CONCRETE SLAB QUARRY TILE OR EQUAL  INTERIOR FINISH: PAINTED BLOCK  PLUMBING: 5-8 FIXTURES  OTHER FEATURES: OVERHEAD DOORS/HOSE BIBS/ DRAINS/SALES/OFFICE AREA/ PLATE GLASS WINDOWS

**BASE PRICE FOR COMMERCIAL SCHEDULE MA 38 SUPERMARKET**

WALL HEIGHT	BASE PRICE	BASE SPECIFICATIONS
14	\$ 71.70	STORY HEIGHT: FIRST FLOOR AREA  FOUNDATION/BASEMENT: CONTINUOUS FOOTING OR POURED CONCRETE SLAB  EXTERIOR WALLS: FACE BRICK OR EQUAL  PARTITIONS/COMMON WALLS: ADEQUATE FOR SEPARATION OF SERVICE/STORAGE AREA  FRAMING: WOOD JOIST  REMARKS/ADDITIONAL FEATURES:  ABUNDANT FLUORESCENT LIGHTING  ADD FOR HEATING/COOLING  ADD FOR SPRINKLER SYSTEM
		FLOOR COVER/FINISH: FINISHED CONCRETE SLAB  INTERIOR FINISH: DRYWALL/PANEL PAINTED BLOCK  PLUMBING: 8-10 FIXTURES  OTHER FEATURES: ALUM/GLASS STORE FRONT AUTOMATIC DOORS

**BASE PRICE FOR COMMERCIAL SCHEDULE MA 61 SKATING RINK**

WALL HEIGHT	BASE PRICE	BASE SPECIFICATIONS
14	\$ 71.10	STORY HEIGHT: FIRST FLOOR AREA  FOUNDATION/BASEMENT: CONTINUOUS FOOTING OR POURED CONCRETE SLAB  EXTERIOR WALLS: FACE BRICK OR EQUAL  PARTITIONS/COMMON WALLS: ADEQUATE FOR SEPARATION OF SALES/RINK AREA  FRAMING: RIGID STEEL JOIST/TRUSS  FLOOR COVER/FINISH: VINYL/HEAVY LINOLEUM CARPET  INTERIOR FINISH: DRYWALL/PANEL PAINTED BLOCK  PLUMBING: 12-15 FIXTURES  OTHER FEATURES: ALUM/GLASS ENTRANCE
REMARKS/ADDITIONAL FEATURES:  ABUNDANT LIGHTING  ADD FOR HEATING/COOLING		

**BASE PRICE FOR COMMERCIAL SCHEDULE MA 39 THEATER**

WALL HEIGHT	BASE PRICE	BASE SPECIFICATIONS
14	\$ 95.93	STORY HEIGHT: FIRST FLOOR AREA  FOUNDATION/BASEMENT: CONTINUOUS FOOTING OR POURED CONCRETE SLAB  EXTERIOR WALLS: FACE BRICK OR EQUAL  PARTITIONS/COMMON WALLS: ADEQUATE FOR SEPARATION OF SERVICE/STORAGE AREA  FRAMING: RIGID STEEL JOIST/TRUSS  REMARKS/ADDITIONAL FEATURES:  ADD FOR HEATING/COOLING  ADD FOR SPRINKLER SYSTEM  FLOOR COVER/FINISH: VINYL/HEAVY LINOLEUM FINISHED CONCRETE SLAB  INTERIOR FINISH: DRYWALL/PANEL PAINTED BLOCK  PLUMBING: 10-12 FIXTURES  OTHER FEATURES: ELEVATED PROJECTION BOOTH/PLATE GLASS FRONT TICKET BOOTH



**BASE PRICE FOR COMMERCIAL SCHEDULE MA 80 TRUCK TERMINAL**

WALL HEIGHT	BASE PRICE	BASE SPECIFICATIONS
14	\$ 55.50	STORY HEIGHT: FIRST FLOOR AREA  FOUNDATION/BASEMENT: CONTINUOUS FOOTING OR POURED CONCRETE SLAB  EXTERIOR WALLS: FACE BRICK OR EQUAL  PARTITIONS/COMMON WALLS: OFFICE/LOUNGE AREA  FRAMING: STEEL FRAME  REMARKS/ADDITIONAL FEATURES:  ADD FOR MAJOR ENCLOSURES  ADD FOR SPRINKLER SYSTEM  ADD FOR HEATING/COOLING
		FLOOR COVER/FINISH: CONCRETE SLAB/VINYL  INTERIOR FINISH: PAINTED BLOCK/EXPOSED BRICK  PLUMBING: 03-10 FIXTURES  OTHER FEATURES: OVERHEAD DOORS (ABUNDANT) DOCK BUMPERS

**BASE PRICE FOR COMMERCIAL SCHEDULE MA 40 WAREHOUSE**

WALL HEIGHT	BASE PRICE	BASE SPECIFICATIONS
14	\$ 42.50	STORY HEIGHT: FIRST FLOOR AREA  FOUNDATION/BASEMENT: CONTINUOUS FOOTING OR POURED CONCRETE SLAB  EXTERIOR WALLS: FACE BRICK OR EQUAL  PARTITIONS/COMMON WALLS: SMALL OFFICE AREAS  FRAMING: STEEL FRAME  REMARKS/ADDITIONAL FEATURES:  ADD FOR HEATING/COOLING  ADD FOR SPRINKLER SYSTEM  ADD FOR MAJOR ENCLOSURES AND MEZZANINES
		FLOOR COVER/FINISH: FINISHED CONCRETE SLAB  INTERIOR FINISH: PAINTED BLOCK  PLUMBING: 0-5 FIXTURES  OTHER FEATURES: OVERHEAD/ROLLING DOORS WOOD OR STEEL

# Schedule of Values

# Chatham County 2021

## MAIN AREA RATES PER SQUARE FOOT

MA CODE	OCCUPANCY	CONC (C)	MASON. (M)	R.S.F. (R)	WOOD (W)	HEIGHT ADJ
01	Apartment Flat	---	\$107.60	\$105.00	\$101.50	H1
02	Apartment Townhouse	---	\$87.61	\$85.00	\$83.00	H1
03	Armory	\$81.60	\$70.95	\$64.05	\$67.41	H2
04	Auditorium	\$90.10	\$78.27	\$70.29	\$74.40	H2
05	Auto Dealership	\$80.15	\$76.35	\$68.10	\$72.25	H2
06	Bank	\$115.48	\$112.20	\$105.60	\$108.88	H2
07	Beauty/Barber Shop	---	\$73.27	\$64.19	\$67.55	H2
08	Cafeteria	---	\$88.95	\$84.75	\$88.85	H2
09	Car Wash	--	\$48.65	\$40.40	\$42.40	H1
10	Church	\$128.70	\$111.80	\$102.30	\$106.25	H2
11	Classroom	\$83.90	\$81.45	\$73.20	\$77.30	H2
13	Dwelling Conversion	\$97.80	\$97.80	---	\$92.25	H2
14	Country Club/Clubhouse	---	\$89.10	\$80.85	\$84.95	H2
15	Department Store	\$82.90	\$78.95	\$70.75	\$74.85	H2
16	Discount Store	\$73.25	\$58.60	\$51.66	\$54.41	H2
17	Dormitory	\$91.25	\$79.35	\$71.15	\$75.30	H2
18	Multiplex	\$104.70	\$107.60	---	\$101.50	H1
19	Gymnasium	---	\$76.65	\$68.40	\$72.50	H2
20	Fire/Police Station	---	\$78.35	\$70.15	\$74.25	H2
21	Fraternity	\$91.15	\$79.35	\$71.15	\$75.30	H2
22	Hanger	\$49.85	\$39.45	\$37.55	\$41.60	H2
23	Hospital	\$131.15	\$127.85	---	\$123.75	H2
24	Hotel	\$117.36	\$102.96	\$91.75	\$96.62	H1
25	Industrial/Manufacturing	\$40.10	\$37.89	\$31.90	\$34.15	H2
26	Laboratory	\$122.10	\$119.60	\$111.35	\$115.50	H2
27	Laundry/Cleaners	---	\$74.25	\$65.15	\$69.65	H2
28	Library	\$86.60	\$84.15	\$77.55	\$81.65	H2
29	Support Area	\$37.40	\$35.75	\$30.25	\$33.00	H2
31	Motel	\$113.77	\$87.52	\$80.82	\$85.82	H1
32	Office	\$86.10	\$83.79	\$75.95	\$78.85	H2
33	Restaurant	\$98.15	\$95.70	\$87.45	\$90.75	H2
34	Retail Store	\$95.87	\$92.75	\$82.50	\$87.70	H2
35	Service Garage	\$81.19	\$76.76	\$63.85	\$68.38	H2
36	Service Station	---	\$87.80	\$79.55	\$83.75	H2
38	Supermarket	\$78.30	\$75.85	\$67.55	\$71.70	H2
39	Theatre	---	\$101.13	\$91.85	\$95.93	H2
40	Warehouse	\$50.50	\$47.50	\$37.62	\$42.50	H2
41	Convenience Store	\$200.00	\$194.85	\$180.45	\$187.70	H2
42	Nursing/Retirement	\$142.70	\$140.25	\$132.00	\$136.10	H2
43	Bowling Alley	---	\$76.60	\$66.75	\$71.30	H2
44	Funeral	---	\$89.90	\$81.65	\$85.80	H2
45	Radio/TV Station	---	\$98.10	\$89.85	\$93.95	H2
46	Medical Office	\$134.31	\$131.50	\$122.50	\$127.05	H2
47	Government Building	\$95.55	\$93.10	\$84.80	\$88.90	H2

**MAIN AREA RATES PER SQUARE FOOT (Continued)**

<b>MA CODE</b>	<b>OCCUPANCY</b>	<b>CONC. (C)</b>	<b>MASON. (M)</b>	<b>R.S.F. (R)</b>	<b>WOOD (W)</b>	<b>HEIGHT ADJ</b>
48	Research/Development	\$90.10	\$70.05	\$63.98	\$65.36	H2
49	Convalescent Home	\$133.00	\$103.00	\$93.00	\$98.00	H2
50	Heavy Industrial	\$99.00	\$94.65	\$79.80	\$92.75	H2
51	Transit Warehouse	---	\$62.25	\$54.10	\$58.10	H2
52	Community Bldg	---	\$58.10	\$49.85	\$54.10	H2
53	Health Club	---	\$76.70	\$68.45	\$72.60	H2
54	Automotive Center	---	\$51.00	\$42.90	\$47.00	H2
55	Mini-Lube	---	\$177.40	\$169.10	\$173.25	H2
56	Dairy Sales	---	\$72.80	\$64.58	\$68.70	H2
57	Service Shop	---	\$43.25	\$35.00	\$39.15	H2
58	Neighborhood Shops	\$86.45	\$84.00	\$75.75	\$79.85	H2
59	Regional Shops	\$95.25	92.75	\$84.50	\$88.70	H2
60	Community Shops	\$86.45	\$84.00	\$75.75	\$79.85	H2
61	Skating Rink	---	\$75.20	\$66.95	\$71.10	H2
62	Distribution Warehouse	\$48.35	\$45.80	\$37.65	\$41.75	H2
63	Mini Warehouse	---	\$41.25	\$27.35	\$31.80	H1
64	Bank Drive Thru	\$114.80	\$112.35	\$104.10	\$108.20	H2
65	Apartment House	---	\$107.60	\$105.00	\$101.50	H1
66	Post Office	\$95.10	\$92.60	\$80.25	\$84.35	H2
67	Car Wash (Thru)	---	\$48.75	\$40.50	\$44.60	H1
68	Dispensary	---	\$95.15	\$87.85	\$91.95	H2
69	Day Care	---	\$84.75	\$76.50	\$80.60	H2
70	Fast Food	\$225.00	\$225.00	\$225.00	\$225.00	H1
71	Veterinary Clinic	\$90.95	\$88.55	\$80.25	\$84.35	H2
72	Group Care Home	\$133.00	\$103.00	\$93.00	\$98.00	H1
73	Lumber Storage	---	\$23.55	\$22.85	\$23.55	H2
74	Jail/Prison	\$95.55	\$93.05	\$84.80	\$88.95	H2
75	Open Office	---	\$81.20	\$72.95	\$77.15	H2
76	Parking Garage	\$40.00	\$42.00	\$37.40	\$39.25	H2
77	Storage	\$47.40	\$45.00	\$36.70	\$41.00	H2
78	Cold Storage	\$63.30	\$60.80	\$52.55	\$56.60	H2
79	Food Shoppe	\$68.00	\$65.55	\$57.35	\$61.40	H2
80	Truck Terminal	\$44.25	\$42.14	\$37.00	\$55.50	H2
81	Office Warehouse	---	\$62.46	\$55.96	\$57.60	H2
82	Drug Store	\$76.70	\$74.25	\$66.00	\$70.15	H2
82F	Franchise Drug Store	\$250.00	\$250.00	\$250.00	\$250.00	H2
83	Winery	---	\$80.30	\$68.80	\$114.65	H2
84	Auto Parts Store	\$104.30	\$95.25	\$81.68	\$90.75	H2
85	Kennel	---	\$97.40	\$83.45	\$92.75	H2
86	Pro Shop	---	\$112.35	\$96.30	\$106.95	H2
87	Convenience Store/Fast Food	\$137.10	\$125.18	\$107.25	\$119.15	H2
89	Downtown Row	\$95.00	\$85.00	---	\$75.00	H2

**STORY ADJUSTMENT FOR COMMERCIAL BUILDINGS**

STC	Upper Floor	90% of First Floor Price
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**AREA PERIMETER RATIO PERCENTAGE**

Code	P01	P02	P03	P04	P05	P06	P07	P08	P09	P10	P11	P12	P13	P14	P15	P16
Perim	150	175	200	250	300	400	500	600	700	800	1000	1200	1400	1600	1800	2000
Sq. Ft																
1000	122	126	130	132	-	-	-	-	-	-	-	-	-	-	-	-
1500	111	115	119	123	126	-	-	-	-	-	-	-	-	-	-	-
2000	104	107	111	117	120	125	-	-	-	-	-	-	-	-	-	-
2500	100	103	105	110	115	120	124	-	-	-	-	-	-	-	-	-
3000	97	100	102	106	110	119	120	-	-	-	-	-	-	-	-	-
4000	94	96	98	100	104	110	117	119	-	-	-	-	-	-	-	-
5000	92	94	95	97	100	105	110	115	-	-	-	-	-	-	-	-
6000	91	92	93	95	98	102	106	110	110	-	-	-	-	-	-	-
8000	89	90	91	92	94	97	100	104	107	110	-	-	-	-	-	-
10000	-	-	90	91	93	95	97	100	103	105	110	115	-	-	-	-
12000	-	-	89	90	91	93	95	97	100	102	106	110	115	-	-	-
14000	-	-	-	-	90	92	94	96	98	100	103	106	110	114	-	-
16000	-	-	-	-	-	91	93	94	96	97	100	104	107	110	-	-
18000	-	-	-	-	-	90	92	93	95	96	99	102	104	107	110	-
20000	-	-	-	-	-	89	91	92	94	95	97	100	103	105	108	110
25000	-	-	-	-	-	88	90	91	92	93	95	97	99	101	103	105
30000	-	-	-	-	-	87	89	90	91	92	93	95	97	98	100	102
35000	-	-	-	-	-	86	88	89	90	91	92	93	95	96	98	99
40000	-	-	-	-	-	85	87	88	89	90	91	92	94	95	96	98
50000	-	-	-	-	-	-	86	87	88	89	90	91	92	93	94	95
75000	-	-	-	-	-	-	85	85	85	86	87	88	89	90	91	92
100000	-	-	-	-	-	-	-	-	-	84	85	86	87	88	89	90
199999	-	-	-	-	-	-	-	-	-	-	-	85	86	87	88	89
999999	-	-	-	-	-	-	-	-	-	-	-	-	85	85	85	85

**\*P00 Equals 100%.**

**WALL HEIGHT ADJUSTMENTS**

<b>Code</b>	<b>Height</b>	<b>Adjust.</b>
H1	ALL	100%
H2	8	88%
H2	9	90%
H2	10	92%
H2	11	94%
H2	12	96%
H2	13	98%
H2	14	100%
H2	15	102%
H2	16	104%
H2	17	105%
H2	18	108%
H2	19	110.5%
H2	20	113%
H2	21	115%
H2	22	118%
H2	23	120.5%
H2	24	123%
H2	25	125%
H2	26	128%

<b>Code</b>	<b>Height</b>	<b>Adjust.</b>
H2	27	131.5%
H2	28	133%
H2	29	135.5%
H2	30	138%
H2	31	141%
H2	32	144%
H2	33	147%
H2	34	149%
H2	35	151%
H2	36	154.5%
H2	37	158%
H2	38	161.5%
H2	39	163%
H2	40	165%
H2	41	169%
H2	42	172%
H2	43	175%
H2	44	177%
H2	45	179%
H2	46-49	186%
H2	50-OVER	193%

<b>HC- Heating/Air Conditioning</b>		
<b>Code</b>	<b>Type</b>	<b>Rate</b>
51	No Heat	(-) \$2.00
52	Flr/Wall Furnace	\$1.00
53	Radiant/Elect/BB	\$2.05
54	Radiant/Water	\$2.05
55	Forced Hot Air	\$2.05
56	Unit Heaters	\$1.00

<b>SS- Sprinkler System</b>		
<b>Code</b>	<b>Type</b>	<b>Rate</b>
01	Wet	\$1.25
02	Dry	\$1.50

<b>EL/ES-Elevator/Escalator</b>		
<b>Code</b>	<b>Type</b>	<b>Rate</b>
ES	Escalator	\$90,000
FE	Freight Elev.	\$40,000
PE	Pass. Elev.	\$75,000
XS	Extra Stops	\$7,500

**COMMERCIAL BASEMENT RATES**

<b>Code</b>	<b>Type</b>	<b>CF- Finished</b>	<b>CU-Unfinished</b>
01	Apartment	\$40.75	\$12.50
02	Retail	\$38.25	\$12.50
03	Office	\$45.85	\$12.50
04	Warehouse	\$19.35	\$10.00
05	Manufacturing	\$20.70	\$12.50
06	Fast Food	\$72.00	\$12.50
07	Storage	\$22.25	\$10.00
08	Government	\$48.50	\$12.50
09	Classroom	\$42.15	\$12.50
10	Restaurant	\$49.95	\$12.50
11	Hotel/Motel	\$46.35	\$12.50

**COMMERCIAL MAIN BUILDING ATTACHMENT CODES**

<b>Code</b>	<b>Description</b>	<b>Rate</b>	<b>Size Adj</b>
07	Loading Dock	\$15.75	M21
18	Overhead Doors	\$500	-
22	Mezzanine Display	\$35.00	M22
22A	Open Mezzanine	\$16.50	M22
23	Above Average Exterior	\$46.40	M12
24	Average Exterior	\$42.25	M12
29	Mezzanine Office	\$35.00	M22
30	Attached Office Brick	\$50.00	M22
31	Attached Office Frame	\$45.00	M22
32	Masonry Warehouse	\$25.00	M12
34	Attached Warehouse	\$22.50	M12
45	Commercial Canopy	\$24.15	M21
46	Metal Warehouse (RSF)	\$22.50	M12
47	Above Average Enclosure	\$25.00	M12
48	Average Enclosure	\$22.50	M12
57	Commercial Drive-Thru	-	-
58	Penthouse	\$20.00	M12
60	Bank Vault	\$75.00	M12
61	Bank Drive In Window	\$7,500	-
62	Cooler-Chiller	\$10.50	M14
63	Cooler-Freezer	\$13.25	M14
64	Cooler Sharp Freezer	\$17.50	M14

**COMMERCIAL MAIN BUILDING ATTACHMENT CODES  
(CONT.)**

<b>Code</b>	<b>Description</b>	<b>Rate</b>	<b>Size Adj</b>
65	Dock Levelers	\$6,500	-
68	Record Vault	\$50.00	M12
71	Attached RSF Office	\$42.50	M22
72	Minimum Enclosure	\$11.25	M12
73	Attached Frame Shop	\$27.50	M22
74	Attached Brick Shop	\$30.00	M22
75	Attached RSF Shop	\$25.00	M22
76	Auto Showroom	\$65.00	M22
77	Roof Monitor	\$6.50	M12



**OUTBUILDINGS AND OTHER YARD ITEMS & ATTACHMENT  
CODE SIZE ADJUSTMENT**

M11		
AREA		ADJ
001-150		110
151-200		108
201-250		106
251-300		104
301-350		102
351-600		100
601-650		98
651-700		96
701-750		94
751-800		92
801-UP		90

M12		
AREA		ADJ
001-050		110
051-100		105
101-150		102
151-400		100
401-550		98
551-700		96
701-850		94
851-1000		92
1001-UP		90

M13		
AREA		ADJ
001-150		110
151-200		105
201-250		102
251-400		100
401-600		98
601-700		96
701-800		94
801-900		92
901-UP		90

M14		
AREA		ADJ
001-040		100
041-080		98
081-150		96
151-300		94
301-UP		90

M21		
AREA		ADJ
001-020		110
021-040		106
041-060		104
061-080		102
081-200		100
201-300		98
301-400		96
401-500		94
501-UP		90

M22		
AREA		ADJ
001-020		110
021-040		106
041-060		104
061-080		102
081-200		100
201-300		98
301-400		96
401-500		94
501-UP		90

**COMMERCIAL OUTBUILDINGS AND YARD ITEMS**

<b>Code</b>	<b>Description</b>	<b>Rate</b>	<b>Size Adj</b>	<b>Deprec.</b>
01	Asphalt Paving	\$2.00	M11	D1
07	Loading Dock	\$12.50	M21	D2
09	Fencing	\$3.00	-	D2
100	Burial Sites	\$1,100	-	-
101	Crypts	\$4,000	-	-
102	Cremation Garden	\$300	-	-
103	Niches	\$1,000	-	-
104	Garden of Peace	\$650	-	-
105	Outdoor Fireplace	\$4,000	-	D3
19	Lighting (Yard)	\$1,800	-	D2
19M	Lighting (Multi-Fixture)	\$2,250	-	D2
22	Railroad Siding	\$75.00	M11	D1
31	Tennis Court w/ Fencing	\$14.00	M11	D1
51	Self Service Booth	\$82.50	M11	D2
54	Office Field	\$40.00	M11	D2
60	Golf Course Very Good	\$150,000	-	D2
65	Water Reservoir (Concrete)	\$.50	-	D2
66	Bleachers (Site Value)	-	-	-
67	Guard House Brick	\$82.50	M11	D2
69	Field House	\$25.00	M11	D2
71	Industrial Stack (Site Value)	-	-	-
72	Service Station Canopy	\$26.00	M11	D2
73	Mini Warehouse	\$20.00	M11	D2
74	Hanger	\$20.50	M11	D2
86	Golf Course Good	\$125,000	-	D2
87	Golf Course Average	\$100,000	-	D2
88	Golf Course Fair	\$75,000	-	D2
89	Golf Course Par 3	\$40,000	-	D2
90	Restroom Structure	\$30.25	M11	D2
91	Truck Scale	\$5,000	-	D2
94	Modular Classroom	\$25,000	-	D2
95	Golf Course Excellent	\$200,000	-	D2

## **MULTI-FAMILY APARTMENTS**

An apartment is a residential living unit with the same living accommodations normally found in a single-family residence. An apartment house is a multifamily residence containing four or more residential living units, and generally providing each unit with a number of common facilities, services and amenities. Two or more apartment buildings operating as a single unit are generally referred to as an apartment complex.

The increased development of multi-family residential housing units since the 1950's has brought the development of both apartment complexes and "high-rise" apartment buildings. Each of these offer complete living accommodations with all the modern conveniences and amenities. In addition, they generally provide a variety of recreational facilities and services for their occupants.

## **VALUATION**

As with other types of property the replacement cost method of valuation is a starting point for the appraiser. There are two types of apartment buildings that must be considered: 1) the walk-up apartment normally found in apartment complexes; and 2) the high-rise or elevator building.

Apartment units found in a given apartment building or complex of buildings vary in size and arrangement. They may be one room efficiency units consisting of a bedroom and kitchenette; two room studio units consisting of a bedroom and living room/den and kitchenette combination; and conventional units consisting of a kitchen, dining area, living room and one or more bedrooms. Each apartment unit has one or more bathrooms, and conventional units often have a separate dining room, den, or family room.

One of the most significant variables in determining the replacement cost of an apartment building is the average size of the individual units. The pricing schedule provided in this section is designed to account for this variation.

## **BASE PRICES - APARTMENTS**

Base square foot prices have been developed for typical average "C" Grade quality apartment units, based on average unit sizes at various floor levels for Wood Joist construction. Adjustments are provided for Fire Resistant and Reinforced Concrete, together with Brick (or equal) and Frame/Concrete Block exterior walls.

The foundation, roof, and normal built-ins are included with the first-floor prices, thus making the schedule applicable to both one story and multi-story buildings.

## **APPLICATION**

Application of the pricing schedule involves the selection of the appropriate base price per floor based on the average unit sizes. Adjustments to the base price for air conditioning, central heating, and type of construction should be made to account for any variations between the subject building and the model building.

## **SPECIAL APPLICATION**

The Apartment Pricing Schedule is designed for garden/walk-up apartment buildings of four or more units. Two and three family residences should be priced by using the Residential Dwelling Schedule (included in the Residential section of the manual).

## **QUALITY FACTOR**

The schedule prices are for average "C" Grade construction quality, erected with average materials and workmanship. A table of Quality Factors is provided to adjust the "C" Grade prices in order to account for variations in construction quality.

## **INCOME APPROACH**

Apartment buildings, regardless of the type, are built, bought, and sold as investment or income producing property. The appraisal of apartments utilizing the Capitalization or Income Approach to value follows the same procedures discussed in the Property Valuation section of the manual.

The basic procedure is . . .

1. Collection of the income generated - including monthly rents for the units, parking, and other receipts, such as laundry facilities.
2. The collection of the expenses associated with the management and maintenance of the property.
3. The capitalization of the net income into an indication of value.

A special section is provided on the use of the economic data form to record all necessary income and expense data.

**PERCENT (%) GOOD GUIDELINES**

Physical deterioration of the structure should be based on age and condition of the property. Functional and Economic Depreciation allowances must be derived from the income and expense of each apartment project as it relates to other properties of similar utility and condition; and should be expressed as percent (%) good.

**BASE PRICE FOR COMMERCIAL SCHEDULE MA 01W APARTMENT**

WALL HEIGHT	BASE PRICE	BASE SPECIFICATIONS
9	\$101.50	STORY HEIGHT: FIRST FLOOR AREA  FOUNDATION/BASEMENT: CONTINUOUS FOOTING OR POURED CONCRETE SLAB  EXTERIOR WALLS: WOOD FRAME OR EQUAL  PARTITIONS/COMMON WALLS: ADEQUATE FOR SEPARATION OF LIVING UNITS  FRAMING: WOOD JOIST  FLOOR COVER/FINISH: VINYL/CARPET  INTERIOR FINISH: DRYWALL/PANEL  PLUMBING: 5 FIXTURES PER UNIT  OTHER FEATURES:
REMARKS/ADDITIONAL FEATURES.		
ADD FOR ATTACHMENTS		
ADD FOR ADDITIONAL PLUMBING		
ADD FOR HEATING/COOLING		

**BASE PRICE FOR COMMERCIAL SCHEDULE MA 02W TOWNHOUSE  
APARTMENT**

WALL HEIGHT	BASE PRICE	BASE SPECIFICATIONS
9	\$83.00	STORY HEIGHT: FIRST FLOOR AREA  FOUNDATION/BASEMENT: CONTINUOUS FOOTING OR POURED CONCRETE SLAB  EXTERIOR WALLS: WOOD FRAME OR EQUAL  PARTITIONS/COMMON WALLS: ADEQUATE FOR SEPARATION OF LIVING UNITS  FRAMING: WOOD JOIST  REMARKS/ADDITIONAL FEATURES.  ADD FOR ATTACHMENTS  ADD FOR ADDITIONAL PLUMBING  ADD FOR HEATING/COOLING
		FLOOR COVER/FINISH: VINYL/CARPET  INTERIOR FINISH: DRYWALL/PANEL  PLUMBING: 5 FIXTURES PER UNIT  OTHER FEATURES:



MA 02  
TOWNHOUSE  
APARTMENT

MA 01  
APARTMENT





**FRANCHISE FOOD RESTAURANTS**

Franchise Food restaurants have become a common place beginning in the 1950's. The buildings, though they offer similar accommodations, are highly distinctive in architectural style and design. Each operation is readily identifiable with a particular design and motif; and relies heavily on the appearance or "eye appeal" of its buildings to attract, maintain and promote business. The wide range of styles and designs have a direct influence on the replacement costs of the buildings. The size and quality of materials and workmanship alone are not the prime determining factors. Two restaurants showing no marked difference in size and construction quality may still show a considerable difference in cost due to the difference in design and décor. The replacement cost schedule provided is based upon specifications of size, quality, and design. The schedule is to be used as a guide for estimating replacement costs of franchise food restaurants. The proper use of the schedule, along with experience and sound judgment, should enable the appraiser to establish a reasonable estimate of replacement cost.

**BASE SPECIFICATIONS**

The Cost Schedule assumes a basic layout which includes a serving area, food preparation area, a small office area, an employee dressing area, two toilet rooms, and depending upon size, a dining area. General construction features include masonry foundation walls on spread footings; 4" reinforced concrete floor slab on a granular base; roof and exterior wall construction, interior finish, and building equipment and fixtures commensurate with the grade; stud and masonry partitioning; unfinished floor and painted masonry or dry wall interior finish in storage areas and mechanical rooms; utility service, heating, fluorescent lighting fixtures in the preparation and office areas, plumbing fixtures and drains.

**QUALITY GRADE SPECIFICATIONS**

A Grade      A unique design featuring elaborate architecture especially in the roof and exterior walls; built of high-quality materials and workmanship. A-Frame, Mansard, Gambrel, or Multi-Pitch type roofs with extensive overhangs, and copper, porcelain enamel shingles, wood shakes, slate, or comparable high- quality roofing on insulated wood or steel decking and framing, with laminated wood frame or steel frame supporting beams and columns often exposed to project architectural effects. Walls consist of a combination of face brick or ceramic glazed brick, decorative stone or wood and plate glass. High quality interior finish of ceramic or quarry tile flooring, exposed stone and brick or high- grade wood or porcelain enamel paneling and ceramic tile wall finish. porcelain enamel or acoustical tile ceilings, often open to the roof slope: combined heating and air conditioning system, high grade

ornamental lighting fixtures in the dining and service areas; good quality plumbing fixtures for typical toilet room facilities.

- B Grade** Conventional design featuring custom architectural styling, built of good quality materials and workmanship. Mansard, Gambrel or Double-Pitch roofs with liberal overhangs, composition tar and gravel, stone chip, or asphalt shingle roofing on insulated wood or steel decking and framing; face brick, ceramic tile and plate glass exterior walls with moderate architectural treatment; good quality interior finish of ceramic or quarry tile flooring, exposed brick or wood paneling and ceramic wall finish; acoustical tile or drywall ceiling; combined heating and air conditioning system, ornamental lighting fixtures in the dining and serving areas, and good quality plumbing fixtures for typical toilet room facilities.
- C Grade** Conventional design featuring moderate architectural styling, built of good quality workmanship and materials. Double-Pitch type roofs with normal overhangs, composition tar and gravel or asphalt shingle roofing on insulated wood or steel decking and framing; face brick, wood, or painted concrete block and plate glass exterior walls; good quality interior finish of quarry or vinyl asbestos tile flooring, wood paneling or drywall and part ceramic tile wall finish; drywall or acoustical tile ceiling; combined heating and air conditioning system; fluorescent lighting fixtures in the dining area, and good quality plumbing fixtures for typical toilet room facilities.
- D Grade** Simple conventional design void of architectural styling; built of average quality materials and workmanship. Flat or Single Pitch roof with normal overhangs, composition roofing on insulated wood decking and framing; painted concrete block or wood exterior walls with a minimal amount of plate glass; average quality interior finish consisting of asphalt or vinyl asbestos tile flooring; painted concrete block, drywall or paneled wall finish and drywall ceiling; forced-air heating, wall unit air conditioning, fluorescent lighting fixtures, fair quality plumbing fixtures for typical toilet room facilities.
- E Grade** Simple design void of architectural styling; built of fair quality materials and workmanship. Single-Pitch roof with normal overhangs, and composition roofing on wood decking and framing; painted concrete block or wood exterior walls with a minimal amount of plate glass; low quality interior finish consisting of asphalt tile flooring and painted concrete block and drywall; unit heaters, no air conditioning, fluorescent lighting fixtures, and fair quality plumbing fixtures for typical toilet room facilities,

**SCHEDULE APPLICATION**

Base prices are included for Average "C" Grade construction for four typical exterior wall types. Select the base price based upon the structure size and exterior wall construction, and make adjustments for attached improvements, air conditioning and sprinkler systems as required. Apply the proper quality Grade factor to establish the replacement cost new.

**PERCENT (%) GOOD GUIDELINES**

Franchise Food restaurants are special purpose buildings which are not readily adaptable to other uses. They go out of style both functionally and economically at a much faster rate than they deteriorate physically. The business is highly competitive and relies heavily on location and the physical appearance of its buildings. In order to keep abreast of competition, owners must frequently renovate the structures. Changing consumer habits, traffic patterns, and competition are but a few of the factors that influence the life span of the buildings and must therefore be considered in the evaluation process.



MA 70W  
FAST FOOD

MA 70W  
FAST FOOD



MA 70W  
FAST FOOD



**BASE PRICE FOR COMMERCIAL SCHEDULE MA 70W FAST FOOD RESTAURANT**

WALL HEIGHT	BASE PRICE	BASE SPECIFICATIONS
12	\$225.00	STORY HEIGHT: FIRST FLOOR AREA  FOUNDATION/BASEMENT: CONTINUOUS FOOTING OR POURED CONCRETE SLAB  EXTERIOR WALLS: FACE BRICK OR EQUAL  PARTITIONS/COMMON WALLS: ADEQUATE FOR SEPARATION OF KITCHEN/DINING AREA  FRAMING: WOOD JOIST  REMARKS/ADDITIONAL FEATURES:  ABUNDANT LIGHTING  ADD FOR HEATING/COOLING
		FLOOR COVER/FINISH: VINY/HEAVY LINOLEUM TERRAZZO/QUARRY TILE  INTERIOR FINISH: DRYWALL/PANEL/EXPOSED BRICK  PLUMBING: 10-15 FIXTURES  OTHER FEATURES: KITCHEN AREA/ SPRINKLER SYSTEM/ QUARRY TILE FINISH/ FLOOR DRAINS

**MOBILE HOME PARKS**

The pricing schedule included in this section is provided as a guide to assist the appraiser in arriving at a reasonable and equitable estimate of the cost of developing a variety of commercial mobile home and trailer parks. Typical site-costs are given for five Grades of parks; the general specifications are as follows:

- A Grade      Excellent quality and excellently planned mobile home parks designed to accommodate the largest tractor-drawn or on-site erected mobile homes, and to provide the user with the utmost in residential amenities, including spacious lots with extensive and attractive landscaping, ample off-street parking, and a wide variety of recreational facilities. Site areas will generally range from 4,500 to 5,500 sq. ft.
  
- B Grade      Good quality and well-planned mobile home parks designed to accommodate the larger tractor-drawn mobile homes with room to spare for lawns and gardens, and featuring attractive landscaping, off-street parking, and complete recreational facilities. Site areas will generally range from 3,500 to 4,500 sq. ft.
  
- C Grade      Average quality and well-planned mobile home parks designed to accommodate mobile homes up to 55' to 60' long, and to provide the user with adequate utility services and facilities, but rather limited recreational facilities and other such amenities. Site areas will generally range from 2,500 to 3,500 sq. ft.
  
- D Grade      Fair quality and minimally planned trailer parks intended primarily for semi-permanent occupancy, built to accommodate car-drawn trailers up to 40' to 45' long, and offering only minimal utility and recreational facilities. Site areas will generally range from 1,750 to 2,500 sq. ft.
  
- E Grade      Cheap quality trailer parks designed to accommodate transient type trailers, and to provide the user with the minimum required facilities. Site areas will generally range from 1,000 to 1,750 sq. ft.

Application of the pricing schedule involves determining the Grade, which is the most representative of the subject property, selecting the corresponding base site-cost, and adjusting the base site-cost to account for any variations between the subject property and the model specifications.

## **BASE COST COMPONENTS**

The costs per site have been developed to include the cost of normal basic on-site improvements and do not include the cost of the land, service and recreational buildings, or major recreational structures, such as swimming pools. The base components are as follows:

Engineering. . . includes the design plans and specifications of the park (exclusive of buildings), engineering and surveying fees, and public fees and permits.

Grading. . . includes the normal grading involved in leveling the site for drainage and roughing out roads, but does not include any abnormal site preparation, such as the excavation and terracing required for hill-side sites.

Street Paving. . . includes base preparation and paving.

Patios and Walks. . . includes all flat work other than street paving.

Sewer. . . includes all on-site lines, but does not include hook up charges, sewage disposal systems, or any off-site connections to trunk lines.

Water. . . includes on-site mains and site services, but does not include wells, pumps, or any off-site connections to source lines.

Electrical. . . includes on-site conduit, electrical and telephone wiring, site outlets, and street and common area lighting commensurate with the Grade; but does not include the cost of any off-site connections.

Gas. . . includes on-site piping, and site and building connections, but does not include any off-site mains.

Other Features. . . include the cost of average entrance ornamentation, landscaping, and common area development commensurate with the park Grade. (Note: Outdoor recreational facilities, such as swimming pools, tennis courts, etc. are not included and should be computed separately.)

## **BASE COST ADJUSTMENTS**

Many mobile homes and trailer parks are apt to possess some features which are typical of one Grade and some features which are typical of another.

For example, an A Grade park may exhibit B Grade "other features" such as entrance decor, landscaping, and recreational facilities; or similarly, a park may be C Grade in all respects except for good quality streets. In such cases, the appraiser must analyze each park in terms of its individual component in order to determine the contribution of each component to the overall cost per site. In order to facilitate this, the specifications and corresponding costs for each component are detailed, thus enabling the appraiser to adjust the base cost either upward or downward to account for any significant variations.

## **PERCENT (%) GOOD GUIDELINES**

Mobile home parks generally can be expected to have a life expectancy of from 10 to 30 years, depending on the quality of the park. The components of a mobile home park, as described above, are subject to the same depreciating forces as are any other real estate improvements. Physical deterioration itself is difficult to observe; but is generally directly related to the functional and economic depreciation of the park. In a going and profitable park, the actual rate of physical deterioration is arrested somewhat by regular and normal maintenance. A park that is normally maintained will have components replaced or renewed as they age. As a park goes out of style functionally and economically, maintenance becomes more and more of a cost burden to the owner and is consequently reduced or curtailed completely, allowing the process of deterioration to accelerate.



## MOBILE HOME PARKS

The average quality mobile home park is designed to provide the user with adequate utility services and facilities. Recreational amenities are limited or nonexistent with streets and landscaping of minimal planning and construction.

Normal site improvements include; low cost concrete or asphalt pads and walks, and enough grading to allow adequate site preparation, drainage, and leveling, minimal on-site electrical service, on site well and septic service, on site public or private water and sewer systems.

The value attributed to land, and the cost of any supportive structures, are not included in the base cost site.

Any variation in overall quality from average should be reflected by the appropriate quality grade adjustment.

## REPLACEMENT COST PER SITE

**“43” Mobile Home Site \$4,000**

**GOLF COURSES**

Golf courses are designed and built in a variety of types and sizes. The pricing schedules in this section are provided as a guide to assist the appraiser in arriving at a reasonable and equitable estimate of the cost of developing the various types of courses.

**REGULATION COURSES**

A regulation golf course usually consists of 18 holes of varied length. There are generally four short holes, 130 to 200 yards (par 3); ten average holes 350 to 400 yards (par 4); and four long holes 450 to 550 yards (par 5). Average costs per hole are given for five grades of courses, the general specifications are as follows:

- AA Grade      Excellent course designed for professional play; rolling terrain; well landscaped with wide tree lined fairways and large, excellent quality greens and tees; numerous natural and man-made hazards; generally, 7200 yards long with a par 72 rating.
  
- A Grade        Excellent course design for championship play; rolling terrain; well landscaped with wide fairways and large, very good quality greens and tees; many natural and man-made hazards; generally, 6900 yards long with a par 72 rating.
  
- B Grade        Good course design for private club membership; rolling terrain; well landscaped with wide fairways and large good quality greens and tees; natural and some man-made hazards; generally, 6500 yards long with a par 70 rating.
  
- C Grade        Average course designed for municipal or general public play; flat terrain; landscaped fairways; average size and quality greens and tees; some natural and few, if any, man- made hazards; generally, 6000 yards long with a par 67 to 70 rating.
  
- D Grade        Simply developed course often referred to as a "cow-pasture course"; flat terrain; very little landscaping; small greens and tees; few natural hazards; generally, 5400 yards long with a par 64 to 67 rating.

**BASE PRICE COMPONENTS**

The costs per hole have been developed to include the cost of normal on course improvements and do not include the cost of land, clubhouse, or any recreational facilities. The base price components are as follows:

Grading and Clearing. . . includes the removal of brush and trees from the fairways, greens, or tees; landscaping and the seeding of grass.

Sprinkler System. . . includes the water source, pumps, piping, and sprinkler heads.

Greens. . . includes the building, seeding and care of the greens until the opening of the course.

Tees. . . includes the building and care of the tees until the opening of the course.

Bunkers. . . includes the building and care of the bunkers until the opening of the course.

Service and Cart Roads. . . includes base preparation, paving, and bridges over hazards.

Architect's Fees. . . includes all plans and supervision during construction.

**OTHER COURSES**

Miniature Course      The entire course is comprised of a putting surface which has various obstacles and hazards placed between the tee and the cup.

Pitch and Putt Course      The course has greens, bunkers, tees, fairways, and very little, if any, rough area separating the holes. The holes are usually 60 to 120 yards long and the course often has lighting for night play.

Par 3 Course      The course is the same as a regulation course, but on a smaller scale with all the holes rated par 3, 140 to 160 yards long and the course may have lighting for night play.

Executive Course      Also called a par 60 course; the course is the same as a regulation course, but on a smaller scale with the holes 200 to 300 yards long. The holes are mostly par 3 with some par 4 and par 5 ratings.

Driving Range	Consists of a piece of land usually 10 to 15 acres with elevated tees along one side used for practice of hitting tee shots on regulation courses.
Practice Putting Greens	Consists of a large green with numerous cups used for putting practice.

## GENERAL APPLICATION

The primary variables in golf courses are size, layout, sprinkler system, greens, tees, fairways, and bunkers. Costs of courses may vary from \$15,000 per hole for a course with minimal improvements to \$125,000 per hole for the best championship courses. The costs given are for average courses in each quality grade. Included in the cost per hole is normal clearing and grading, complete sprinkler systems, landscaping, greens, tees, bunkers, service and cart roads, and architect's fees. Costs do not include buildings, swimming pools, parking areas, or any other off-course improvements. Listed below is the procedure to be used for the appraisal of golf courses.

1. Identify the course by name and record the following data on the property record card (preferably in the top portion of the sketch area).
  - a. The type of course (regulation size, pitch and putt, miniature, etc.).
  - b. The year of completion (if developed in phases, describe the number of holes completed each year).
  - c. The number of holes and the amount of land used for the course.
  - d. The course length and par.
  - e. The terrain and topographical features.
  - f. The average size of the greens, tees, and the number of bunkers.
  - g. The type of sprinkler system.
2. Analyze the various components of the subject property, giving special consideration to the extent of planning, the natural contour of the land, clearing and grading of fairways, greens, and tees, the extent and quality of the sprinkler system: whether it is automatic, manual, covers the entire course or only the tees and greens, the average green and tee size, the average number of bunkers per hole, the quality of cart and service roads and any other characteristics essential to establishing the proper grade level of the course.
3. Determine the Quality Grade of the course by comparing its components, as analyzed above, with the given specifications for each grade and select the corresponding base cost per hole.

In many instances, the course will exhibit a composite quality which falls somewhere between two grades. In such cases it is necessary to interpolate between the base hole costs.

4. Multiply the average replacement cost per hole, as derived in Step #3, by the total number of holes to arrive at the total replacement cost of the course.
5. Determine the proper depreciation allowance based upon the condition, desirability, and usefulness of the course relative to its age, and apply it to the total replacement cost as derived in Step #4, to arrive at the depreciated value of the course.
6. Sketch, list, and compute by using the appropriate pricing schedule, the replacement cost and depreciated value of all improvements not included in the base cost.

See pricing example on following page.

**GOLF COURSE PRICING EXAMPLE**

Smith Golf Course - an 18 hole; regulation size course, 6500 yards long, par 72, located on 150 acres of rolling terrain. The course is 10 years old and has 10000 square foot greens, (3) 2500 square foot tee locations for each hole, and (3) bunkers per hole. Fairways and greens have automatic sprinkler system.

This course is judged to be a Average Quality Course with very good greens and tees, good overall condition, desirability and utility. Land value is estimated at \$5000 per acre

Base Cost Per Hole Average Quality	\$ 100,000
Quality Factor + 0%	+ 0
Replacement Cost Per Hole	\$ 100,000
Number of Holes	X 18
Total Replacement Cost	\$1,800,000
Less Depreciation -10%	- 180,000
Total Value of Course Improvements	\$1,620,000
Land Value (150 acres @ \$5000)	+ 750,000
Total Value	\$2,370,000
Value Per Hole (Rounded)	\$ 131,667

**GOLF COURSE PRICING****MS 95 EXCELLENT - REPLACEMENT COST \$200,000 PER HOLE**

Excellent golf course consisting of 18 holes designed for championship, professional, advance, or competitive play with a par rating of 71 to 72 and yardage ranging from 6,800 and up. Terrain is generally rolling with medium to wide fairways, numerous man-made and natural hazards, well maintained landscaping with tees, greens and fairways of excellent quality.

**MS 60 VERY GOOD- REPLACEMENT COST \$150,000 PER HOLE**

Very good golf course consisting of 18 holes designed for championship, professional, advanced or competitive play with a par rating of 71 to 72 and yardage ranging from 6000 to 7300 yards. Terrain is generally rolling with wide fairways and many man-made or natural hazards, well maintained landscaping, tees, greens and fairways of very good quality.

**MS 86 GOOD - REPLACEMENT COST \$125,000 PER HOLE**

Good golf course consisting of 18 holes designed for all classes of golfers with a par rating of 70 to 72 and yardage ranging from 5500 to 7300 yards. Terrain is generally rolling with narrow to wide fairways, several natural hazards and some man-made hazards, well maintained landscaping with tees, greens and fairways of good quality.

**MS 87 AVERAGE - REPLACEMENT COST \$100,000 PER HOLE.**

Average quality public or semi-private course; 18 holes designed for the average or occasional golfer with a par rating of 68 to 72 and yardage ranging from 5500 to 6900 yards. Terrain is generally flat to rolling with varying fairway widths and few natural or man-made hazards, mostly natural landscaping with some maintenance, tees, and greens are of average to good quality.

**MS 88 FAIR- REPLACEMENT COST \$75,000 PER HOLE.**

Simply designed golf course consisting of 9 to 18 holes designed for recreational or occasional golfers; with a par rating of 68 to 72 and yardage ranging from 5500 to 6900 yards. Terrain is generally flat with narrow fairways little maintenance, very few hazards, tees and greens are fair to average quality.

**MS 89 PAR 3- REPLACEMENT COST \$40,000 PER HOLE.**

Non-regulation golf course, consisting of 9 to 18 holes located on 25 to 50 acres, 1800 to 2500 yards long, par 27 to 54, terrain is rolling to flat, tees, greens and



fairways range from fair to good quality, maintenance varies based on private or public play.

**CHATHAM COUNTY REAPPRAISAL GOLF COURSE QUESTIONNAIRE**

Course Name \_\_\_\_\_ Architect \_\_\_\_\_

Number of Holes \_\_\_\_\_ Par/Course Rating \_\_\_\_\_

USGA Slope Rating:

Championship \_\_\_\_\_ Intermediate \_\_\_\_\_ Senior/Ladies \_\_\_\_\_

Number of Acres Utilized by Golf Course: \_\_\_\_\_

Irrigation System: Greens \_\_\_\_\_ Fairways \_\_\_\_\_ Both \_\_\_\_\_

Actual Year Built \_\_\_\_\_ Cost Per Hole \_\_\_\_\_

Year of Major Renovations \_\_\_\_\_

\_\_\_\_\_

Number of Anticipated Annual Rounds \_\_\_\_\_

Number of Actual Annual Rounds \_\_\_\_\_

Public/Guest Rates:

18 Holes Weekday – Seasonal \_\_\_\_\_

18 Holes Weekend/Holidays – Seasonal \_\_\_\_\_

Special Rates:

18 Holes Senior/Junior \_\_\_\_\_

18 Holes Twilight \_\_\_\_\_

18 Holes Off Season \_\_\_\_\_

Comments: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**CHATHAM COUNTY REAPPRAISAL GOLF COURSE QUESTIONNAIRE**

Course Name \_\_\_\_\_

Number of Holes \_\_\_\_\_ Acres \_\_\_\_\_ Length \_\_\_\_\_ (yds)

Par/Course Rating \_\_\_\_\_ Zoning \_\_\_\_\_ Age \_\_\_\_\_

Annual Rounds Played This Year (anticipated) \_\_\_\_\_ Last Year \_\_\_\_\_

USGA Slope Rating \_\_\_\_\_ (Attach Scorecard)

Irrigation: Fairways \_\_\_\_\_ Greens \_\_\_\_\_ Both \_\_\_\_\_

List of Amenities: (please check)

Practice Green _____	Driving Range _____
Lockers _____	Practice Sand Trap(s) _____
Restaurant _____	Bag Storage _____
Bar/Lounge _____	Snack Bar _____
Rain Shelters _____	Golf Cars _____
Restrooms (on course) _____	Snack Bar (on course) _____
Swimming Pool _____	Tennis Courts _____
Other (list items) _____	

Course Rating: Excellent = 5; Good = 4; Average = 3; Fair = 2; Poor = 1

Greens/Fairways _____	Clubhouse/Pro Shop _____
Tees/Range/Hazards _____	Trees/Scenic Beauty _____
Layout Design _____	Practice Facilities _____
Food/Bev. Facilities _____	Other Amenities _____
Social Atmosphere _____	Course Image _____
Architect _____	
Total Points _____	

Note: A score over 50 is excellent; 40-49 points is good; 30-39 points is average; 15-29 points is fair; and 14 points & under is poor.

Course Prices:

9-Hole Weekday \$ \_\_\_\_\_ 9-Hole Weekend \$ \_\_\_\_\_ 18-Hole WeekDay \$ \_\_\_\_\_  
 18-Hole Weekend \$ \_\_\_\_\_ Golf Car/9-Hole \$ \_\_\_\_\_ 18-Hole \$ \_\_\_\_\_  
 Special Rates-Senior \$ \_\_\_\_\_ Junior \$ \_\_\_\_\_ Twilight \$ \_\_\_\_\_

Date of Rating: \_\_\_\_\_

Name of Analyst: \_\_\_\_\_

Contact: \_\_\_\_\_ Telephone: \_\_\_\_\_

**FOR PROFIT CEMETERIES**

**North Carolina General Statute §105-278.2**

- (a) Real property set apart for burial purposes shall be exempted from taxation unless it is owned or held for purposes of (i) sale or rental or (ii) sale of burial rights therein.
- (b) Taxable real property set apart for human burial purposes is hereby designated a special class of property under authority of Article V, Section II (2) of the North Carolina Constitution, and it shall be assessed for taxation taking into consideration the following:
  - (1) The effect on its value by division and development into burial plots:
  - (2) Whether it is irrevocable dedicated for human burial purposes by plat recorded with the Register of Deeds in the County in which the land is located; and
  - (3) Whether the owner is prohibited or restricted by law or otherwise from selling, mortgaging, leasing or encumbering the same.
- (c) For the purposes of this section, the term “real property” includes; land, tombs, vaults; monuments and mausoleums and the term burial includes entombment. (1973, c. 695, s. 4; 1987, c. 724; 2018-113, s. 15.)

## CEMETERIES

Private or “for profit” cemeteries are appraised by determining the number of unsold units (lots, crypts and niches), the average selling price per unit and the absorption period necessary to deplete the unsold inventory.

The following formula has been utilized by Chatham County;

Number of unsold lots, crypts, niches (x) average selling price (x) discount rate.  
 $(\# \text{ units}) \times (\text{avg. } \$ \text{ price}) \times (\text{DR}) = \text{indicated value}$

NOTE: Other income (openings, closings, markers sales, etc.) is not included in the formula listed above. This additional income should be capitalized using a traditional income approach to determine value. Any excess land (non-platted or not dedicated for burial purposes) will be valued in accordance with the rates placed on surrounding parcels. The value of all land dedicated for burial purposes will be included in the value of the unsold units, land occupied by sold units will be considered exempt from taxation and will not be included in the final appraised value.

**NOTE: The gravesites, crypts and niches rates are specific to each cemetery and are listed in the miscellaneous building rates.**

EXAMPLE:

Spartan Cemetery

Property consists of: 21.584 acres totally dedicated for cemetery use, and 3,500 unsold gravesites. Gravesites sell at an average of \$900 each and the absorption period is estimated at 50 to 75 years.

$(3500 \text{ units}) \times (\$900/\text{unit}) = \$3,150,000 \times (10\% \text{ DR}) = \mathbf{\$315,000 \text{ Indicated Value}}$

**CHATHAM COUNTY CEMETERY QUESTIONNAIRE**

Cemetery Name \_\_\_\_\_

Cemetery Address \_\_\_\_\_

1) How many grave sites remained unsold as of January 1, 2021? \_\_\_\_\_

2) How many grave sites were sold during 2020? \_\_\_\_\_

3) Total gross income received from the sale of grave sites during 2020. \_\_\_\_\_

4) What is the average price of the remaining unsold grave sites? \_\_\_\_\_

5) How many crypt sites remained unsold as of January 1, 2021? \_\_\_\_\_

6) How many crypt sites were sold during 2020? \_\_\_\_\_

7) Total gross income received from the sale of crypt sites during 2020. \_\_\_\_\_

8) What is the average price of the remaining unsold crypt sites? \_\_\_\_\_

9) How many niche sites remained unsold as of January 1, 2021? \_\_\_\_\_

10) How many niche sites were sold during 2020? \_\_\_\_\_

11) Total gross income received from the sale of niche sites during 2020. \_\_\_\_\_

12) What is the average price of the remaining unsold niche sites? \_\_\_\_\_

13) Were any grave sites, crypt sites, niche sites or mausoleums added during 2020? yes \_\_\_ no \_\_\_

14) Have you purchased or sold any cemetery land or made any other improvements during 2020? yes \_\_\_ no \_\_\_ if yes list type, amount and cost.

15) Has the property been appraised for any reason; sale, bankruptcy, merger, etc. since 2016? yes \_\_\_ no \_\_\_ if yes please provide copy of appraisal, etc.

Submitted by \_\_\_\_\_

Owner Name(s) \_\_\_\_\_

Telephone \_\_\_\_\_

Parcel Number \_\_\_\_\_

Date \_\_\_\_\_

## SOLAR FARMS

**G.S. 105-275** – Property classified and excluded from tax base..

80% of the appraised value of solar electric systems is excluded as exempt use.

*Solar Energy Electric System means* “all equipment used directly and indirectly for the conversion of solar energy to electricity.”

Solar Panels and other equipment shall be valued as business personal property at a rate of 20% of value. The land associated with this equipment will be valued at a range **\$10,000 to \$25,000** per acre based on the principal of **Highest and Best Use**.

## CELL TOWERS

For listing purposes 1.00 acre will be designated to support the cell tower and associated components required to run cellular operations.

The cellular components are listed as personal property. They usually consist of the cell tower, individual company's cellular antenna, operating equipment, equipment shelters and security fencing. Give any information attained about the cellular components to business personal property.

The land supporting the cell tower will be valued using the prevailing commercial and industrial land rates in the immediate area.

**SECTION 42 LOW-INCOME HOUSING****North Carolina General Statute # 105-277.16**

In North Carolina low-income housing which has been allocated a federal tax credit under Section 42 of the Code is designated a special class of property under Article V, Section 2 (2) of the North Carolina Constitution and must be appraised, assessed and taxed in accordance with this section. The assessor must use the income approach as the method of valuation for property classified under this section and must take rent restrictions that apply to the property into consideration in determining the income attributable to the property. The assessor may not consider income tax credits received under Section 42 of the Code or under G.S. 105-129.42 in determining the income attributable to the property. (2008-146, s. 3.1;2008-187, s. 47.6).

**General Application**

Identify the low-income housing property being appraised and request copies of the audited financial statements for current year (revaluation year) and three prior years.

Analyze the actual income stream; apply expense ratios, capitalization rates, and Gross Rent Multipliers (GRM) developed for use in the 2021 Chatham County Revaluation Project.

**Standardized Operating Expenses & Vacancy Rates****Operating Expenses**

Based on analysis an expense ratio of 55% has been adopted for use by Chatham County.

**Vacancy Rates**

Analysis of vacancy rates provided by IREM indicates average vacancy rates of 0% to 5%, a rate of 3% has been adopted for use by Chatham County.

**Reserve for Replacements**

Analysis of typical reserve for replacements for traditional apartment properties in Chatham County indicates a range of 3% to 5%. A rate of 3% has been selected for use in Section 42 low-income housing appraisal.

**Capitalization Rate**

A range of capitalization rates from 6%-7.5% have been adopted for Section 42 housing.

**SAMPLE INCOME APPROACH APPRAISAL****SECTION 42 LOW INCOME HOUSING****(G.S. 105-277.16)****100 UNIT APARTMENT COMPLEX @ \$450 PER MONTH BASE RENT**

<b>POTENTIAL GROSS INCOME (100 x \$450 x 12 MONTHS)</b>	<b>\$540,000</b>
<b>VACANCY (3%)</b>	<b>(-\$16,200)</b>
<b>OTHER INCOME</b>	
<b>EFFECTIVE GROSS INCOME</b>	<b>\$523,800</b>
<b>OPERATING EXPENSES (55%)</b>	<b>(-\$288,090)</b>
<b>RESERVE FOR REPLACEMENTS (5%)</b>	<b>(-\$26,190)</b>
<b>NET OPERATING INCOME</b>	<b>\$209,520</b>
<b>CAPITALIZATION RATE (8%)</b>	<b>{.08}</b>
<b>APPRAISED VALUE</b>	<b>\$2,619,000</b>
<b>VALUE PER UNIT (ROUNDED)</b>	<b>\$26,190</b>



## **DWELLING PERCENT GOOD CDU RATING SYSTEM**

As houses grow older, they wear out; they become less desirable, less useful. This universal decline in value is called depreciation, and appraisers are required to determine the degree of this loss in each property they examine. If all houses deteriorated at the same rate, this decline in value would be a simple function of the age of the structure - a certain percentage per year. However, houses depreciate at varying rates depending on a score or so of variables.

Every building is acted upon by two value reducing forces. One tends to shorten its physical life; the other shortens its economic life. Both forces act concurrently, overlap, and affect each other. A new house, or any type of structure for that matter, has its greatest value at the moment of completion. Its expectancy of life - both physical and economic - is longest on the day the key is handed over by the builder. The building is then most desirable and most useful. The future benefits which the occupant may expect to enjoy are at the maximum. From that day forward, however, decay and wear and tear act to lessen the value of the structure by curtailing its remaining capacity for use.

At the same time the house is "wearing out ", it is also "going out of style". It is becoming less desirable. It is progressively becoming less useful, both from the effect of forces within the property (obsolescence), and outside of it as well (encroachment of undesirable influences such as less desirable property uses).

Neither physical decline nor functional loss are constant in their action. Deterioration is a relatively steady process offset periodically by maintenance. Worn-out elements of the building are repaired or replaced at intervals, depending upon the policy of the owner. Cheaper houses generally deteriorate faster than better ones. Obsolescence and encroachment may come slowly or happen almost overnight. The forces which cause both deterioration and functional/economic depreciation may act and often do act simultaneously, but they are not necessarily related. A house may decline in physical condition, and yet throughout its entire life remain relatively functional.

Obviously enough, the age of a house remains an important factor in estimating accrued depreciation. A certain number of houses will receive "normal" maintenance and will experience "average" economic loss due to obsolescence and functional depreciation. These buildings will depreciate at an average rate as they grow older.

Other houses will lose value at lesser or more rapid rates. CDU Ratings provide a logical reasoning process, by means of which normal age depreciation may be modified according to the appraiser's best determination of the relative loss of value in a structure, as compared with the average loss that might be expected. Thus, the age of a dwelling is an unreliable indicator of the degree of depreciation from its cost new. For houses depreciate not merely because they grow older - but because they wear out and become less desirable and less useful from a variety of causes.

To assist the appraiser in establishing the "CDU Ratings" of buildings, several simple classifications have been established. These classifications or ratings are entirely natural and will fit the normal impressions of the appraiser as he examines a building. Following is a tabulation of CDU Ratings, with their accompanying definitions of the observed physical condition of the building, and its degree of desirability and usefulness for its age and for its type.

**CDU RATING GUIDE**

CDU RATING OF DWELLING	DEFINITION
Excellent	Building is in perfect condition; very attractive and highly desirable
Very Good	Slight evidence of deterioration; still attractive and quite desirable.
Good	Minor deterioration visible; slightly less attractive and desirable, but useful.
Average	Normal wear and tear is apparent; average attractiveness and desirability.
Fair	Marked deterioration - but quite usable; rather unattractive and undesirable
Poor	Definite deterioration is obvious; definitely undesirable, and barely usable.
Very Poor	Condition approaches unsoundness; extremely undesirable and barely usable.
Unsound	Building is definitely unsound and practically unfit for use.

Age is reflected as an index of the normal deterioration and obsolescence in a structure which may be expected over the years. Condition represents a variable measure of the effects of maintenance and remodeling on a building. Desirability is a measure of the degree of appeal a particular building may have to prospective purchasers. Usefulness is a measure of the utility value of the structure for the purpose for which it may be used.

Percent good is defined as the resultant estimate of the diminishing value of an improvement, after subtracting the amount of estimated depreciation from the Replacement Cost New. For example, a structure which is estimated to be 45 percent depreciated as of a given time has a percent good of 55. Therefore, depreciation and percent good are complements of each other. Once the CDU Rating of a building has been established through a consideration of its condition, desirability, and usefulness for its age and its type, reference to the Basic Percent

Good Table will indicate the appropriate value percent remaining for a structure possessing these qualities, in the degree observed and noted by the appraiser.

The degree of deterioration and obsolescence, or loss of value from all causes, both within and without the property, is automatically taken into account. This is accomplished by means of a simple rating of the capabilities and qualities of the structure, in precisely the same terms as would a prospective purchaser. Sound valuation theory presupposes the existence of a prospective buyer with intelligence enough to compare the advantages and disadvantages of competing properties, and to rate the property he is examining according to its relative degree of desirability and usefulness.

## APPLYING THE CDU SYSTEM

To apply the CDU System, the appraiser rates each house according to his composite impression of its relative condition, desirability, and usefulness for its age and type. The following four actual cases illustrate this convenient and practical method of determining percent good in houses.

Case One: A fifteen-year-old single-family residence situated in an attractive residential suburb of a typical American community. Grade "B" with two baths. Minor deterioration is visible: slightly less attractive and desirable than new, but useful. A qualified observer would rate this house above average on the CDU Rating System. Accordingly, our appraiser has assigned it a CDU Rating of "Good". Referring to the table, we find 97% Good would be appropriate.

Case Two: A one story frame house seven years old. Grade "C" or average quality construction: three bedrooms, one and one-half baths. Structure shows normal wear and tear and has average attractiveness and desirability. The appraiser's impression is, "for a seven-year-old Grade "C" house, this would be rated as Average." From the table we find 97% Good is indicated.

Case Three: This century-old Colonial style frame house is located in a New England seaport community; erected 1858. Grade "B" or good quality construction. Building has been extremely well maintained and completely modernized with central heating, electric lighting, and plumbing added. The structure is in good physical condition in spite of its age. Building is architecturally attractive and quite desirable. The appraiser's impression is, "for a very old house of Grade "B" quality, this is an Excellent one ". From the table 90% Good is indicated.

Case Four: A twenty-four-year-old single-family residence of Grade "C" quality; one story and basement, frame construction; three bedrooms with bath. Structure has had normal maintenance and is average in physical condition. Within the past two years, an elevated six-lane expressway passing over the adjoining lot has been erected. This encroachment has seriously detracted from the attractiveness and desirability of the property. Accordingly, the appraiser has assigned a CDU Rating of "Very Poor". From the table 48% Good is indicated.

**DWELLING PERCENT GOOD**

1. Rate the dwelling in terms of its overall condition, desirability, and usefulness.
2. Select the proper percent good relative to its actual age.

**COMMERCIAL/INDUSTRIAL PERCENT GOOD  
COMMON CAUSES OF OBSOLESCENCE**

In the final analysis, an estimate of depreciation or value loss represents an opinion of the appraiser as to the degree that the present and future appeal of a property has been diminished by deterioration and obsolescence. The accuracy of the estimate will be a product of the appraiser's experience in recognizing the symptoms of deterioration and obsolescence and his ability to exercise sound judgment in equating his observations to the proper monetary allowance to be deducted from the replacement cost new. The following tables have been provided as guidelines to assist the appraiser in arriving at the resultant estimate of the diminishing value of improvements after subtracting all forms of depreciation. Following is a listing of some of the most common sources of functional and economic obsolescence which should further assist him in arriving at a reasonable estimate of obsolescence.

**Common Causes of  
Functional Obsolescence**

- Poor ratio of land to building area.
- Inadequate parking, and/or truck and railroad loading and unloading facilities.
- An appearance unattractive and inconsistent with present use and surrounding properties.
- Poor proportion of office, rental, or manufacturing, and warehouse space.
- Inadequate or unsuited utility space.
- Limited use and excessive material and product handling costs caused by irregular and inefficient floor plans, varying floor elevations, inadequate clearance, and cut up interiors with small bays and excessive number of walls, posts and columns.
- Multi-story design when single story would be more efficient and economical.

Effects of corrosion created by manufacturing, processing, or storing of chemicals.

Foundational and structural failures due to poor soil conditions, poor design, excessive loading, poor maintenance, excessive vibration of building and process equipment.

Inadequate power distribution, heating, ventilation, air condition, or lighting systems.

**Common Causes of  
Economic Obsolescence**

- Zoning laws and other governmental regulations which affect the usage and operation of the property.
- Building code requirements which set current acceptable construction standards.
- Market acceptability of the product or services for which the property was constructed or is currently used.

Excessive or deficient floor load capacity.

Insufficient and inadequate elevator service.

High maintenance costs resulting from mixed building constructions and/or the use of obsolete building materials.

Profitability of the operation of the property and the justifiable investment which the business would support.

Termination of the need for the property due to actual or probable changes in economic or social conditions.

## COMMERCIAL DEPRECIATION TABLES

Commercial Depreciation Codes are defined by three characters. All commercial depreciation codes start with character C. The second position character denotes Condition. The last character position identifies Construction Type. Codes are defined as:

<b>Condition</b>		<b>Construction Type</b>	
E	Excellent	W	Wood Frame
G	Good	R	Fire Resistant
A	Average	P	Fire Proof
F	Fair		
P	Poor		
U	Unsound		

# Schedule of Values

# Chatham County 2021

## Fire Resistant Construction

CER		CGR		CAR		CFR		CPR	
Age	Deprec.	Age	Deprec.	Age	Deprec.	Age	Deprec.	Age	Deprec.
01	0%	01	1%	01	2%	01	3%	01	4%
02-03	1%	02	2%	02	3%	02	5%	02	6%
04	2%	03	3%	03	5%	03	6%	03	8%
05-06	3%	04	5%	04	7%	04	8%	04	10%
07	4%	05	6%	05	9%	05	10%	05	12%
08-09	5%	06	7%	06	10%	06	12%	06	14%
10	6%	07	8%	07	12%	07	14%	07	16%
11-12	7%	08	10%	08	14%	08	16%	08	18%
13	8%	09	11%	09	16%	09	18%	09	20%
14-15	9%	10	12%	10	17%	10	19%	10	22%
16	10%	11	13%	11	19%	11	21%	11	24%
17-18	11%	12	14%	12	21%	12	23%	12	26%
19	12%	13	15%	13	22%	13	24%	13	27%
20-21	13%	14	16%	14	23%	14	25%	14	29%
22	14%	15	17%	15	24%	15	26%	15	30%
23-24	15%	16	18%	16	25%	16	27%	16	32%
25	16%	17	19%	17	27%	17	28%	17	34%
26-27	17%	18	20%	18	28%	18	30%	18	35%
28	18%	19	21%	19	29%	19	31%	19	37%
29-30	19%	20-21	22%	20	30%	20	32%	20	38%
31-32	20%	22	23%	21	31%	21	34%	21	40%
33	21%	23	24%	22	32%	22	35%	22	42%
34-35	22%	24	25%	23	33%	23	36%	23	43%
36-37	23%	25	26%	24	34%	24	37%	24	44%
38-39	24%	26-27	27%	25	35%	25	38%	25	45%
40-41	25%	28	28%	26	36%	26	39%	26	46%
42-44	26%	29	29%	27	37%	27	40%	27	48%
45-46	27%	30	30%	28	38%	28	42%	28	49%
47	28%	31-32	31%	29	39%	29	43%	29	51%
48-49	29%	33	32%	30	40%	30	44%	30	52%
50 Up	30%	34	33%	31	41%	31	45%	31	53%
		35	34%	32	42%	32	46%	32	54%
		36-37	35%	33	43%	33	47%	33	55%
		38	36%	34	44%	34	48%	34	57%
		39-40	37%	35	45%	35	49%	35	58%
		41-42	38%	36	46%	36	50%	36	59%
		43-44	39%	37	47%	37	51%	37	60%
		45-46	40%	38	48%	38-39	52%	38	61%
		47	41%	39-40	49%	40	53%	39	62%
		48-49	42%	41-42	50%	41	54%	40	63%
		50 Up	43%	43	51%	42	55%	41	64%
				44-45	52%	43-44	56%	42-43	65%
				46-47	53%	45	57%	44-45	66%
				48-49	54%	46-47	58%	46-47	67%
				50 Up	55%	48-49	59%	48	68%
						50 Up	60%	49	69%
								50 Up	70%
CUR									
Age	Deprec.								
01 Up	90%								







**OTHER BUILDING AND YARD ITEM  
PERCENT GOOD GUIDELINES**

The appraisal of other buildings and yard improvements for both residential and agricultural properties is a difficult task. Other buildings and yard improvements are rarely purchased or sold separately from the balance of the property. The cost of construction of a swimming pool, which is built for the convenience and comfort of a property owner, will rarely add an equivalent amount to the market value of the property. The cost of construction of a farm outbuilding that can be justified by its contribution to the farming operation will again seldom add an equivalent amount to the market value of the property.

In effect, other buildings and yard improvements have value in direct proportion to their degree of utility or usefulness. This is an extension of the principle of contribution, which affirms that the value of any factor in production is dependent upon the amount which it contributes to the overall net return, irrespective of the cost of its construction. Any effective approach to the valuation of other buildings and yard improvements must reflect the action of investors. Informed farm owners and operators would not invest in buildings which could not pay for themselves by either maintaining or adding to the required level of productivity. Homeowners would not invest in swimming pools, detached garages, etc., which would not supply the degree of comfort and/or convenience they desire.

Five individual Percent Good Tables have been developed to assist the appraiser in valuing the various other building and yard improvements that are normally encountered. The following is a list of the five tables.

**Miscellaneous Structures Depreciation**

<b>D1</b>	
AGE	DEPR.
01	10%
02	20%
03	25%
04	30%
05	35%
06	40%
07	45%
08-UP	50%

<b>D2</b>	
AGE	DEPR.
01	5%
02	10%
03	15%
04	20%
05	25%
06	30%
07	35%
08	40%
09	45%
10	50%
11	55%
12	60%
13	65%
14	70%
15-UP	75%

<b>D3</b>	
AGE	DEPR.
00--03	5%
04--06	10%
07--09	15%
10--12	20%
13--15	25%
16--18	30%
19--21	35%
22--24	40%
25--27	45%
28--30	50%
31--35	55%
36--40	60%
41--45	65%
46--50	70%
50--UP	75%

<b>D4</b>	
AGE	DEPR.
00--04	5%
05--08	10%
09--12	15%
13--16	20%
17--20	25%
21--24	30%
25--28	35%
29--32	40%
33--36	45%
37--40	50%
41--44	55%
45--48	60%
49--52	65%
53--56	70%
57--UP	75%

<b>D5</b>	
AGE	DEPR.
00--05	5%
06--10	10%
11--15	15%
16--20	20%
21--25	25%
26--30	30%
31--35	35%
36--40	40%
41--45	45%
46--50	50%
51--55	55%
56--60	60%
61--65	65%
66--70	70%
71--UP	75%

**LAND TYPES AND DESCRIPTIONS**

<b>Land Type</b>	<b>LAND DESCRIPTIONS</b>
B) Primary	Primary Site – site for possible construction of building.
B1) Primary w/ Public Water	Primary Site – same as above but with public water available to site.
S) Secondary	Secondary Site – restricted site for possible construction of building. Example: the site of a second house located behind the main house on a particular parcel.
S1) Secondary w/ Public Water	Secondary Site – same as above but with public water available to site.
U) Undeveloped	Land that is either being actively developed, being prepared for development, or the highest and best use is suitable for and likely to be developed in the near future. Typically located in suburban areas with many active subdivisions and concentrated population centers; but can also be found in rural areas with extra road frontage or pocket areas of construction. Public water and sewer is preferred but is not a requirement.
R) Residual	Land with nominal value, typically land which only has value relative to its contribution to the overall parcel value. Example: an improved parcel which consists of 1 .25 acres, one acre will be classified as a Primary Site with the remaining .25 acres priced as residual land
LU) Land Use	Land segment used for descriptive purposes to identify quantities of land for reference Example can be used to identify the number of Agricultural Land Use acres in a given land segment.

CA) Open Space	Allocation of value to individual properties located in townhouse or condominium developments. Value includes interest in all common areas, e.g. parking areas, pools, tennis courts, etc.
CT) Cell Tower	Land that has a cell tower placed on it.
ZV) Zero Value	Land segment used for descriptive purposes to identify quantities of land for reference. Example- can be used to identify the number of Agricultural Land Use acres in a given land segment.
W) Wasteland	Land which is unsuitable for any practical use. Example: land located under the waters of a river.
WF) Waterfront	Land which directly adjoins a lake- refers to Residential, Commercial and Industrial Improved Building Sites as well as Undeveloped Lots and Acreage tracts.
GC) Golf Course	Course Land – land that is used for golf course, not including club house or extra amenities.
AP) Apartment Improved	Apartment Building Site - includes cost typical site preparation, landscaping and water and sewer access.
CB) Commercial Improved	Commercial Building Site-includes cost of typical site preparation, landscaping and water and sewer system access.
CS) Commercial Secondary	Commercial Building Site - includes cost of minimal site preparation, landscaping, and water and sewer service.
CR) Commercial Residual	Commercial land which has nominal value, typically land which only has value relative to its contribution to the overall parcel value.
CU) Commercial Undeveloped	Vacant Commercial Land which is suitable in size, zoning and location for commercial development.
IB) Industrial Improved	Industrial Building Site - includes cost of typical site preparation, landscaping and water and sewer system access.

IS) Industrial Secondary	Industrial Secondary Site - includes cost of minimal site preparation, landscaping, and water and sewer service.
IU) Industrial Undeveloped	Vacant Industrial Land which is suitable in size, zoning and location for industrial development.
IR) Industrial Residual	Industrial land which has nominal value, typically land which only has value relative to its contribution to the overall parcel value.

## **VALUATION GUIDELINES**

- 1) Rural - Remote or sparsely developed areas of the county where much of the land is being actively farmed or lying idle. Turnover is infrequent; and development is generally limited to major highway intersections and rural hamlet communities. Public water may or may not be available. The majority of homes and businesses in rural areas are served by individual wells and septic systems.
- 2) Suburban - Areas in the county in which development is occurring or has reached equilibrium stage. Includes concentrated communities, surrounding cities, and towns. Pockets of commercial and industrial properties are prevalent. Public water is normally available; and in some cases, sanitary sewer services exist but are not required.
- 3) Urban - Areas within or immediately surrounding cities or towns with a high density of housing, commercial and industrial properties. Land is almost always bought and sold with the intent to develop. Turnover is frequent; and development is rapid. Public water and sewer are readily available.
- 4) Subdivisions - Areas which have been divided into plots with roadways for the purpose of development for residential, commercial or industrial. Subdivisions may have extra restrictions besides governmental restrictions. Public water may or may not be available and in some cases sanitary sewer services exist.

## **DEEDED VS. CALCULATED ACREAGE DISCREPANCIES**

Chatham County is a “Deeded Acreage” county indicating the County Assessor will list all parcels at the acreage as stated on their respective deeds. In accordance with the best practices as recommended by the North Carolina Secretary of State, Land Records Division, the County Assessor may resolve discrepancies between Deeded and Calculated acreages.

## **LAND INFLUENCE FACTORS**

### **GENERAL:**

The technique of land pricing, as described in other sections of this manual, provides for the development of unit land rates for all classes of real property within a given area or neighborhood. These land rates are developed from verified, recent sales and are expected to reflect market value for various prevalent land types as of the effective valuation date for each given area.

Land rates will be developed for parcels in the following Categories:

- Lot
- Square Foot
- Acreage
- Unit Buildable
- Base Value
- Land Use

It is significant to point out that assigned land rates are based on typical or normal conditions for that class of property and land type within a specific neighborhood or area. It is likely that some number of specific parcels, within a neighborhood, will have unique factors affecting the value of that land parcel. These “Land Influences Factors” may affect the value of a specific parcel beneficially or detrimentally. I.E., plus or minus compared to the norm for the neighborhood.

Proper appraisal practice indicates that a land rate adjustment or “Land Influence Factor” should be applied by the review appraiser to properly reflect the unique considerations for a parcel with significant physical or economic characteristics, deviating from the normal conditions reflected by the neighborhood land rates.

The primary goal of a Reappraisal Program is equalization; it is strongly recommended that users of this manual exercise proper judgment and caution in the application of land influence factors.

**Land Influence Factor Guidelines**

**Topography**

This category allows the reviewer's judgment of the degree of difficulty due to poor topography in erecting a suitable improvement on the subject parcel.

Normally if a suitable improvement is present on the subject lot, the topography problem has been corrected. Therefore, an improved lot normally should have no allowance for topography. However, a topography influence may need to be applied in significant cases of un-improved lots or tracts where poor topography represents an actual detriment to the presumed utilization of the parcel.

Topography factors include; irregular land contour, poor drainage, potential subsidence, sub-surface rock ledge, potential erosion, and flood plain areas.

The following is presented as topography factor guide:

**TOPOGRAPHY INFLUENCE FACTOR GUIDE**

	<b>CONDITION</b>	<b>FACTOR</b>
Normal	Problem corrected or not significant.	00%
Slight	Problem is a moderate handicap to full utilization of the lot but is correctable. The lot is buildable but less desirable than typical lots in the area due to topography problem.	10% - 25%
Moderate	Problem is significant but correctable in that it prevents the development of the lot until the topography problem is corrected.	25% - 75%
Severe	The topography problem is so severe it is not economically feasible to develop the lot.	75% - 90%



**Shape or Size**

Shape or size factor is normally a negative adjustment to account for loss of value to a parcel due to highly irregular shape or insufficient size for the presumed utilization of the parcel.

Shape or size factor is a review judgment and may apply to all land types. The basis for any factor is a negative adjustment reducing the subject lot value to the amount and degree of land utility applicable for the presumed utilization.

The following is presented as a shape/size factor guide:

	Condition	Factor
Normal	Shape or size is no significant detriment to the presumed utilization of the parcel.	NONE
Minor	The lot is buildable and/or economically usable for the presumed utilization but irregular shape or insufficient size precludes the full utilization of the parcel.	10% - 25%
Moderate	Irregular shape or insufficient size represents a significant handicap to the presumed utilization and/or development of the land category is restricted to a significant under improvement or under utilization of the parcel.	25% - 75%
Un-Buildable	The shape or size problem is so severe that it renders the land category unusable and/or unbuildable for the presumed utilization. A typical example would be an undersized lot subject to minimum zoning restrictions which effectively prevents any economical utilization.	75% - 90%

**Restrictions**

A negative land influence adjustment for restrictions is applicable for cases where the property is subject to a legal or physical restriction to its utilization. Typical examples would include: utility easements, as power lines and sewer lines. Zoning or deed restrictions to the property, limiting the utilization to a less than normal use for typical lots in the neighborhood.

Physical barriers to the property as bridges, highway medians, fences or abutments.

The following is presented as a land influence factor guide for restrictions:

	CONDITION	FACTOR
Normal	No significant restriction to the property exists.	NONE
Minor	A restriction of moderate significance, legal or physical, exists which causes the property to be less desirable than similar lots in the area which are not subject to this restriction but does not prevent utilization of the property for the presumed use.	10% - 25%
Moderate	A restriction of major significance, legal or physical, exists which causes the property to be restricted to a less than full utilization compared to similar lots in the area, which are not subject to this restriction. An example would be power lines bisecting the lot which prevent the building of a dwelling but would be suitable for a garage or secondary structure.	25% - 75%
Un- Buildable	A restriction of very severe impact, legal or physical, exists which causes the property to be rendered virtually un-buildable or unusable for any significant utilization compared to similar lots in the area which are not subject to this restriction. An example would be a lot rendered non-accessible by a highway right-of-way.	75% - 90%

**Economic Mis-Improvement**

This category is reserved as a reviewer's judgment of the comparative loss of value land (either under-improvement or over-improvement). In essence, this judgment is expressing the appraiser's opinion that the existing structure represents an encumbrance to the full utilization of the land.

The application of a mis-improvement factor for Residential/Agricultural property is possible but very rare. Most instances occur in commercial or industrial situations where market evidence indicates a different economic utilization of the land than the current utilization. It is important to recognize in the application of economic mis-improvement factors that the land is presumed to be valued on the bases of typical "highest and best" utilization and the existing structure is non-contributory to this most economical utilization. Obviously, vacant tracts are not encumbered by any structure; therefore, vacant tracts are not subject to economic mis-improvement factors. Further, the appraiser should recognize that the economic mis-improvement condition is "curable": i.e., if the structure is removed, the previously applied economic mis-improvement factor is normally no longer applicable.

Typical examples include:

Dwellings in areas converting to commercial development, or gross under-improvement, as an old warehouse located in an area where market evidence indicates modern office complex development.

Following is an Economic Mis-Improvement Factor Guide:

	CONDITION	FACTOR
Normal	The property is unimproved (No major structures present) or the existing structure is consistent with the economical utilization of the land.	NONE
Minor	The land is encumbered with a structure that represents an economic mis-improvement and the structure has an assigned value of 25% to 50% of the land value at highest and best use.	25% - 50%
Major	The land is encumbered with a structure that represents an economic mis-improvement and the structure has an assigned value of 50% or more of the land value at the highest and best use.	50% - 75%

**Corner and/or Alley Influence**

This category is reserved for the recognition of the enhancement in land value attributable to the potential utilization of a corner lot, over and above the value of an otherwise comparable inside lot. The enhancement due to the presence of a rear or side alley is normally common to all lots in a given area or block. Therefore, recommended procedure for enhancement due to alley influence, if any, is to consider this factor in the land rate itself.

The amount of enhancement, if any, to a corner lot must be based on the individual merits of each corner location.

Normally, corner influence is not applicable to Residential/Agricultural property. Corner influence factors should be applied to only those cases of commercial or industrial property where the corner is an actual enhancement to the land.

Following is presented as a guide for Corner Influence Factors:

	CONDITION	FACTOR
Normal	The presence of a corner or alley has no significant enhancement effect to the property. Example: The side street has restricted access as a dead-end street.	NONE
Minor	The lot value is moderately enhanced by the presence of corner or alley exposure. Example: Intersection of two secondary streets or a major arterial street and a secondary street.	+10% - +25%
Major	The lot value is significantly enhanced by the presence of corner or alley exposure. Example: The intersection of two major arterial streets.	+25% - +100%

**View Influence**

This factor is normally a positive adjustment for lots or parcels where the land value is significantly enhanced by the presence of a scenic or waterfront view when compared to similar lots in the area where no significant view is present. This factor also applies to golf course lots.

It is highly recommended that the appraiser exercise due caution in the application of view influence. It is useful to remember that while the subject may have an appealing view, if this condition is common to most parcels in the area, then comparatively there is probably no real view enhancement. The appraiser should also consider the permanency of the view, i.e., the probability of potential obstruction.

The following is a View Influence Factor Guide:

	CONDITION	FACTOR
Normal	The view is considered common to the area, and market evidence indicates no actual value enhancement exists.	NONE
Minor	The subject property has a moderate enhancement due to an appealing view, and market evidence: Indicates value enhancement exists.	+10% - +25%
Major	The subject property has a significant enhancement due to an appealing view. Further, the view enhancement is not common to similar lots in the area and there is little or no potential for obstruction of the view by other structures.	+25% -+100%
Negative	For properties with less than normal or typical views, the appraiser should apply negative factors to the affected properties as indicated by market analysis and evidence.	-10% - -75%

**BASE RATE LAND VALUATION TECHNIQUE**

The Base Rate Land Valuation Technique allows the appraiser to establish land rates using either a price per acre, price per square foot or price per lot for each parcel located within an individual neighborhood unit. This method also allows the appraiser to develop base land sizes for each land segment type within the neighborhood.

Incremental/Decremental Rates are developed as a percentage of the Base Land Rates to allow for size adjustments for those parcels which are either smaller or larger than the indicated base sizes established for the neighborhood.

**EXAMPLE 1:**

Neighborhood 0902 North Hickory Mountain

Land Type	Base Size (Acreage)	Base Rate (Per Acre)	Decrement Rate	Increment Rate
AC B	1.00	35000	17500	35000
AC R	20.00	175000	8750	4375

Subject parcel consists of 50 acres, including: an improved one (1) acre building site, and forty (49) acres of residual land. The base rate valuation technique will value the parcel in the following manner:

1 acre Building Site @ \$35,000 per acre	\$ 35,000
49 acres Rural Land @ \$6160 per acre (average) (20 acres @ \$175,000 - 29 acres @ \$4375 per acre)	\$301,840
<b>TOTAL APPRAISED VALUE OF LAND</b>	<b>\$336,840</b>

## Schedule of Values

## Chatham County 2021

EXAMPLE 2:

Neighborhood SC002 Pine Forest South

Land Type	Base Size (Acreage)	Base Rate (Per Acre)	Decrement Rate	Increment Rate
AC B	1.00	90000	45000	90000
AC R	1.00	22500	22500	11250

Subject parcel consists of an improved lot containing .65 acres located within a prominent neighborhood. The base rate valuation technique will value the parcel in the following manner:

Base Size (-) Subject Size = Residual Size  
(1.00 acre) (-) (.65 acres) = (.35 acres)

Residual Size x Decrement = Residual Value  
(.35 acres) x (\$45000/acre) = (\$15750)

Base Rate (-) Residual Value = Appraised Value  
(\$90000/acre) (-) (\$15750) = (\$74250)

Appraised Value/Subject Size = Effective Rate/Acre  
(\$74250) / (.65 acres) = (\$114231)

Subject Site x Effective Rate/Acre = Appraised Value  
(.65 acres) x (\$114231) = (\$74250)

TOTAL APPRAISED VALUE OF LAND

\$74,250

**LAND USE SCHEDULES**

**2021 REAPPRAISAL**

**CHATHAM COUNTY NORTH CAROLINA**

In order to comply with the procedures of North Carolina General Statutes 105-317 (c) “1” and “2” and 105-277.6 (c), Chatham County is required to develop and adopt a land use schedule of values for agriculture, horticulture and forest lands. The purpose of this schedule is to provide a uniform method of valuation based on the present value in use for qualifying lands.

After careful consideration of the available pertinent production statistics for Chatham County, North Carolina and the Use Value Manual for Agricultural, Horticultural and Forest Land prepared by the North Carolina Use Advisory Board. The following schedule of values is recommended as the standard for present use taxation for the 2021 Chatham County, North Carolina Reappraisal.

**LAND USE VALUATION SCHEDULE**

**AGRICULTURAL SCHEDULE (Rate Per Acre)**

UA            All Soils            \$645

**HORTICULTURAL SCHEDULE (Rate Per Acre)**

UH            All Soils            \$890

**FORESTRY SCHEDULE (Rate Per Acre)**

UW            All Soils            \$252

Rates shown are price per acre.

In lieu of detailed soil maps, the rate per class will be applied countywide.

Poundage assessment (allotment) \$1.70/lb of Quota



## **Flood Zone Documentation:**

The purpose of this is to apply flood adjustments to the parcels are located within a FEMA designated flood zone. This will be done in mass. Parcels may need further review by experienced appraisers.

Chatham County has approximately 5000 parcels that are affected in some way by a flood zone. For this exercise we will group the flood zones into the following group:

- Floodway
- 100 Year
- 200 Year

# LEGEND



**SPECIAL FLOOD HAZARD AREAS SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD**

The 1% annual flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V, and VE. The Base Flood Elevation is the water-surface elevation of the 1% annual chance flood.

- ZONE A** No Base Flood Elevations determined.
- ZONE AE** Base Flood Elevations determined.
- ZONE AH** Flood depths of 1 to 3 feet (usually areas of ponding); Base Flood Elevations determined.
- ZONE AO** Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.
- ZONE AR** Special Flood Hazard Area formerly protected from the 1% annual chance flood by a flood control system that was subsequently decertified. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood.
- ZONE A99** Area to be protected from 1% annual chance flood by a Federal flood protection system under construction; no Base Flood Elevations determined.
- ZONE V** Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.
- ZONE VE** Coastal flood zone with velocity hazard (wave action); Base Flood Elevations determined.



**FLOODWAY AREAS IN ZONE AE**

The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.



**OTHER FLOOD AREAS**

- ZONE X** Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.



**OTHER AREAS**

- ZONE X** Areas determined to be outside the 0.2% annual chance floodplain.

**FLOOD ZONE ADJUSTMENT GUIDE**

<b>% IN FLOOD ZONE</b>	<b>1 to 10%</b>	<b>11 to 25%</b>	<b>26 to 50%</b>	<b>51 to 75%</b>	<b>76 to 100%</b>
<b>FLOOD ZONE</b>					
<b>Floodway</b>	<b>5%</b>	<b>10%</b>	<b>25%</b>	<b>40%</b>	<b>60%</b>
<b>100 Year</b>	<b>3%</b>	<b>5%</b>	<b>10%</b>	<b>15%</b>	<b>20%</b>
<b>200 Year</b>	<b>1%</b>	<b>3%</b>	<b>5%</b>	<b>10%</b>	<b>12%</b>

## INCOME APPROACH TO VALUE

The Income Approach includes models for the following property groups:

- Apartments
- Hotels
- Retail Shops/Grocery Stores
- Discount Stores
- Office
- Convenience Stores
- Restaurants
- Manufacturing/Warehouse
- NNN Models
- Mobile Home Parks
- Mini Storage
- Service Shop/Service Garage
- Franchise Drug Store
- Franchise Restaurant
- Franchise Retail
- Medical Office
- Motels
- Nursing Home
- Office/Warehouse
- Shopping Center/Mall

Income and Expense Models are developed for each property group to cover the range of properties located within Chatham County. Income and expense models are based on typical net lease situations. For triple net and other type leases, expense ratios should be adjusted to reflect actual or typical expenses of the landlord in this type of arrangement. Triple net leases have no expenses.

Economic Income is developed on a gross square foot or unit basis. Potential Gross Income is adjusted for occupancy loss to produce an Effective Gross Income. Income and Occupancy factors may be adjusted for exceptional properties on an individual basis.

Expenses for management and marketing, maintenance, utilities, reserve for replacement, property taxes and other operating expenses are specified as a percentage of Effective Gross Income. Expenses are deducted from Effective Gross Income to generate a Net Income, which is then capitalized using direct capitalization.

Income Models include associated capitalization parameters:

- a) Typical financing percentage rates and terms.
- b) Cash on cash requirements.

These capitalization parameters may be adjusted for lower or higher risk properties through an override of the indicated model rates. Capitalization Rates are computed excluding an effective tax rate and applied to the Net Income to generate an indicated value

# Schedule of Values

# Chatham County 2021

## APARTMENTS

MODEL	MONTHLY RENTAL RATE					EXPENSE RATIOS			CAPITALIZATION		
	EFF	1BR	2BR	3BR	4BR	VACANCY	MGMT	EXPENSES	CAP RATE	GRM	MISC
AP1	900	1000	1500	2000	2500	5 - 10%	3 - 10%	25 - 40%	.05 - .07	7-8	\$100.00
AP2	750	900	1100	1400	1700	5 - 10%	3 - 10%	25 - 40%	.05 - .08	7-8	\$100.00
AP3	600	650	850	1000	1200	5 - 10%	3 - 10%	25 - 40%	.06 - .09	6-7	\$100.00
AP4	500	550	650	800	900	10 - 15%	3 - 10%	30 - 50%	.06 - .10	6-7	\$100.00
AP5	400	450	525	700	800	10 - 15%	3 - 10%	30 - 50%	.07 - .11	6-7	\$50.00
AP6	250-Less	300-LESS	400-LESS	500-LESS	600-LESS	15 - 20%	3 - 10%	30 - 50%	.10 - .12	5-6	\$50.00

## HOTELS

MODEL	EFFECTIVE DAILY ROOM RATES		EXPENSE RATIOS			CAPITALIZATION	
	DAILY ROOM RATES		VACANCY	MGMT	EXPENSES	CAP RATE	GRM
H01	\$200 - UP PER NIGHT		35 - 50%	5 - 10%	40 - 60%	.09 - .10	1 - 3
H02	\$150 PER NIGHT		35 - 50%	5 - 10%	40 - 65%	.09 - .10	1 - 3
H03	\$100 PER NIGHT		35 - 50%	5 - 10%	50 - 65%	.10 - .11	1 - 3
H04	\$75 PER NIGHT		35 - 50%	5 - 10%	50 - 65%	.10 - .11	1 - 2

## RETAIL SHOPS/GROCERY STORES

MODEL	ANNUAL SQUARE FOOT RENT		EXPENSE RATIOS			CAPITALIZATION	
	ECONOMIC RENT		VACANCY	MGMT	EXPENSES	CAP RATE	GRM
RE1	\$10 - \$25 PER SQ/FT		5 - 10%	5 - 10%	20 - 40%	.06 - .10	N/A
RE2	\$10 - \$20 PER SQ/FT		5 - 10%	5 - 10%	20 - 40%	.06 - .10	N/A
RE3	\$8.50 - \$15 PER SQ/FT		5 - 10%	5 - 10%	20 - 40%	.06 - .10	N/A
RE4	\$7.50 - \$12.50 PER SQ/FT		5 - 10%	5 - 10%	25 - 50%	.06 - .11	N/A
RE5	\$6 - \$10 PER SQ/FT		10 - 15%	5 - 10%	25 - 50%	.06 - .11	N/A
RE6	\$5 - \$7.50 PER SQ/FT		10 - 15%	5 - 10%	25 - 50%	.06 - .11	N/A

## DEPARTMENT/DISCOUNT STORES

MODEL	ANNUAL SQUARE FOOT RENT		EXPENSE RATIOS			CAPITALIZATION	
	ECONOMIC RENT		VACANCY	MGMT	EXPENSES	CAP RATE	GRM
DS1	\$6 - \$10 PER SQ/FT		3 - 5%	5 - 10%	25 - 40%	.07 - .09	N/A
DS2	\$4 - \$6 PER SQ/FT		3 - 5%	5 - 10%	25 - 40%	.08 - .10	N/A
DS3	\$2.50 - \$4 PER SQ/FT		3 - 5%	5 - 10%	25 - 40%	.09 - .11	N/A

# Schedule of Values

# Chatham County 2021

## OFFICE

ANNUAL SQUARE FOOT RENT		EXPENSE RATIOS			CAPITALIZATION	
MODEL	ECONOMIC RENT	VACANCY	MGMT	EXPENSES	CAP RATE	GRM
OF1	\$20 - UP PER SQ/FT	3 - 5%	3 - 5%	20 - 35%	.06 - .08	N/A
OF2	\$15 - \$20 PER SQ/FT	3 - 10%	3 - 5%	20 - 35%	.06 - .09	N/A
OF3	\$10 - \$15 PER SQ/FT	5 - 10%	5 - 10%	25 - 40%	.07 - .095	N/A
OF4	\$5 - \$10 PER SQ/FT	10 - 15%	5 - 10%	25 - 45%	.08 - .11	N/A
OF5	\$7 - LESS PER SQ/FT	10 - 15%	5 - 10%	25 - 45%	.09 - .11	N/A

## CONVENIENCE STORES

ANNUAL SQUARE FOOT RENT		EXPENSE RATIOS			CAPITALIZATION	
MODEL	ECONOMIC RENT	VACANCY	MGMT	EXPENSES	CAP RATE	GRM
CS1	\$35- UP PER SQ/FT	0 - 5%	5 - 10%	08 - 10%	.08 - .10	N/A
CS2	\$20- \$30 PER SQ/FT	0 - 5%	5 - 10%	10 - 15%	.09 - .11	N/A
CS3	\$12.50- \$20 PER SQ/FT	3 - 5%	5 - 10%	15 - 30%	.09 - .11	N/A
CS4	\$8-\$12.50 PER SQ/FT	5 - 10%	5 - 10%	20 - 30%	.09 - .11	N/A
CS5	\$5 - \$8 PER SQ/FT	5 - 10%	5 - 10%	25 - 40%	.10- .12	N/A

## RESTAURANTS

ANNUAL SQUARE FOOT RENT		EXPENSE RATIOS			CAPITALIZATION	
MODEL	ECONOMIC RENT	VACANCY	MGMT	EXPENSES	CAP RATE	GRM
RS1	\$25 - UP PER SQ/FT	0 - 5%	5 - 10%	20 - 35%	.07 - .09	N/A
RS2	\$15 - \$25 PER SQ/FT	5 - 10%	5 - 10%	25 - 40%	.08 - .10	N/A
RS3	\$10 - \$15 PER SQ/FT	5 - 10%	5 - 10%	25 - 40%	.08 - .10	N/A
RS4	\$6 - \$10 PER SQ/FT	5 - 10%	5 - 10%	25 - 40%	.09 - .11	N/A
RS5	\$4 - \$6 PER SQ/FT	5 - 10%	5 - 10%	25 - 40%	.10- .12	N/A

## MANUFACTURING/WAREHOUSE

ANNUAL SQUARE FOOT RENT		EXPENSE RATIOS			CAPITALIZATION	
MODEL	ECONOMIC RENT	VACANCY	MGMT	EXPENSES	CAP RATE	GRM
MW1	\$7.50 - UP PER SQ/FT	5 - 10%	5 - 10%	25 - 40%	.07 - .09	N/A
MW2	\$4 - \$7.50 PER SQ/FT	5 - 10%	5 - 10%	25 - 40%	.08 - .10	N/A
MW3	\$2.50 - \$4 PER SQ/FT	10 - 15%	5 - 10%	25 - 40%	.08 - .10	N/A
MW4	\$1 - \$2.50 PER SQ/FT	10 - 15%	5 - 10%	40 - 55%	.09 - .11	N/A

## NNN MODELS

ANNUAL SQUARE FOOT RENT		EXPENSE RATIOS			CAPITALIZATION	
MODEL	ECONOMIC RENT	VACANCY	MGMT	EXPENSES	CAP RATE	GRM
NN1	\$20 - \$30 PER SQ FT	0 - 3%	5 - 10%	10 - 15%	.05 - .08	N/A
NN2	\$25 - \$40 PER SQ/FT	0 - 3%	5 - 10%	10 - 15%	.05 - .08	N/A
NN3	\$7.50 - UP PER SQ/FT	0 - 5%	5 - 10%	05 - 10%	.05 - .09	N/A

# Schedule of Values

# Chatham County 2021

## MOBILE HOME PARKS

ECONOMIC RENT		EXPENSE RATIOS			CAPITALIZATION	
MODEL	ECONOMIC RENT PER SITE	VACANCY	MGMT	EXPENSES	CAP RATE	GRM
MH1	\$125 - \$200/MONTH	5 - 10%	5 - 10%	25 - 35%	.08 - .10	5 - 6

## MINI-STORAGE

ECONOMIC RENT		EXPENSE RATIOS			CAPITALIZATION	
MODEL	ECONOMIC RENT PER UNIT	VACANCY	MGMT	EXPENSES	CAP RATE	GRM
MS1	\$75 - UP PER MONTH	10 - 25%	5 - 10%	20 - 35%	.07 - .09	5 - 6
MS2	\$50- \$125 PER MONTH	10 - 25%	5 - 10%	20 - 35%	.07 - .09	5 - 6
MS3	\$25 - \$75 PER MONTH	10 - 25%	5 - 10%	20 - 35%	.08 - .10	5 - 6

## SERVICE SHOP/SERVICE GARAGE

ANNUAL SQUARE FOOT RENT		EXPENSE RATIOS			CAPITALIZATION	
MODEL	ECONOMIC RENT	VACANCY	MGMT	EXPENSES	CAP RATE	GRM
SS1	\$15 - UP PER SQ/FT	5 - 10%	5 - 10%	10 - 15%	.07 - .08	N/A
SS2	\$5 - \$10 PER SQ/FT	5 - 10%	5 - 10%	20 - 35%	.09 - .10	N/A
SS3	\$2.50 - \$4 PER SQ/FT	5 - 10%	5 - 10%	25 - 40%	.10 - .11	N/A

## FRANCHISE DRUG STORES

ANNUAL SQUARE FOOT RENT		EXPENSE RATIOS			CAPITALIZATION	
MODEL	ECONOMIC RENT	VACANCY	MGMT	EXPENSES	CAP RATE	GRM
FD1	\$18 - \$25 PER SQ/FT	3 - 5%	5 - 10%	05 - 10%	.05 - .08	N/A
FD2	\$15 - \$20 PER SQ/FT	3 - 5%	5 - 10%	05 - 10%	.05 - .085	N/A

## FRANCHISE RESTURANTS

ANNUAL SQUARE FOOT RENT		EXPENSE RATIOS			CAPITALIZATION	
MODEL	ECONOMIC RENT	VACANCY	MGMT	EXPENSES	CAP RATE	GRM
FR1	\$25 - \$40 PER SQ/FT	0 - 3%	5 - 10%	10 - 15%	.05 - .08	N/A
FR2	\$15 - \$25 PER SQ/FT	0 - 3%	5 - 10%	10 - 15%	.05 - .09	N/A

## FRANCHISE RETAIL

ANNUAL SQUARE FOOT RENT		EXPENSE RATIOS			CAPITALIZATION	
MODEL	ECONOMIC RENT	VACANCY	MGMT	EXPENSES	CAP RATE	GRM
RF1	\$12.50 - \$20.00 PER SQ/FT	5 - 10%	5 - 10%	05 - 15%	.06 - .08	N/A
RF2	\$7- \$12 PER SQ/FT	5 - 10%	5 - 10%	05 - 15%	.07 - .09	N/A
RF3	\$7.50 - LESS PER SQ/FT	5 - 10%	5 - 10%	05 - 15%	.07 - .09	N/A

# Schedule of Values

# Chatham County 2021

## MEDICAL OFFICES

ANNUAL SQUARE FOOT RENT		EXPENSE RATIOS			CAPITALIZATION	
MODEL	ECONOMIC RENT	VACANCY	MGMT	EXPENSES	CAP RATE	GRM
MD1	\$30 - \$40 PER SQ/FT	5 - 10%	5 - 10%	20 - 30%	.07 - .09	N/A
MD2	\$20 - \$30 PER SQ/FT	5 - 10%	5 - 10%	25 - 35%	.075 - .09	N/A
MD3	\$10 - \$20 - PER SQ/FT	5 - 10%	5 - 10%	25 - 35%	.08 - .10	N/A

## MOTELS

EFFECTIVE DAILY ROOM RATES		EXPENSE RATIOS			CAPITALIZATION	
MODEL	DAILY ROOM RATES	VACANCY	MGMT	EXPENSES	CAP RATE	GRM
MO1	\$125 - UP PER NIGHT	40 - 50%	5 - 10%	40 - 60%	.095 - .10	1 - 3
MO2	\$100 PER NIGHT	40 - 50%	5 - 10%	40 - 60%	.095 - .10	1 - 3
MO3	\$85 PER NIGHT	40 - 50%	5 - 10%	50 - 65%	.10 - .11	1 - 3
MO4	\$65 PER NIGHT	40 - 50%	5 - 10%	50 - 65%	.10 - .11	1 - 2
MO5	\$50 PER NIGHT	40 - 50%	5 - 10%	50 - 70%	.10 - .12	1 - 2
MO6	\$40 PER NIGHT	40 - 50%	5 - 10%	50 - 70%	.10 - .12	1 - 2

## NURSING HOMES

ECONOMIC RENT		EXPENSE RATIOS			CAPITALIZATION	
MODEL	ECONOMIC RENT	VACANCY	MGMT	EXPENSES	CAP RATE	GRM
NH1	\$1100 - \$1500/MONTH	5 - 10%	5 - 10%	40 - 60%	.08 - .10	N/A

## OFFICE/WAREHOUSE

ECONOMIC RENT		EXPENSE RATIOS			CAPITALIZATION	
MODEL	ECONOMIC RENT	VACANCY	MGMT	EXPENSES	CAP RATE	GRM
OW1	\$10 - \$15 PER SQ FT	05 - 10%	5 - 10%	20 - 40%	.075 - .09	N/A
OW2	\$7.50- \$12.50 PER SQ FT	05 - 10%	5 - 10%	20 - 40%	.08 - .10	N/A
OW3	\$4.50 - \$7.50 PER SQ FT	05 - 10%	5 - 10%	20 - 40%	.085 - .10	N/A

## SHOPPING CENTERS/MALL

ANNUAL SQUARE FOOT RENT		EXPENSE RATIOS			CAPITALIZATION	
MODEL	ECONOMIC RENT	VACANCY	MGMT	EXPENSES	CAP RATE	GRM
SC1	\$15 - \$25 PER SQ/FT	5 - 10%	5 - 10%	25 - 50%	.075 - .09	N/A
SC2	\$12.50 - \$20 PER SQ/FT	5 - 10%	5 - 10%	25 - 45%	.08 - .10	N/A
SC3	\$7.50 - \$12.50 PER SQ/FT	5 - 10%	5 - 10%	25 - 45%	.08 - .10	N/A



## Neighborhood Delineation

### Purpose

Neighborhood Delineation is a study of forces from outside which could be considered to have an effect on property value; and conclusions on the typical housing, economic, social and demographic characteristics of the geographic area considered a homogeneous neighborhood. A “neighborhood” for analysis purposes is defined as the largest geographic grouping of properties where the significant economic forces of those properties are generally uniform.

The Neighborhood Data Form serves three (3) main functions:

1. To provide an opinion of the typical structure, economic factors and conditions within an area considered a neighborhood. Appraisers use this information to provide a benchmark to compare each property within the neighborhood with each other.
2. To provide a generally similar geographic area to use as a statistical base for sales comparison, both during the 2021 Reappraisal and years later to measure change and update values accordingly.
3. Provide a basis to allow development of computer assisted land price tables (CALP).

Significant Characteristics Considered:

1. Physical Boundaries
  - a. Natural - as rivers, mountains, woods, streams, etc.
  - b. Manmade - as roads, highways, railroads, streets, corporation boundaries, etc.
2. Housing Characteristics - such as type, quality, age and condition.
3. Occupancy - as % of homes owner-occupied or tenant-occupied, and % of vacant structures.
4. Predominant land use and anticipated changes.
5. Typical land size and land valuation.
6. Neighborhood life cycle.
7. Estimates of market value ranges.

## **INSTRUCTIONS FOR NEIGHBORHOOD DELINEATION FIELD ANALYSIS**

Step 1 - Produce large scale maps for the county, which ideally show all streets, roads and significant physical features as rivers, lakes, railroads, etc.

Step 2 - Establish preliminary neighborhood boundaries on base maps using known physical and governmental features as boundaries. A general rule would be to consider all physical separation points as, rivers, arterial streets, corporation lines, lakes, commercial-industrial areas, highways, etc., as a definite neighborhood boundary.

Step 3 - Assemble and analyze supplementary material for the community as available and useful.

Examples would include:

- Listing of established subdivisions
- Zoning maps and zoning restrictions
- Planning department maps - (master development plans)
- Census Tract Statistics
- School district maps
- Redevelopment planning maps and studies
- Current and planned utility maps (sewer, public water)
- Soil maps, topographic maps, etc.
- Real estate sales data from multiple listing service and internal sales verification letters.
- Industrial plant listing, employment base summaries.

Step 4 - Begin the field inspection process by conducting a thorough, street by street visual inspection throughout the county. Based on physical observation and data collected and analyzed to date, establish individual neighborhood boundaries, recognizing the specific delineation points where the properties begin to represent significant physical and economic changes from adjacent areas.

Step 5 - After establishing boundaries of each neighborhood;

A - Fill out the neighborhood data form and assign an identification number.

B - Post the established neighborhood boundaries and identification numbers to a master map.

Step 6 - Establish final boundaries and permanent neighborhood numbers and post both to the Project Master Map and Individual Field Maps used for field appraisal.

Step 7 - Determine through manual or computerized analysis the comparability of all neighborhoods. The theory here is, even though various neighborhoods may be physically separated, if the predominant value analysis characteristics such as value range, housing characteristics, neighborhood type, etc., are similar, then it is desirable to group similar neighborhoods and thereby create a larger sales data base for comparable property value analysis.

SUMMARY - Keep in mind during the neighborhood analysis process, our primary purpose is to use the neighborhoods established to develop a statistical measuring base for pooling and analyzing sales data, and subsequently using this data to determine market value for individual properties via the comparable market data approach.



*For Baldwin, Williams, New Hope, Cape Fear, and portions of Haw River, Oakland, Center, Albright, Gulf, Hickory Mountain, Matthews, and Hadley Townships*



**ADOPTED: DECEMBER 1, 2008**  
**EFFECTIVE: DECEMBER 2, 2008**

**DATE OF ORDINANCE ADOPTION: DECEMBER 1, 2008**

**EFFECTIVE DATE OF ORDINANCE: DECEMBER 2, 2008**

**ORDINANCE AMENDMENT DATES:**

April 19, 2010

June 21, 2010

February 21, 2011

May 16, 2011

June 6, 2011

September 6, 2011

May 21, 2012

*\*Effective July 1, 2012\**

August 20, 2012

April 15, 2013

May 20, 2013

July 15, 2013

September 16, 2013

February 17, 2014

June 16, 2014

July 21, 2014

November 17<sup>th</sup>, 2014

December 15<sup>th</sup>, 2014

May 18<sup>th</sup>, 2015

January 15<sup>th</sup>, 2016

April 17<sup>th</sup>, 2017

April 16, 2018

January 22, 2019

August 19, 2019

September 16, 2019

April 20, 2020

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**THE CHATHAM COUNTY ZONING ORDINANCE FOR BALDWIN, WILLIAMS,  
NEW HOPE, CAPE FEAR, AND PORTIONS OF HAW RIVER, OAKLAND, CENTER,  
ALBRIGHT, GULF, HICKORY MOUNTAIN, MATTHEWS AND HADLEY  
TOWNSHIPS, CHATHAM COUNTY, NORTH CAROLINA**

AN ORDINANCE PROVIDING FOR THE ZONING OF BALDWIN, WILLIAMS, NEW HOPE, CAPE FEAR, AND PORTIONS OF HAW RIVER, OAKLAND, CENTER, ALBRIGHT, GULF, HICKORY MOUNTAIN, MATTHEWS AND HADLEY TOWNSHIPS, CHATHAM COUNTY, NORTH CAROLINA.

In pursuance of authority conferred by Article 18, Part 3, Zoning of Chapter 153A of the General Statutes of North Carolina and for the purpose of promoting the public health, safety and general welfare; promoting the orderly growth of the jurisdiction; lessening congestion on the roads and streets; securing safety from fire, panic and other dangers; providing adequate light and air; preventing the overcrowding of land; avoiding undue concentration of population; and facilitating the adequate provision of transportation, water, sewage, schools, parks and other public requirements; all in accordance with the adopted Land Use Plan; NOW THEREFORE,

The Board of Commissioners of Chatham County do ordain as follows:

**SECTION 1 TITLE**

This Ordinance shall be known as "The Chatham County Zoning Ordinance for Baldwin, Williams, New Hope, Cape Fear, and portions of Haw River, Oakland, Center, Albright, Gulf, Hickory Mountain, Matthews and Hadley Townships, Chatham County, North Carolina", and may be referred to as "The Zoning Ordinance."

**SECTION 2 JURISDICTION**

The regulations set forth in this Ordinance shall apply within the zoning areas designated on the official zoning maps as established in Section 6 herein for Baldwin, Williams, New Hope, Cape Fear and portions of Haw River, Oakland, Center, Albright, Gulf, Hickory Mountain, Matthews and Hadley Townships, Chatham County, North Carolina.

**SECTION 3 BONA FIDE FARM EXEMPT**

This Ordinance shall in no way regulate, restrict, prohibit or otherwise deter or affect property used for bona fide farm purposes, but any use of farm property for non-farm purposes shall be subject to the regulations of this Ordinance, per North Carolina General Statutes §153A-340(b). For purposes of determining whether a property is being used for bona fide farm purposes, any of the following shall constitute sufficient evidence that the property is being used for bona fide farm purposes:

- a. A farm sales tax exemption certificate issued by the Department of Revenue.
- b. A copy of the property tax listing showing that the property is eligible for participation in the present use value program pursuant to NCGS §105-277.3.
- c. A copy of the farm owner's or operator's Schedule F from the owner's or operator's most recent federal income tax return.
- d. A forest management plan.

A building or structure that is used for agritourism is a bona fide farm purpose if the building or structure is located on a property that (i) is owned by a person who holds a qualifying farmer sales tax exemption certificate from the Department of Revenue pursuant to G.S. 105-164.13E(a) or (ii) is enrolled in the present-use value program pursuant to G.S. 105-277.3. Failure to maintain the requirements of this subsection for a period of three years after the date the building or structure was originally classified as a bona fide purpose pursuant to this subdivision shall subject the building or structure to applicable zoning and development regulation ordinances adopted by a county pursuant to subsection (a) of this section in effect on the date the property no longer meets the requirements of this subsection. For purposes of this section, "agritourism" means any activity carried out on a farm or ranch that allows members of the general public, for recreational, entertainment, or educational purposes, to view or enjoy rural activities, including farming, ranching, historic, cultural, harvest-your-own activities, or natural activities and attractions. A building or structure used for agritourism includes any building or structure used for public or private events, including, but not limited to, weddings, receptions, meetings, demonstrations of farm activities, meals, and other events that are taking place on the farm because of its farm or rural setting.

**SECTION 4 DISTRICTS ESTABLISHED**

In order to achieve the purposes of this Ordinance as set forth above, the jurisdictional area subject to this Ordinance is hereby divided into general use districts of which there shall be 10 with the designation and purposes as listed below:

**R5 Residential district**

Primarily for very low density residential developments along the County's rivers and streams which are compatible with protecting the water quality of the rivers and streams.

**R2 Residential district**

Primarily for low density residential development to protect water supply watersheds

**R1 Residential District**

This district is primarily for low to moderate density residential development within the residential-agricultural areas of the jurisdiction.

**O&I Office and Institutional District**

Primarily for office and institutional type uses along with residences

**B-1 General Business District**

Intended for retail trade and consumer services dealing with the general public; the old district has been split into 3 new districts (NB, CB, and RB, below) that are intended for retail and consumer services, but are scaled to better fit different needs around the County. This district is historical and no parcel or portion of a parcel can be rezoned to this district. Should an applicant for a rezoning wish to rezone to a district with approved land uses listed for this district, the applicant may apply for a rezoning to one of the 3 new business districts (NB, CB, and RB, below).

**NB Neighborhood Business District**

This district is meant to serve a small retail market, roughly equivalent to the trade area of a small (40,000 square foot) grocery store and limited ancillary services. No building within this district shall exceed 40,000 square feet and the cumulative building square footage shall not exceed 160,000.

**CB Community Business District**

This district is similar to the Neighborhood Business District, but at a slightly larger scale, roughly equivalent to a 80,000 square foot grocery store and ancillary services. No building within this district shall exceed 80,000 square feet and the cumulative building square footage shall not exceed 320,000.

**RB Regional Business District**

This district is similar to the old General Business District in that a wider array of uses is allowed and there are not limitations on single-occupant, single-use structure sizes or outdoor storage and display of merchandise.

**IL Light Industrial District**

## Chatham County Zoning Ordinance

Primarily for wholesale activities, warehouses, and light manufacturing operations which do not involve heavy processing activities and which are not likely to create noise, smoke, dust, vibration, heat, odor or other obnoxious effects, controlled or uncontrolled.

### **IH Heavy Industrial District**

Primarily for manufacturing operations involving heavy manufacturing processes such as dyeing, chemical mixing, melting, and stamping but which control such processes so as not to exceed the environmental performance standards of this Ordinance. IH also permits all uses as permitted in the IL District.

**SECTION 5 CONDITIONAL ZONING DISTRICTS**

Conditional Zoning district (bearing the designation CD) corresponds to the general purpose zoning districts and to the mixed use districts as authorized in this ordinance.

**5.1. Purpose**

Conditional Zoning districts are zoning districts in which the development and use of the property is subject to predetermined ordinance standards and the rules, regulations, and conditions imposed as part of the legislative decision creating the district and applying it to the particular property.

Some land uses are of such a nature or scale that they have significant impacts on both the immediate surrounding area and on the entire community, which cannot be predetermined and controlled by general district standards. The review process established in this Ordinance provides for accommodation of such uses by a reclassification of property into a conditional zoning district, subject to specific conditions, which ensure compatibility of the use with neighboring properties. A conditional zoning district is not intended for securing early zoning for a proposal, except when that proposal is consistent with an approved land use plan or the proposal can demonstrate that public infrastructure needed to serve the development will be made available within a reasonable time period.

**5.2 Conditional Zoning Districts**

**A. Residential Districts**

The following districts are identical to the corresponding residential districts, except that approval of a conditional zoning district is required as a prerequisite to any use or development, as provided for in this Ordinance:

CD-R5

CD-R2

CD-R1

**B. Office, Institutional and Commercial Districts**

The following districts are identical to the corresponding commercial districts, except that approval of a conditional zoning district is required as a prerequisite to any use or development, as provided for in this Ordinance:

**CD-O&I** Office & Institutional

**CD-B1** General Business

**CD-NB** Neighborhood Business

**CD-CB** Community Business

**CD-RB** Regional Business

**C. Industrial Districts**

The following districts are identical to the corresponding industrial districts, except that approval of a conditional zoning district is required as a prerequisite to any use or development, as provided for in this Ordinance:

**CD-IL** Light Industrial

**CD-IH** Heavy Industrial



**D. Mixed Use Districts**

Approval of a conditional zoning district shall be required as a prerequisite to any use or development, as provided for in this Ordinance, for the following districts:

**CD-CC Compact Community** – a compact residential development with a mixed commercial use village center. See the Compact Communities Ordinance for more information.

**CD-MU Mixed Use** – a mixed use development that provides for an integration of diverse but compatible uses into a single development.

**5.3. General Requirements**

Property may be rezoned to a conditional zoning district only in response to and consistent with an application submitted in compliance with Section 5.

**A. Application**

Rezoning to a conditional zoning district shall only be considered upon request of the property owner or the authorized agent of the owner. In addition to the documents specified in

**Subsection B** below, all applications shall also contain the following information:

1. The alleged error in this Ordinance, if any, which would be remedied by the proposed amendment with a detailed explanation of such error in the Ordinance and detailed reasons how the proposed amendment will correct the same.
2. The changed or changing conditions, if any, of the area or in the County generally, which make the proposed amendment reasonably necessary to the promotion of the public health, safety and general welfare.
3. The manner in which the proposed amendment will carry out the intent and purpose of any adopted plans or part thereof.
4. The requested amendment is either essential or desirable for the public convenience or welfare.
5. All other circumstances, factors and reasons which the applicant offers in support of the proposed amendment.
6. Information required on the application form received from the Planning Department.

**B. Plans and other information to accompany application**

(1) The application shall include a site plan, drawn to scale, with supporting information and text that specifies the actual use or uses intended for the property and any rules, regulations, and conditions that, in addition to the predetermined ordinance requirements, will govern the development and use of the property. The following information must be provided, if applicable:

- a. Information showing the boundaries of the proposed property as follows:
  1. If the entire parcel will be zoned, a GIS or survey map and parcel number of the subject property.
  2. If only a portion of the parcel will be zoned, a boundary survey and vicinity map showing the property's total acreage, parcel number, current zoning classification(s) and the general location in relation to major streets, railroads, and/or waterways,
- b. Legal Description of proposed conditional zoning district
- c. All existing and proposed easements, reservations, and rights-of-way;
- d. Proposed number and general location of all building sites, their approximate location, and their approximate dimensions;

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- e. Proposed use of all land and structures, including the number of residential units and the total square footage of any nonresidential development;
  - f. All yards, buffers, screening, and landscaping required by these regulations or proposed by the applicant;
  - g. All existing and proposed points of access to public and/or private streets;
  - h. Stream buffers required through this or other Chatham County Ordinances or Regulations, and other Local, State, or Federal regulatory agencies. Delineation of areas within the regulatory floodplain as shown on the Official Flood Insurance Rate Maps for Chatham County
  - i. Proposed phasing, if any;
  - j. Generalized traffic, parking, and circulation plans;
  - k. Proposed provision of utilities;
  - l. The location of known sites of historic or cultural significance within or adjacent to the project area, including any structure over 50 years old;
  - m. The approximate location of any cemetery,
  - n. Proposed number, location, and size of signs;
  - o. Location and description of any proposed lighting on the project site with a note that any lighting will comply with Section 13; and
  - p. The location of existing and/or proposed storm drainage patterns and facilities intended to serve the proposed development, and impervious surface calculations; and
  - q. Environmental Impact Assessment pursuant to Section 11.3 of the Zoning Ordinance, if applicable.
- (2) The Zoning Administrator has the authority to waive any application requirement where the type of use or scale of the proposal makes providing that information unnecessary or impractical.
- (3) In the course of evaluating the proposed use, the Zoning Administrator, Planning Board, Chatham County Appearance Commission, or Board of Commissioners may request additional information from the applicant. This information may include, but not be limited to, the following:
- a. Proposed screening, buffers, and landscaping over and above that required by these regulations, as well as proposed treatment of any existing natural features;
  - b. Existing and general proposed topography;
  - c. Scale of buildings relative to abutting property;
  - d. Height of structures;
  - e. Exterior features of the proposed development;
  - f. A traffic impact analysis of the proposed development prepared by a qualified professional. The traffic impact analysis shall follow the NCDOT TIA Analysis Guidelines, and shall also include consideration for non-motorized and public transportation;
  - g. Any other information needed to demonstrate compliance with these regulations.
- (4) The site plan and any supporting text shall constitute part of the application for all purposes under this section.

**5.4. Uses Within District**

Within a conditional zoning district, only those uses listed (or determined to be equivalent uses) as permitted uses or conditional uses in the corresponding zoning district shall be permitted, and no use shall be permitted except as a conditional use subject to approval of a conditional zoning district rezoning authorized by the Board of Commissioners as provided herein.

**5.5. Conditions**

In approving a reclassification of property to a conditional zoning district, the Planning Department and Planning Board may recommend, and the Board of Commissioners request, that reasonable and appropriate conditions be attached to approval of the rezoning. Any such conditions should relate to the relationship of the proposed use to surrounding property, proposed support facilities such as parking areas and driveways, pedestrian and vehicular circulation, screening and buffer areas, the timing of development, street and right-of-way improvements, water and sewer improvements, stormwater drainage, the provision of open space, and other matters that the Board of Commissioners may find appropriate or the applicant may propose. Such conditions to approval of the rezoning may include dedication to the County or State, as appropriate, of any rights-of-way or easements for roads, water, or other public utilities necessary to serve the proposed development. The applicant shall have a reasonable opportunity to consider and respond to any such conditions prior to final action by the Board of Commissioners.

**5.6. Non-compliance with District Conditions**

Any violation of a use or condition included in the approval of a conditional zoning district shall be treated the same as any other violation of this Ordinance and shall be subject to the same remedies and penalties as any such violation. Any violation of such a condition shall be deemed to be the same type of violation as the use of a property for a use not permitted under the district regulations, for the reason that any use permitted in a conditional zoning district is permitted only subject to the specified conditions.

**5.7. Procedure**

Applications for new conditional zoning districts or expansion of existing Conditional Zoning Districts shall be processed, considered and voted upon using the following procedure. Before filing an application for a conditional zoning district, the applicant(s) is encouraged to meet with the Planning Department staff to discuss the nature of the proposed reclassification, the standards for development under the existing and proposed classifications, and concerns that persons residing in the vicinity of the property may have regarding the proposed reclassification, if known.

**A. Community Meeting**

- (1) The applicant is required to hold a community meeting prior to the application deadline for a conditional zoning district rezoning. The applicant shall provide mailed notice of the meeting.

- a. Notice of the meeting shall be provided to owners of abutting property, as listed with the Chatham County Tax Department, and include properties directly across a street, easement or public or private right of way.
  - b. Notice may be sent to additional properties by the applicant.
  - c. At a minimum, the notice shall be sent by standard mail and be postmarked at least fourteen (14) days prior to the date of the community meeting. Additional types of notice may be provided by the applicant.
- (2) A written report of the community meeting shall be included as part of the application packet.
- a. The written report of the meeting shall include a listing of those persons and organizations contacted about the meeting and the manner and date of contact, the time, date, and location of the meeting, a roster of the persons in attendance at the meeting, a summary of issues discussed at the meeting, and a description of any changes to the rezoning application made by the applicant as a result of the meeting.
  - b. In the event the applicant has not held at least one meeting pursuant to this subsection, the applicant must file a report documenting efforts that were made to arrange such a meeting and stating the reasons such a meeting was not held. The adequacy of the meeting held or a report filed pursuant to this subsection shall be considered by the Board of Commissioners, but shall not be subject to judicial review.
- (3) Revisions to existing Conditional Zoning Districts and existing Conditional Use Permits shall not require a community meeting if the physical boundaries of the district or permit are not proposed to be expanded.

**B. Chatham County Appearance Commission Review**

The applicant is required to meet with the Chatham County Appearance Commission for review of landscaping and signage plans prior to submittal to the Planning Department. The Appearance Commission shall have forty-five (45) days from the date of submittal to forward a recommendation to the applicant and Planning Department. The submittal date shall be seven (7) days prior to the date of the Appearance Commission meeting.

**C. Submittal to Planning Department**

- (1) A completed application and supporting information shall be submitted to the Planning Department at least forty-five (45) days prior to the Public Hearing. A digital copy of the application and all accompanying materials shall be submitted pursuant to the Planning Department Digital Document Submission Guidelines.
- (2) The Planning Department shall, before scheduling the public hearing, ensure that the application contains all the required information as specified in Section 5.
- (3) The Planning Department shall have fifteen (15) days from the date of submittal to notify the applicant that the application is complete for scheduling the public hearing.
  - a. If the Planning Department determines the information is not sufficient for review, the Department shall notify the applicant of the specific information that is required for review.
  - b. The Planning Department shall take no further action on the application until the applicant submits the required information.
  - c. Once the applicant corrects the identified deficiencies, the applicant shall resubmit to the Planning Department at least 45 days prior to the next Public Hearing meeting,

and the Department shall have 15 days to review the information and notify the applicant that the information is sufficient for review.

- d. A determination that an application contains sufficient information for review as provided in this subsection (b) does not limit the ability of other county agencies, the Planning Board or the Board of Commissioners to request additional information during the review process.
- (4) The application is reviewed by the Technical Review Committee prior to the Public Hearing for comments and recommendations from other agencies.

**D. Joint Public Hearing by Board of Commissioners and Planning Board**

- (1) The Board of Commissioners and Planning Board shall receive public comment on Conditional Zoning District applications in a public hearing at the County Commissioners' last regular meeting in January, February, March, April, May, June, August, September, October, and November.
- (2) The lack of quorum of the Planning Board at such meetings shall not affect the proceedings nor require further hearings.
- (3) Notice of the public hearing shall be given according to State law. At a minimum, the following notice shall be provided:
  - a. A notice of the public hearing shall be prominently posted on the site proposed for the Conditional Zoning District or on an adjacent public street or highway right-of-way. When multiple parcels are included in the proposed Conditional Zoning District, a posting on each individual parcel is not required, but sufficient notices shall be posted to provide reasonable notice to interested parties.
  - b. Mailed notice shall be sent to adjoining properties pursuant to State law.
  - c. Published notice of the hearing shall be given pursuant to State law.
- (4) The Board of Commissioners may continue the Public Hearing in order to receive more public input or requested information from the applicant.

**E. Planning Board and Board of Commissioners Action**

Once the Public Hearing is closed by the Board of Commissioners, the Planning Board and Board of Commissioners shall review the application pursuant to the procedure outlined in Sections 19.6 – 19.11.

**5.8 Effect of Approval**

- A. If an application for conditional zoning is approved, the development and use of the property shall be governed by the predetermined ordinance requirements applicable to the district's classification, the approved site plan for the district, and any additional approved rules, regulations, and conditions, all of which shall constitute the zoning regulations for the approved district and are binding on the property as an amendment to these regulations and the zoning maps.
- B. If an application is approved, only those uses and structures indicated in the approved application and site plan shall be allowed on the subject property. A change of location of any structures may be authorized pursuant to Section 5.9.
- C. Following the approval of a rezoning application for a conditional zoning district, the subject property shall be identified on the Zoning Map by the appropriate district designation.
- D. Any conditional zoning district shall have vested rights pursuant to Section 19.11.

**5.9 Alterations to Approval**

- A. Except as provided in Section 5.9(B), changes to the approved conditional zoning district application or to the conditions attached to the approval shall be treated the same as a new application for a conditional zoning district and shall be processed in accordance with the procedures in Section 5.7.
- B. The Zoning Administrator shall have the delegated authority to approve an administrative amendment change to an approved site plan. The standard for approving or denying such a requested change shall be that the change does not significantly alter the site plan or its conditions and that the change does not have a significant impact upon abutting properties. Any changes that increase the intensity of the development are limited for nonresidential development to 10% of the approved building square footage or 5,000 square feet, whichever is less. For residential development, increases in density are not allowed as an administrative change.
- C. The Zoning Administrator shall always have the discretion to decline to exercise the delegated authority because a rezoning application for a public hearing and Board of Commissioners action is deemed appropriate under the circumstances. If the Zoning Administrator declines to exercise this authority, then the applicant can only file a rezoning application for a public hearing and Commissioner decision.

**SECTION 6 OFFICIAL MAPS ADOPTED - DISTRICT BOUNDARIES ESTABLISHED**

**6.1. Zoning Map**

The location and boundaries of zoning districts shall be as kept in spatial databases entitled "Zoning" and "Zoning Overlays" that are maintained as part of the County's geographic information system (GIS) under the direction of the Planning Director, or designee. This depiction of zoning boundaries along with additional reference data in the GIS shall constitute the Official Zoning Map for the County's zoning jurisdiction, and is adopted into this Ordinance by reference. The County Clerk, as applicable, may upon validation by the Planning Director, or designee, certify a paper copy of the Official Zoning Map, or portions of the map, as a true and accurate copy of the Official Zoning Map, or a portion thereof, under the authority of G.S. 160A-79(b) and G.S. 153A-50.

The Planning Director, or designee, shall revise the Official Zoning Map when amendments are passed by the governing body in accordance with Section 17, Amendment to Zoning Ordinance. The Planning Director, or designee, shall correct errors in the map as they are discovered.

No unauthorized person may alter or modify the Official Zoning Map. Errors in the Official Zoning Map shall be corrected as they are discovered, and the corrected information shown on the GIS system.

The Planning Director, or designee, may authorize printed copies of the Official Zoning Map to be produced, and shall maintain digital or printed copies of superseded versions of the Official Zoning Map for historical reference.

**6.2. Interpretation of Boundaries**

The Planning Director, or designee, may authorize periodic changes to the boundaries of the Official Zoning Map in conformance with this section. Interpretations of zone boundaries may be appealed to the Board of Adjustment.

**A. Boundaries That Follow Lot Lines**

A boundary shown on the Official Zoning Map as following a lot line or parcel boundary shall be construed as following the lot line or parcel boundary as it actually existed at the time the zoning boundary was established, as shown on maps submitted or used when the boundary was established.

If, subsequent to the establishment of the zoning boundary, a minor property line adjustment is made, such as from settlement of a boundary dispute, the zoning boundary shall be construed to move with the lot line or parcel boundary if the adjustment is less than ten feet.

**B. Boundaries That Do Not Follow Lot Lines**

Where the ordinance establishing a zoning boundary identifies the boundary as following a particular natural feature such as a ridgeline, contour line, a river, stream, lake or other water course, or reflects a clear intent that the boundary follow the feature, the boundary shall be construed as following that feature as it actually exists. If, subsequent to the establishment of the boundary, such natural feature should move as a result of natural processes (slippage, subsidence, erosion, flooding, sedimentation, etc.), the boundary shall be construed as moving with the natural feature.

## Chatham County Zoning Ordinance

A boundary shown on the Official Zoning Map as approximately following a street or railroad line shall be construed as following the centerline of the street or railroad right-of-way. If, subsequent to the establishment of the boundary, the centerline of the street or railroad right-of-way should be moved as a result of its widening or a minor realignment (such as at an intersection), the boundary shall be construed with moving with the centerline only if the centerline is moved no more than 25 feet.

A boundary shown on the Official Zoning Map as approximately parallel to, or as an apparent extension of, a feature described above shall be construed as being actually parallel to, or an extension of, the feature.

If a zoning boundary splits an existing lot or parcel, the metes and bounds description, if one was submitted at the time the zoning boundary was established, shall be used to establish the boundary.

If the specific location of the boundary cannot be determined from application of the above rules to the Official Zoning Map, it shall be determined by scaling the mapped boundary's distance from other features shown on the map.



**SECTION 7      DEFINITIONS**

**7.1.    General Purpose**

For the purpose of this Ordinance certain words and terms used herein are defined as herein indicated. All words used in the present tense shall include the future tense; all words in the singular number shall include the plural number; all words in the plural number shall include the singular number unless the natural construction of the wording indicates otherwise; words in the male gender include the female gender; all words not defined in this section shall carry the definition prescribed in the common dictionary.

**7.2.    Definitions**

**Accessory Building** - A detached subordinate building the use of which is incidental to that of the principal building and located on the same lot therewith.

**Accessory Dwelling Unit** (i.e. guest house, pool house, garage apartment, in-house apartment) - An accessory dwelling unit that is smaller than the principal residential dwelling. The accessory dwelling unit is situated on the same lot as the principal residence and may be located within the principal residence or in a separate building with a separate access. The accessory dwelling unit is restricted to 1,500 square feet of heated living space. The use is to conform to the character of the existing structures and neighborhood, i.e. mobile homes are not allowed as an accessory dwelling unit on lots smaller than 80,000 square feet.

**Accessory Structure** - A detached subordinate structure, the use of which is incidental to that of the principal structure and located on the same lot therewith.

**Accessory Use** - Any use which is clearly incidental, secondary, and/or supportive of a principal use.

**Accessory Use Sign** - Any sign which is located on the same premises with a principal permitted use and which are clearly incidental, secondary and/or supportive of the principal use.

**Adult Arcade** - Any place to which the public is permitted or invited wherein coin-operated or slug-operated or electronically, electrically, or mechanically controlled still or motion picture machines, projectors, or other image-producing devices are maintained to show images to five or fewer persons per machine at any one time, and where the images so displayed are distinguished or characterized by the depicting or describing of Specified Sexual Activities or Specified Anatomical Areas.

**Adult Cabaret** - A business operating in a building or portion of a building regularly featuring dancing or other live entertainment if the dancing or entertainment that constitutes the primary live entertainment is distinguished or characterized by an emphasis on the exhibiting of specified sexual activities or specified anatomical areas for observation by patrons therein.

**Adult Escort** - A person who, for consideration, agrees or offers to act as a companion, guide, or date for another person for the purpose of participating in, engaging in, providing, or facilitating Specified Sexual Activities.

**Adult Escort Agency** - A person or business that furnishes, offers to furnish, or advertises to furnish adult escorts as one of its business purposes for a fee, tip, or other consideration.

**Adult Media Store** -A business: (a) Which receives a majority of its gross income during any calendar month from the sale or rental of publications (including books, magazines, other periodicals, videotapes, compact discs, other photographic, electronic, magnetic, digital, or other imaging medium) which are distinguished or characterized by their emphasis on matter depicting, describing, or relating to Specified Sexual Activities or Specified Anatomical Areas, as defined in this article; or (b) Having as a preponderance (either in terms of the weight and importance of the material or in terms of greater volume of materials) of its publications (including books, magazines, other periodicals, videotapes, compact discs, other photographic, electronic, magnetic, digital, or other imaging medium) which are distinguished or characterized by their emphasis on matter depicting, describing, or relating to Specified Sexual Activities or Specified Anatomical Areas.

**Adult Merchandise** - Any product dealing in or with explicitly sexual material as characterized by matter depicting, describing, or relating to Specified Sexual activities or Specified Anatomical Areas.

**Adult Mini Motion Picture Theater** - An enclosed building with viewing booths designed to hold patrons which is used for presenting motion pictures, a preponderance of which are distinguished or characterized by an emphasis on matter depicting, describing, or relating to specified sexual activities or specified anatomical areas. A booth shall not mean a theater, movie house, playhouse, or a room or enclosure or portion thereof that contains more than 600 square feet.

**Adult Motel** - A hotel, motel or similar commercial establishment that offers accommodation to the public for any form of consideration and: (a) Provides patrons with closed-circuit television transmissions, films, motion pictures, video cassettes, slides, or other photographic reproductions that are characterized by the depiction or description of Specified Sexual Activities or Specified Anatomical Areas; and has a sign visible from the public rights-of-way that advertises the availability of this adult type of photographic reproductions; or (b) Offers a sleeping room for rent for a period of time that is less than six hours; or (c) Allows a tenant or occupant of a sleeping room to sub-rent the room for a period of time that is less than twelve hours.

**Adult Motion Picture Theater** - A commercial establishment where, for any form of consideration, films, motion pictures, videocassettes, slides, or similar photographic reproductions are regularly shown as one of its principal business purposes that depict or describe specified sexual activities and/or specified anatomical areas.

**Adult Patron** - Any person who is physically present on the premises of a sexually oriented business and who is not an owner, employee, agent, subcontractor, or independent contractor of said business, or any entertainer or performer at said business.

**Adult Theater** - A theater, concert hall, auditorium, or similar commercial establishment which regularly features, exhibits, or displays as one of its principal business purposes, persons who appear in a state of nudity or semi-nudity, or live performances that expose or depict specified anatomical areas and/or specified sexual activities.

**Agriculture** - For purposes of this Ordinance the terms "agriculture", "agricultural", and "farming" refer to all of the following:

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- (1) The cultivation of soil for production and harvesting of crops, including but not limited to fruits, vegetables, sod, flowers and ornamental plants.
- (2) The planting and production of trees and timber.
- (3) Dairying and the raising, management, care, and training of livestock, including horses, bees, poultry, and other animals for individual and public use, consumption, and marketing.
- (4) Aquaculture as defined in G.S. 106-758.
- (5) The operation, management, conservation, improvement, and maintenance of a farm and the structures and buildings on the farm, including building and structure repair, replacement, expansion, and construction incident to the farming operation.
- (6) When performed on the farm, "agriculture", "agricultural", and "farming" also include the marketing and selling of agricultural products, agritourism, the storage and use of materials for agricultural purposes, packing, treating, processing, sorting, storage, and other activities performed to add value to crops, livestock, and agricultural items produced on a farm, and similar activities incident to the operation of a farm.

**Animal Husbandry, Specialized** - The use of land for the raising and keeping of animals, fowl, reptiles, etc. which are not general livestock or poultry and not classified as a bona fide farm. Specialized animal husbandry farming includes but is not limited to the following: fur-bearing animal farms, game bird farming and animal farms, wild animal farms, aviaries, snake, alligator and frog farms, laboratory animal farms, worm farms, and fish farms.

**Apartment Buildings** - A building containing three (3) or more residential dwelling units that are not on their own individual lot. Such units may be leased separately or developed as condominiums.

**Apartment Complex** – A grouping of two or more apartment buildings.

**Attached Sign** - Any sign attached to, painted on the wall surface of, or erected and confined within the limits of the outside wall of any building or structure, which is supported by such wall or building.

**Auto Wrecking** - A commercial activity that provides open storage, disassembling, or salvaging for more than two junked motor vehicles.

**Avocational Farming** - The use of land for those activities which constitute farming, but does not meet the definition of a bona fide farm.

**Awning** - A structure made of cloth, metal, or other material affixed to a building in such a manner that it shades windows or doors below, but is not a constructed canopy.

**Banner Sign** - A sign of lightweight fabric or similar material which is attached to a pole or a building, structure and/or vehicle by any means. National, state or municipal flags shall not be considered banners.

**Bed and Breakfast Home** - Owner-occupied bed and breakfast homes with no more than two (2) rooms (units) for rent for stays no longer than seven (7) consecutive days and may be located

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on legal, non-conforming and conforming lots of record, on at least one and one half (1.5) acres, which may have standard setbacks as set in the district in which it is located.

**Bed and Breakfast Inn** - Small, owner-operated businesses where the owner usually lives on premises, but is not required to do so. The building's primary usage is for lodging of overnight guests and meals served in conjunction with the stay of guests. Inns advertise, have business licenses, comply with government ordinances, pay all appropriate taxes and post signs. The inn may host events such as weddings, small business meetings, et cetera, with up to 8 overnight rooms for rent to overnight guests, provided all other local and state requirements are met.

**Board of Commissioners** – The Chatham County Board of Commissioners.

**Bona Fide Farm** - The use of land for agriculture as defined in Section 3 of this Ordinance.

**Building** - Any structure having a roof supported by walls or columns constructed or used for residence, business, industry or other public or private purposes.

**Building Height** - The vertical distance measured from the average elevation of the finished grade to the topmost section of the roof.

**Building Line** - A line perpendicular to the lot depth which establishes the horizontal distance between the structure and the front property line excluding the outermost steps, uncovered porches, gutters, and similar features.

**Canopy** - A permanent structure, not enclosed and not retractable, attached or unattached to a building, for the purpose of providing shelter to patrons or automobiles, or as a decorative feature on a building wall.

**Churches** – see Place of Worship.

**Commercial Design Guidelines** - The Chatham County Commercial Design Guidelines and Section 12 of this Ordinance.

**Common Area** - All areas, including private streets, conveyed to an owners' association in a townhouse development, residential development, or owned on a proportional undivided basis in a condominium.

**Common Plan of Development** – A group of two or more buildings constructed, planned and developed with a unified design including coordinated parking and service areas, and may include associated out parcels. Shopping centers are examples of common plans of development.

**Compact Community** – A compact residential development with a mixed commercial use village center with a conditional use permit required as a prerequisite to any use or development.

**Concealed Wireless Facility** – Any tower, ancillary structure, or equipment compound that is not readily identifiable as such, and is designed to be aesthetically compatible with existing and proposed building(s) and uses on a site.

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There are two (2) types of concealed facilities: 1) Antenna Attachments, including painted antenna and feed lines to match the color of a building or structure, faux windows, dormers or other architectural features that blend with an existing or proposed building or structure and 2) Freestanding. Freestanding concealed tower's usually have a secondary, obvious function which may include church steeple, bell tower, clock tower, light standard, flagpole, or tree.

**Conditional Use** - A use which is permitted in a district only if a conditional use permit therefore is expressly authorized by the Board of Commissioners.

**Conditional Zoning District** - A zoning district in which the development and the use of the property included in the district is subject to the predetermined ordinance standards and the rules, regulations, and conditions imposed as part of the legislative decision creating the district and applying it to the particular property.

**Condominium** - A form of property ownership whereby the owner gains ownership of an interior space within a building. The building structure, the land under the building, and all of the surrounding land is commonly owned by all the inhabitants on a proportional basis.

**Congregate Care Facility** - A facility providing shelter and services for ambulatory individuals at least 55 years of age who by reason of their age, functional impairment, or infirmity may require meals, housekeeping and personal care assistance. Congregate Care Facilities do not include nursing homes or similar institutions devoted primarily to the care of the chronically ill or the incurable.

**Corner Lot** - A lot abutting two or more streets at their intersection. The front of the lot shall be the portion on the highest order road, or when road types are equal, the length with the most frontage. Where there are equal frontage portions the owner shall designate the front.

**Directional Sign** - A sign which has use incidental to the use of the zone lot on which it is located, such as "no parking", "entrance", "loading only", "telephone", and other similar directives, and may include certain signs with commercial messages that are not legible from a location off the lot.

**District** - Any section of the zoning jurisdiction in which zoning regulations are uniform.

**Dwelling Unit** - A dwelling or that portion of a multi-family dwelling used or designed as a residence for a single family.

**Duplex** - See two-family dwelling.

**Environmental Impact Assessment** – A document that must be prepared for any proposed development project that is subject to and meets the criteria in either Section 6.2 of the Subdivision Regulations or Section 11.3 of the Zoning Ordinance which discusses the potential environmental impact of the proposed project and the methods proposed to mitigate or avoid significant adverse environmental impacts.

**Environmental Impact Statement** – A document that must be prepared pursuant to the National Environmental Policy Act of 1969, or the North Carolina Policy Act of 1971, regarding

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proposed federal or certain State actions respectively that significantly affect the quality of the human environment.

**Events Center Limited** – A venue to allow for various gatherings such as weddings, receptions, arts and crafts shows, corporate meetings, outdoor movies (no drive ins), etc. on a smaller scale and which can be indoor or outdoor or a combination thereof. Please refer to Section 17.7 of this Ordinance for further standards. All other standards of this Ordinance shall also apply.

**Family** - One or more persons occupying a dwelling unit and living as a single household.

**Family Care Home** - A home as defined by NCGS § 168-21 with support and supervisory personnel that provides room and board, personal care and habilitation services in a family environment for not more than six resident persons with disabilities.

**Family Subdivision** - Family subdivision means one or more divisions of a tract of land (a) to convey the resulting parcels, with the exception of parcels retained by the grantor, to a relative or relatives of direct lineage, or to the surviving spouse, if any, of any deceased lineal descendant, as a gift or for nominal consideration, but only if no more than one parcel from such tract is conveyed by the grantor to any one relative or such relative's surviving spouse; or (b) to divide land from common ancestor among tenants in common, all of whom inherited by intestacy or by will. This provision shall apply only where the grantor or decedent already owned the land so divided before January 1, 1994.

**Farming** - See Agriculture.

**Fence** - A physical barrier or enclosure consisting of wood, stone, brick, block, wire, metal or similar material used as a boundary or means of protection or confinement, but not including a hedge or other natural growth.

**Forestry Plan** - A document related to the management of forest resources, generally written by a North Carolina State Forester or a Certified Forestry Consultant. Such plan shall include forest management practices to insure both maximum forest productivity and environmental protection of the lands to be treated under the management plan (see N.C.G.S § 113A 178).

**Freestanding Sign** - A non-movable sign which is entirely supported by one or more uprights, poles, braces or base in or upon the ground.

**Frontage** - That side of a lot abutting on a street.

**Front Setback** - Any setback from a street or road, as measured from the edge of the public right-of-way or edge of access easement.

**Group Care Home** – A facility licensed by the State of North Carolina, other than a Family Care Home, with support and supervisory personnel that provides room and board, personal care or habilitation services in a family environment for more than six resident persons with disabilities.

**Guest House, Pool House or Garage Apartment** - See Accessory Dwelling Unit.

**Home Occupation** - Any use conducted on residential premises and carried on by the occupants thereof, and which use is incidental and secondary to the use of the premises for residential purposes and does not change the character thereof.

**Hotel (also motels and inns)** – Structures/buildings with individual rooms for rent. Rooms may include suites with kitchenettes for extended stays and may provide area for eating and drinking establishments and personal service facilities within the principle structure.

**Informational Sign** - Any sign which contains no commercial or advertising message that is located on-site providing information as required by regulatory authorities and/or other public entity. These include, but are not limited to, “No Parking,” “Loading/Unloading Zone,” “Keep off Grass” and “No Smoking.”

**Junked Motor Vehicle** - A motor vehicle that does not display a current license plate and is one of the following: 1) partially dismantled or wrecked; or 2) cannot be self-propelled or moved in the manner in which it originally was intended to move; or 3) more than five years old and appears to be worth less than \$500.00.

**Junk/Salvage Yard** - Any land or area used, in whole or in part, for the storage, keeping, or accumulation of material, scrap metals, waste paper, rags, or other scrap materials, or used building materials or for the dismantling, demolition or abandonment of automobiles or other vehicles or machinery or parts thereof.

**Land Clearing and Inert Debris Landfill** - Land areas of greater than one-half acre in size, for the deposit of inert materials and land clearing materials including gravel, rocks, stumps, soil (not contaminated by petroleum products), unpainted and untreated building materials such as bricks, concrete blocks and lumber. Personal home-owners use of inert debris landfill materials (beneficial fill) not to exceed two (2) acres in size be exempt from requiring a conditional use permit. Commercial inert debris landfills or any that exceed two (2) acres in size will require a conditional use permit.

**Land Use Plan** – Any Comprehensive Land Use Plan adopted by Chatham County, as well the Chatham-Cary Joint Land Use Plan.

**Live-Work Unit** - See Mixed Use Building.

**Lot** - A portion of a subdivision or any other parcel of land intended as a unit for transfer or ownership or for development or both. The word "lot" includes "plot", "parcel", or "tract".

**Lot Depth** - The distance along the perpendicular bisector of the lot.

**Lot of Record** - A lot, plot, parcel or tract recorded in the Office of the Register of Deeds in conformance with the ordinance in effect at the time of recording.

**Lot Width** - The width measured at right angles to its depth at the widest point of the lot.

**Manufactured Dwelling** - A dwelling that 1) is composed of one or more components, each of which was substantially assembled in a manufacturing plant and designed to be transported to the home site on its own chassis; 2) exceeds 40 feet in length and eight feet in width; 3) is constructed in accordance with the National Manufactured Home Construction and Safety Standards; and 4) is not constructed in accordance with the standards of the North Carolina Uniform Residential building Code for one- and two-family dwellings.

**Major Utility** - All utility facilities other than minor utilities. Includes public utilities serving regional areas and public utility service and storage yards. Examples include, but are not limited to, electrical substations and wastewater treatment plants. This definition excludes public utility transmission lines.

**Minor Utility** - Any above-ground structures or facilities owned by a governmental entity, a nonprofit organization or corporation used in connection with the transmission, delivery, collection, or storage of water, sewage, electricity, gas, oil, or electronic signals. Minor utilities are necessary to support development within the immediate vicinity and involve only minor structures. Examples include, but are not limited to, pump stations, community well houses and above ground utility cabinets. Excepted from this definition are Major Utilities.

**Mixed Use Building** - Small commercial enterprises with the ground floor (and optionally second floor) occupied by commercial uses and a residential unit or units above. Commercial space may be a home-based business or may be leased independently.

**Modular Dwelling** - A dwelling constructed in accordance with the standards set forth in the NC State Residential Building Code and composed of components substantially assembled in a manufacturing plant and transported to the building site for final assembly on a permanent foundation.

**Multi-Family Dwelling** - A residential use consisting of a building designed or constructed to contain more than one dwelling unit, including apartments and condominiums. This definition does not include two-family (duplex) dwellings.

**Non-conforming Building or Structure** - A non-conforming situation that occurs when the height of a structure or the relationship between an existing building or buildings and other buildings or lot lines do not conform to the dimensional regulations applicable to the district in which the property is located.

**Non-conforming Lot of Record** - A lot existing at the effective date of this Ordinance or any amendment to it (and not created for the purpose of evading the restrictions of this Ordinance) that cannot meet the minimum area and/or lot width requirements of the district in which the lot is located.

**Non-conforming Situation** - A situation that occurs when, on the effective date of this Ordinance or any amendment to it, an existing lot or structure or use of an existing lot or structure does not conform to one or more of the regulations applicable to the district in which the lot or structure is located. A non-conforming situation may also occur due to governmental acquisition of property whether voluntary or involuntary. Among other possibilities, a non-conforming situation may arise because a lot does not meet minimum acreage requirements,



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because structures do not satisfy minimum yard requirements, because the relationship between existing buildings and the land (in such matters as density and setback requirements) is not in conformity with this Ordinance, or because land or buildings are used for purposes which are not in conformance with the list of permitted uses for the district in which the property is located.

**Non-conforming Use** - A non-conforming situation that occurs when property is used for a purpose or in a manner not permitted by the use regulations applicable to the district in which the property is located.

**Nude or A State of Nudity** - The appearance of a human anus, male genitals, or female genitals; or a state of dress which fails to opaquely cover a human anus, male genitals, or female genitals.

**Nude Model Studio** - Any place where a person who appears nude or semi-nude, or who displays specified anatomical areas is provided to be observed, sketched, drawn, painted, sculptured, photographed, filmed, or similarly depicted by other persons who pay money or any other form of consideration. Nude Model Studio shall not include a preparatory school licensed by the State of North Carolina or a college, junior college, or university supported entirely or in part by public taxation; a private college or university which maintains and operates educational programs in which credits are transferable to a college, junior college, or university supported entirely or partly by taxation.

**Nursing Home** - An establishment which provides full-time convalescent or chronic care, or both, to persons who are not related by blood or marriage to the operator or who, by reason of advanced age, chronic illness or infirmity, are unable to care for themselves.

**Off-Premise Sign** - Any sign that advertises or otherwise identifies any property, structure or use not located on the same parcel as sign.

**Off-Premise Directional Sign** – Any off-premise sign indicating the location of or directions to a business, church, park, historic property, school, or other place of public assembly and shall contain no advertising content.

**On-Site Directional Sign** - A sign incidental to the use of the lot on which it is located that provides necessary information to guide traffic, whether vehicular or otherwise, within the site. Any one directional sign shall be no larger than five (5) square feet.

**Open Structures**- A building or structure, open on all sides and supported by a roof and posts or columns.

**Owner** - A holder of any legal or equitable estate in the premises, whether alone or jointly with others, and whether in possession or not.

**Pennant Sign** - A sign made of lightweight plastic, fabric or other material, whether or not containing a message, suspended from a rope, wire or string, usually in series, designed to move in the wind.

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**Person** - Any individual, partnership, firm, association, joint venture, public or private corporation, trust, estate, commission, board or public or private institution, utility, cooperative, interstate body or other legal entity.

**Photovoltaic System** - An active solar energy system that converts solar energy directly into electricity.

**Place of Worship** - A building and/or land primarily used by a non-profit organization for organized religious services and supporting uses.

**Planned Residential Development** - A residential project not bound by typical minimum lot sizes, housing development types and dimensional requirements as set forth in the district in which the development is located but are subject to the standards as set forth in section 17.5(c) of this ordinance. Also referenced informally as a Planned Unit Development, or PUD.

**Portable Sign** - Any sign not permanently attached to the ground or other permanent structure, or a sign designed to be transported.

**Primary Live Entertainment** - On-Site entertainment by live entertainers that characterizes the establishment, as determined from a pattern of advertising and/or actual performances.

**Principal Building** - A building in which is conducted the principal use of the lot on which it is located.

**Principal Permitted Use** - Any use listed as a permitted use in any zoning district, except those which by definition or their nature are accessory uses.

**Principal Structure** - A structure in which is conducted the principal use of the lot on which it is located.

**Principal Use Sign** - A sign which constitutes the sole and/or principal use of land.

**Public Street** - A dedicated public right-of-way in which the roadway has been accepted or constructed to public standards for vehicular traffic, but not an alley.

**Rear Setback** - Any interior property line other than a front setback which provides a usable outdoor space. (Any lot having two or more front setbacks may not have to provide a rear setback).

**Recreational Vehicles (RV)** - A Vehicle, or vehicle type portable structure which can be hauled, towed or driven, designed for recreational use (as in camping). Recreational Vehicles are not designed for permanent occupancy. This would include, but is not limited to travel trailers, motor homes, camping trailers, campers, truck and recreational vans. Recreational vehicles are considered domestic vehicles.

**Recreational Vehicle (RV), Park Model** - A vehicle that is built on a single chassis, is 400 sq. feet or less when measured at the largest horizontal projection, is self-propelled or permanently

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towable by a light duty truck, and is generally used as temporary living quarters for recreational, camping, travel, seasonal, and special uses.

**Roof Line** - The top edge of the roof or the top of the parapet, whichever forms the top line of the building silhouette.

**Semi-Nude** - A state of dress in which clothing covers no more than the genitals, pubic region, and areola of the female breast, as well as portions of the body covered by supporting straps or devices

**Setback** - The minimum required horizontal distance between a structure and the property line, street right-of-way line, street centerline or access easement.

**Specified Anatomical Areas** - (1) Less than completely and opaquely covered: human genitals, pubic region, buttocks, or female breast below a point immediately above the top of the areola; or (2) Human male genitals in a discernibly turgid state, even if completely and opaquely covered.

**Specified Sexual Activities** - Includes any of the following: a) Human genitals in a state of sexual stimulation, arousal, or tumescence; or b) The fondling or other erotic touching of human genitals, pubic region, buttocks, anus, or female breasts; or c) Sex acts, actual or simulated, including intercourse, oral copulation or sodomy; or d) Masturbation, actual or simulated; or e) Sadomasochistic practices, including, but not limited to: flagellation or torture by or upon a person, clothed or naked, or the condition of being fettered, bound, or otherwise physically restrained on the part of one clothed or naked; or f) Erotic or lewd touching, fondling, or other contact with an animal by a human being; or g) Human excretion, urination, menstruation, vaginal or anal irrigation.

**Sexual Encounter Center** - A business or commercial enterprise that, as one of its principal business purposes, offers for any form of consideration physical contact in the form of wrestling or tumbling between two or more persons when one or more of the persons is in a state of nudity or semi-nude, or activities between two or more persons when one or more of the persons is in a state of nudity or semi-nude.

**Sexually Oriented Business** - An adult arcade, adult media store, adult cabaret, adult motel, adult mini motion picture theater, adult motion picture theater, adult theater, escort agency, nude model studio, sexual encounter center, or any combination of the foregoing. (*Refer to Section 17.8 for general standards*)

**Side Setback** - Any interior property line setback other than a rear setback.

**Sign** - Any object, device, display or structure, or part thereof, which is used to advertise, identify, display, direct or attract attention to any object, person, institution, organization, business, product, service, event or location by any means, including but not limited to words, letters, pennants, banners, emblems, trademarks, trade names, insignias, numerals, figures, designs, symbols, fixtures, colors, illumination or projected images or any other attention directing device.

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**Sign Area** - Sign area shall be measured by the smallest square, rectangle, triangle, circle or combination thereof, which will encompass the entire advertising copy area, excluding architectural trim and structural members. In computing area, only one side of a double-faced sign shall be considered.

**Single-Family Dwelling** - A separate, detached building designed for and occupied exclusively by one family.

**Solar Collector** - A device, structure or part of a device or structure (i.e. array, panel, etc.) installed for the sole purpose of the collection, inversion, storage, and distribution of solar energy. This device may be roof-mounted or ground-mounted as an accessory use (Refer to Section 17.6 for general standards).

**Solar Energy** - Radiant energy received from the sun that can be collected in the form of heat or light by a solar collector.

**Solar Farm** - A use where a series of solar collectors are placed in an area for the purpose of generating photovoltaic power for an area greater than the principle use on the site or as the principle use on the site for off-site energy consumption. The use of solar collectors for personal or business consumption that occurs on-site is not considered a solar farm.

**Specialized Horticulture** - The use of land for the propagation of ornamental plants and other nursery products, such as bulbs, florist greens, flowers, shrubbery, flower and vegetable seeds and plants and sod and fruits and vegetables grown primarily under cover, but does not meet the definition of a bona fide farm.

**Story** - That portion of a building included between the surface of any floor and the surface of the floor next above it, or if there is no floor above it, then the space between such floor and the ceiling next above it.

**Structure** - Anything constructed, erected, or placed.

**Taxed Value** - The official value assigned to real property by the Chatham County Tax Assessor for ad valorem tax purposes.

**Temporary Building** - Any building of an impermanent nature or which is designed for use for a limited time, including any tent or canopy. This includes the use of temporary construction trailers where a building permit has been issued and remains valid during the construction process.

**Temporary Sign** - Any non-permanent sign designed to advertise a business or event (non-profit or for-profit) for a limited period of time. These can include portable signs, signs placed in or on the ground or signs placed on a vehicle. These do not include political signs as specified in Section 15.5(9).

**Temporary Structure** - Any structure of an impermanent nature or which is designed for use for a limited time, including any tent or canopy. This includes the use of temporary construction trailers where a building permit has been issued and remains valid during the construction process.

**Townhouse** (or Townhome) - Attached dwelling units with ground level access and on their own individual lot.

**Two-Family Dwelling (Duplex)** - A building arranged and designed to be occupied by two families living independently of each other.

**Use** - The purpose for which land or structures thereon is designed, arranged or intended to be occupied or used, or for which it is occupied, maintained, rented or leased.

**Variance** - Official permission from the Board of Adjustment to depart from the requirements of this Ordinance.

**Vested Right** – The right to undertake and complete the development and use of property under the terms and conditions of an approved site specific development plan or an approved phased development plan. Refer to the North Carolina General Statutes § 153A-344.1 for more information.

**Voluntary Agricultural District (VAD)** – Contiguous acres (initially) of agricultural land, or forestland, or horticultural land that is part of a qualifying farm or the number of qualifying farms deemed appropriate by the governing board of the county and reviewed by the Agricultural Advisory Board. The purpose of such agricultural districts shall be to increase identity and pride in the agricultural community and its way of life and to increase protection from nuisance suits and other negative impacts on properly managed farms. Refer to North Carolina General Statutes § 106-738 and -743 for more information.

**Wireless Facility or Wireless Facilities** - The set of equipment and network components, exclusive of the underlying Wireless Support Structure, including, but not limited to, Antennas, Accessory Equipment, transmitters, receivers, Base Stations, power supplies, cabling and associated equipment necessary to provide wireless telecommunications services.

**Wireless Support Structure** - A freestanding structure, such as a Monopole or Tower, designed to support Wireless Facilities. This definition does not include Utility Poles.

**Zoning Administrator and Official** - The person or persons designated by the Chatham County Manager to administer and enforce this Ordinance.

**SECTION 8 GENERAL PROVISIONS**

The following general provisions shall apply in all situations unless otherwise indicated.

**8.1. Relationship of Buildings to Lot**

Every building hereafter erected, moved or placed shall be located on a lot and in no case shall there be more than one principal residential building on a lot except as may be permitted in a planned residential development and as provided for as follows:

1. Two detached principal residential units may be situated on one lot provided: (a) at least one of the residential units is a manufactured dwelling, and (b) the lot is at least two times the required lot area for the district in which it is located.
2. There may be more than one single family detached residential unit on a lot if the average area of the property per residence is greater than 10 acres and the residential units are situated in such a manner that the distance between units shall not be less than the applicable setback distances required under this Ordinance for residential units situated upon adjoining lots.
3. More than one building of single family attached or detached units, where permitted, may be constructed on one lot provided:
  - a. the applicable zoning requirements of lot size and building setbacks are met,
  - b. a building permit is issued prior to construction,
  - c. a preliminary subdivision plat is submitted and approved prior to construction,
  - d. the final plat is prepared and final approval certified by the appropriate agencies,
  - e. the property is subdivided according to the County regulations prior to the sale of the individual building or units, and
  - f. a certificate of occupancy is issued prior to occupancy.
4. Regulation of Recreational Vehicles (RV's).
  - a. Recreational Vehicles are permitted to be stored unoccupied on residential lots. Such storage of the Vehicle shall not be within any required setback. The unoccupied vehicle may not be used to store any materials, items, pets, farm animals, and the like. Recreational vehicles are not designed nor intended for permanent habitation, therefore an RV cannot be considered as a primary residence. A Recreational Vehicle stored in accordance with this ordinance shall:

- i. Not be connected to any permanent utility service. The use of extension cords for cleaning and/or repair is allowed on a temporary basis.
  - ii. Have its wheels and axels remain at all times
  - iii. Maintain proper insurance and registration being fully licensed and ready for highway use.
  - iv. Have no accessory structures supported by the Vehicle, this includes decks, porches, and awnings.
- b. Permanent habitation is not permitted. In order to provide for the health, safety, and welfare, the use of a recreational vehicle for permanent habitation shall be deemed unlawful.
- c. A Recreational Vehicle can be utilized for temporary occupation for no more than 180 days if the following requirements are met:
  - i. It is used during the construction of a single-family dwelling or placement of modular/mobile home.
  - ii. It is used while a damaged/destroyed home is being replaced due to damage by fire, flood, hurricane, tornado, or other emergency event or natural disaster.
  - iii. Extensions of the 180 day time period can be granted by the zoning official when work is ongoing with a valid building permit.

No commercial building may use fill to artificially raise the grade of a building site in such a way that the buildings cannot be screened from view of the public right-of-way per SECTION 12 LANDSCAPING AND BUFFERING STANDARDS.

## **8.2. Open Space Requirements**

No part of a yard, court or other open space provided around any building or structure for the purpose of complying with the provisions of this Ordinance shall be included as a part of a yard or other open space required under this Ordinance for another building or structure. Every part of a required yard shall be open and unobstructed from its lowest level to the sky, except for the ordinary projection of sills, chimneys, flues and eaves; provided, however, that none of the aforesaid projections shall project into a minimum side yard more than 1/3 of the width of such yard nor more than 24 inches, whichever is the least. Open or lattice enclosed fire escapes, fire proof outside stairways, and balconies opening upon fire towers projecting into a yard not more than five feet shall be permitted where placed so as not to obstruct light and ventilation. Open, uncovered decks may project into required yards for up to 1/3 of the width of such yards. In addition, certain structures are permitted to be placed in the required yard area as provided for in the schedule of district regulations.

## **8.3. Reduction of Lot and Yard Areas Prohibited**

No yard or lot existing at the time of passage of this Ordinance shall be reduced in size or area below the minimum requirements set forth in this Ordinance. Yards or lots created after the effective date of this Ordinance shall meet at least the minimum requirements established by this Ordinance.

#### **8.4. Access to Property**

No building, structure or use of land shall be established on a lot nor shall any lot be created that does not abut upon a public right-of-way to which it has legal access. The public access requirement shall not apply to land exempt from the Chatham County Subdivision Regulations or to lots which might be created within a planned residential development where access may be through common area or otherwise provided, nor to situations otherwise exempt from public street access by this Ordinance or the Chatham County Subdivision Regulations.

#### **8.5. Interpretation of District Boundaries**

See section 6.2.

#### **8.6. Interpreting Permitted Uses**

The listings of permitted and conditional uses in the various districts in this Ordinance are considered to be specific. Any use that is not specifically listed in a district shall be deemed to be prohibited.

#### **8.7. Water and Sewer Requirements**

The lot sizes required for the various districts in this Ordinance were drawn based upon the assumption that adequate water supply and sewage disposal systems are available to each and every lot. The lack of adequate systems for one or both facilities, however, may require larger lot areas or, in some instances, not permit development as proposed by a developer.

New development should also connect to the county water system or municipal equivalent where available. If irrigation systems are to be included, they should use non-public water, treated wastewater or have the ability to be converted to recycled wastewater when it becomes available. In addition, no homeowner's association rules, restrictive covenants, or other deed restrictions may prohibit the use and placement of rain barrels.

#### **8.8. Height Limitation Exceptions**

Except as may otherwise be prohibited by the Federal Aviation Administration Regulations, the height limitations of this Ordinance shall not apply to public buildings, church spires, belfries, cupolas and domes not intended for residential purposes, or to water towers, power transmission towers, silos, grain elevators, chimneys, smokestacks, derricks, conveyors, radio, television and communication towers, masts, aerials and similar structures, provided such structures meet the required NC Building Code.

#### **8.9. Fees**

Reasonable fees sufficient to cover the costs of administration, inspection, technical review, publication of notice and similar matters may be charged to applicants for zoning permits, sign permits, conditional use permits, zoning amendments, variances and other administrative relief. The amount of the fees charged shall be as set forth in the county's budget or as established by resolution of the Board of Commissioners. Fees established in accordance herewith shall be paid upon submission of an application or notice of appeal.





**SECTION 9 NON-CONFORMING SITUATIONS**

The purpose of this section is to avoid undue hardship by permitting the continued use of any building, structure, or property that was lawful at the time of the enactment of this Ordinance or any applicable amendment thereof, even though such use, structure or property does not conform with the provisions of this Ordinance. However, this section is also established to require that non-conforming situations be terminated under certain circumstances.

**9.1. Definitions**

See Section 7 Definitions.

**9.2. Continuation of Non-conforming Situations**

Non-conforming situations that were otherwise lawful on the effective date of this Ordinance may be continued, subject to the restrictions and qualifications set forth in Subsections 9.4 through 9.7 of this section.

**9.3. Non-conforming Lots of Record**

Where the owner of a non-conforming lot of record does not own sufficient land to enable him to conform to the area or lot width requirements, such lot may be used as a building site provided all other dimensional requirements are met and provided that the use to be made of the property is not one to which larger than minimum lot area requirements are called for in the list of permitted uses.

**9.4. Extension or Enlargement of Non-conforming Situations**

Non-conforming situations may be extended or enlarged as provided below:

- a) Subject to paragraph 4 of this subsection, a non-conforming use may be extended through any portion of a completed building. A non-conforming use may be extended to additional buildings or to land outside the original building. New buildings are allowed provided they meet the zoning district requirements or the zoning district requirements of their type of actual use, whichever is more stringent.
- b) A non-conforming use may be extended to cover more land than was occupied or manifestly designed and arranged to be occupied, by that use when it became non-conforming; provided it is not extended to additional parcels and applicable standards are met, i.e. setbacks, buffers.
- c) A non-conforming situation may be changed if the changes amount only to changes in the degree of activity rather than changes in kind and no violations of other paragraphs of this subsection occur.
- d) Physical alteration of non-conforming structure or structures containing a non-conforming use is unlawful if it results in greater non-conformity with respect to dimension restrictions such as yard requirements, height limitations, or density requirements.
- e) Minor repairs to and routine maintenance of property where non-conforming situations exist are permitted and encouraged. Major renovation – i.e., work estimated to cost more than 10% of the taxed value of the structure to be renovated

may be done provided that the work will not result in a violation of any other paragraphs of this subsection, particularly paragraph 5.

- f) Non-conforming Signs: Any permanent, on-premise sign may be replaced, repaired or relocated on the property, provided that the replaced, repaired or relocated sign does not exceed the size (square footage) or height of the original sign.

### **9.5. Reconstruction Limitations**

Any non-conforming building or structure or any building or structure containing a non-conforming use which is destroyed or damaged to an extent equal to 60% or more of the taxed value of the building or structure by fire, flood, explosion, earthquake, winds, war, riot, act of nature or by any act not under the control of the owner, may be reconstructed and used as before, provided that no non-conforming situation is increased or extended and provided further that a zoning permit and building permit are received within two years of the event. This section shall not apply to non-conforming signs. See Section 9.4.

### **9.6. Change in Kind of Non-conforming Use**

A non-conforming use may be changed to a conforming use; thereafter, the property may not revert to a non-conforming use.

A non-conforming use shall not be changed to another non-conforming use.

If a non-conforming use and a conforming use or any combination of non-conforming uses exist on one lot, the use made of the property may be changed only to a conforming use.

Change in Use of Non-conforming Buildings - Conforming uses may be established or re-established in non-conforming buildings or structures provided that off-street parking is provided as required by this Ordinance and provided no other provisions of this Ordinance for the establishment of new uses is violated.

### **9.7. Discontinuance of Non-conforming Uses**

When active operation or occupancy of a non-conforming use is discontinued, regardless of the purpose or reason, for a consecutive period of 365 days, the property involved may thereafter be used only for conforming uses. The requirements of this subsection shall not apply to uses in buildings undergoing reconstruction in accordance with the provisions of Subsection 9.5.

For purposes of determining whether a right to continue a non-conforming situation is lost pursuant to this subsection, all of the buildings, activities, and operations maintained on a lot are generally to be considered as a whole. For example, the failure to rent one apartment in a non-conforming apartment building or one space in a non-conforming mobile home park for 365 days shall not result in a loss of the right to rent that apartment or space thereafter so long as the apartment building or mobile home park as a whole is continuously maintained. But if a non-conforming use is maintained in conjunction with a conforming use, cessation of operation or occupancy the non-conforming use for the required period shall terminate the right to maintain it thereafter.

**9.8. Building on Subdivision Lots of Record**

Where there exist platted subdivision lots of record, whether conforming or non-conforming according to the Zoning Ordinance, buildings may be situated on said lots according to the requirements in effect in the Zoning Ordinance at the time of recordation. If the Zoning Ordinance was not applicable to the subdivision at the time of recordation the setbacks of the most applicable zoning district within the pre-existing Ordinance shall apply when zoning becomes applicable.

**SECTION 10      SCHEDULE OF DISTRICT REGULATIONS**

Within the districts as established by this Ordinance, the requirements as set forth in this section shall be complied with in addition to any other general or specific requirements of this Ordinance. Permitted uses for all districts, both by-right and conditional are listed in Table 1: Zoning Table of Permitted Uses. Uses permitted by right are subject to obtaining a zoning permit from the Zoning Official; Uses permitted by conditional use are only permitted subject to the issuance of a conditional use permit by the Board of Commissioners as provided for in Section 15. Certain uses as listed in the subsection may be subject to certain specific conditions as set forth in Section 15 and if permitted by the Board of Commissioners shall be subject to any such conditions as may be listed for that use. In addition, in granting a conditional use permit the Board of Commissioners may impose such additional conditions and safeguards that the Board may deem as reasonable and appropriate.

When the conservation subdivision option of the Subdivision Ordinance is exercised, then the minimum lot area and setbacks listed for each district is superseded by the density bonus requirements of the conservation subdivision. The minimum lot area used for the initial calculation of the density bonus is still based on the minimums listed here.

**10.1.    R 5 - Residential District**

**A. Permitted Uses**

The following uses are permitted subject to obtaining a zoning and/or conditional use permit from the Zoning Official. (See Table 1: Zoning Table of Permitted Uses on page 47)

**B. Dimensional Requirements**

Minimum Required Lot Area - Family subdivisions may have lots a minimum of two acres in size. Existing (as of December 31, 1990) lots of ten acres or less may be divided provided that no resultant lot is smaller than three acres. New lots other than these previously described must average five acres in size with no lots smaller than three acres; lots larger than ten acres shall not be included in the averaging.

Lots to be created for the express purpose of minor utilities are exempted from the Required Minimum Lot Area, but must comply with the required setback of the district. Any noise producing equipment or generators must be stored within a structure, or must be setback a minimum fifty (50) feet from any public right-of-way or property line.

Minimum Required Lot Width - 100 feet

Minimum Required Front Setback - 40 feet

Minimum Required Side Setback - 25 feet

Minimum Required Rear Setback - 25 feet

Maximum Building Height - 60 feet

Location of Accessory Buildings and Structures – Accessory buildings and structures must conform to the minimum required setbacks for the district. Provided, however, well houses,

satellite dishes, and open structures may be located in the required yards provided they are located at least 10 feet from any street or property line. Fences are permitted within the front, side and rear yards with no minimum setback requirement.

**C. Visibility at Intersections**

On a corner lot nothing shall be erected, placed, planted or allowed to grow in such a manner as materially to impede vision between a height of 2 1/2 feet and 10 feet in a sight triangle as established by NCDOT.

**D. Off-Street Parking and Loading**

Off-street parking and loading shall be provided in accordance with the provisions set forth in Section 14.

**E. Signs**

Signs shall be governed by the provisions of Section 15.

**10.2. R 2 - Residential District**

**A. Permitted Uses**

The following uses are permitted subject to obtaining a zoning and/or conditional use permit from the Zoning Official. (See Table 1: Zoning Table of Permitted Uses on page 47)

**B. Dimensional Requirements**

Minimum Required Lot Area - 90,000 square feet

Minimum Required Lot Area for a Two-Family Dwelling -except an accessory dwelling unit 180,000 square feet. Each unit of a two-family dwelling may be placed on a separate lot, provided that each lot consists of not less than 90,000 square feet, and provided that the common wall between the units is a fire wall as required by the building code.

Lots to be created for the express purpose of minor utilities are exempted from the Required Minimum Lot Area, but must comply with the required setback of the district. Any noise producing equipment or generators must be stored within a structure, or must be setback a minimum fifty (50) feet from any public right-of-way or property line.

Minimum Required Lot Width - 100 feet

Minimum Required Lot Width for a Two-Family Dwelling - 110 feet

Minimum Required Front Setback - 40 feet

Minimum Required Side Setback - 25 feet. Where a two-family dwelling is placed such that the units are on separate lots with a common fire wall, no side yard shall be required at the common wall.

Minimum Required Rear Setback - 25 feet

Maximum Building Height - 60 feet

Location of Accessory Buildings and Structures – Accessory buildings and structures must conform to the minimum required setbacks for the district. Provided, however, well houses, satellite dishes, and open structures may be located in the required yards provided they are at least 10 feet from any street or property line. Fences are permitted within the front, side and rear yards with no minimum setback requirement.

**C. Visibility at Intersections**

On a corner lot nothing shall be erected, placed, planted or allowed to grow in such a manner as materially to impede vision between a height of 2 1/2 feet and 10 feet in a sight triangle as established by NCDOT.

**D. Off-Street Parking and Loading**

Off-street parking and loading shall be provided in accordance with the provisions set forth in Section 14.

**E. Signs**

Signs shall be governed by the provisions of Section 15.

**10.3. R 1 - Residential District**

**A. Permitted Uses**

The following uses are permitted subject to obtaining a zoning and/or conditional use permit from the Zoning Official. (See Table 1: Zoning Table of Permitted Uses on page 47)

**B. Dimensional Requirements**

Minimum Required Lot Area - 40,000 square feet or 65,340 square feet for lots with individual wells and individual wastewater disposal systems.

Minimum Required Lot Area for a Two-Family Dwelling - except an accessory dwelling unit 80,000 square feet. Each unit of a two-family dwelling may be placed on a separate lot, provided that each lot consists of not less than 40,000 square feet, and provided that the common wall between the units is a fire wall as required by the building code.

Lots to be created for the express purpose of minor utilities are exempted from the Required Minimum Lot Area, but must comply with the required setback of the district. Any noise producing equipment or generators must be stored within a structure, or must be setback a minimum fifty (50) feet from any public right-of-way or property line.

Minimum Required Lot Width - 100 feet

Minimum Required Lot Width for a Two-Family Dwelling - 110 feet

Minimum Required Front Setback - 40 feet

Minimum Required Side Setback - 25 feet. Where a two-family dwelling is placed such that the units are on separate lots with a common fire wall, no side yard shall be required at the common wall.

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Minimum Required Rear Setback - 25 feet

Maximum Building Height - 60 feet

Location of Accessory Buildings and Structures – Accessory buildings and structures must conform to the minimum required setbacks for the district. Provided, however, well houses, satellite dishes, and open structures may be located in the required yards provided they are at least 10 feet from any street or property line. Fences are permitted within the front, side and rear yards with no minimum setback requirement.

## **C. Visibility at Intersections**

On a corner lot nothing shall be erected, placed, planted or allowed to grow in such a manner as materially to impede vision between a height of 2 1/2 feet and 10 feet in a sight triangle as established by NCDOT.

## **D. Off-Street Parking and Loading**

Off-street parking and loading shall be provided in accordance with the provisions set forth in Section 14.

## **E. Signs**

Signs shall be governed by the provisions of Section 15.

## **10.4. O&I - Office and Institutional District**

### **A. Permitted Uses**

The following uses are permitted subject to obtaining a zoning and/or conditional use permit from the Zoning Official. (See Table 1: Zoning Table of Permitted Uses on page 47)

### **B. Dimensional Requirements**

Minimum Required Lot Area - 40,000 square feet or 65,340 square feet for lots with individual wells and individual wastewater disposal systems.

Minimum Required Lot Area for a Two-Family Dwelling - 80,000 square feet each unit of a two-family dwelling may be placed on a separate lot provided that each lot consists of not less than 40,000 square feet, and provided that the common wall between the units is a fire wall as required by the building code.

Lots to be created for the express purpose of minor utilities are exempted from the Required Minimum Lot Area, but must comply with the required setback of the district. Any noise producing equipment or generators must be stored within a structure, or must be setback a minimum fifty (50) feet from any public right-of-way or property line.

Minimum Required Lot Width - 100 feet

Minimum Required Lot Width for a Two-Family Dwelling - 110 feet

Minimum Required Front Setback - 40 feet



Minimum Required Side Setback - 25 feet. Where a two-family dwelling is placed such that the units are on separate lots with a common fire wall, no side yard shall be required at the common wall

Minimum Required Rear Setback - 25 feet

Maximum Building Height - 60 feet

Location of Accessory Buildings and Structures – Accessory buildings and structures must conform to the minimum required setbacks for the district. Provided, however, well houses, satellite dishes, and open structures may be located in the required yards provided they are at least 10 feet from any street or property line. Fences are permitted within the front, side and rear yards with no minimum requirement

**C. Visibility at Intersections**

On a corner lot nothing shall be erected, placed, planted or allowed to grow in such a manner as materially to impede vision between a height of 2 1/2 feet and 10 feet in a sight triangle as established by NCDOT.

**D. Off-street Parking and Loading**

Off-street parking and loading shall be provided in accordance with the provisions set forth in Section 14.

**E. Signs**

Signs shall be governed by the provisions of Section 15

**10.5. B-1 - Business District**

**A. Permitted Uses**

The following uses are permitted subject to obtaining a zoning and/or conditional use permit from the Zoning Official. (See Table 1: Zoning Table of Permitted Uses on page 47)

**B. Dimensional Requirements**

The minimum yard setbacks listed may be reduced to the minimum established in the most recent North Carolina building code for buildings that are part of a common plan of development, except along the exterior project boundary where the minimum yard setbacks shall be met.

Minimum Required Lot Area - 40,000 square feet or 65,340 square feet for lots with individual wells and individual wastewater disposal systems. Lots to be created for the express purpose of minor utilities are exempted from the Required Minimum Lot Area, but must comply with the required setback of the district. Any noise producing equipment or generators must be stored within a structure, or must be setback a minimum fifty (50) feet from any public right-of-way or property line.

Minimum Required Lot Width - 75 feet

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Minimum Required Front Setback - 50 feet

Minimum Required Side Setback - 20 feet

Minimum Required Rear Setback - 20 feet

Maximum Building Height - 60 feet

Location of Accessory Buildings and Structures – Accessory buildings and structures must conform to the minimum required setbacks for the district. Provided, however, well houses, satellite dishes, open structures and telephone booths may be located in the required yards provided they are at least 10 feet from any street or property line. Fences are permitted within the front, side and rear yards with no minimum setback requirement.

## **C. Visibility at Intersections**

On a corner lot nothing shall be erected, placed, planted or allowed to grow in such a manner as materially to impede vision between a height of 2 1/2 feet and 10 feet in a sight triangle as established by NCDOT.

## **D. Off-Street Parking and Loading**

Off-street parking and loading shall be provided in accordance with the provisions set forth in Section 14.

## **E. Signs**

Signs shall be governed by the provisions of Section 15.

## **10.6. NB - Neighborhood Business District**

### **A. Permitted and Conditional Uses**

The following uses are permitted subject to obtaining a zoning and/or conditional use permit from the Zoning Official (See Table 1: Zoning Table of Permitted Uses on page 47). Outdoor storage and sales are limited to one-tenth (1/10) of the interior sales space.

### **B. Dimensional Requirements**

The minimum yard setbacks listed may be reduced to the minimum established in the most recent North Carolina building code for buildings that are part of a common plan of development, except along the exterior project boundary where the minimum yard setbacks shall be met.

Minimum Required Lot Area - 40,000 square feet or 65,340 square feet for lots with individual wells and individual wastewater disposal systems. Lots to be created for the express purpose of minor utilities are exempted from the Required Minimum Lot Area, but must comply with the required setback of the district. Any noise producing equipment or generators must be stored within a structure, or must be setback a minimum fifty (50) feet from any public right-of-way or property line.

Minimum Required Lot Width - 75 feet

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Minimum Required Front Setback - 50 feet

Minimum Required Side Setback - 20 feet

Minimum Required Rear Setback - 20 feet

Maximum Building Height - 60 feet

No building within this district shall exceed 40,000 square feet, including all floors, and the cumulative building square footage shall not exceed 160,000.

Location of Accessory Buildings and Structures – Accessory buildings and structures must conform to the minimum required setbacks for the district. Provided, however, well houses, satellite dishes, open structures and telephone booths may be located in the required yards provided they are at least 10 feet from any street or property line. Fences are permitted within the front, side and rear yards with no minimum setback requirement.

## **C. Visibility at Intersections**

On a corner lot nothing shall be erected, placed, planted or allowed to grow in such a manner as materially to impede vision between a height of 2 1/2 feet and 10 feet in a sight triangle as established by NCDOT.

## **D. Off-Street Parking and Loading**

Off-street parking and loading shall be provided in accordance with the provisions set forth in Section 14.

## **E. Signs**

Signs shall be governed by the provisions of Section 15.

## **10.7. CB - Community Business District**

### **A. Permitted and Conditional Uses**

The following uses are permitted subject to obtaining a zoning and/or conditional use permit from the Zoning Official (See Table 1: Zoning Table of Permitted Uses on page 47). Outdoor storage and sales are limited to one-tenth (1/10) of the interior sales space.

### **B. Dimensional Requirements**

The minimum yard setbacks listed may be reduced to the minimum established in the most recent North Carolina building code for buildings that are part of a common plan of development, except along the exterior project boundary where the minimum yard setbacks shall be met.

Minimum Required Lot Area - 40,000 square feet or 65,340 square feet for lots with individual wells and individual wastewater disposal systems. Lots to be created for the express purpose of minor utilities are exempted from the Required Minimum Lot Area, but must comply with the required setback of the district. Any noise producing equipment or generators must be stored within a structure, or must be setback a minimum fifty (50) feet from any public right-of-way or property line.

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Minimum Required Lot Width - 75 feet

Minimum Required Front Setback - 50 feet

Minimum Required Side Setback - 20 feet

Minimum Required Rear Setback - 20 feet

Maximum Building Height - 60 feet

No building within this district shall exceed 80,000 square feet, including all floors, and the cumulative building square footage shall not exceed 320,000.

Location of Accessory Buildings and Structures – Accessory buildings and structures must conform to the minimum required setbacks for the district. Provided, however, well houses, satellite dishes, open structures and telephone booths may be located in the required yards provided they are at least 10 feet from any street or property line. Fences are permitted within the front, side and rear yards with no minimum setback requirement.

## **C. Visibility at Intersections**

On a corner lot nothing shall be erected, placed, planted or allowed to grow in such a manner as materially to impede vision between a height of 2 1/2 feet and 10 feet in a sight triangle as established by NCDOT.

## **D. Off-Street Parking and Loading**

Off-street parking and loading shall be provided in accordance with the provisions set forth in Section 14.

## **E. Signs**

Signs shall be governed by the provisions of Section 15.

## **10.8. RB - Regional Business District**

### **A. Permitted and Conditional Uses**

The following uses are permitted subject to obtaining a zoning and/or conditional use permit from the Zoning Official (See Table 1: Zoning Table of Permitted Uses on page 47).

### **B. Dimensional Requirements**

The minimum yard setbacks listed may be reduced to the minimum established in the most recent North Carolina building code for buildings that are part of a common plan of development, except along the exterior project boundary where the minimum yard setbacks shall be met.

Minimum Required Lot Area - 40,000 square feet or 65,340 square feet for lots with individual wells and individual wastewater disposal systems. Lots to be created for the express purpose of minor utilities are exempted from the Required Minimum Lot Area, but must comply with the required setback of the district. Any noise producing equipment or generators must be stored

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within a structure, or must be setback a minimum fifty (50) feet from any public right-of-way or property line.

Minimum Required Lot Width - 75 feet

Minimum Required Front Setback - 50 feet

Minimum Required Side Setback - 20 feet

Minimum Required Rear Setback - 20 feet

Maximum Building Height - 60 feet

Location of Accessory Buildings and Structures – Accessory buildings and structures must conform to the minimum required setbacks for the district. Provided, however, well houses, satellite dishes, open structures and telephone booths may be located in the required yards provided they are at least 10 feet from any street or property line. Fences are permitted within the front, side and rear yards with no minimum setback requirement.

### **C. Visibility at Intersections**

On a corner lot nothing shall be erected, placed, planted or allowed to grow in such a manner as materially to impede vision between a height of 2 1/2 feet and 10 feet in a sight triangle as established by NCDOT.

### **D. Off-Street Parking and Loading**

Off-street parking and loading shall be provided in accordance with the provisions set forth in Section 14.

### **E. Signs**

Signs shall be governed by the provisions of Section 15.

## **10.9. IL - Light Industrial District**

### **A. Permitted Uses**

The following uses are permitted subject to obtaining a zoning and/or conditional use permit from the Zoning Official. (See Table 1: Zoning Table of Permitted Uses on page 47)

### **B. Dimensional Requirements**

The minimum yard setbacks listed, except along state maintained roads, may be reduced to the minimum established in the most recent North Carolina building code when the adjacent property has the same zoning district and an adjacent property owner provides a written affidavit allowing said reduction along the property line between the property in question and the property owned by the consenting property owner.

Minimum Required Lot Area - 40,000 square feet or 65,340 square feet for lots with individual wells and individual wastewater disposal systems. Lots to be created for the express purpose of minor utilities are exempted from the Required Minimum Lot Area, but must comply with the required setback of the district. Any noise producing equipment or generators must be stored

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within a structure, or must be setback a minimum fifty (50) feet from any public right-of-way or property line.

Minimum Required Lot Width - 150 feet

Minimum Required Front Setback - 50 feet

Minimum Required Side Setback - 50 feet

Minimum Required Rear Setback - 50 feet

Location of Accessory Buildings and Structures – Accessory buildings and structures must conform to the minimum required setbacks for the district. Provided, however, well houses, satellite dishes, open structures and telephone booths may be located in the required yards provided they are at least 10 feet from any street or property line. Fences are permitted within the front, side and rear yards with no minimum setback requirement.

### **C. Visibility at Intersections**

On a corner lot nothing shall be erected, placed, planted or allowed to grow in such a manner as materially to impede vision between a height of 2 1/2 feet and 10 feet in a sight triangle as established by NCDOT.

### **D. Off-Street Parking and Loading**

Off-street parking and loading shall be provided in accordance with the provisions set forth in Section 14

### **E. Signs**

Signs shall be governed by the provisions of Section 15.

## **10.10. IH - Heavy Industrial District**

### **A. Permitted Uses**

The following uses are permitted subject to obtaining a zoning and/or conditional use permit from the Zoning Official. (See Table 1: Zoning Table of Permitted Uses on page 47) Uses noted in the Light Industrial Districts are also allowed in the Heavy Industrial District provided they shall meet the requirements of that district.

### **B. Dimensional Requirements**

The minimum yard setbacks listed, except along state maintained roads, may be reduced to the minimum established in the most recent North Carolina building code when the adjacent property has the same zoning district and an adjacent property owner provides a written affidavit allowing said reduction along the property line between the property in question and the property owned by the consenting property owner.

Minimum Required Lot Area - 80,000 square feet. Lots to be created for the express purpose of minor utilities are exempted from the Required Minimum Lot Area, but must comply with the required setback of the district. Any noise producing equipment or generators must be stored

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within a structure, or must be setback a minimum fifty (50) feet from any public right-of-way or property line.

Minimum Required Lot Width - 300 feet

Minimum Required Front Setback - 100 feet

Minimum Required Side Setback - 100 feet

Minimum Required Rear Setback - 100 feet

Location of Accessory Buildings and Structures – Accessory buildings and structures must conform to the minimum required setbacks for the district. Provided, however, well houses, satellite dishes, open structures and telephone booths may be located in the required yards provided they are at least 10 feet from any street or property line. Fences are permitted within the front, side and rear yards with no minimum setback requirement.

### **C. Visibility at Intersections**

On a corner lot nothing shall be erected, placed, planted or allowed to grow in such a manner as materially to impede vision between a height of 2 1/2 feet and 10 feet in a sight triangle as established by NCDOT.

### **D. Off-Street Parking and Loading**

Off-street parking and loading shall be provided in accordance with the provisions set forth in Section 14.

### **E. Signs**

Signs shall be governed by the provisions of Section 15.

## **10.11. CD-CC Conditional Use Compact Community**

The following use is permitted subject to obtaining a zoning permit from the Zoning Administrator.

### **A. Permitted Use:**

Compact Community

### **B. Requirements:**

The requirements for Compact communities are more specifically set forth in the separate Compact Community Ordinance which is hereby incorporated herein by reference.

## **10.12 CD-MU Mixed Use**

### **A. Purpose**

The purpose of the Mixed Use Conditional District is to permit flexibility in the Ordinance by providing for a mix of residential, commercial, and light industrial uses to be developed on large tracts in accordance with a unified development plan. These developments should be unified by distinguishable design features and provide pedestrian connections between all uses. Mixed use

developments should provide a more efficient use of land while providing more on-site amenities and preserving open space. The mix of uses shall be designed to be mutually supporting so that traffic congestion is minimized and pedestrian circulation is enhanced.

**B. Minimum Size**

In order to qualify for a Mixed Use district the gross acreage for the development shall be a minimum of 50 acres.

**C. Maximum Net Density and Built Upon Area Allowed**

Within a Mixed Use district, the net density and built upon area for any portion of the development shall not exceed the requirements of the underlying watershed district as identified on the most recently adopted “Watershed Protection Map of Chatham County, North Carolina”.

**D. Net Land Area Computation**

Net land area is obtained by taking the gross land area of the development and subtracting the following areas:

1. Land to be dedicated or set aside for public and private street right-of-way. As an option to measuring projected street right-of-way, the developer may subtract 20% gross area as street right-of-way allowance regardless of the amount of land actually required for streets.
2. Any area of the property located within a Special Flood Hazard Area, consistent with the Chatham County Flood Damage Prevention Ordinance.
3. Any area classified as wetlands or woody swamp by the U.S. Army Corps of Engineers.
4. Other areas determined by the Zoning Administrator, Planning Board or Board of Commissioners to be unbuildable due to either physical features or regulatory authority. Typical zoning setback areas shall be considered buildable for purposes of this determination.

**E. Permitted Uses**

The uses allowed within the Mixed Use district may be selected from the permitted uses or conditional uses from the following districts:

- R-1 Residential district
- O&I Office and Institutional district
- NB Neighborhood Business district
- CB Community Business district
- RB Regional Business district
- IND-L Light Industrial district

The site plan must show, and the final development must include, uses from at least two (2) of the zoning districts listed above. Multi-family dwellings shall also be permitted within the CD-MU district. Uses may be mixed within a building or within the development and the site plan must identify the location of the proposed uses.

At a minimum, twenty percent (20%) of the total built upon area of the development must be occupied by or used for non-residential uses, provided that at no time shall the cumulative amount of land developed for non-residential purposes exceed the cumulative amount of land developed for residential purposes.



**F. Dimensional and Off-Street Parking Requirements**

Standard dimensional and off-street parking requirements shall not apply. Proposed lot sizes, setbacks, building heights, and off-street parking must be specified on the site plan or accompanying text for a conditional rezoning application and be approved by the Board of Commissioners. In no circumstances shall a building have a height greater than sixty (60) feet.

Exterior Boundary Setbacks – A setback of one hundred (100) feet shall apply to all residential and non-residential buildings and structures along the exterior boundary of the mixed use development, including any existing street right-of-way.

**G. Signage**

Any proposed signage shall not exceed the standards set forth in this Ordinance for the respective zoning district from which a use is taken. All signs shall use a coordinated color, style, and lettering scheme.

**10.13 Table 1: Zoning Table of Permitted Uses Notes: Compact Communities (CC) uses are listed separately in the Compact Communities Ordinance**

Many commercial activities that are otherwise prohibited in this table may be allowed as Home Occupations if they meet the requirements of that section.

Key: P = Permitted; A = Accessory Only; CU = Conditional Use Only; PRD = Planned Residential Development Only; \* = Historical district; (this district is no longer permitted for future rezonings)

Zoning District	R5	R2	R1	O&I	B-1*	NB	CB	RB	IL	IH
ABC stores					P	P	P	P		
Accessory dwelling unit i.e. guest house, pool house, garage apartment and in-house apartment	P	P	P							
Accessory uses and structures clearly incidental to a permitted use	P	P	P							
Airports and landing fields for fixed and rotary wing aircraft									CU	CU
Alcohol and alcoholic beverages manufacture										P
Amusement enterprises such as pool, bowling, roller rink when housed entirely within a permanent structure					P		P	P		
Animal Husbandry Specialized with a minimum lot area and setback twice the minimum required of the zoning district. Lot area and setback for the AG district measured as if R5	CU	CU	CU							
Antique shops					P	P	P	P		
Apartment Complex or Residential Condominium Complex	PRD	PRD	PRD							
Appliance distributors for wholesale									P	
Appliance sales and service					P	P	P	P		
Art supply retail sales					P	P	P	P		
Arts and Crafts fabrication and related sales	CU				P	P	P	P		
Asphalt manufacture or refining (Subject to additional requirements of Section 17.9)										CU
Assembly halls, coliseums, gymnasiums and similar structures								CU	CU	CU
Assembly of ammunition, for small arms only, from previously prepared parts									CU	CU
Assembly of machines, appliances and goods from previously prepared parts									P	P
Automobile and truck assembly									CU	P
Automobile and automobile accessory sales and service					P		CU	P		

# Chatham County Zoning Ordinance

Zoning District	R5	R2	R1	O&I	B-1*	NB	CB	RB	IL	IH
Automobile service stations including tune-ups, minor repairs, tire service, washing facilities both manual and automatic and similar services. <sup>1</sup>					P	P	P	P	P	P
Aviation/aerospace equipment, engine and instrument manufacturing and/or assembly. (Subject to additional requirements of Section 17.9)										CU <sup>3</sup>
Avocational farming	P	P	P							
Bait and tackle shops					P	P	P	P	P	P
Bake shops and similar food preparation intended primarily for retail sales on the premises for consumption either on or off premises					P	P	P	P		
Bakeries or baking plants									P	P
Banks, savings and loans, finance companies, credit agencies and similar financial institutions				P	P	P	P	P		
Battery Manufacture (Subject to additional requirements of Section 17.9)										CU
Beauty Shops, Salons					P	P	P	P		
Owner-occupied bed and breakfast homes with no more than two (2) rooms (units) for rent for stays no longer than seven (7) consecutive days and may be located on legal, non-conforming and conforming lots of record, on at least one and one half (1.5) acres, which may have standard setbacks as set in the district in which it is located	P	P	P							
Bed and breakfast inns with no more than six rooms for rent with a minimum lot area of three acres and provided that all buildings, structures and high intensity activity areas shall be set back a minimum of two times the minimum yard requirement for the district in which it is located	CU	CU	CU				P	P		
Bedding, carpet and pillow manufacturing, cleaning and renovating									P	P
Bicycle sales and repair					P	P	P	P		
Blacksmith or horseshoeing shops						P			P	P
Blueprinting and Photostatting establishments								P	P	P
Boarding kennels (See Section 17.5 for acreage requirements)	CU	CU	CU			P	P	P		
Boat, trailer and other utility vehicle sales and service					P		CU	P		
Boat Storage Facility					CU	CU	CU	CU	CU	CU

<sup>1</sup> Fuel, oil and similar pumps and appliances may be located in the minimum required front and side yards provided that none shall be located nearer than 15 feet to any street line and may be covered by an attached or free standing unenclosed canopy provided such canopy does not extend nearer than five feet to any property line and does not cover greater than 30% of the required yard area.

<sup>3</sup> When Chatham County Water and Town of Sanford Sewer Infrastructure is utilized the use is allowed by right.

# Chatham County Zoning Ordinance

Zoning District	R5	R2	R1	O&I	B-1*	NB	CB	RB	IL	IH
Book, stationery and office supply stores					P	P	P	P		
Bookbindery									P	P
Bottling works for soft drinks									P	P
Breeding kennels with a minimum lot area of three acres and provided that all buildings, structures and high intensity activity areas shall be set back a minimum of two times the minimum yard requirement for the district in which it is located	CU	CU				P	P	P		
Brick, tile, clay pipe and other clay products manufacture (Craft pottery is not covered in this definition)										P
Bus passenger stations					P			P		
Cabinet shops					P	P	P	P		
Campgrounds—SEE Public and Private recreation camps and grounds										
Candy products manufacture									P	P
Canvas and burlap products manufacture, sales and storage									P	P
Carpeting, Flooring, Tile, and Stone Products Sales					P	P	P	P		
Catering establishments					P	P	P	P		
Cement, lime, plaster manufacture (Subject to additional requirements of Section 17.9)										CU
Cemeteries	CU	CU	CU	P						
Churches and other places of worship	CU <sup>2</sup>	CU <sup>2</sup>	CU <sup>2</sup>	P	P	P	P	P		
Circuses, carnivals, exhibition shows, sideshows, races, trade shows, flea markets, banquets, conventions, religious events, arts and crafts shows, stage shows, athletic events and other similar events, including temporary living quarters such as mobile homes and recreational vehicles provided that the stay of such temporary living quarters shall be limited to a period of not more than five days longer than the duration of the event and no more than 30 total days in any 12 month period for any one separate event								CU	CU	CU
Clothing manufacture									P	P
Clothing shops					P	P	P	P		
Clubs and other places of entertainment operated as commercial enterprises								CU	CU	CU
Coal or coke yards (Subject to additional requirements of Section 17.9)									CU	CU

<sup>2</sup> Provided such are located on a lot of not less than three acres and provided further that the minimum side and rear yards shall be 50 feet and the front yard setback a minimum of 25 feet greater than required for a single-family residence within the district.

Chatham County Zoning Ordinance

Zoning District	R5	R2	R1	O&I	B-1*	NB	CB	RB	IL	IH
Coffee roasting									P	P
Cold storage plants									P	P
Computer and Electronic product manufacture										CU <sup>3</sup>
Congregate care facilities				P	P	P	P	P		
Contractor's plants or storage yards and staging areas	CU	CU	CU	CU	CU	CU	CU	CU	CU	CU
Cooperage works										P
Cosmetics and perfume manufacture(Subject to additional requirements of Section 17.9)										CU <sup>3</sup>
Dairy bars and ice cream shops intended primarily for retail sale on the premises for consumption either on or off premises					P	P	P	P		
Dairy products, processing, bottling and distribution, ice-cream manufacture, all on a wholesale basis									P	P
Data processing, hosting and related services										CU <sup>3</sup>
Day care centers for 15 or fewer children.	CU	CU	CU							
Day Care Centers for more than 15 children.				P	P	P	P	P		
Day care centers in the principal residence to accommodate not more than 15 children at any one time, provided such are located on a lot of not less than one acre and provided further that all buildings, structures and high intensity activity areas shall be set back a minimum of two times the minimum yard requirement for the district in which it is located	CU	CU	CU							
Drive-in or outdoor motion picture show									CU	CU
Drug stores					P	P	P	P		
Dry cleaning, pressing, and related retail service counter					P	P	P	P	P	P
Dwellings, single-family, manufactured	P	P	P		P					
Dwellings, single-family, site built and modular	P	P	P		P					
Dwellings, single-family attached (Duplex)		P	P	P						
Dwellings, manufacture of										P
Dye stuff manufacture and dyeing plants									CU	CU
Eating and drinking establishments					P	P	P	P		
Electrical equipment, appliance, and component manufacturing										CU <sup>3</sup>
Electric light or power generating station (Subject to additional requirements of Section 17.9)									CU	CU
Emory cloth or sandpaper manufacture									P	P
Enameling, japanning, lacquering or the plating or galvanizing of metals										P

Chatham County Zoning Ordinance

Zoning District	R5	R2	R1	O&I	B-1*	NB	CB	RB	IL	IH
Event Center Limited (See Section 17.7)					P	P	P	P		
Excelsior and fiber manufacture										P
Fabric shops					P	P	P	P		
Family Care Home (except that a Family Care Home may not be located within 1,125 feet of an existing Family Care Home)	P	P	P	P						
Feed and seed processing									P	P
Feed and seed wholesale									P	P
Feed, seed, fertilizer retail sales					P	CU	CU	P	P	P
Felt manufacture										P
Fertilizer wholesale sales									P	P
Fire stations and emergency medical facilities with a minimum lot area of three acres and provided that all buildings, structures and high intensity activity areas shall be set back a minimum of two times the minimum yard requirement of the district in which it is located	P	P	P							
Fire stations, emergency medical service facilities, police stations and law enforcement offices (less than three acres in the residential districts)	CU	CU	CU	P	P	P	P	P	P	P
Flammable liquids - bulk plants and storage (Subject to additional requirements of Section 17.9)										CU
Flea markets and rummage sales conducted either within a building or outdoors provided that no principal building or sales area shall be located in the required yard								CU	CU	CU
Florist - greenhouses, cultivation facilities and warehousing for wholesale and related retail sales									P	P
Florist shops					P	P	P	P		
Food processing in wholesale quantities									P	P
Food stores, retail					P	P	P	P		
Foundries casting nonferrous metals where conducted wholly within an enclosed structure, except for open air storage and having a total furnace capacity of not more than 1,000 aluminum pounds (Subject to additional requirements of Section 17.9)									CU	CU
Foundries producing iron and steel products (Subject to additional requirements of Section 17.9)										CU
Frozen food lockers									P	P
Funeral homes, undertaking establishments, embalming including crematoria				P	P		P	P	P	P

Chatham County Zoning Ordinance

Zoning District	R5	R2	R1	O&I	B-1*	NB	CB	RB	IL	IH
Fur storage (no sales)					P				P	P
Furniture Manufacture										CU <sup>3</sup>
Furniture stores					P	P	P	P		
Furrier, retail sales (can include storage)					P	P	P	P		
Garbage and waste incinerators (except hazardous waste) (Subject to additional requirements of Section 17.9)										CU
Gas and Petroleum Processing (Subject to additional requirements of Section 17.9)										CU
Gas storage in bulk										CU
Gases or liquefied petroleum gases in approved portable metal cylinders									P	P
General, professional, and medical offices				P	P	P	P	P	P	P
Gift shops					P	P	P	P		
Golf courses and tennis clubs, public or private				P				P		
Golf courses, tennis and recreation clubs with a minimum lot area of five acres and provided that all buildings, structures and high intensity activity areas shall be set back a minimum of two times the minimum yard requirements for the district in which it is located	CU	CU	CU							
Government Offices and Facilities	P	P	P	P	P	P	P	P	P	P
Grain elevators									P	P
Grounds and facilities for hunting and fishing clubs with a minimum lot area of 20 acres and provided that all buildings, structures and high intensity activity areas shall be set back a minimum of two times the minimum yard requirement for the district in which it is located	CU	CU	CU							
Grounds and facilities for non-profit clubs with a minimum lot area of three acres and provided that all buildings, structures and high intensity activity areas shall be set back a minimum of two times the minimum yard requirement for the district in which it is located	CU	CU	CU	P						
Grounds and facilities for open air games or sports except the following:								CU	CU	CU
* Paintball Gaming Outdoor									P	P
* Shooting Range Indoor								CU		P
* Shooting Range Outdoor										CU
Group Care Home				P						

Chatham County Zoning Ordinance

Zoning District	R5	R2	R1	O&I	B-1*	NB	CB	RB	IL	IH
Guest house, pool house, garage apartment meeting the same setback for the principal use	P	P	P							
Hardware, appliances, electrical and similar items retail sales					P	P	P	P		
Heating, plumbing, electrical, cabinet and similar shops					P	P	P	P		
Heavy manufacturing, processing or assembly not otherwise named herein provided no operations are carried on, or are likely to be carried on, which will create smoke, fumes, noise, odor or dust which will be detrimental to the health, safety or general welfare of the community (Subject to additional requirements of Section 17.9)										CU
Home occupations when conducted in accordance with the provisions of SECTION 16	P	P	P							
Horticulture, specialized					P	P	P	P		
Horticulture, specialized with a minimum lot area of three acres and provided that all buildings, structures and high intensity activity areas shall be set back a minimum of two times the minimum yard requirement for the district in which it is located	P	P	P							
Hosiery manufacture									P	P
Hospital, health and welfare centers, nursing homes and/or convalescent homes				P	P		P	P		
Hotels, motels and inns (See definition for accessory use/s)					P	P	P	P		
Ice manufacture, storage and sales									P	P
Industrial chemical manufacture (Subject to additional requirements of Section 17.9)										CU
Inert Debris Landfill	CU	CU	CU							
Insulation material manufacture and sale										P
Interior design shops					P	P	P	P		
Jail and penal institutions									CU	CU
Jewelry and watch sales and service, goldsmith					P	P	P	P		
Junk yards and auto wrecking, but only when conducted within an enclosure not less than six feet in height and with a solidity of not less than 60% outside any required yard area									CU	CU
Kindergartens and nurseries (See Daycares)										
Laboratories for research and testing (Subject to additional requirements of Section 17.9)									CU	CU <sup>3</sup>
Laboratory - dental, medical, optical					P			P		



# Chatham County Zoning Ordinance

Zoning District	R5	R2	R1	O&I	B-1*	NB	CB	RB	IL	IH
Land clearing and inert debris landfill (For beneficial fill see "Inert Debris")								CU	CU	CU
Landscape design business					P	P	P	P		
Landscaping and grading business					P			P	P	P
Laundries, Laundromats and dry cleaning establishments	CU	CU			P	P	P	P		
Laundries, steam								CU	P	P
Lawn and garden shops					P	CU	P	P		
Leather goods manufacture excluding tanning									P	P
Leather goods sales and service including manufacture for retail sales on premises					P	P	P	P		
Libraries, museums and art galleries				P	CU	CU	P	P		
Light manufacturing, processing, or assembly not otherwise named herein provided no operations are carried on, or are likely to be carried on, which will create smoke, fumes, noise, odor or dust which will be detrimental to the health, safety or general welfare of the community (Subject to additional requirements of Section 17.9)									CU	CU
Lock and gunsmiths	CU	CU			P	P	P	P	P	P
Lumberyards, building materials storage and sales									P	P
Machinery Manufacture										CU <sup>3</sup>
Machine shops									P	P
Meat processing and packing										P
Meat processing and packing related to onsite raising of livestock										
Medical clinics - inpatient and outpatient care				P	P	CU	P	P		
Metal fabricating plants using plate and structural shapes and including boiler for tank works										P
Mining <sup>4</sup> (Subject to additional requirements of Section 17.9)										CU
Major Utilities									P	P
Machinery Manufacture										CU <sup>3</sup>
Medical Equipment and Instrument Manufacture										CU <sup>3</sup>
Metal manufacturing for primary and fabricated materials										CU <sup>3</sup>

<sup>4</sup>Parcels used in whole or in part for mining operations or as to which mining permits are applicable in whole or in part as of April 17, 2017, are exempt from the conditional use permit requirement for mining uses, as are "accessory uses", as that term is defined in the Zoning Ordinance.

<sup>3</sup>When Chatham County Water and Town of Sanford Sewer Infrastructure is utilized the use is allowed by right.

Chatham County Zoning Ordinance

Zoning District	R5	R2	R1	O&I	B-1*	NB	CB	RB	IL	IH
Minor Utilities (Any noise producing equipment must be stored within a structure, or must be setback a minimum fifty (50) feet from any public right-of-way or property line)	P	P	P	P	P	P	P	P	P	P
Mixed Use Building				CU	CU	CU	CU	CU		
Mixing plants for concrete, or paving materials and manufacture of concrete products										CU
Mobile home sales and service					P		CU	P	P	P
Motorcycle sales and service					P		CU	P	P	P
Mulch – grinding, screening (sifting and separating of particles), mixing, blending, processing or dyeing of mulch									CU	CU
Music stores including repair and craft manufacture	CU	CU			P	P	P	P		
Natural gas compressor station (Subject to additional requirements of Section 17.9) –.	CU	CU	CU	CU	CU	CU	CU	CU	CU	CU
Newsstands					P	P	P	P		
Oil and Gas Exploration, Development and Production (Subject to additional requirements of Section 17.9)	CU	CU	CU	CU	CU	CU	CU	CU	CU	CU
Office – business and professional				P	P	P	P	P		
Office - engineering supply and similar sales and services including blueprinting, Photostatting and similar services				P	P	P	P	P		
Open air sales and service of accessory buildings and gazeboes and like free-standing structures					P		CU	P		
Open-air sales or displays from a temporary building or structure					P	CU	P	P	P	P
Optical and scientific instrument, jewelry and clock, musical instrument manufacture									P	P
Opticians and optical sales and service					P	P	P	P		
Owner-occupied bed and breakfast homes with no more than two (2) rooms (units) for rent for stays no longer than seven (7) consecutive days and may be located on legal, non-conforming and conforming lots of record, on at least one and one half (1.5) acres, which may have standard setbacks as set in the district in which it is located.	P	P	P							
Oxygen manufacture and/or storage										P
Paint and enamel manufacture not employing a boiling process										P
Paint retail shops					P	P	P	P		
Paper, cardboard and building board manufacture										CU
Pawnshops and secondhand stores					P	P	P	P		

Chatham County Zoning Ordinance

Zoning District	R5	R2	R1	O&I	B-1*	NB	CB	RB	IL	IH
Pet shops					P	P	P	P		
Pharmaceutical products manufacture (Subject to additional requirements of Section 17.9)									CU	CU <sup>3</sup>
Photographic studios, camera shops					P	P	P	P		
Planing or sawmills									P	P
Planned residential developments	CU	CU	CU							
Plastics manufacture										CU
Plating works										P
Plumbing shop and yard									P	P
Post offices				P	P		P	P		
Pottery (hand crafted) and related retail					P	P	P	P		
Pottery, porcelain and vitreous china manufacture										P
Printing and publishing					P	P	P	P		
Printing, publishing and reproduction establishments									P	P
Private recreation camps and ground with a minimum lot area of 10 acres and provided that all buildings, structures, spaces, and high intensity activity areas shall be set back a minimum of fifty (50) feet from all property line/boundary areas except in the Haw River Township, which shall meet the minimum setback requirements of the base zoning district					P	P	P	P		
Public and private recreation camps and grounds (See Section 17.5 for acreage requirements)	CU	CU	CU							
Public and private schools, training and conference centers				P	P	CU	CU	P	CU	CU
Public parks and recreation areas including marinas and concessions with a minimum lot area of three acres and provided that all buildings, structures and high intensity activity areas shall be set back a minimum of two times the minimum yard requirement for the district in which it is located	CU	CU	CU							
Public utility transmission lines	P	P	P	P	P	P	P	P	P	P
Radio and television stations and their towers when the towers are located on the same site with the station					P			P		
Rag, bag and carpet cleaning establishments										P
Railroad freight yards, terminals or classification yards and rights-of-way									P	P
Railroad rights-of-way									P	P
Recreational Facilities (Gyms, yoga studios, et cetera)					P	P	P	P		
Recreational Vehicle Storage Facility					CU	CU	CU	CU	CU	CU

Chatham County Zoning Ordinance

Zoning District	R5	R2	R1	O&I	B-1*	NB	CB	RB	IL	IH
Recycling industries that do not include the storage and/or processing of hazardous waste										P
Repair and service of office and household equipment	CU	CU	CU					P	P	P
Repair and servicing of industrial equipment machinery, except railroad equipment									P	P
Repair shops for jewelry, shoes, radios, televisions and other small office or household appliances	CU	CU	CU		P	P	P	P		
Retail stores and personal service shops similar to those listed dealing in direct consumer and personal services					P	P	P	P		
Rock crushers										CU
Rodenticide, insecticide and pesticide mixing plants (Subject to additional requirements of Section 17.9)										CU
Sanitary landfill excluding the burning of trash out of doors (Subject to additional requirements of Section 17.9)										CU
Schools, public and private with a minimum lot area of three acres and provided that all buildings, structures and high intensity activity areas shall be set back a minimum of two times the minimum yard requirement for the district in which it is located	CU	CU	CU							
Scrap paper or rag storage, sorting or bailing when conducted within a building									P	P
Secretarial and job service offices					P	P	P	P		
Self-storage facility / mini-warehouse storage facility with related retail and services (i.e. moving truck rental)					CU		CU	CU	CU	CU
Semiconductor Manufacture (Subject to additional requirements of Section 17.9)										CU <sup>3</sup>
Sexually Oriented Businesses (see Section 17.8 for standards)										P
Sheet metal shops									P	P
Sign manufacture, painting and maintenance					P			P	P	
Soap, detergent and washing compound manufacture										CU
Solar Farm <less than 2 acres follow Section 17.6	P	P	P	P					P	P
Solar Farm >greater than 2 acres follow Section 17.6	CU	CU	CU	CU					CU	CU
Sporting goods sales					P	P	P	P		
Spray irrigation of tertiary tested wastewater (reclaimed water)	P	P	P	P	P	P	P	P	P	P
Stonecutting, monument manufacture and sales									P	P
Storage warehouses									CU	CU

Chatham County Zoning Ordinance

Zoning District		R5	R2	R1	O&I	B-1*	NB	CB	RB	IL CU	IH CU
Storage yards (outdoor storage)											
Street and railway rights-of-way		P	P	P							
Swimming pool and related items sales and service						P		P	P		
Tannery or tanning operations (Subject to additional requirements of Section 17.9)											CU
Tar and waterproofing materials manufacture, treatment and storage (Subject to additional requirements of Section 17.9)											CU
Wireless Telecommunications Facilities and Wireless Support Structures  <i>*Subject to the provisions of the Wireless Facilities Ordinance</i>	Wireless Support Structures that are sixty (60) feet or less in height	P*	P*	P*	P*	P*	P*	P*	P*	P*	P*
	Concealed Wireless Facilities that are sixty (60) feet or less in height	P*	P*	P*	P*	P*	P*	P*	P*	P*	P*
	Concealed Wireless Facilities one hundred fifty (150) feet or less in height but greater than sixty (60) feet in height	CU*	CU*	CU*	P*	P*	P*	P*	P*	P*	P*
	Wireless Support Structures that are less than one hundred ninety-nine (199) feet, but greater than sixty (60) feet in height	CU*	CU*	CU*	CU*	CU*	CU*	CU*	CU*	P*	P*
	Wireless Support Structures that are greater than one hundred ninety-nine (199) feet, but no more than four hundred (400) feet in height	CU*	CU*	CU*	CU*	CU*	CU*	CU*	CU*	CU*	CU*
Temporary construction trailers or structures (See definitions for requirements)		P	P	P	P	P	P	P	P	P	P
Textile machinery manufacture											P
Textile manufacture including spinning, dyeing, bleaching and other heavy processes (Subject to additional requirements of Section 17.9)											CU
Tire recapping and re-treading										P	P
Tobacco processing and storage										P	P
Trailer sales areas										P	P
Transportation equipment Manufacture											CU <sup>3</sup>
Truck terminals, repair shops, hauling and storage yards										P	P

Chatham County Zoning Ordinance

<b>Zoning District</b>	<b>R5</b>	<b>R2</b>	<b>R1</b>	<b>O&amp;I</b>	<b>B-1*</b>	<b>NB</b>	<b>CB</b>	<b>RB</b>	<b>IL</b>	<b>IH</b>
Upholstery, paper hanging and decorator shops					P	P	P	P	P	P
Uses and structures customarily accessory to any permitted use					P	P	P	P	P	P
Veterinary clinics and hospitals with dog runs or equivalent facilities					P		CU	CU	CU	CU
Veterinary hospitals & clinics					P		P	P	P	P
Wastepaper and rags, collection and bailing									P	P
Wholesale and jobbing establishments including incidental retail outlets for only such merchandise as is handled at wholesale									P	P
Woodworking shops, mill work									P	P

## **SECTION 11      GENERAL ENVIRONMENTAL PERFORMANCE STANDARDS**

### **11.1. In General**

All uses in any district shall comply with all the applicable performance requirements of the State of North Carolina regarding noise, glare, resource pollution, air pollution and/or other regulatory standards applicable to the environs and/or their protection. All uses shall be so constructed, maintained and operated as to not be injurious to the use and occupation or enjoyment of the adjacent premises by reason of the emission or creation of noise, vibration, light, smoke, dust or other particulate matter, toxic or noxious waste materials, odors, radiation, fire, explosion hazard or glare, stormwater discharge, or other such matters or events.

### **11.2. Specific Requirements**

In addition to the above and not in conflict, the following specific standards shall apply to all uses unless otherwise indicated:

#### **A. Noise**

Noise generated by uses and operations permitted or regulated by this Ordinance shall be subject to the provisions of the Chatham County Noise Control Ordinance.

#### **B. Vibration**

No use shall be operated so as to produce ground vibration noticeable, without instruments, at the lot line of the premises, which the use is located.

#### **C. Smoke and Other Particulate Matter**

Every use shall be so operated as to prevent the emission of smoke from any source whatever, to a density greater than described as Number 1 on the Ringlemann Smoke Chart, provided, however, that smoke equal to, but not in excess of that shade of appearance described as Number 2 on the Ringlemann Chart may be emitted for a period or periods totaling four minutes in any 30 minutes. For the purpose of grading the density of smoke, the Ringlemann Chart as published and used by the United States Bureau of Mines, and which is hereby made, by reference, a part of these regulations, shall be standard. All measurements shall be made at the point of emission.

Every use shall be so operated as to prevent the emission into the air of dust or other solid matter which may cause damage to property and health of persons or animals at or beyond the lot line of the premises on which the use is located.

#### **D. Odors**

No use shall be operated so as to produce the emission of hazardous, objectionable or offensive odors in such concentration as to be readily perceptible at or beyond the lot line of the property on which the use is located.

#### **E. Toxic, Noxious or Hazardous Matter**

*No use shall for any period of time, discharge across the boundaries of a lot on which it is located, or into the waters of the State of North Carolina, toxic, noxious or hazardous matter in such concentrations as to be detrimental to or endanger the public health, safety, comfort, or general welfare, or cause injury or damage to persons, property or the use of property or land.*

**F. Electromagnetic Interference**

No use, activity, or process shall be conducted which produces electromagnetic interference with normal radio or television reception beyond the lot line of the property on which the use is located.

**G. Fire and Explosion Hazards**

Each use shall be operated so as to minimize the danger from fire and explosion and to comply with the regulations contained in the building code and fire prevention code.

**H. Humidity, Heat or Glare**

Any activity producing humidity in the form of steam or moist air, or producing heat or glare, shall be carried on in such a manner that the steam, humidity, heat or glare is not perceptible at or beyond the boundary of the zoning district in which the use is located, or any residential, business or office and institutional zoning district boundary.

**I. Light**

All lighting shall be beamed down and away from adjoining property. To the extent practicable, all light produced on-site shall be contained within the perimeter of the site by design, orientation or shielding of the light source. The following lighting shall be prohibited:

1. No fixture shall be erected which is an imitation of an official highway or traffic control light or sign.
2. No fixture shall be in a direct line of vision with any traffic control sign or light.
3. No fixture shall have a flashing or intermittent pattern of illumination.
4. No fixture shall be located within a public right-of-way.
5. No fixture shall be erected which because of the design of the light source, orientation or intensity causes direct glare onto adjacent property or streets, creating a nuisance or a hazard or causing confusion to drivers.
6. Search lights are prohibited except when used by Federal, State or local authority.
7. No fixture shall violate any law of the State of North Carolina relative to outdoor lighting.

See **SECTION 13**, Lighting for additional requirements.

**J. Stormwater Discharge**

No use shall for any period of time, discharge across the boundaries of a lot on which it is located, stormwater containing toxic or noxious matter in such concentrations as to be detrimental to or endanger the public health, safety, comfort, or general welfare, or cause injury or damage to persons, property or the use of property or land.



### **11.3. Environmental Impact Assessment**

An Environmental Impact Assessment, as described in Section 6.2 (B) of the Subdivision Regulations and related guidelines, shall be required for a project which meets any criteria listed in A. through E. below and which consists of ten (10) or more contiguous acres in extent and that disturbs ten (10) or more acres. A project for which a detailed statement of the environmental impact of the project is required pursuant to N.C. Gen. Stat. § 113A-4(2) or 42 U.S.C. § 4332(C), or for which a functionally equivalent permitting process is required by federal or State law, regulation or rule, is exempt from the requirement of this Section 11.3, provided that a copy of any such detailed statement of environmental impact or of any application(s) for a functionally equivalent permitting process on which an exemption is claimed shall be provided to the County prior to any land-disturbing activity. A project for which no environmental document shall be required pursuant to N.C. Gen. Stat. § 113A-12 is exempt from the requirements of this Section 11.3.

This Section 11.3 applies to the following projects:

- A.** Any new project requiring a Conditional Use Permit or Conditional Zoning District.
- B.** Any physical expansion of project approved under an existing Conditional Use Permit or Conditional Zoning District. A physical expansion that is less than ten (10) contiguous acres in extent or disturbs less than ten (10) acres shall be subject to the requirements of this Section 11.3 if no substantial work has begun on the approved project and the expansion together with the approved project will exceed ten (10) contiguous acres in extent and disturbs ten (10) or more acres. Physical expansion means the addition of new property or acreage to an area covered by an existing Conditional Use Permit or Conditional Zoning District. This requirement shall also apply to conversions of existing Conditional Use Zoning Districts to Conditional Zoning Districts.
- C.** Any non-residential major subdivision development project, excepting bona fide farm activities;
- D.** Any residential subdivision development project that will include fifty (50) or more dwelling units, whether detached or attached single family residences or in a multi-family structure or structures; or
- E.** Any residential subdivision project of fifty (50) or more lots.

**SECTION 12     LANDSCAPING AND BUFFERING STANDARDS**

Attractive landscaping of a project is an essential component of overall visual appeal. It affords an opportunity to soften the impact of new development. Therefore, it is important that the landscape plan demonstrate clearly thought-out goals. There are many possible approaches to achieving the degree of screening necessary for the various conditional use districts. A clearly stated rationale should accompany the landscaping plan that explains how the plan both serves the needs of the project and fits in with the rural Chatham County setting. For example, some factors that may be addressed are as follows:

- Site conditions such as the amount of sun or shade, slope, and wet or dry areas
- Representative native species of both canopy and under story trees to provide continuity with wooded areas nearby
- Plants that provide screening in cold seasons
- Cost and maintenance considerations
- Growth rates
- Flowering species that can benefit both passersby and beneficial insects.

Landscaping plants shall be selected from the Chatham County Design Guidelines that are, for the most part, a naturally occurring species and arrangement for the area. The use of non-naturally occurring and rare plantings is not discouraged for "specimen" and "contrast" plantings.

- A landscaping plan must be submitted to the County with every non-residential application. Landscaping refers to topography, trees, shrubs, grass, and vegetation. The landscaping plan shall indicate where existing trees and vegetation are preserved.
- A buffer is a strip of land with the screening required thereon. Screening may include landscaping, walls, fences, hedges, berms, and existing vegetation.
- Street trees shall be required along streets at intervals of 40 ft. Each tree shall be of at least 2-1/2 inch caliper when installed and be a height of 30 ft. at maturity.
- Chain link fences are to be discouraged unless screened by vegetation.
- Plantings adjacent to building walls should be included along sides of buildings where devoid of architectural interest.
- The buffer width, height, and appropriate screening for commercial uses adjacent to other commercial uses, adjacent to residential/rural use, or to land zoned as such shall be in accordance with Table 2.

In situations where the property for which site plan or building permit approval is sought was timbered in violation of development regulations, and the timber harvest results in the removal of all or substantially all of the trees that were protected under County regulations governing development of that tract, the County may withhold approval for up to three (3) years after the completion of the timber harvest.

The County may refuse to approve a site plan or deny a building permit for up to five (5) years after the completion of a timber harvest if the harvest results in the removal of all or substantially all of the trees that were protected under County regulations governing development of the tract for which the approval is sought, and the harvest was a willful violation of County regulations.

**12.1. Additional Requirements**

- a. Plantings as required by this chapter shall not be located in drainage, access or utility easements, under overhead power lines or in sight triangles.
- b. All developments shall provide secure, safe and sanitary facilities for the storage and pickup of refuse. Such facilities shall be convenient to collection and shall be appropriate to the type and size of the development being served. All dumpsters/refuse storage facilities shall be screened by a solid wall, fence, tight evergreen hedge, or a combination. Such screening shall be of sufficient height and design to effectively screen the facility from the view of adjacent properties and roads.
- c. Fences, walls and earth berms may be used in combination with trees and shrubs to fulfill required landscaping; provided, however, that these manmade features are designed and located in such a way that will not conflict with other site features and functions and will be in harmony with the surrounding landscape.
- d. All portions of the landscaping area not planted with shrubs and trees or covered by a wall or other barrier shall be planted in grass and/or ground cover, or covered by a natural mulch of a minimum depth of three inches.

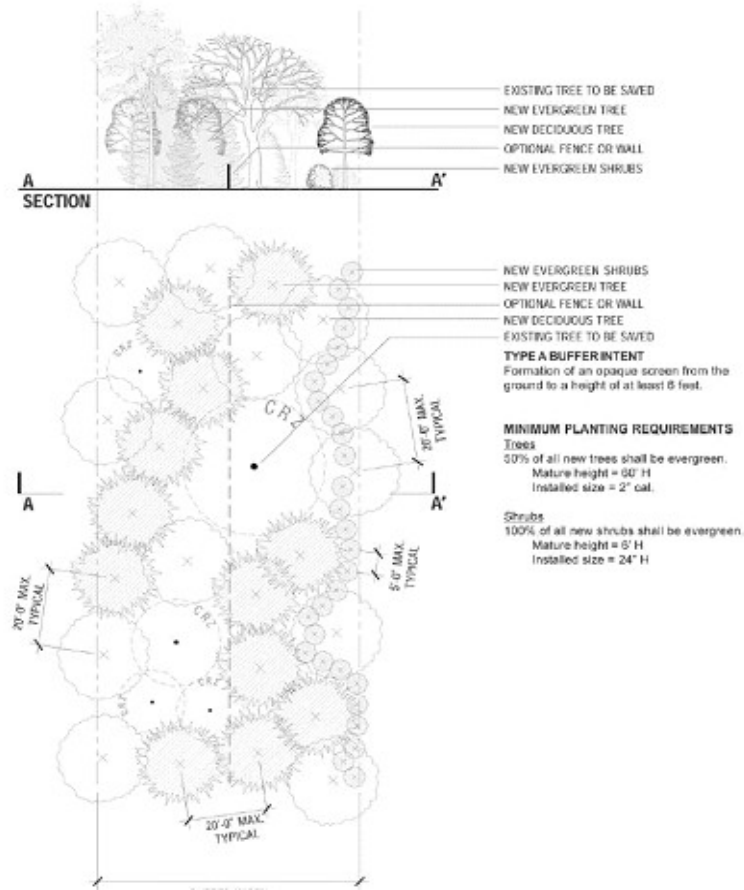
**12.2. Water Conservation Guidelines**

Given the finite resources for Chatham County, it is highly recommended that year round water conservation be practiced. The purpose of the following recommendations is to preserve our limited natural resources and to foster good growth rates of plantings in the landscape.

**A. Xeriscaping**

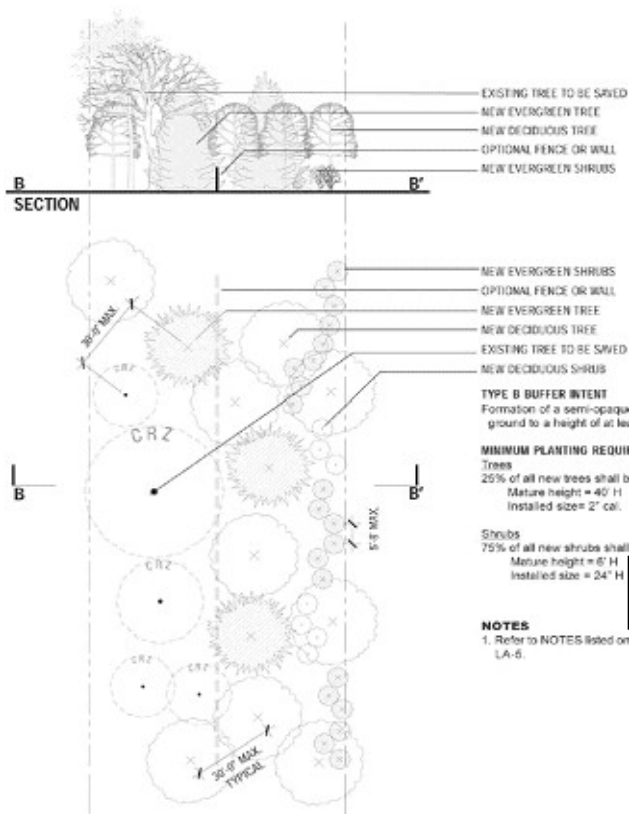
Xeriscaping is recommended where possible to conserve water. See *Chatham County Design Guidelines* for more about xeriscaping.

**12.3. Landscape Buffering Requirements and Screen Types**



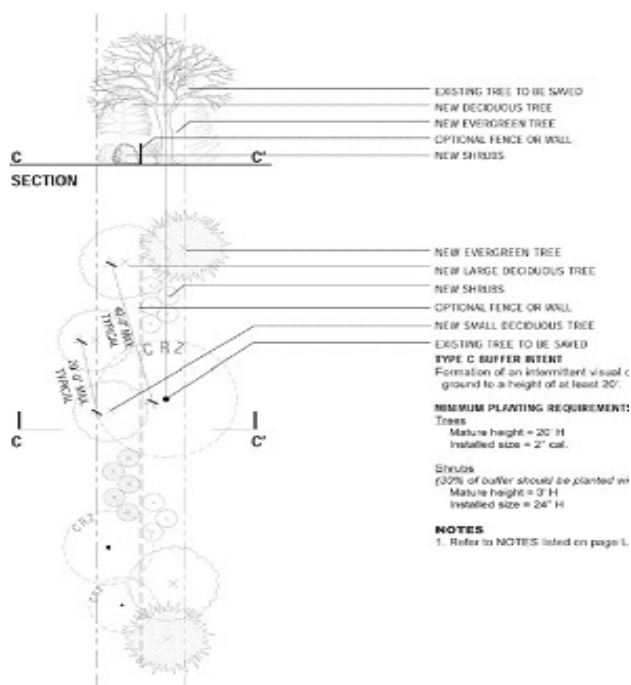
**Screen A:** This screen creates a year-round visual barrier such that there are no direct views from the street or from the adjacent properties to the development at any time of year. Plants are typically evergreen and can be used in combination with walls and berms. Minimum spacing shall generally be no wider than 20 feet between tree trunks (but may wider depending on tree type), with evergreen shrubs spaced five feet on center.

**Figure 1: Screen A Example**



**Screen B:** This screen breaks up the view such that some elements of the property can be seen from some views and/or during some seasons. 25 – 35% deciduous plants may be allowed. Minimum spacing shall generally be no wider than 30 feet between tree trunks (but may be wider depending on tree type), with evergreen shrubs spacing ranging from five to eight feet on center.

**Screen C:** This buffer area simply preserves existing vegetation. It is intended less as a visual barrier and more for a specific purpose. Examples could include, but are not limited to erosion control, providing continuity with nearby wooded areas, providing wildlife habitat, protecting existing vegetation, providing shade, and/or for aesthetic purposes. Minimum spacing shall generally be no wider than 40 feet between canopy tree trunks and no wider than 20 feet between ornamental tree trunks.



**Figure 3: Screen C Example**

Height and width of all screen types to be determined case-by-case depending on height of structure to be screened in combination with topography of site and of adjacent sites. Berms, walls, and/or building layout changes may also be necessary. Minimum widths and plant types for satisfying the screen requirements are in: Landscape Buffer Requirements. The plantings are to reach screening goals within 24 – 36 months of the installation and to be maintained as shown on any plans.

**Table 2: Landscape Buffer Requirements\***

<i>Proposed land use class</i>	For adjacent property development					Land use across an adjacent street				
	<i>Com</i>	<i>O&amp;I</i>	<i>Ind-L</i>	<i>Ind-H</i>	<i>R</i>	<i>Com</i>	<i>O-I</i>	<i>Ind-L</i>	<i>Ind-H</i>	<i>R</i>
<i>Commercial (NB, CB, RB)</i>	n/a	n/a	B 20'	B 20'	A 20'	C 20'	B 20'	C 20'	C 20'	B 20'
O&I: Office & Institutional	n/a	n/a	B 20'	B 20'	A 30'	B 20'	B 20'	B 20'	B 20'	B 20'
Ind-L: Light Industrial	B 40'	A 40'	n/a	n/a	A 60'	A 20'	A 20'	C 20'	C 20'	A 40'
Ind-H: Heavy Industrial	B 60'	A 60'	n/a	n/a	A 80'	A 40'	A 40'	C 20'	C 20'	A 60'
R-A: Residential & Agricultural	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a

\*Adjacent property (but not street) buffers may be waived for mixed-use projects as a condition of an approved Conditional Use Permit.

**12.4 Screening of Storage Areas**

This section addresses the outdoor storage, utility, and equipment areas often associated with commercial uses. Requirements herein do not apply to mercantile locations where commodities for sale are displayed on the sales site.

Preliminary site design for any project should include providing for adequate outdoor storage needs. These areas include space where materials are temporarily stored, waste and recycling is handled and stored, mechanical/electrical equipment is located or loading and vehicular work yards are located.

Whenever possible storage areas should be concealed by site or building design. Where such is not possible, screening should be provided as follows.

**Table 3: Storage Area Screening Requirements**

<u>Type of Item to be Screened</u>	<u>Screening Requirements</u>
Ground-mounted electrical transformer	Border plantings on the two most visible sides of the equipment <u>at least as high as the equipment</u> , such as evergreen shrubbery planted to achieve an approximate 80% visual obstruction
Waste and recycling outdoor containers, stored construction materials, utility supplies, etc.  (does not apply to temporary storage of six months or less)	A 95% solid treated wood fence at least 1' higher than the object to be screened and coming within 12" of the ground, with border plantings of evergreen shrubs that constitute an approximate 30% screen on the two most visible sides of the fence, <u>OR</u> ,

Repair work, dismantling or servicing of vehicles	An approximate 95% dense planting of evergreen shrubs and/or small trees that reaches the screen density within 24 months of installation and is maintained in perpetuity or until a fence is erected.
Satellite dish antennas that are 25” in diameter or greater	Conceal area using 8’ high, 100% opaque fence, with evergreen border plantings that conceal 35% of the fence or equivalent screening A 70% visual barrier that is the height of the dish or greater when viewed from the public right-of-way or adjacent residential usages.

Storage areas that are deemed hazards to the public or stored items that could be windblown or require security shall be further enclosed on all sides by wall or fence with border plantings and shall include an operable gate. Gates shall not swing into any public way.

*Project landscaping shall be established prior to the facility earning a certificate of occupancy. It is the owner's responsibility to maintain the landscape plantings in good health and to replace any failed plants promptly.*

**12.5 Screening of Loading Areas**

The Chatham County zoning ordinance provides for loading and delivery areas for all buildings used for trade, or industry. A minimum dimension for loading spaces and a quantity requirement for providing spaces based on building area is included. Such spaces shall have access to a public service alley, private driveway, or, if necessary, a public street.

Whenever possible, all loading areas shall be located between the building and the rear lot line of the property, and/or shall be screened from the view of the street and adjacent properties. Developments that use loading areas extensively are encouraged to recess this functional area of the building into the mass of the building or creatively blend it into the landscape using building offsets, screen walls, berms, and other design techniques.

The following list of screening requirements is intended to protect the public and adjacent properties from views to loading areas.

**Table 4: Loading Area Screening Requirements**

<u>Type of Item to be Screened</u>	<u>Screening Requirements</u>
Delivery door or overhead door without exterior dock and steps	None
Overhead delivery doors with loading docks and steps	6’ high screening device of solid structure (wall, fence, etc.) with low border plantings at corners or 25’ on center areas of border plantings
	OR

Loading dock areas that are also used to store recycling waste containers or outdoor stored materials for any period of time

An approximate 95% dense planting of evergreen shrubs and/or small trees that reaches effective density within 24 months and is maintained in perpetuity or until a landscaped fence is erected.

A 95% solid wooden fence or wall at least 1' higher than the tallest storage or equipment article. Fence shall extend to within 12" of the ground and have border plantings of evergreen shrubs that constitute an approximate 30% screen on the two most visible sides of the loading area

OR

An approximate 95% dense planting of evergreen shrubs and/or small trees that reaches effective density within 24 months of installation and is maintained in perpetuity or until a landscaped fence is erected.

Screening structures and landscaping may include breaks in the visual barrier for vehicular and pedestrian egress. There, openings in the screening shall be limited to a minimum practical width and located so as to obscure line of sight from the public way.

#### **12.6. Applicability**

- a. Existing uses shall not be considered non-conforming for this section until expansion of the use is greater than ten percent (10%) of the footprint of the use (building(s), ancillary structures, parking, loading, et cetera. Generally impervious surfaces; pervious areas that are actively engaged in the primary use or permitted ancillary uses are also included).
- b. Any expansion under ten percent (10%) within three (3) years of an additional expansion shall be counted toward the percentage of the total.
- c. This shall apply to all non-residential applications and conditional use permits with the exception of wireless facilities and structures, which are subject to the landscaping provisions within the Wireless Facilities Ordinance and exempt from Appearance Commission Review.



## SECTION 13     LIGHTING

### 13.1.    Intent and purpose

Outdoor lighting shall be designed to provide the minimum lighting necessary to ensure adequate safety, night vision, and comfort, reduce light pollution and not create or cause excessive glare on adjacent properties and street rights-of-way.

### 13.2.    Illuminating Engineering Society of North America (IESNA) Cutoff Classifications<sup>3</sup>

**Full Cutoff**—A fixture light distribution where no light intensity is emitted at or above a horizontal plane drawn through the bottom of the fixture and no more than 10% of the lamp's light intensity is emitted at or above an angle 10 degrees below that horizontal plane, at all lateral angles around the fixture.

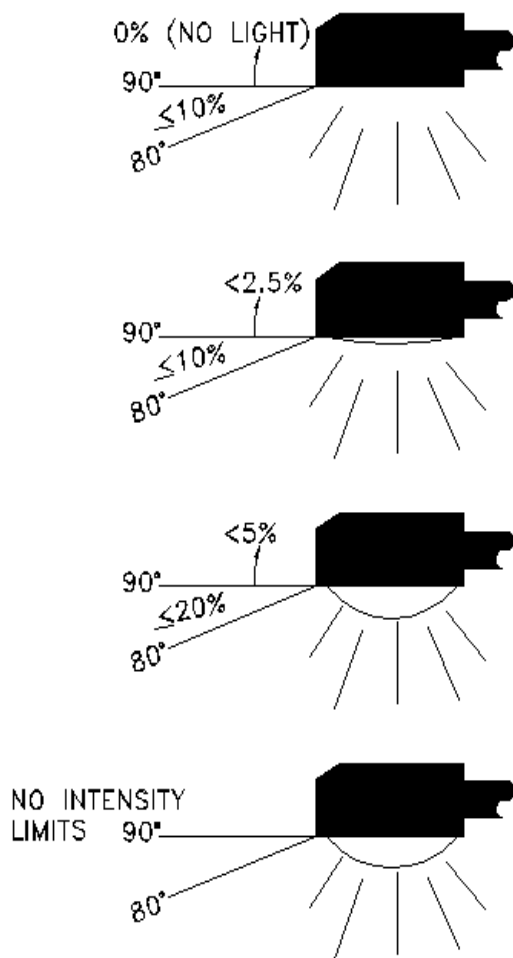
**Cutoff**—A fixture light distribution where no more than 2.5% of a lamp's light intensity is emitted at or above a horizontal plane drawn through the bottom of the fixture and no more than 10% of the lamp's light intensity is emitted at or above an angle 10 degrees below that horizontal plane, at all lateral angles around the fixture.

**Semi-Cutoff**—A fixture light distribution where no more than 5% of a lamp's light intensity is emitted at or above a horizontal plane drawn through the bottom of the fixture and no more than 20% of the lamp's light intensity is emitted at or above an angle 10 degrees below that horizontal plane, at all lateral angles around the fixture

**Noncutoff**—A fixture light distribution where there is no light intensity limitation in the zone above the maximum distribution of light intensity.

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<sup>3</sup> with minimal wording modifications to provide non-technical clarity



- 1. Full Cutoff**—A fixture light distribution where no light intensity is emitted at or above a horizontal plane drawn through the bottom of the fixture and no more than 10% of the lamp’s light intensity is emitted at or above an angle 10 degrees below that horizontal plane, at all lateral angles around the fixture.
- 2. Cutoff**—A fixture light distribution where no more than 2.5% of a lamp’s light intensity is emitted at or above a horizontal plane drawn through the bottom of the fixture and no more than 10% of the lamp’s light intensity is emitted at or above an angle 10 degrees below that horizontal plane, at all lateral angles around the fixture.
- 3. Semi-Cutoff**—A fixture light distribution where no more than 5% of a lamp’s light intensity is emitted at or above a horizontal plane drawn through the bottom of the fixture and no more than 20% of the lamp’s light intensity is emitted at or above an angle 10 degrees below that horizontal plane, at all lateral angles around the fixture
- 4. Noncutoff**—A fixture light distribution where there is no light intensity limitation in the zone above the maximum distribution of light intensity.

### 13.3. Definitions

**Candela**— A measure of luminous or light intensity in a certain direction. Useful in determining how much light is shining out of a fixture and in what direction.

**Diffusing Panel (lens)** – A translucent material covering the lamps in a luminaire in order to reduce the brightness by distributing the light flux over an extended area.

**Direct Lighting** – Lighting involving luminaries that distribute 90 to 100% of the emitted light in the general direction of the surface to be illuminated. The term usually refers to light emitted in a downward direction.

**Fixture**— An assembly that holds the lamp (bulb) in a lighting system. It includes the elements designed to give light output control, such as a reflector (mirror) or refractor (lens), the ballast, housing, and the attachment parts.

**Flood Lamp**— A form of lighting designed to direct its output in a specific direction with a reflector formed from the glass envelope of the lamp itself. Such lamps are so designated by the manufacturers and are typically used in residential outdoor area lighting.

**Flood Light**— A form of lighting designed to direct its output in a diffuse, more or less specific direction, with reflecting or refracting elements located external to the lamp.

**Footcandle (FC)**— A quantitative unit measuring the amount of light (illumination) falling onto a given point. One footcandle equals one lumen per square foot.

**Glare**— The effect produced by a light source within the visual field that is sufficiently brighter than the level to which the eyes are adapted, to cause annoyance, discomfort, or loss of visual performance and ability.

**HID**— High intensity discharge lighting is a bulb type including mercury vapor, metal halide, high pressure or low-pressure sodium, which glow when an electric current is passed through a gas mixture inside the bulb.

**Holiday/Festive Lighting** – Lighting that is installed with the intent to operate during a designated temporary period of time where a specific theme or event is a focus of attention.

**IESNA**—The Illuminating Engineering Society of North America, a non-profit professional organization of lighting specialists that has established recommended design standards for various lighting applications.

**Illuminance**— The amount of light falling on a surface-measured in lux or footcandles.

**Internal Refractive Lens**— A glass or plastic lens installed between the lamp and the sections of the outer fixture globe or enclosure. Refractive refers to the redirection (bending) of the light as it goes through the lens, softening and spreading the light being distributed from the light source thereby reducing direct glare.

**Light Source**— The element of a lighting fixture that is the point of origin of the lumens emitted by the fixture.

**Light Trespass**— Light emitted by a lighting installation that falls outside the boundaries of the property on which the installation is sited. This has adverse effects on residents, vehicle operators and pedestrians, the natural environment.

**Lumen**— A quantitative unit used to identify the amount of light emitted by a light source. A lamp is generally rated in lumens.

**Maintained Footcandles**— Illuminance of lighting fixtures adjusted for a maintenance factor accounting for dirt build-up and lamp output depreciation. The maintenance factor used in the design process to account for this depreciation cannot be lower than 0.72 for high-pressure sodium and 0.64 for metal halide and mercury vapor.

**Medium Base**— The size of lamp socket designed to accept a medium or Edison base lamp.

**Natural Recreation Area** – An area that is intrinsically dark at night where electric lighting should be held to a minimum as designated by Chatham County.

**Outdoor Performance Area**— An area permanently dedicated to the public presentation of music, dance, theater, media arts, storytelling, oratory, or other performing arts, whether publicly or privately owned, including but not limited to amphitheatres and similar open or semi-enclosed structures.

**Outdoor Sports Field**— An area designed for recreation (public or privately owned). These areas include, but are not limited to baseball/softball diamonds, soccer fields, football fields, golf courses, golf driving ranges, tennis courts, racetracks, firearm shooting ranges, and swimming pools.

**Right-of-Way**— An interest in land to the county which provides for the perpetual right and privilege of the county, its agents, franchise holders, successors, and assigns to construct, install, improve, reconstruct, remove, replace, inspect, repair, maintain, and use a public *street*, including related and customary uses of street rights-of-way such as sidewalks, bike paths, landscaping, mass transit facilities, traffic control, traffic control devices and signage, sanitary sewer, storm water drainage, water supply, cable television, electric power, gas, and telephone transmission and related purposes in, upon, over, below, and across the rights-of-way.

**Temporary Lighting**— Lighting used for a limited duration, but in no case longer than thirty (30) days.

**Vehicular Canopy**— A roofed, open, drive-through structure designed to provide temporary shelter for vehicles and their occupants while making use of a business' services.

**Wall Pack**— A type of light fixture typically flush-mounted on a vertical wall surface.

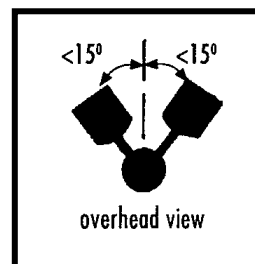
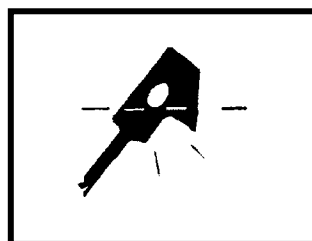
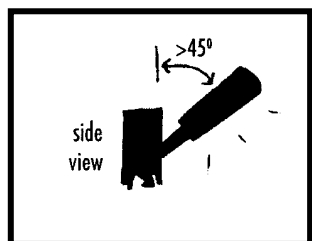
**Wide-body Refractive Globe**— A translucent lamp enclosure used with some outdoor fixtures to provide a decorative look (including but not limited to acorn- and carriage light-style fixtures). “Wide-body” refers to a wider than average size globe (greater than 15.75” in diameter). “Refractive” refers to the redirection (bending) of the light as it goes through the lens, rendering the light fixture more effective. Wide-body refractive globes are intended to soften and spread the light being distributed from the light source thereby reducing direct glare.

**13.4. Light Measurement Technique**

Light level measurements shall be made at the property line of the property upon which the light to be measured is being generated. If measurement on private property is not possible or practical, light level measurements may be made at the boundary of the right-of-way that adjoins the property of the complainant or at any other location on the property of the complainant. Measurements shall be made at finished grade (ground level), with the light-registering portion of the meter held parallel to the ground pointing up. The meter shall have cosine and color correction and have an accuracy tolerance of no greater than plus or minus five (5) percent. Measurements shall be taken with a light meter that has been calibrated within the previous two years. Light levels are specified, calculated and measured in footcandles (FC). All FC values are maintained footcandles unless specified otherwise. See the definition for maintained footcandles in section 13.3 for maximum allowed light loss factors.

**13.5. General Standards for Outdoor Lighting**

1. Lighting Plan—A lighting plan shall be provided for review and must be approved prior to the issuance of the building permit. The lighting plan shall demonstrate a consideration for reduced energy consumption through the selection of energy efficient fixtures.
2. Unless otherwise specified in the following subsections, the maximum light level shall be 0.5 maintained footcandle at any property line in a residential district, or on a lot occupied by a dwelling, congregate care or congregate living structure, unless otherwise approved by the county.
3. All floodlights shall be installed such that the fixture shall be aimed down at least forty-five (45) degrees from vertical. These lights shall be positioned such that any such fixture located within fifty feet (50) of a public street right-of-way is mounted and aimed perpendicular to the right-of-way, with a side-to-side horizontal aiming tolerance not to exceed fifteen (15) degrees from perpendicular to the right-of-way. The Zoning Administrator may require shields to be installed on floodlights before, during or after the installation when needed to further reduce lighting trespass, glare and light pollution. Flood lights shall not be aimed at residential property.



4. All flood lamps emitting 1,000 or more lumens shall be aimed at least sixty (60) degrees down from horizontal or shielded such that the main

beam from the light source is not visible from adjacent properties or the public street right-of-way.

5. All wall pack fixtures shall be full cutoff fixtures.
6. All fixtures installed, owned, or leased by governmental or public agencies, or their agents, for the purpose of illuminating public streets are otherwise exempt from this regulation. Fixtures installed through private development are not exempt.
7. The lighting plan shall demonstrate a consideration for reduced energy consumption through the selection of energy efficient fixtures.
8. With the exception of essential all-night security lighting, the plan shall demonstrate lighting reduction procedures, implemented using timers or other methods (such as fixtures that automatically change wattage output). Said lighting reduction shall be active between approximately 12 midnight and dawn. For 24-hr commercial activities, this requirement may be adjusted by approval of the Board of County Commissioners.

**13.6. Lighting in Outdoor Areas (Residential and Non-Residential)**

1. Other than flood lights and flood lamps, all outdoor area and parking lot lighting fixtures of more than 2,000 lumens shall be full cutoff fixtures, or comply with subsection (4) below.
2. The mounting height of all outdoor lighting, except outdoor sports field lighting and outdoor performance area lighting shall not exceed thirty-seven (37) feet above finished grade, unless approved by the Board of County Commissioners as having no adverse effect.
3. Security Lighting for Open Parking Facilities: For lighted parking lots the minimum light level shall be no less than 0.2 footcandles. All light levels are measured at ground level. The minimum light level requirements vary depending on the activity classification. The specified minimum FC value above 0.2 FC as outlined in the following table means that the lowest light level point or location in the parking lot must not exceed the minimum stated FC value in the table (i.e. 0.9 FC for large shopping centers). An average to minimum uniformity ratio of 4:1 means that the average FC to minimum FC ratio cannot be worse (higher) than 4:1. See the following table:

Security Light Levels for Open Outdoor Parking Facilities*		
Use/Task	Maintained Footcandles	Uniformity Avg/Min
<b>Parking, residential, multi-family</b> Low to medium vehicular/pedestrian activity	Range from 0.2 Min to 0.6 Min	4:1
<b>Parking, industrial/commercial/Institutional/municipal</b> High activity, i.e. large shopping centers/fast food facilities, major athletic/civic cultural events	0.9 Min	4:1
Medium/low activity, i.e. community shopping, office parks, hospitals, commuter lots, cultural/civic/recreational events, residential neighborhood shopping,	Range from 0.2 Min to 0.7 Min	4:1

industrial employee parking, schools, church parking		
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Source: IESNA 8<sup>th</sup> Edition Lighting Handbook; Modification: Medium and Low Activity Level recommendations have been combined.

Notes:

- a. Illumination levels are horizontal on the task, e.g. pavement or area surface.
  - b. Uniformity ratios dictate that average illuminance values shall not exceed minimum values by more than the product of the minimum value and the specified ratio. For example, for commercial parking medium/low activity, the average footcandles shall not be in excess of 2.8 (0.7 x 4).
  - c. A low/medium activity can be reclassified upward when appropriate and only with Chatham County Planning Department approval.
  - d. Examples of lighting measurements taken during the development of this ordinance are available from the Planning Department.
4. Exceptions:
- a. Non-cutoff decorative post-mounted fixtures may be used but must be equipped with a solid top when available to direct the light downward or meet the cutoff classification. Mounting heights of 18 feet or less above ground are allowed when the maximum initial lumens generated by each fixture does not exceed 9500 initial lamp lumens.
    1. All metal halide, mercury vapor, fluorescent, induction, white high pressure sodium and color improved high pressure sodium lamps used in non-cutoff fixtures shall be coated with an internal white frosting inside the outer lamp envelope.
    2. All metal halide solid-top decorative post fixtures equipped with a medium base socket must use an internal refractive lens, a diffusing panel (lens) or a wide-body refractive globe as described in section 13.3 Definitions.
  - b. Dusk-to-dawn open bottom security lights must be fully shielded to provide a full cutoff light distribution.
  - c. Temporary lighting for special events of short duration. Typically these are low wattage or low voltage applications for public festivals, celebrations, and the observance of holidays, carnivals, and celebrations. Portable (non-permanent) internally-illuminated signs come under this classification and, as such, can be used for up to thirty (30) days only.
  - d. Airport lighting controlled by the Federal Aviation Administration (FAA).
  - e. Lighting of the United States of America and State of North Carolina flags and other flags or insignia of any governmental entity.

**13.7. Lighting for Vehicular Canopies**

Areas under a vehicular canopy shall have an average maximum horizontal illuminance of twenty-four (24) maintained footcandles (FC). Areas outside the vehicular canopy shall be regulated by the standards of subsection 13.6 above. Lighting under vehicular canopies shall be designed so as not to create glare off-site. Acceptable methods include one or both of the following:

1. Recessed fixture incorporating a lens cover that is either recessed or flush with the bottom surface (ceiling) of the vehicular canopy that provides a full cutoff or fully-shielded light distribution.
2. Surface mounted fixture incorporating a flat glass that provides a full cutoff or fully-shielded light distribution.

**13.8. Outdoor Sports Field /Outdoor Performance Area Lighting**

1. The mounting height of outdoor sports field and outdoor performance area lighting fixtures shall not exceed eighty (80) feet from finished grade unless approved by the Chatham County Zoning Board of Adjustment.
2. All outdoor sports field and outdoor performance area lighting fixtures shall be equipped with a glare control package (louvers, shields, or similar devices).
3. The fixtures must be aimed so that their beams are directed and fall within the primary playing or performance area. The maximum light level shall be 0.5 maintained footcandles at any property line in a residential district, or on a lot occupied by a dwelling congregate care or congregate living structure.
4. As outdoor sport field/outdoor performance area lighting non-conforming fixtures fail, maintenance replacement fixtures must be installed that comply with the requirements of these lighting standards.
5. The hours of operation for the lighting system for any game or event shall not exceed one hour after the end of the event.

**13.9. Natural Recreation Areas**

These locations are intrinsically dark landscapes at night. Such areas include state and national parks, conservation areas, natural recreation areas, and areas adjacent to optical astronomical observatories. These places are used for camping, etc., where a naturally dark environment is desired and are designated by Chatham County.

1. Light reduction procedures begin at approximately 12 midnight with limited essential safety and security lighting.
2. All fixtures shall be full cut-off.

**13.10. Lighting of Outdoor Display Areas**

The following provisions apply to outdoor display areas except for car dealership parking lots, as specified in item (4), below:

1. Parking lot outdoor areas shall be illuminated in accordance with the requirements for subsection 13.6 above. Outdoor display areas shall have a maximum average maintained illuminance of twenty-four (24) maintained footcandles.
2. All light fixtures shall meet the IESNA definition of cutoff fixtures. Forward throw fixtures (type IV light distribution, as defined by the IESNA) are required within twenty-five (25) feet of any public street right-of-way. Alternatively, directional fixtures (such as floodlights) may be used provided they shall be aimed in accordance with subsections 13.5 (3) and 13.5 (4) of this ordinance.

3. The mounting height of outdoor display area fixtures shall not exceed thirty-seven (37) feet above finished grade.
4. For car dealership parking lots, the following provisions shall apply:
  - a. Full cutoff fixtures shall be used.
  - b. Mounting Heights: Up to a maximum of thirty-five (35) plus 2-foot raised base for parking areas as needed.
  - c. Lighting at the first row, the car bumper may not exceed a maximum average maintained illuminance of 24 footcandles.
  - d. Lighting in the non-display area of the parking lot after hours shall be no higher than 7 FC average maintained.

### **13.11. Lighting of Buildings**

1. Lighting fixtures shall be selected, located, aimed, and shielded so that direct illumination is focused exclusively on the building façade, plantings, and other intended site features, and away from adjoining properties and the public street right-of-way.
2. Illumination on any vertical surface or angular roof shall not exceed 5.0 FC average maintained
3. To the extent practical and where possible, lighting fixtures shall be directed downward rather than upward
4. When upward aiming is used, placement of low wattage fixtures with shields (as needed) close to the building to graze the façade is required to minimize reflected light from windows and other surfaces. The Planning Department can waive this requirement in rare and unusual cases if it is demonstrated that the physical location of light fixtures close to the building to accomplish this design is not possible.

### **13.12. Permanent Sign and Billboard Lighting**

External lighting fixtures illuminating signs and billboards shall be aimed and shielded so that direct illumination is focused exclusively on the sign. Externally lighted signs shall be lighted from the top of the sign downward. The Planning Department can waive this requirement in rare and unusual cases if it is demonstrated that the physical location of light fixtures for top down aiming is not possible. The maximum watts permitted to illuminate a sign are determined by multiplying the sign face area by 2 watts per square foot. Internally illuminated signs are permitted, provided that the message or letters of such sign consist of nonreflective material. For additional guidance, see the sign section of the County Zoning Ordinance.

Exception: Signs less than 7 feet (2 meters) in height above grade may be illuminated by ground mounted uplighting not exceeding 100 lamp watts per sign face.

NOTE: Refer to Section 13.6 (4)(c) regarding portable internally illuminated signs.

### **13.13. Holiday/Festive Lighting**

Holiday/festive lighting is allowed provided it complies with the definition outlined in section 13.3. The connection of multiple holidays and/or festive events over a number of weeks and/or months is not permitted. Lamps below 7 watts are exempt and have no restrictions on use.



**13.14. Walkways, Bikeways and Parks (Section to be lighted)**

The walkway, pathway, or ground areas that are to be lighted shall be illuminated to a level of at least 0.2 and no more than 0.5 average horizontal maintained footcandles.

**13.15. Landscape Lighting**

All landscape and residential façade lighting systems shall employ shielded directional luminaires not to exceed 40 lamp watts. The luminaires shall be aimed such that the light source cannot be seen from any reasonable viewing point on an adjacent property.

**13.16. Permitting and Approval Process**

The following section applies generally to the Permitting and Approval Process and outlines requirements of the applicant seeking a permit for work involving outdoor lighting for residential subdivision single family and multi-family developments, commercial, multi-use, office, institutional and industrial projects. Specific permitting requirements are to be in compliance with the procedures established by the Chatham County Planning Department and the Chatham County Central Permitting Department. These aforementioned requirements shall serve as the framework by which this ordinance is implemented.

As with any permitting process, the applicant shall be required to submit the appropriate supporting documentation at the time the application is submitted for review. The documentation submitted shall contain, but not be limited to the following, all or part of which may be part of, or in addition to, the information required elsewhere in this Ordinance, and by the policies and procedures established by the Chatham County Planning Department and the Chatham County Central Permitting Department.

1. The applicant for any permit required for work involving outdoor lighting for commercial, office, institutional and industrial projects with a gross floor area of more than 5,000 square feet, residential projects other than detached single family dwellings of more than 6 units, all vehicular canopies and all outdoor display areas shall submit documentation at time of site plan or plot plan approval that the proposed lighting plan complies with the provisions of this lighting standard.
2. A lighting plan to scale is required that shows a point-by-point footcandle array on a 10' by 10' grid in a printout format indicating the location and aiming of illuminating devices. The printout shall include a summary table to indicate compliance with the average maintained and minimum footcandles and average to minimum uniformity ratios. FC point values in the appropriate areas to determine light trespass compliance is also required. The lighting plan shall include as a minimum an arrangement of the subject outdoor lighting, a fixture schedule detailing the mounting height & technique, fixture type, bulb type & wattage, controls, lenses, etc. The lighting plan shall demonstrate a consideration for reduced energy consumption through the selection of energy efficient fixtures as well as the implementation of the stated lighting practices as outlined throughout this ordinance.

3. A point-by-point photometric footcandle array created from industry recognized lighting software systems and/or manual calculations created by a professional engineer, lighting certified professional, vendor or an individual that possesses the skills to perform such calculations. Methods used for calculating the lighting footcandle levels shall be indicated in the application documentation. The footcandle array shall be provided in a hardcopy printed format indicating the location and aiming of all applicable illuminating devices covered under the subject application based on the site and/or building arrangement plan complete with consideration of adjoining properties and roadways.
4. Description of the illuminating devices, fixtures, lamps, supports, reflectors, poles, raised foundations and other devices (including but not limited to manufacturers or electric utility catalog specification sheets and/or drawings, and photometric report indicating fixture classification [cutoff fixture, wall pack, flood light, etc.]).

Projects that are not required to submit items identified in sub-section (1) above are still subject to comply with the provisions of this ordinance and may be required to provide this information upon request.

The Chatham County Planning Department personnel may modify and/or waive any part(s) of the above referenced permit requirements, provided the applicant can otherwise demonstrate compliance with this Code. Note: An example of this provision might be where a contractor or utility repeatedly installs the same lighting equipment on different projects in the county. One submittal containing the specification sheets of a particular group of fixtures may be sufficient for the Planning Department to modify the project requirement and require that only the other provisions of the ordinance be met since the fixture specification provisions have already been met. This modification would conserve county personnel and lighting supplier/installer resources.

### **13.17. Nonconformities**

1. Any lighting fixture lawfully in place or approved by the county prior to the adoption of this ordinance shall be exempt from these requirements. At the time that a non-conforming fixture is replaced, moved, upgraded, or otherwise changed, the fixture must be brought into compliance with the requirements of this ordinance. Any expansion of, or addition to, an existing lighting system must conform to the requirements of this ordinance.
2. Routine maintenance, including changing the lamp, ballast, starter, photo control, lens, and other required components, is permitted for all existing fixtures. When the fixture housing is changed, the fixture must come into compliance.
3. Major renovation(s) of vehicular canopies (50% or more of the existing light fixtures) will require compliance with Section 13.7.
4. Property owners that install lighting fixtures after the effective date of this ordinance and are found to be in non-compliance shall receive written notification according to this ordinance.
5. See section 13.12 (h)(4) for nonconformity provisions for outdoor sports fields and performance areas.

**SECTION 14      OFF-STREET PARKING AND LOADING**

**14.1.            Off-Street Parking Requirements**

There shall be provided at the time of the erection of any building, or at the time any principal building is enlarged or increased in capacity by adding dwelling units, guest rooms, seats, or floor area; or before conversion from one type of use or occupancy to another, permanent off-street parking space in the amount specified by this section. Such parking space may be provided in a parking garage or properly graded open space.

**A. Certification of Minimum Parking Requirements**

Each application for a zoning permit submitted to the Zoning Official as provided for in this Ordinance shall include information as to the location and dimensions of off-street parking and the means of entrance and exit to such space. This information shall be in sufficient detail to enable the Zoning Official to determine whether or not the requirements of this section are met.

**B. Definition of a Parking Space**

The storage space of one automobile. The size of a parking space shall be in accordance with generally accepted geometric design principles for the type space and lot.

**C. Minimum Off-Street Parking Requirements**

The following off-street parking space shall be required:

**Classification Off-Street Parking Requirements**

*Note that any fractional space e.g. 47.3 shall be considered the next whole number, e.g., 48*

**RESIDENTIAL:**

Housing designed for and used by the elderly	1 space per 4 dwelling units
Incidental home occupations	1 space in addition to the residential requirement
Multi-family residences	1.5 spaces per dwelling unit
Rehabilitation homes	1 space per two beds
Congregate care	1 space per 2 dwelling units
Single-family and two-family residences (may be in a single drive with one car behind the other)	2 spaces per dwelling unit

**COMMERCIAL AND INDUSTRIAL:**

Auto service station and/or repair shops	4 spaces per service bay, plus 1 space per wrecker or service vehicle
Auto sales	1 space per 400 square feet of building area devoted to sales
Bank and consumer financial services	1 space per 200 square feet of gross floor area
Barber & beauty shops and other personal services	2 spaces per operator
Car washes	1 space per 2 employees
Delivery, ambulance and other similar services	1 space per vehicle, plus 1 space for each 2 employees
Drive-through service such as banks, automobile service stations, dry cleaners, car washes and similar uses (in addition to use requirements)	Stacking for 4 vehicles at each bay, window or lane
Dry cleaners or laundries (self-service)	1 space per 4 rental pieces of equipment
Eating establishments and nightclubs serving meals	10 spaces, plus 1 for every 3 seats
Fire stations	1 space per person on duty on a normal shift
Hotel, motel, motor court and similar uses	1 space per unit, plus 2 spaces per 3 employees on a normal shift
Mobile home sales	5 spaces, plus 1 space per 20,000 square feet of gross area
Manufacturing, industrial, warehousing and wholesaling	1 space per 3 employees on the largest shift
Post Offices	1 space per 200 square feet of public service area, plus 2 spaces per 3 employees on the largest shift
Retail sales except those listed below	1 space per 200 square feet of gross floor area
Retail sales of bulky items which require high rates of floor space to the number of items offered for sale such as antiques, appliances, art, bicycles, carpet, floor covering, furniture, motorcycles, paint, upholstery and similar uses	1 space per 300 square feet of gross floor area
Retail uses dealing primarily in service and/or repair	1 space per 200 square feet of gross floor area

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Designed shopping centers	5 spaces per 1,000 square feet of gross floor area (optional to computing parking on a store by store basis)
Radio, TV Stations	2 spaces per 3 employees on the largest shift
Transportation terminals, such as airports, bus terminals and railroad passenger stations	1 space per 4 seating accommodations for waiting passengers, plus 1 space for each 2 employees on the largest shift
Wholesale with related retail	1 space per 3 employees on the largest shift, plus additional spaces per square foot of gross floor area devoted to retail sales as applicable from "retail sales" schedule above

## **OFFICE AND INSTITUTIONAL:**

Child care and kindergarten, less than 6 children	1 space per teacher or staff, plus space for 1 car drop-off and pickup
Child care and kindergarten, 6 or more children	1 space per teacher or staff, plus stacking for 4 cars for drop-off and pickup or stacking for 1 car per 10 children, whichever is greater
Churches and other places of worship	1 space per 4 seats in the largest assembly room
Dormitories	1 space per 4 beds
Fraternity, sorority houses	1 space per 2 beds
Elementary and junior high schools	5 spaces, plus 1 space per teacher or staff
Funeral homes	1 space per 4 seats in the main chapel
General offices	1 space per 200 square feet of net rentable area (Net rentable area shall be considered to be 80% of gross floor area unless otherwise shown by applicant)
Hospital, nursing and convalescent homes	1 space per 2 beds, plus 1 space per staff doctor on duty
Library, museum and art galleries	1 space per 300 square feet of gross floor area
Medical, dental and similar offices	7 spaces per doctor or practitioner
Nursing, convalescent homes designed and used primarily for the elderly	1 space per 3 beds, plus 1 space per staff doctor on duty
Orphanage, juvenile homes	1 space per 2 beds
Senior high schools, trade and vocational schools, colleges and universities	7 spaces per classroom
Auditoriums, stadiums, assembly halls and gymnasiums located on a high school, college or university campus	1 space per 12 fixed seats and 1 space per 12 movable seats in largest assembly room

**RECREATION:**

Amusements, dance halls, nightclubs not serving meals	1 space per 3 persons in designed capacity, plus 2 spaces per 3 employees on the largest shift
Auditoriums, stadiums, assembly halls, convention centers, gymnasiums, fraternal or social clubs or lodges, community recreation centers	1 space per 3 fixed seats and 1 space per 3 movable seats in the largest assembly room
Bowling alleys	4 spaces per lane
Golf courses	4 spaces per tee
Indoor movie theaters	1 space per 3 fixed seats and 1 space per 3 movable seats
Public swimming pools	1 space per 100 square feet of water area
Recreation uses such as golf driving range, miniature golf, tennis, billiards or pool centers or similar recreation uses	1 space per tee, green, court and/or other method of participation however styled
Recreation facilities such as community center, swimming pool, tennis courts, and similar activities when located in conjunction with a townhouse, condominium, group housing or homeowner association development	1 space per 25 memberships or tenant

**D. Combination of Required Parking Spaces**

The required parking spaces for any number of separate uses may be combined in one lot or parking structure, but the required parking spaces assigned to one use may not be assigned to another use at the same time.

**E. Day Time/Night Time Assignments**

One-half of the required parking spaces for places of worship, theaters, or assembly halls whose peak attendance is at night or weekends may be assigned to a use which will be closed at night or weekends.

**F. Lighting**

Access ways, walkways and parking areas, if lighted, shall be lighted by fixtures which shall be so installed as to protect the street and neighboring properties from direct glare or hazardous interference of any kind.

**G. Remote Parking**

On all off-street parking lots, the required space shall be provided on the same plot with the use or on a lot separated there from by not more than 400 feet, except for residential uses which must be provided on the same plot.

Where provision of required off-street parking for a building or other uses established subsequent to the adoption of this section involves one or more parcels or tracts of land that are

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not a part of the plot on which the principal use is situated, the applicant for a permit for the principal use shall submit with his application for a zoning permit an instrument duly executed and acknowledged, which subjects the parcels or tracts of land to parking uses in connection with the principal use for which it is made available. The applicant shall cause said instrument to be registered in the office of the Register of Deeds upon the issuance of a zoning permit.

Parking in one zoning district in connection with a use not permitted in that district shall be permitted in accordance with the following:

- Business uses may park in Industrial Districts.
- Industrial uses may park in Business Districts.
- Office and Institutional uses may park in Business and Industrial Districts.
- Residential uses may park in Business, Industrial and Office and Institutional Districts.

In addition, any use located in one zoning district which is also a permitted use in another zoning district may also park in such other zoning district in which the use is permitted.

### **14.2. Parking Lot Improvement, Design and Locational Requirements**

All off-street parking lots including exits, entrances, drives and parking areas shall:

Be designed to allow for traffic movement in accordance with generally accepted geometric design principles;

- Have physical access to a public street;
- Be so designed that all access to public street is by forward motion;
- Be graded, properly drained, stabilized and maintained to prevent dust and erosion; and
- Be continuously provided and maintained as long as the use which they serve exists.

No parking lot designed or provided for more than six cars shall be located in the required front yard within the following districts:

R5 - Residential 5

R2 - Residential 2

R1 - Residential 1

O&I - Office and Institutional

IL - Light Industrial

Parking Lots for Neighborhood Business, Community Business, and Regional Business shall adhere to the Chatham County Design Guidelines. Front yard parking is discouraged in order to facilitate pedestrian and transit access from the public right-of-way. All other provisions (except

front yard parking) in the B-1 district (below) still apply. No front yard parking space may be within 10 feet of any public right-of-way line.

In accordance with the principles set forth in the Chatham County Design Guidelines, within the B-1 Business District and IH Heavy Industrial District parking lots may be located in the front yard but not within 10 feet of any public right-of-way line. When a parking lot with space for more than 10 cars adjoins any plot zoned for residential purposes, a buffer shall be provided to protect residences from light, glare, noise and fumes. This buffer shall be a five foot wide strip of land on which is placed a four foot high, at least 50% opaque fence or a dense evergreen screen of equal height and opaqueness, provided that smaller evergreen plantings may be permitted where in the opinion of the County staff there is a reasonable expectation that such plantings will reach the required height and opaqueness within a two-year period.

Refer to the Chatham County Design Guidelines for required interior plantings and planting island specifications for all off-street parking areas.

### **14.3. Off-Street Loading Requirements**

Every structure or building used for trade, business or industry hereafter erected shall provide space as indicated herein for the loading, unloading and maneuvering space of delivery vehicles off the street or public alley. Such space shall have access to a public alley, private driveway, or, if such cannot reasonably be provided, to a public street. For the purpose of this section an off-street loading space (exclusive of adequate access drives and maneuvering space) shall have a minimum dimension of 12 feet by 40 feet and an overhead clearance of 14 feet in height above the alley or street grade.

#### **A. Type of Use Required Off-Street Loading Space**

Retail Business: 1 space for each 20,000 square feet of gross floor area or fraction thereof

Wholesale and Industries: 1 space for each 20,000 square feet of gross floor area or fraction thereof

Office and Institutions: 1 space for each 50,000 square feet of gross floor area or fraction thereof

Loading areas shall be screened in accordance with the Chatham County Design Guidelines and Section 12.5 Screening of Loading Areas.



**SECTION 15            REGULATIONS GOVERNING SIGNS**

The regulations governing the use of signs are set forth in this section. All signs shall be erected, altered, and maintained in accordance with the following provisions and only those signs as specified and as regulated shall be erected within the jurisdiction. Signs shall adhere to the Chatham County Design Guidelines as stated in Section 12 for items not directly addressed in this ordinance unless such adherence is unsafe due to site conditions or other extenuating circumstance. Any sign or type of sign not expressly mentioned in this section shall be prohibited.

**15.1. Definitions**

See Definitions, Section 7.

**15.2. Non-conforming signs**

See Section 9 for provisions for non-conforming signs.

**15.3. Lighting of Signs**

For lighting of signs, refer to Section 13 of the Chatham County Zoning Ordinance.

**15.4. Prohibited Signs**

1. Any sign that obscures a sign displayed by public authority for the purposes of giving traffic instruction or direction or other public information.
2. Any sign that uses the word "stop" or "danger" or otherwise presents or implies the need or requirement of stopping or caution or the existence of danger, or which is a copy or imitation of or which for any reason is likely to be confused with any sign displayed by a public authority. Provided, however, this provision is not intended to prevent the placement on private property of signs such as "stop" , "yield" or other such wording or design where such is necessary for traffic control or other such legitimate notice to the public.
3. Any sign that obstructs any window, door, fire escape, stairway, ladder or opening intended to provide light, air, ingress or egress for any building as required by law.
4. Any portable sign that is not considered a Temporary Sign as defined in Section 7.
5. Any sign that violates any provision of any law of the State relative to outdoor advertising.
6. Signs with flashing, intermittent or animated illumination except for official warning or regulatory signs. Provided, however, electronically or electrically controlled message centers or reader boards where different copy changes, involving alphabetical or numerical characters only, present messages of a public service or commercial nature on the same lamp bank shall not be considered to be flashing signs.

7. Signs affixed to trees, telephone poles, light poles, State-owned sign posts or public road right-of-way control fencing, except when used to post property or other such public purposes.
8. Signs erected in or over the public right-of-way except as permitted by the North Carolina Department of Transportation, Enforcement of this provision shall be the responsibility of the North Carolina Department of Transportation.
9. Signs intentionally set in motion by wind, water, motor drive or otherwise.
10. Signs, banners, streamers, or pennants tied or consecutively strung together, but not including temporary holiday decorations.
11. Any sign with a sign area over 200 square feet.
12. Any sign which would constitute the sole and/or principal use of any lot, plot, parcel or tract of land. This provision is intended to prohibit any sign which viewed within the context of its design, orientation, location on property, physical situation, relationship to surrounding property, streets and uses of land and other such factors would appear to constitute a principal use of land as regulated by this Ordinance. However, no sign listed as "signs Permitted in Any Zoning District", Temporary Signs in this section, or Off-Premise Directional Signs are intended to be prohibited by this provision.

**15.5. Signs Permitted in Any Zoning District**

The following signs are permitted in any zoning district:

1. Signs not exceeding four square foot in area and bearing only property numbers, post office box numbers, names of occupants of premises, or other identification of premises not having commercial connotations.
2. Flags and insignias of any government.
3. Legal notices, identification, information, or directional signs erected or required by governmental bodies.
4. Integral decorative or architectural features of buildings, except letters, trademarks, moving lights, or moving parts.
5. Signs directing and guiding traffic and parking on private property, but bearing no advertising matter. On-premise signs pertaining to realty, such as for sale, rent or lease, not exceeding four square feet in area and not illuminated. Signs up to 32 square feet are permitted for properties ten (10) acres in size or larger. There shall be a limit of one such sign for each street abutting the lot.

6. Church, community or public building bulletin boards and identification sign, lighted or unlighted shall not exceed 32 square feet in area. There shall be a limit of two such signs for each street abutting the lot, or one such sign not exceeding 64 square feet in area.
7. Signs advertising agricultural products, produced on the premises, not exceeding 32 square feet in area. There shall be a limit of one such sign for each street abutting the lot.
8. Signs identifying, by name only, residential sub-division, planned housing development, recreational facility, permitted campgrounds or mobile home parks and not exceeding 32 square feet in area. There shall be a limit of one double-faced sign or two single-faced signs for each road or driveway entrance to the development named on the sign.
9. Signs of any political party or announcing the candidacy of any individual for any nomination or office; provided that in any residential district, no such sign shall exceed 32 square feet in area and in any district other than a residential district no sign shall exceed in area the maximum area of sign display permitted on any lot in that district; provided further, that all such signs, shall be removed not later than 10 working days after the date of the election to which they pertain.
10. Signs not exceeding 32 square feet in area, warning the public against hunting, fishing, or trespassing on the land on which the same are displayed.
11. Temporary signs may be allowed pursuant to the Temporary Signs Section (Section 15.10).

**15.6. Signs Permitted in the O&I, Office and Institutional Districts**

**A. Sign Area**

Within the O&I District, each lot or parcel may have a maximum of 1 1/2 square feet of sign area for each linear foot of frontage on a private- or public-maintained street. Double frontage or corner lots or parcels shall be permitted an additional sign area computed at 1/2 the rate as above for the additional street frontage. Such additional sign area need not be proportionally directed toward such streets.

**B. Freestanding Signs**

Not more than 1/2 the total sign area for any one lot may be in the form of freestanding signs. No part of any freestanding signs shall exceed a height of 10 feet above the ground at its base.

**C. Attached Signs**

No sign shall be attached to a building in such a way as to extend above the roof line which forms the background of the sign.

**D. Sign Size**

No one sign shall exceed a size of 50 square feet.

**15.7. Signs Permitted in the B-1, NB, CB, and RB Districts**

**A. Sign Area**

Within the B-1, NB, CB, and RB Districts, each lot or parcel may have a maximum of two square feet of sign area for each lineal foot of frontage on a private- or public-maintained street or highway. Double frontage or corner lots or parcels shall be permitted an additional sign area computed at 1/2 the rate as above for the additional street frontage. Such additional sign area need not be proportionally directed toward such streets.

**B. Freestanding Signs**

Not more than 2/3 the total sign area for any one lot may be in the form of freestanding signs. No part of any freestanding sign shall exceed a height of 30 feet above the ground at its base.

**C. Attached Signs**

No sign shall be attached to a building in such a way as to extend above the roof line which forms the background of the sign.

**D. Sign Size**

No one sign shall exceed a size of 150 square feet.

**15.8. Signs Permitted in the IL, Light Industrial District**

**A. Sign Area**

Within the Light Industrial District, each lot or parcel may have a maximum of two square feet of sign area for each lineal foot of frontage on a private- or public-maintained street or highway. Double frontage or corner lots or parcels shall be permitted an additional sign area computed at 1/2 the rate as above for the additional street frontage. Such additional sign area need not be proportionally directed toward such streets.

**B. Freestanding Signs**

No part of any freestanding sign shall exceed a height of 30 feet above the ground at its base.

**C. Attached Signs**

No attached sign shall exceed a height of 30 feet from the average finished grade of the lot on which the structure to which the sign is attached is located.

**D. Sign Size**

No one sign shall exceed a size of 200 square feet.

**15.9. Signs Permitted in the IH, Heavy Industrial District**

**A. Sign Area**

Within the Heavy Industrial District, each lot or parcel may have a maximum of two square feet of sign area for each lineal foot of frontage on a private- or public-maintained street. Double frontage or corner lots or parcels shall be permitted an additional sign area computed at 1/2 the rate as above for the additional street frontage. Such additional sign area need not be proportionally directed toward such streets.

**B. Freestanding Signs**

No part of any freestanding sign shall exceed a height of 30 feet above the ground at its base.

**C. Attached Signs**

No attached sign shall exceed a height of 30 feet from the average finished grade of the lot on which the structure to which the sign is attached is located.

**D. Sign Size**

No one sign shall exceed a size of 200 square feet.

**15.10. Temporary Signs**

- A. On-premise or off-premise signs promoting events sponsored by civic, charitable, educational, religious, community recreational, or other non-profit organizations may be erected up to two (2) weeks in advance of the event being promoted. These signs shall be removed within two (2) days following the conclusion of the event. The signs shall not exceed 32 square feet in size, and shall not exceed ten (10) feet in height, measured from ground level to the top of the sign. Written permission shall be required for signs located on property other than the location of the event. No such signs shall be permitted on public property or within public rights-of-way unless authorized by the responsible landowner or agency. There shall be no more than one (1) sign per street or road frontage per parcel.
- B. On-premise or off-premise signs promoting real estate open houses may be erected up to two (2) days prior to the open house and must be removed within 24 hours following the conclusion of the open house. The signs shall not exceed four (4) square feet in size, and shall not exceed five (5) feet in height, measured from ground level to the top of the sign. On-premise or off-premise auction signs may be erected up to two (2) weeks prior to the auction and must be removed within 24 hours following the conclusion of the event, shall not exceed 32 square feet in size, and shall not exceed ten (10) feet in height, measured from ground level to the top of the sign. Written permission shall be required for signs located on property other than the location of the event. No such signs shall be permitted on public property or within public rights-of-way unless authorized by the responsible landowner or agency. There shall be no more than one (1) sign per street or road frontage per parcel, and no more than three (3) signs per real estate open house or auction event.
- C. All other temporary signs shall be on-premise and shall not be erected for more than 30 calendar days per year, shall not exceed 32 square feet in size, and shall not exceed ten (10) feet in height, measured from ground level to the top of the sign. No such signs shall be permitted on public property or within public rights-of-way unless authorized by the responsible landowner or agency. There shall be no more than one (1) sign per street or road frontage per parcel.
- D. Banner signs shall be permitted as on-premise temporary signs, provided they do not exceed 32 square feet in size. Banner signs shall be erected for no more 30 calendar days per year. No banner signs shall be permitted on public property or within public rights-of-way unless authorized by the responsible landowner or agency. There shall be no more than one (1) sign per street or road frontage per parcel.

- E. On-premise temporary signs giving information pertaining to construction taking place on the property for which a permit has been issued may remain throughout construction but shall be removed upon issuance of a certificate of occupancy. These signs shall not exceed 32 square feet in size, and shall not exceed ten (10) feet in height, measured from ground level to the top of the sign. No such signs shall be permitted on public property or within public rights-of-way unless authorized by the responsible landowner or agency. There shall be no more than one (1) sign per construction entrance.
- F. Off-premise signs promoting seasonal harvesting activities for bona fide farming operations shall not exceed 32 square feet in size, and shall not exceed ten (10) feet in height, measured from ground level to the top of the sign. There shall be no more than one (1) sign per street frontage or road frontage per parcel.

**15.11. Off-Premise Directional Signs**

- A. Off-premise directional signs are permitted in any zoning district provided no sign is larger than 32 square feet and no part of the sign is higher than eight (8) feet above the ground at its base.
- B. Three off-premise directional signs are allowed per business, church, park, historic property, school, or other place of assembly.
- C. Only one (1) off-premise directional sign is permitted per property; however multiple uses are allowed to be identified on the sign.
- D. The square footage of the off-premise directional sign shall not be counted against the square footage of other signs allowed on the property.
- E. Written permission from the owner(s) of the property where the sign is proposed to be located is required to be submitted with the sign permit application.
- F. Verification from the North Carolina Department of Transportation that the sign will not be in violation of any State regulations at its proposed location must be submitted with the sign permit application.

**15.12. Permit Required**

- A. No sign shall be erected, placed, attached, suspended, altered, remodeled, relocated or otherwise put into use or structurally changed except pursuant to a permit issued by the Planning Division. Each application for a sign permit, whether permanent or temporary, shall include such information as the Planning Division may deem necessary in order to determine compliance with the provisions of this Ordinance.
- B. The following signs listed in Section 15.5 (signs permitted in any district) shall not require a permit: (1), (2), (3), (4), (5), (7), (9), (10)

**SECTION 16     HOME OCCUPATIONS**

**16.1.   Neighborhood Home Occupations**

Customary home occupations are permitted in residential districts where such occupations are carried on in the residence and/or accessory buildings subject to the following limitations.

1. Such occupations shall be engaged in only by residents of the premises and not more than three additional on-site employees who may be non-residents. The total number of resident and non-resident employees working on-site shall not exceed four. The use shall be clearly incidental and subordinate to its use for residential purposes by its occupants.
2. No more than 25% percent of the heated living space, excluding basements, shall be used for home occupations. Basements may also be used for home occupations in addition to the 25% or a detached garage.
3. No outdoor display of goods or materials shall be allowed on the property.
4. One non-illuminated sign is allowed which shall not exceed four square feet in area.
5. No equipment or process shall be used in such home occupation, which creates noise, vibration, glare, fumes, odors, or electrical interference detectable to the normal senses off the lot. In the case of electrical interference, no equipment or process shall be used which creates visual or audible interference in any radio or television receivers off the premises, or which causes fluctuation in line voltage off the premises.
6. Accessory buildings may be used for home occupations provided the building area is not larger than 1,000 square feet. If multiple buildings are used, the total combined square footage shall not exceed 1,000 square feet.
7. No traffic shall be generated by such home occupation in greater volumes than would normally be expected in a residential neighborhood, and any need for parking generated by the conduct of such home occupation shall be met off the street in an area other than in a required front yard.

The customary home occupations referred to in this subsection may include the merchandising and the sale of goods and products at retail, and the manufacture and assembly of goods and products.

Occupations that have no non-resident employees, no signs, no on-site retail sales, or no visits from the general public do not require a home occupation permit.

**16.2.   Rural Home Occupations**

Rural home occupations are those, which by their nature are not compatible on small lots near other residences, and may require an outdoor storage area for goods and materials associated with the business.

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1. Rural home occupations may be allowed on parcels, which are no smaller than three acres in size.
2. Such occupations shall be engaged in only by residents of the premises and not more than three additional on-site employees who may be non-residents. The total number of resident and non-resident employees working on-site shall not exceed four. The use shall be subordinate to its use for residential purposes by its occupants.
3. No more than 25% percent of the heated living space, excluding basements, shall be used for home occupations. Basements may also be used for home occupations in addition to the 25%.
4. One non-illuminated sign is allowed which shall not exceed four square feet in area.
5. No equipment or process shall be used in such home occupation, which creates noise, vibration, glare, fumes, odors, or electrical interference that is a nuisance off the lot. All operations must conform to the Chatham County Noise Ordinance. In the case of electrical interference, no equipment or process shall be used which creates visual or audible interference in any radio or television receivers off the premises, or which causes fluctuation in line voltage off the premises.
6. Accessory buildings may be used for home occupations provided the building is not larger than 2,500 square feet. If multiple buildings are used, the total combined square footage shall not exceed 2,500 square feet.
7. Commercial driveway permits may be required to assure traffic hazards are minimized. The driveway shall be located and improved such that it provides all weather access and does not interfere with other traffic using said drive. Any need for parking generated by the conduct of such home occupation shall be met off the street in an area other than in a required front yard.
8. Buildings, material storage and operations used for home occupations shall be setback from side and rear property lines a minimum of 50 feet except for noise generating operations, as determined by staff, in which case the setbacks shall be a minimum of 100 feet. The front setback shall be a minimum of 40 feet and shall be measured from the property line or the edge of the road right of way, which ever is greater.
9. To lessen the impact on adjacent properties, visual screening shall be installed to provide at a minimum a 15 foot wide opaque buffer. This may include but not be limited to a 6 foot high opaque fence and/or the planting of vegetation that at a minimum provides a continuous all season opaque screen at least 6 feet in height within 4 years of planting. Planting shall be a minimum of 3 gallon shrubbery or 10 gallon trees.
10. All required permits (i.e. Chatham County Central Permitting, Chatham County Environmental Health, North Carolina Department of Transportation or other local and state agencies) must be obtained prior to the issuance of the home occupation permit.



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Any person wanting to conduct a home occupation within their residence shall apply for a home occupation permit. A home occupation permit approved by the Zoning Administrator must be received prior to beginning said occupation. Permits are not transferable. The home occupation permit is valid only as long as the use meets the provisions for home occupation specified herein and the permit may be revoked any time the use does not meet the provisions of this or other applicable ordinances.

**SECTION 17            CONDITIONAL USE PERMITS**

Permits for conditional uses as provided for in this Ordinance may be authorized by the Board of Commissioners in certain circumstances and subject to certain procedures as set forth herein. In some zoning districts certain listed uses are permitted only as conditional uses.

**17.1. Procedure**

Requests for conditional use permits as authorized by this Ordinance shall be processed and considered in the same format as set forth in this Ordinance for conditional zoning district requests, but shall follow quasi-judicial procedures. A community meeting must be held by the applicant, following the same procedure described in Section 5.7 (A). No vote greater than a majority vote shall be required to issue such permits for the Board of Commissioners. For the purposes of this section, vacant positions on the board and members who are disqualified from voting on a quasi-judicial matter shall not be considered ‘members of the board’ for calculation of the requisite majority. In considering an application for a conditional use permit the Board of Commissioners shall give due regard that the purpose and intent of this Ordinance shall be served, public safety and welfare secured and substantial justice done. If the Board of Commissioners should find, after public hearing, the proposed conditional use permit should not be granted, such proposed permit shall be denied. Conditional use permits may include time limits for expiration if specified criteria are not met.

In granting a conditional use permit, the Board of Commissioners shall make the following affirmative findings:

1. The use requested is among those listed as an eligible conditional use in the district in which the subject property is located or is to be located.
2. The requested conditional use permit is either essential or desirable for the public convenience or welfare.
3. The requested permit will not impair the integrity or character of the surrounding or adjoining areas, and will not be detrimental to the health, safety, welfare or environment of the community.
4. The requested permit will be consistent with the objectives of the Land Use Plan.
5. Adequate utilities, access roads, storm drainage, recreation, open space, and other necessary facilities have been or are being provided consistent with the County’s plans, policies and regulations.

In granting a conditional use permit, the Board of Commissioners may impose such additional restrictions and requirements upon such permit as it may deem necessary in order that the purpose and intent of this Ordinance are served, public welfare secured and substantial justice done. If all requirements and conditions are accepted by the applicant, the Board of Commissioners shall authorize the issuance of the conditional use permit, otherwise the permit shall be denied. Any conditional use permit so authorized shall be perpetually binding upon the property included in such permit unless subsequently changed or amended by the Board of Commissioners, as provided for in this Ordinance.

A member of the Board of Commissioners shall not participate in or vote on any quasi-judicial matter in a manner that would violate affected persons' constitutional rights to an impartial decision maker. Impermissible conflicts include, but are not limited to, a member having a fixed opinion prior to hearing the matter that is not susceptible to change, undisclosed ex parte communications, a close familial, business, or other associational relationship with an affected person, or a financial interest in the outcome of the matter. If an objection is raised to a member's participation and that member does not recuse himself or herself, the remaining members shall by majority vote rule on the objection.

## **17.2. Plans**

Final plans for any development to be made pursuant to any conditional use permit shall be submitted to the Planning Department for review prior to the issuance of any permits. The EIA or special study, if required pursuant to Section 11.3 or Section 17.9 respectively, shall be completed and submitted to the Planning Department prior to the issuance of any permits. Such review shall be for the purpose of determining compliance with the permit conditions and other Ordinance requirements.

## **17.3. Violations**

Any violation of a term or condition of a conditional use permit shall be treated the same as a violation of this Ordinance and shall be subject to the same remedies and penalties as any such violation.

## **17.4. Changes or Amendments**

Upon request by the property owner, the Board of Commissioners may change or amend any conditional use permit, after a public hearing upon recommendation by the Planning Board and subject to the same consideration as provided for in this Ordinance for the original issuance of a conditional use permit. No proposal to amend or change any conditional use permit shall be considered within 12 months of the date of the original authorization of such permit or within 12 months of the hearing of any previous proposal to amend or change any such permit.

## **17.5. Specific Conditions for Conditional Uses Listed in Residential Districts**

The minimum requirements for the zoning district in which a conditional use is located shall be the minimum requirements for such conditional use. In addition, for the following conditional uses, which are listed as conditional uses in the residential districts, the listed conditions shall be imposed along with any additional conditions the Board of Commissioners may attach in the granting of a conditional use permit.

### **A. Boarding Kennels**

1. Minimum lot area - 3 acres
2. All buildings, structures and high intensity activity areas shall be set back a minimum of two times the minimum yard requirement for the district in which it is located.

**B. Public and Private Recreation Camps and Grounds**

1. Minimum Lot Area - 20 acres except within the zoned portions of the Haw River Township which may have a minimum lot area of 10 acres.
2. All buildings, structures and high intensity activity areas shall be set back a minimum of two times the minimum yard requirement for the district in which it is located.

**C. Planned Residential Development**

Planned residential developments are conditional uses within the R5, R2 and R1 zoning districts.

1. Purpose

The purpose of the Planned Residential Development is to permit maximum flexibility in lot creation and residential unit placement within larger planned residential projects while at the same time preserving open space in more usable and environmentally sensitive units. Planned residential developments are not bound by typical minimum lot sizes, housing development types and dimensional requirements as set forth in the district in which the development is located but are subject to the standards as set forth in this section and any additional conditions and safeguards as may be attached by the Board of Commissioners in authorizing a conditional use permit.

2. Area Required

In order to qualify for a planned residential development, the following minimum gross areas are required by zoning districts:

- R5 200 acres
- R2 100 acres
- R1 50 acres

3. Maximum Net Density Allowed

Within a planned residential development, the following net densities by zoning districts shall not be exceeded:

- R5 One dwelling unit for each five acres of net land area
- R2 One dwelling unit for each 90,000 square feet of net land area
- R1 One dwelling unit for each 40,000 square feet of net land area

4. Net Land Area Computation

Net land area is obtained by taking the gross land area of the development and subtracting the following areas:

- a. Land to be dedicated or set aside for public and private road rights-of-way. As an option to measuring projected road rights-of-way the developer may subtract 20% of gross area as road right-of-way allowance regardless of the amount of land actually required for roads.

- b. Land subject to flooding by the 100 year flood.
  - c. Land and water classified as wetlands or wooded swamp by the U.S. Army Corps of Engineers.
  - d. Water areas over one acre
  - e. Other areas determined to be unbuildable due to other regulatory authority. However, typical zoning setback areas and riparian buffer areas shall be considered to be buildable areas for purposes of this net land area determination.
5. Exterior Boundary Setbacks and Development  
Setbacks along the exterior boundary of the planned residential development or on any existing public street shall not be less than that required for the district in which the project is located. In addition, the Board of Commissioners may require, in addition to any other conditions or safeguards, other special screening, setbacks, and/or lotting sizes and building arrangements along the exterior boundary of the project in order to mitigate any potential adverse effects upon surrounding property.
6. Gross Site Use  
Within a planned residential development all land that is not used for public or private street rights-of-way, building lots, or plots for other residential developments shall be placed in common area and an entity created for its perpetual ownership and maintenance. There may be more than one common area and more than one level of common area rights within a planned residential development. Common areas may be used for recreational facilities and similar uses for the development.
7. Site Plan Required  
A site plan is required for a planned residential development in the same form as required for a subdivision sketch design. The Planning Board may also require additional drawings and information in order to make its determination and recommendation.

**17.6. Standards for Solar Energy Uses**

This section is intended to provide the opportunity for solar energy to serve as a viable form of energy generation while protecting public health, safety and general welfare. All regulations in the zoning ordinance shall apply unless expressly allowed or modified in the below standards.

**A. Solar Collectors**

Solar collectors shall be permitted as an accessory use to existing structures or facilities in any zoning district under the following standards:

- 1. Roof mounted solar systems shall not extend beyond the exterior perimeter of the building on which the system is mounted or built.

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2. Ground mounted solar systems shall meet the minimum zoning setbacks from property lines for the zoning district in which it is located.
3. The maximum height for a ground mounted solar system under this standard is 15 feet as measured from the grade of the base of the collector to its highest point.

### **B. Solar Farms on Less than Two (2) Acres**

Solar farms on <less than two (2) acres in size shall meet the following standards:

1. Collectors and all their components shall not exceed 25 feet in height as measured from the grade of the base of the collector to its highest point.
2. All structures and collectors shall meet a 50 foot minimum perimeter setback from all property lines.
3. In cases where buffers do not exist, a modified version of the Type B buffer as described in Section 12 of the Zoning Ordinance shall be appropriate to the location of the site, the adjacent land use, and the area topography.

### **C. Solar Farms on Greater than Two (2) Acres**

Solar farms on >greater than two (2) acres in size shall meet the following standards:

1. A conditional use permit shall be applied for and approved before any activity may proceed on the proposed solar farm site and must comply with Section 17.1 Procedures for Conditional Use Permits.
2. Collectors and their components shall not exceed 25 feet in height as measured from the grade of the base of the collector to its highest point.
3. All structures and collectors shall meet a 50 foot minimum perimeter setback from all property lines with a 100 foot minimum setback from any public roadway where applicable.
4. In cases where buffers do not exist, a modified version of the Type B buffer as described in Section 12 of the Zoning Ordinance shall be appropriate to the location of the site, the adjacent land use, and the area topography.

### **D. General Standards for All Solar Farms**

All solar farms shall comply with the following:

- Shall comply with all Building and Electrical codes.
- Shall not create a visual safety hazard for passing motorist or aircraft.
- Shall be removed, at the owner's expense, within one hundred and eighty (180) days of determination by the Planning Department the facility is no longer being maintained in an operable state of good repair or no longer supplying solar power.

### **17.7. Standards for Events Center Limited**

This section is intended to provide the opportunity for smaller scale event centers to serve as a venue for business opportunities and gathering space in the county while protecting the health, safety, and welfare of the community. All regulations in the Zoning Ordinance shall apply unless expressly allowed or modified in the below standards:

#### **A. Size and Capacity Limits-**

1. Gathering, meeting or hosting area event space shall be limited to no more than 5,000 square feet in size.

#### **B. Accessory Uses Permitted-**

Accessory and/or ancillary uses shall be those directly related to the event being held.

Examples are food and beverages service, dance floors, outdoor speakers, music, festive lighting, decorations, tents, etc.

#### **C. Signage Allowed-**

1. Event advertising shall be limited to the permanent on premise signage as allowed in Section 15 of the Zoning Ordinance.

### **17.8. Standards for Sexually Oriented Businesses**

#### **A. Separation Requirements**

1. Sexually oriented business(es) shall not be located in any building, or portion thereof, that is:

Within 1,000 feet of a:

- (i) Existing sexually oriented business.
  - (ii) Residential zoning district or any residential land use including any open space established as part of the residential subdivision approval process,
  - (iii) A place of worship or building which is used primarily for religious worship and related religious activities,
  - (iv) K-12 Schools (public, private, or specialty),
  - (v) Public or private library,
  - (vi) State licensed child care facility, or
  - (vii) A Public or private park or recreational area which has been designated for park or recreational activities including but not limited to: a park, playground, nature trails, swimming pool, reservoir, athletic field, basketball or tennis courts, pedestrian/bicycle paths, wilderness areas, or other similar land.
- (b) Measurement shall be made in a straight planar line, without regard to the intervening structures or objects, from the nearest portion of the building or structure used as the part of the premises where a sexually oriented business is conducted to the nearest portion of a building, structure, or open space area of a use listed above.

### **17.9. Additional Information for Certain Conditional Use Permits**

This Section 17.9 applies to those uses designated in Section 10.13 as being subject to additional requirements of Section 17.9. For uses subject to this Section, the County may determine in certain cases that it needs more information to determine whether a use is consistent with the findings required in Section 17.1. When such a determination is made, the County may retain the services of a consultant that is mutually acceptable to the County and the applicant to conduct a study to

provide such additional information. Upon making a determination that an additional study is needed, notice shall be given to the applicant, and the applicant shall meet with the County staff to determine the scope of the study and to select a consultant. The applicant shall pay a fee as part of the conditional use permit application for the reasonable costs of the consulting services incurred by the County. The report of the study results shall be approved by the County staff and shall become part of the conditional use permit application submitted to the Board of Commissioners. This Section 17.9 is also applicable to an applicant for a conditional use permit for which an environmental impact assessment is required by Section 11.3 of this Ordinance.



**SECTION 18                    BOARD OF ADJUSTMENT**

**18.1. Board of Adjustment Created**

There is hereby created a board of adjustment to be known as the Chatham County Board of Adjustment, consisting of five (5) regular members and two (2) alternate members, and referred to herein as the board of adjustment. All members of the board of adjustment shall be residents of Chatham County and appointed by the Board of Commissioners. The Chatham County Board of Commissioners hereby finds and determines that even though the Board of Commissioners does not zone the entire territorial jurisdiction of Chatham County that due to the number of designated zoning areas it is not practicable to have one resident from each designated area as a member of the board of adjustment and that therefore the board of adjustment should consist of five (5) regular members and two (2) alternate members. There shall be five (5) board of adjustment districts which shall be identical to the Board of Commissioner districts, as the same are redrawn, modified, or changed from time to time, and one regular member shall be appointed from each board of adjustment district, unless there are no applicants from a board of adjustment district, or the Board of Commissioners determines that an applicant from another district possesses superior skills and qualifications.. If the Board of Commissioner districts (and therefore the board of adjustment districts) are redrawn, modified, or changed such that a regular member of the board of adjustment is no longer a resident of the district he or she was appointed from, such member, provided he or she continues to be a resident of Chatham County, shall nevertheless continue to serve on the board of adjustment until his or her term expires notwithstanding that such member no longer resides in the district. The alternate members shall be residents of Chatham County but shall be appointed at large and not from districts. An alternate member may sit in lieu of a regular member who is unable to sit on any matter coming before the board of adjustment, and when so seated, an alternate member shall have the same powers and duties as a regular member. The regular and alternate members shall be appointed for three (3) year staggered terms, but both regular members and alternate members shall continue to serve until their successors have been duly appointed and qualified. If a regular or alternate member ceases to be a resident of Chatham County his or her term shall expire effective as of the date a replacement member is duly appointed and qualified. The Board of Commissioners shall fill all vacancies on the board of adjustment.

**18.2. Meetings**

Meetings of the board shall be held at the call of the Chairman or any two (2) other members of the board, and at such other times as the board may determine. The board shall adopt rules governing its organization and all proceeding coming before the board. All meetings of the board shall be open meeting in accordance with the North Carolina Open Meeting law, and its records shall show the vote of each member upon every question or his or her absence or failure to vote. The board shall also keep records of its hearings and any other official action. Proceedings of the board of adjustment shall be in accordance with G.S. 160A-388 and G.S. 153A-345.1.

**A. Oath**

The chair of the board or any member acting as chair and the clerk to the board are authorized to administer oaths to witnesses in any matter coming before the board. Any person who, while under oath during a proceeding before the board of adjustment, willfully swears falsely is guilty of a Class 1 misdemeanor.

**B. Hearing Notice**

Notice of hearings conducted pursuant to this section shall be mailed to the person or entity whose appeal, application, or request is the subject of the hearing; to the owner of the property that is the subject of the hearing if the owner did not initiate the hearing; to the owners of all parcels of land abutting the parcel of land that is the subject of the hearing; and to any other persons entitled to receive notice as provided by the zoning ordinance. In the absence of evidence to the contrary, the county may rely on the county tax listing to determine owners of property entitled to mailed notice. The notice must be deposited in the mail at least 10 days, but not more than 25 days, prior to the date of the hearing. Within that same time period, the county shall also prominently post a notice of the hearing on the site that is the subject of the hearing or on an adjacent street or highway right-of-way.

**C. Subpoenas**

The board of adjustment through the chair, or in the chair's absence anyone acting as chair, may subpoena witnesses and compel the production of evidence. To request issuance of a subpoena, persons with standing under G.S. 160A-393(d) may make a written request to the chair explaining why it is necessary for certain witnesses or evidence to be compelled. The chair shall issue requested subpoenas he or she determines to be relevant, reasonable in nature and scope, and not oppressive. The chair shall rule on any motion to quash or modify a subpoena. Decisions regarding subpoenas made by the chair may be appealed to the full board of adjustment. If a person fails or refuses to obey a subpoena issued pursuant to this subsection, the board of adjustment or the party seeking the subpoena may apply to the General Court of Justice for an order requiring that its subpoena be obeyed, and the court shall have jurisdiction to issue these orders after notice to all proper parties.

**18.3. Powers and Duties of the Board of Adjustment**

The board of adjustment hears and decides requests for variances and appeals of decisions of administrative officials charged with enforcement of the ordinance. As used in this section, the term "decision" includes any final and binding order, requirement, or determination. The board of adjustment shall follow quasi-judicial procedures when deciding appeals and requests for variances. The board shall hear and decide all matters upon which it is required to pass under any statute or ordinance that regulates land use or development.

**A. Administrative Review**

To hear and decide appeals where it is alleged there is error in any decision made by any administrative official in the enforcement of this Ordinance.

**B. Variance**

Where there are unnecessary hardships in the way of carrying out the strict letter of this Ordinance, the board of adjustment is empowered in passing upon appeals in specific cases, to vary or modify any of the regulations or provisions of this Ordinance relating to the construction or alteration of buildings or structures so that the spirit of the Ordinance shall be observed, public safety and welfare secured, and substantial justice done. The board of adjustment may not, however, grant variances for the use of land or structures.

## Chatham County Zoning Ordinance

1. Variances from the provisions of this Ordinance may be granted only upon appeal from a decision, action, determination, or order of the Zoning Official and shall demonstrate substantially the following:
  - a. Unnecessary hardship would result from the strict application of the ordinance. It shall not be necessary to demonstrate that, in the absence of the variance, no reasonable use can be made of the property.
  - b. The hardship results from conditions that are peculiar to the property, such as location, size, or topography. Hardships resulting from personal circumstances, as well as hardships resulting from conditions that are common to the neighborhood or the general public, may not be the basis for granting a variance.
  - c. The hardship did not result from actions taken by the applicant or the property owner. The act of purchasing property with knowledge that circumstances exist that may justify the granting of a variance shall not be regarded as a self-created hardship.
  - d. The requested variance is consistent with the spirit, purpose, and intent of the ordinance, such that public safety is secured, and substantial justice is achieved.
2. Furthermore, the board of adjustment must make such findings of fact to substantiate all of these requirements. In considering applications for variances from the provisions of this Ordinance, demonstration of financial disadvantage alone shall not constitute conclusive evidence of unnecessary hardship.
3. Appropriate conditions may be imposed on any variance, provided that the conditions are reasonably related to the variance. Any other ordinance that regulates land use or development may provide for variances consistent with the provisions of this subsection.
4. Departure from or violation of any of those conditions or safeguards shall be deemed a violation of this Ordinance, and shall be subject to the penalties, as provided in Section 21.
5. A variance, once granted, shall continue for an indefinite period of time unless otherwise specified at the time granted.
6. No change in permitted uses may be authorized by a variance.

### **C. Quasi-Judicial Decisions**

The board shall determine contested facts and make its decision within a reasonable time. Every quasi-judicial decision shall be based upon competent, material, and substantial evidence in the record. Each quasi-judicial decision shall be reduced to writing and reflect the board's determination of contested facts and their application to the applicable standards. The written decision shall be signed by the chair or other duly authorized member of the board. A quasi-judicial decision is effective upon filing the written decision with the clerk to the board or such other office or official as the ordinance specifies. The decision of the board shall be delivered by

personal delivery, electronic mail, or by first-class mail to the applicant, property owner, and to any person who has submitted a written request for a copy, prior to the date the decision becomes effective. The person required to provide notice shall certify that proper notice has been made.

## **18.4. Appeal Procedure**

The board of adjustment shall hear and decide appeals from decisions of administrative officials charged with enforcement of the Zoning Ordinance and may hear appeals arising out of any other ordinance that regulates land use or development, pursuant to all of the following:

1. Any person who has standing under G.S. 160A-393(d) or the county may appeal a decision to the board of adjustment. An appeal is taken by filing a notice of appeal with the county clerk. The notice of appeal shall state the grounds for the appeal.
2. The official who made the decision shall give written notice to the owner of the property that is the subject of the decision and to the party who sought the decision, if different from the owner. The written notice shall be delivered by personal delivery, electronic mail, or by first-class mail.
3. The owner or other party shall have 30 days from receipt of the written notice within which to file an appeal. Any other person with standing to appeal shall have 30 days from receipt from any source of actual or constructive notice of the decision within which to file an appeal.
4. It shall be conclusively presumed that all persons with standing to appeal have constructive notice of the decision from the date a sign containing the words "Zoning Decision" in letters at least six inches high and identifying the means to contact an official for information about the decision is prominently posted on the property that is the subject of the decision, provided the sign remains on the property for at least 10 days. Posting of signs is not the only form of constructive notice. Any such posting shall be the responsibility of the landowner or applicant. Verification of the posting shall be provided to the official who made the decision. Absent an ordinance provision to the contrary, posting of signs shall not be required.
5. The official who made the decision shall transmit to the board all documents and exhibits constituting the record upon which the action appealed from is taken. The official shall also provide a copy of the record to the appellant and to the owner of the property that is the subject of the appeal if the appellant is not the owner.
6. An appeal of a notice of violation or other enforcement order stays enforcement of the action appealed from unless the official who made the decision certifies to the board of adjustment after notice of appeal has been filed that because of the facts stated in an affidavit, a stay would cause imminent peril to life or property or because the violation is transitory in nature, a stay would seriously interfere with enforcement of the ordinance. In that case, enforcement proceedings shall not be stayed except by a restraining order, which may be granted by a court. If enforcement proceedings are not stayed, the appellant may file with the official a request for an expedited hearing of the appeal, and the board of adjustment shall meet to hear the appeal within 15 days after such a request

is filed. Notwithstanding the foregoing, appeals of decisions granting a permit or otherwise affirming that a proposed use of property is consistent with the ordinance shall not stay the further review of an application for permits or permissions to use such property; in these situations the appellant may request and the board may grant a stay of a final decision of permit applications or building permits affected by the issue being appealed.

7. Subject to the provisions of subdivision (6) of this subsection, the board of adjustment shall hear and decide the appeal within a reasonable time.
8. The official who made the decision shall be present at the hearing as a witness. The appellant shall not be limited at the hearing to matters stated in the notice of appeal. If any party or the county would be unduly prejudiced by the presentation of matters not presented in the notice of appeal, the board shall continue the hearing. The board of adjustment may reverse or affirm, wholly or partly, or may modify the decision appealed from and shall make any order, requirement, decision, or determination that ought to be made. The board shall have all the powers of the official who made the decision.

#### **18.5. Vote Required - Judicial Appeal**

The board of adjustment, by a vote of 4/5 of its members shall be necessary to grant a variance. A majority of the members shall be required to decide any other quasi-judicial matter or to determine an appeal made in the nature of certiorari. For the purposes of this subsection, vacant positions on the board and members who are disqualified from voting on a quasi-judicial matter shall not be considered 'members of the board' for calculation of the requisite supermajority if there are no qualified alternates available to take the place of such members.

Every quasi-judicial decision shall be subject to review by the superior court by proceedings in the nature of certiorari pursuant to G.S. 160A-393. A petition for review shall be filed with the clerk of superior court by the later of 30 days after the decision is effective or after a written copy thereof is given in accordance with Section 18.3(c) of this Ordinance. When first-class mail is used to deliver notice, three days shall be added to the time to file the petition.

A member of the board of adjustment shall not participate in or vote on any quasi-judicial matter in a manner that would violate affected persons' constitutional rights to an impartial decision maker. Impermissible conflicts include, but are not limited to, a member having a fixed opinion prior to hearing the matter that is not susceptible to change, undisclosed ex parte communications, a close familial, business, or other associational relationship with an affected person, or a financial interest in the outcome of the matter. If an objection is raised to a member's participation and that member does not recuse himself or herself, the remaining members shall by majority vote rule on the objection.

**SECTION 19            AMENDMENT TO ZONING ORDINANCE**

**19.1.    Statement of Intent**

For the purpose of establishing and maintaining sound, stable and desirable development within Chatham County this Ordinance shall not be amended except to correct an error in the Ordinance or, because of changed or changing conditions in a particular area or in the County generally, or to extend the boundary of an existing zoning district or to rezone an area to a different zoning district, or to change the regulation and restrictions of the Zoning Ordinance. These amendments shall be reasonably necessary to promote the public health, safety and general welfare and to achieve the purposes of the adopted Land Use Plan.

**19.2.    Amendment Initiation**

Subject to the limitations of the foregoing statement of intent an amendment to this Ordinance may be initiated by:

1. Text Amendment
  - a. The Board of Commissioners on its own motion;
  - b. The Planning Board;
  - c. Application by any person who owns property or resides in the area of jurisdiction of this Ordinance.
2. Map Amendment
  - a. The Board of Commissioners on its own motion;
  - b. The Planning Board;
  - c. The owner or authorized agent of the owner;

**19.3.    Conditional Zoning District Rezoning**

It is the intent of this section that the applicant for rezoning to any district other than a conditional zoning district shall be prohibited from offering any testimony or evidence concerning the specific manner in which he/she intends to use or develop the property. If the applicant believes that the development of his property in a specific manner will lessen adverse effects upon surrounding properties or otherwise make the rezoning more in accordance with principles underlying the County's comprehensive zoning plan, he/she shall apply for rezoning to the appropriate conditional zoning district specifying the nature of his proposed development. Conditional Zoning District requests shall follow the requirements in Section 5. No permit shall be issued for any development within a conditional zoning district except in accordance with the approved conditional zoning district.

**19.4    Procedure for Submission and Consideration of Applications for Text Amendment or General Use Zoning Map Amendment**

**A. County-Initiated Amendments**

All applications for amendments to this Ordinance initiated by the Planning Board or County departments/agencies shall be in writing, signed and filed with the Planning Department. The Board of Commissioners can initiate an amendment upon on their own motion.

The Planning Department, shall, before scheduling any amendment on the application for public hearing, ensure that it contains all the required information, as specified, in this Ordinance and on the application. Applications which are not complete, or otherwise do not comply with the provisions of this Ordinance shall not be scheduled by the Planning Department, but shall be returned to the applicant with a notation of the deficiencies in the application. Completed applications shall be received a minimum of 30 days prior to the public hearing at which the proposed amendment is scheduled to be heard.

## **B. Citizen-Initiated Amendments**

All applications for text or map amendments initiated by a property owner or citizen shall be required to submit an application containing the following information and follow the procedure outlined in Section 5.7. Applications for these amendments shall not require a Community Meeting or be required to meet with the Chatham County Appearance Commission.

## **C. Contents of Application**

All applications for amendments to this ordinance without limiting the right to file additional material shall contain at least the following:

1. If the proposed amendment would require a change in the zoning map, a map to scale showing the land which would be covered by the proposed amendment. If the proposed amendment does not affect the entire property, a boundary survey and vicinity map showing the property's total acreage, parcel number, current zoning classification(s) and the general location in relation to major streets, railroads, and/or waterways.
2. A legal description of such land or adequate description to define the area to be rezoned.
3. The alleged error in this Ordinance, if any, which would be remedied by the proposed amendment with a detailed explanation of such error in the Ordinance and detailed reasons how the proposed amendment will correct the same.
4. The changed or changing conditions, if any, in the area or in the County generally, which make the proposed amendment reasonably necessary to the promotion of the public health, safety and general welfare.
5. The manner in which the proposed amendment will carry out the intent and purpose of the adopted Land Use Plan or part thereof.
6. All other circumstances, factors and reasons which the applicant offers in support of the proposed amendment.
7. Information required on the application form received from the Planning Department.

## **19.5 Joint Public Hearing for County-Initiated Amendments**

The Board of Commissioners and the Planning Board shall receive public comment on applications for amendments to this Ordinance in a public hearing at a County Commissioners

meeting upon proper notice. The lack of quorum of the Planning Board at such meetings shall not affect the proceedings nor require further hearings.

#### **19.6 Public Hearing and Notice Thereof**

A public hearing shall be held by the Board of Commissioners before adoption of any proposed amendment to this Ordinance. Notice of the public hearing shall be given according to State law. When a zoning map amendment is proposed, a notice of the public hearing shall be prominently posted on the site proposed for rezoning or on an adjacent public street or highway right-of-way. When multiple parcels are included within a proposed zoning map amendment, a posting on each individual parcel is not required, but sufficient notices shall be posted to provide reasonable notice to interested parties.

Mailed notice shall be required in compliance with State law when the County initially zones property.

#### **19.7 Planning Department Prepares Final Analysis and Recommendation**

Following the public hearing the Planning Department shall prepare an analysis of the application and a recommendation to approve, deny, or defer action on the application. This information shall be presented to the Planning Board at least by the second regular meeting following the public hearing.

#### **19.8 Planning Board Action on the Amendment Application**

The Planning Board shall consider the amendment upon receipt of the Planning Department recommendation beginning no later than the second regular meeting following the public hearing. The Planning Board shall provide a written recommendation to the Board of Commissioners that addresses consistency with the adopted comprehensive plan and other matters as deemed appropriate. A recommendation by the Planning Board that a proposed amendment is inconsistent with the comprehensive plan shall not preclude consideration of approval of the proposed amendment by the governing board.

The Planning Board has a maximum of three regularly scheduled meetings to consider the request, following receipt of the Planning Department recommendation. Failure of the Planning Board to make a recommendation to the Board of Commissioners following the Planning Board's third regular meeting shall be considered a favorable recommendation without conditions.

A Planning Board member shall not vote on recommendations regarding any zoning map or text amendment where the outcome of the matter being considered is likely to have a direct, substantial, identifiable financial impact on the member. See the Planning Board Code of Ethics for more detail.

#### **19.9 Board of Commissioners Receives Recommendation of Planning Board**

The Board of Commissioners shall not consider the adoption of the proposed amendment until after the Planning Board makes a recommendation, or fails to make a recommendation within the time allowed. A member of the Board of Commissioners shall not vote on any zoning map or text amendment where the outcome of the matter being considered is reasonably likely to have a direct,



substantial, identifiable financial impact on the member. Prior to adopting or rejecting any zoning amendment, the Board of Commissioners shall adopt a statement describing whether its action is consistent with an adopted comprehensive plan, is reasonable, and in the public interest. Should the Board of Commissioners adopt a zoning amendment after finding that such an action is not consistent with an adopted comprehensive plan, the Board of Commissioners must also issue a declaration that the adopted comprehensive plan in question is also amended. The statement must include an explanation of “the change in conditions the governing board took into account in amending the zoning ordinance to meet the development needs of the community.”

### **19.10           Withdrawal of Application**

An applicant may withdraw his application at any time by written notice to the Planning Department. However, any withdrawal of an application after the giving of the first notice as required in Subsections 5.7(C) and 19.5 shall be considered, for the purposes of Subsection 19.10, a denial of the petition and any fees paid are non-refundable.

### **19.11           Effect of Denial on Subsequent Petitions**

When the Board of Commissioners shall have denied a map application or the application shall have been withdrawn after the first notice of the public hearing thereon, the Board of Commissioners shall not entertain another application for the same or similar map amendment, affecting the same property or a portion of it until the expiration of a one year period, extending from the date of denial or withdrawal, as applicable. Provided, however, one additional application may be made before the expiration of the one year period for the same property or a portion of it if the second application is for a zoning district designated as a conditional district.

### **19.12           Vested Rights**

Requests to establish vested rights according to G.S. 153A-344.1 shall provide the information required for a conditional zoning or conditional use permit request and shall follow the amendment procedure specified in Section 5.7 of the Chatham County Zoning Ordinance.

**SECTION 20            ENFORCEMENT**

**20.1.    Zoning Administrator**

This Ordinance shall be administered and enforced by the Zoning Administrator or designee. If the Zoning Administrator or designee shall find that any of the provisions of this Ordinance are being violated, he/she shall notify in writing the person responsible for such violation, indicating the nature of the violation and ordering the action necessary to correct it. He/she shall order discontinuance of illegal use of land, buildings, or structures; removal of illegal buildings or structures or addition, alterations, or structural changes thereto; discontinuance of any illegal work being done; or shall take any other action authorized by this Ordinance to insure compliance with or to prevent violations of its provisions.

**20.2.    Certificate of Zoning Compliance**

No land shall be used or occupied and no building hereafter structurally altered, erected, or moved, shall be used, or its use changed until a certificate of zoning compliance shall have been issued by the Zoning Administrator or Zoning Official stating that the building and/or the proposed use thereof complies with the provisions of this Ordinance. No building shall be occupied until that certificate is approved. A record of all certificates shall be kept on file in the office of the Planning Department and copies shall be furnished upon request.

**A.    Application Procedures**

Each application for certificate of zoning compliance shall be accompanied by a plan, one copy of which shall be returned to the owner upon approval. The plan shall show the following:

1.    The shape and dimensions of the lot on which the proposed building or use is to be erected or conducted;
2.    The location of the said lot with respect to adjacent rights-of-way;
3.    The shape, dimensions, and location of all buildings, existing and proposed on the said lot;
4.    The nature of the proposed use of the building or land, including the extent and location of the use on the said lot;
5.    The location and dimensions of off-street parking and the means of ingress and egress to such space; and
6.    Any other information which the Zoning Administrator may deem necessary for consideration in enforcing the provisions of this Ordinance.

**B.    Right of Appeal**

If the certificate of zoning compliance is denied, or not acted upon within 15 days of submittal, the applicant may appeal the action of the Zoning Administrator to the Board of Adjustment.

**20.3. Duties of Zoning Administrator, Zoning Official, Board of Adjustment, and Courts as to Matters of Appeal**

It is the intention of this Ordinance that all questions arising in connection with the enforcement of this Ordinance shall be presented first to the Zoning Administrator or Official and that such questions shall be presented to the Board of Adjustment only on appeal from the Zoning Administrator or Official; and that from the decision of the Board of Adjustment recourse shall be to courts as provided by law.

**SECTION 21 PENALTY FOR VIOLATIONS**

Upon determination of a violation of any section of this Ordinance, the penalty for which is a civil penalty, Chatham County may cause a warning citation (aka Notice of Violation) to be issued to the violator setting out the nature of the violation, the section violated, the date of the violation, an order to immediately cease the violation, or if the violation is in the nature of an infraction for which an order or abatement would be appropriate in a civil proceeding, a reasonable period of time is stated in which the violation must be abated. The warning citation shall specify that a second citation shall incur a civil penalty, together with costs, and attorney fees if applicable.

Within 30 days of a violation warning citation, an appeal may be made as described in Section 18.4 Appeal Procedures.

Upon failure of the violator to obey the warning citation a civil citation may be issued by the Zoning Administrator or designee and either served directly on the violator, his duly designated agent, or registered agent if a corporation, either in person or posted in the United States mail service by first class mail addressed to the last known address of the violator as contained in the records of the County or obtained from the violator at the time of issuance of the warning citation. The violator shall be deemed to have been served upon the mailing of said citation. The citation shall direct the violator to pay the citation to the Planning Department of Chatham County within 15 days of the date of the citation, or alternatively to pay the citation by mail. The violation for which the citation is issued must have been corrected by the time the citation is paid otherwise further citations may be issued. Citations may be issued for each day the offense continues until the prohibited activity is ceased or abated. Each day's continuing violation of any provision of this Ordinance shall be a separate and distinct offense. This means that on the 16<sup>th</sup> day of non-compliance, civil penalties will accrue on a daily basis as long as the violation continues.

The civil penalty, if not paid to the Planning Department within 15 days of the issuance of a citation, may be recovered by the County in a civil action in the nature of debt. Said civil penalties shall be assessed in the amount of \$50.00 per day for the first violation. If the same violation occurs on the same property within six (6) years after the initial violation is remedied, a civil penalty in the amount of \$100.00 per day shall automatically apply. If the same violation occurs on the same property within six (6) years after the second occurrence of the violation is remedied, a civil penalty in the amount of \$200.00 per day shall automatically apply. If the same violation occurs on the same property within six (6) years after the third or any subsequent occurrence of the violation is remedied, a civil penalty in the amount of \$500.00 per day shall automatically apply. Civil penalties will continue to accrue until compliance has been met on the property. The Zoning Administrator has the discretion to waive the escalation of the penalty if the violator is working to correct the violation in good faith and has made tangible progress during the grace period.

In addition to the penalties set out above, any provision of this Ordinance may be enforced by an appropriate equitable remedy issuing from a court of competent jurisdiction. In such case, the general court of justice shall have jurisdiction to issue such orders as may be appropriate, and it shall not be a defense to the application of the County for equitable relief that there is an adequate remedy at law.

## Chatham County Zoning Ordinance

In addition to the penalties set out above, any provision of this Ordinance that makes unlawful a condition existing upon or use made of real property may be enforced by injunction and order of abatement by general court of justice. When a violation of such a provision occurs, the County may apply to the appropriate division of the general court of justice for a mandatory or prohibitory injunction and order of abatement commanding the defendant to correct the unlawful condition upon or cease the unlawful use of the property. The action shall be governed in all respects by the laws and rules governing civil proceedings, including the Rules of Civil Procedure in general and Rule 65 in particular.

In addition to an injunction, the County may seek an order of abatement as a part of the judgment in the cause. An order of abatement may direct that buildings or other structures on the property be closed, demolished or removed; that fixtures, furniture or other movable property be removed from buildings on the property; that improvements or repairs be made; or that any other action be taken that is necessary to bring the property into compliance with this Ordinance. If the defendant fails or refuses to comply with an injunction or with an order of abatement within the time allowed by the court, he/she may be cited for contempt, and the County may execute the order of abatement. The County shall have a lien on the property for the cost of executing an order of abatement in the nature of a mechanic's and material man's lien. The defendant may secure cancellation of an order of abatement by paying all costs of the proceedings and posting a bond for compliance with the order. The bond shall be given with sureties approved by the Clerk of Superior Court in an amount approved by the judge before whom the matter is heard and shall be conditioned on the defendant's full compliance with the terms of the order of abatement within a time fixed by the judge. Cancellation of an order of abatement shall not suspend or cancel an injunction issued in conjunction therewith. The provisions of the Ordinance may be enforced by one, all or a combination of the remedies authorized and prescribed by this section.

**SECTION 22      EFFECTS UPON OUTSTANDING BUILDING PERMITS**

Nothing herein contained shall require any change in the plans, construction, size or designated use of any building, structure or part thereof for which a building permit has been granted prior to the time of passage of this Ordinance and said permit remains valid. However if a building permit expires, any further construction or use shall be in conformity with the provisions of this Ordinance.

**SECTION 23      EFFECTS UPON OUTSTANDING CONDITIONAL USE PERMITS**

Nothing herein contained shall require any change in the plans, size or designated use of any valid conditional use permit which has been granted by the Board of Commissioners prior to the time of the adoption of this Ordinance. It is the intent of this Ordinance that all outstanding valid conditional use permits shall survive the same as if such permits, as issued and including any and all limitations and conditions, were each and every one fully described and set out herein.

**23.1      Cancellation by surrender of a Conditional Use Permit**

A. Any conditional use permit, which has been previously approved, may be offered for surrender by the property owner or his agent by submitting a written application to the Zoning Administrator.

B. The Zoning Administrator will accept the offer of surrender and cancel the conditional use permit if all of the following conditions are met:

1. There are no existing zoning violations on the conditional use permit
2. The property is undeveloped or the existing use is permitted in the underlying zoning district
3. The underlying zoning district is a general use district listed in Section 4 of this Ordinance.

C. Approval of the application will result in the conditional use permit being cancelled and the property becoming subject to the underlying zoning district. Upon cancellation of the conditional use permit, any expansion of an existing use or any new development must conform to all requirements of the underlying zoning district.

D. The Zoning Administrator shall submit a report to the Board of Commissioners upon the cancellation of a Conditional Use Permit.

E. Following the cancellation, the designation of the previously approved conditional use permit will be removed from the Zoning Map and the property will be shown to be in the appropriate underlying zoning district.

**23.2.      Termination of a Conditional Use Permit**

Any conditional use permit, which does not meet the conditions for cancellation established by Section 23.1, can be terminated by a reclassification of the property in accordance with the procedures set forth in Sections 5 and 19. The granting of a zoning re-classification will terminate the previously approved conditional use permit.

**23.3      Violations of an Approved Conditional Use Permit**

Any violation of a term or condition of a conditional use permit shall be treated the same as a violation of this Ordinance and shall be subject to the same remedies and penalties as any such violation.

**SECTION 24     REENACTMENT AND REPEAL OF EXISTING ZONING ORDINANCE**

This Ordinance in part carries forward by reenactment some of the provisions of the existing Zoning Ordinance of Chatham County for Baldwin, Williams, New Hope and portion of Cape Fear (North of U.S. 1) Townships adopted April 13, 1973 as amended and it is not intended to repeal but rather to reenact and continue in force such existing provisions so that all rights and liabilities that have accrued are preserved and may be enforced. All provisions of the Zoning Ordinance which are not reenacted herein are hereby repealed. All suits at law or in equity and/or all prosecutions resulting from the violation of any Zoning Ordinance in effect, which are now pending in any of the courts of this State or of the United States, shall not be abated or abandoned by reason of the adoption of this Ordinance, but shall be prosecuted to their finality the same as if this Ordinance had not been adopted; and any and all violations of the existing Ordinance, prosecutions for which have not been instituted, may be filed and prosecuted; and nothing in this Ordinance shall be so construed as to abandon, abate, or dismiss any litigation or prosecution now pending and/or which may have instituted or prosecuted.



**SECTION 25     INTERPRETATION, PURPOSE AND CONFLICT**

In interpreting and applying the provisions of this Ordinance they shall be held to be the minimum requirements for the promotion of the public safety, health, convenience, prosperity, and general welfare. It is not intended by this Ordinance to interfere with or abrogate or annul any easements, covenants, or other agreements between parties; provided, however, that where this Ordinance imposes a greater restriction upon the use of buildings or premises or upon the height of buildings, or requires larger open spaces than are imposed or required by other ordinances, rules, regulations, or by easements, covenants, or agreements, the provisions of this Ordinance shall govern.

**SECTION 26     VALIDITY**

If any section, subsection, sentence, clause, or phrase of this Ordinance is for any reason held to be invalid, such decision shall not affect the validity of the remaining portions of this Ordinance. The Board of Commissioners hereby declares that it would have passed this Ordinance and each section, subsection, clause, and phrase thereof, irrespective of the fact that any one or more sections, subsections, sentences, clauses or phrases be declared invalid.

**SECTION 27     EFFECTIVE DATE**

This Ordinance shall be in full force and effect from and after the 31st day of December, 1990.

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**SECTION 28**     **AMENDMENTS**

Reserved

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2021 USE-VALUE MANUAL  
FOR AGRICULTURAL, HORTICULTURAL  
AND  
FOREST LAND



April 2020

North Carolina Use-Value Advisory Board  
North Carolina Department of Revenue  
Raleigh, North Carolina

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## **Foreword**

When originally enacted in 1973, the objective of the present-use value program was to keep “the family farm in the hands of the farming family.” By the early 1970’s, North Carolina had become a prime site for industrial and commercial companies to relocate because of its plentiful and reliable work force. With this growth came other improvements to the State’s infrastructure to accommodate this growth, such as new and larger road systems, more residential subdivisions, and new industrial and commercial developments. The land on which to build these improvements came primarily from one source: farmland. As the demand for this land skyrocketed, so did its price as well as its assessed value, as counties changed from a fractional assessment to a market value system. Farmers who owned land near these sites soon could not afford the increase in property values and sought relief from the General Assembly.

In response, the General Assembly passed legislation known as the Present-Use Value program. As originally enacted, the basic tenets of this program were that only individuals who lived on the land for which they were applying could immediately qualify and that the land had to have a highest and best use as agriculture, horticulture or forest land. Land might also have qualified if the farmer owned it for seven years. Passage of this law eased the financial burden of most farmers and eliminated to some degree the “sticker shock” of the new property tax values. From that time until the mid-1980’s, the present-use value schedules were based on farmer-to-farmer sales, and quite often the market value schedules were very similar to the present use schedules, especially in the more rural areas.

Virtually every session of the General Assembly has seen new changes to the law, causing a constant rethinking as to how the law is to be administered. The mid-1980's saw several court cases that aided in this transformation. Among the legislative changes that resulted from these cases were the use of soil productivity to determine value, the use of a 9% capitalization rate, and the utilization of the "unit concept" to bring smaller tracts under the present use value guidelines.

Through the years the General Assembly has expanded the present-use value program to include new types of ownership such as business entities, tenants in common, trusts, and testamentary trusts. Legislation also expanded the definition of a relative. More recent legislation has established cash rents as the basis for determining present-use value for agricultural and horticultural land, while retaining the net income basis for determining present-use value for forestland.

This Use-Value Advisory Board Manual is published yearly to communicate the UVAB recommended present-use value rates and to explain the methodology used in establishing the recommended rates.



# NORTH CAROLINA USE-VALUE ADVISORY BOARD

## Chairman

**Dr. A. Richard Bonanno**

Associate Dean & Director

North Carolina Cooperative Extension Service

North Carolina State University

NCSU Box 7602

Raleigh, NC 27695-7602

919.515.1372 (T)

919.515.3135 (F)

[abonann@ncsu.edu](mailto:abonann@ncsu.edu)

*(Representing the NC Cooperative Extension Service at NCSU)*

## Members

Mr. Sean M. **Brogan**, Director

Forest Management & Forest Development

NC Forest Service

Archdale Building-10<sup>th</sup> Fl

Raleigh, NC 27699-1616

Telephone: 919.857.4818

Fax: 919.857.4805

Email: [Sean.Brogan@ncagr.gov](mailto:Sean.Brogan@ncagr.gov)

*(Representing NC Forest Service, NC Department of Agricultural and Consumer Services)*

Dr. Rosalind **Dale**

Associate Dean & Extension Administrator

NC Cooperative Extension Program

NC A&T State University

PO Box 21928

Greensboro, NC 27420-1928

Telephone: 336.334.7956

Email: [rdale@ncat.edu](mailto:rdale@ncat.edu)

*(Representing the NC Cooperative Extension Program at NC A&T State University)*

Ms. Tina **Hlabse**

General Counsel

NC Dept. of Agriculture & Consumer Services

Mail Service Center 1001

Raleigh, NC 27699

Telephone: 919.707.3013

Fax: 919.716.0090

Email: [tina.hlabse@ncagr.gov](mailto:tina.hlabse@ncagr.gov)

*(Representing Dept. of Agriculture & Consumer Services)*

Mr. Steve **Woodson**

Associate General Counsel

North Carolina Farm Bureau

PO Box 27766

Raleigh, NC 27611

Telephone: 919.788.1018

Fax: 919.783.3593

Email: [steve.woodson@ncfb.org](mailto:steve.woodson@ncfb.org)

*(Representing NC Farm Bureau Federation, Inc.)*

Mr. Sam **Croom**

Pitt County Assessor

PO Box 43

Greenville, NC 27835

Telephone: 252.902.3400

Fax: 252.830.0753

Email: [sam.croom@pittcountync.gov](mailto:sam.croom@pittcountync.gov)

*(Representing NC Assn. Of Assessing Officers)*

Mr. Tony **Simpson**

Director, Local Government Division

NC Department of Revenue

PO Box 871

Raleigh, NC 27602

Telephone: 919.814.1129

Fax: 919.715.3107

Email: [john.simpson@ncdor.gov](mailto:john.simpson@ncdor.gov)

*(Representing NC Dept. of Revenue)*

Mr. Dan A. **Hunsucker**

Catawba County Commissioner

3216 John Daniel Drive

Conover, NC 28613

Telephone: 828.312-0102

Fax: 828.465.8392

Email: [dhunsucker@catawbacountync.gov](mailto:dhunsucker@catawbacountync.gov)

*(Representing NC Assn. Of County Commissioners)*

Mr. John **Hatcher**

Executive VP, NC Forestry Association

1600 Glenwood Avenue

Raleigh, NC 27608

Telephone: 919.834.3943 (press 5)

Fax: 919.832.6188

Email: [jhatcher@ncforestry.org](mailto:jhatcher@ncforestry.org)

*(Representing NC Forestry Association)*

# **USE-VALUE ADVISORY BOARD SUBCOMMITTEES**

## **Administration and Implementation**

Tony Simpson, NCDOR  
Doug Huffman, NCDOR  
Steve Woodson, Farm Bureau  
Dee Webb, NCDA&CS  
David Baker, NCACC  
Sam Croom, Pitt County  
Daniel J. Whittle, Environmental Defense  
Robert Horton, NRCS

## **Soils**

Rafeal Vega, NRCS  
Milton Cortes, NRCS  
Doug Huffman, NCDOR  
Chris Green, Cleveland County  
Godfrey Gayle, NC A&T State University  
Joseph Kleiss, Soil Science, NCSU

## **Cash Rents**

Doug Huffman, NCDOR  
Tony Simpson, NCDOR  
Sam Croom, Pitt County  
Steve Woodson, Farm Bureau  
*Vacant*, Crop Science, NCSU

## **Forestry**

Mark Megalos, Forestry, NCSU  
Tony Simpson, NCDOR  
Doug Huffman, NCDOR  
Steve Whitfield, NC Forest Landowners Assn.  
Mike Huggins, Private Landowner Representative  
Clay Altizer, Utilization Forester, NCFS

# **USE-VALUE ADVISORY BOARD MANUAL**

Following are explanations of the major components of this manual.

## **I. Cash Rents**

Beginning in 1985, the basis for determining present-use value for agricultural land was based on the soil productivity for growing corn and soybeans. At that time, corn and soybeans were considered the predominant crops in the state. Over time, fewer and fewer acres went into the production of corn and soybeans and the land used for these crops tended to be lower quality. As a result, both the productivity and value of these crops plummeted, thus resulting in lower present-use values. A viable alternative was sought to replace corn and soybeans as the basis for present-use value. Following a 1998 study by North Carolina State University, cash rents for agricultural and horticultural land were determined to be the preferred alternative. Cash rents are a very good indicator of net income, which can be converted into a value using an appropriate capitalization rate.

The General Assembly passed legislation that established cash rents as the required method for determining the recommended present-use values for agricultural and horticultural land. The cash rents data from the NCSU study served as the basis for determining present-use value for the 2004-2007 UVAB manuals. However, starting in 2006, funding became available for the North Carolina Department of Agriculture to perform an extensive statewide cash rents survey on a yearly basis. The 2006 survey became the basis for the 2008 UVAB recommended values, and this process will

continue forward until changes dictate otherwise (i.e. the 2007 survey is used to establish the 2009 UVAB values, etc.).

Forestland does not lend itself well to cash rents analysis and continues to be valued using the net income from actual production.

## **II. Soil Types and Soil Classification**

The 1985 legislation divided the state using the six Major Land Resource Areas (MLRAs). Five different classes of productive soils and one non-productive soil class for each MLRA were determined. Each class was identified by its net income according to type: agriculture, horticulture and forestry. The net income was then divided by a 9% capitalization rate to determine the present-use value. For 2004 and forward, the following change has taken place. For agricultural and horticultural classifications, the five different soil classes have been reduced to three soil classes and one non-productive soil class. Forestland present-use value has kept the five soil classes and one non-productive soil class. The use of the six MLRAs has been retained.

The six MLRAs are as follows:

MLRA 130	Mountains
MLRA 133A	Upper Coastal Plain
MLRA 136	Piedmont
MLRA 137	Sandhills
MLRA 153A	Lower Coastal Plains
MLRA 153B	Tidewater

The soils are listed in this manual according to the MLRA in which they occur. They are then further broken down into their productivity for each of the three types of use: agriculture, horticulture and forestry. Every soil listed in each of the MLRAs is ranked by its productivity into four classes (with the exception of forestry which retained its previous six classes). The classes for agricultural and horticultural land are as follows:

CLASS I	Best Soils
CLASS II	Average Soils
CLASS III	Fair Soils
CLASS IV	Non-Productive Soils

It should be noted that, in some soil types, all the various slopes of that soil have the same productivity class for each of the usages, and therefore for the sake of brevity, the word “ALL” is listed to combine these soils. Each of the classes set up by the UVAB soils subcommittee corresponds to a cash rent income established by the most recent cash rents survey conducted by the North Carolina Department of Agriculture. This rent income is then capitalized by a rate established each year by the UVAB (see below). The criteria for establishing present-use value for forestry have remained basically unchanged from previous years due to the quantity and quality of information already available.

### **III. Capitalization Rate**

The capitalization rate mandated by the 1985 legislation for all types of present-use value land was 9%. The 1998 study by NCSU strongly indicated that a lower capitalization rate for agricultural and horticultural land was more in line with current sales and rental information. The 2002 legislation mandated a rate between 6%-7% for agricultural and horticultural land.

For the year 2004 and the subsequent years, the UVAB has set the capitalization rate at 6.5% for agricultural and horticultural land.

The capitalization rate for forestland continues to be fixed at 9% as mandated by the statutes.

#### **IV. Other Issues**

The value for the best agricultural land can be no higher than \$1,200 an acre for any MLRA.



# **PRESENT-USE VALUE SCHEDULES**

## **AGRICULTURAL RENTS**

<b>MLRA</b>	<b>BEST</b>	<b>AVERAGE</b>	<b>FAIR</b>
130	90.30	54.30	35.50
133A	82.15	58.30	43.65
136	61.80	42.10	27.35
137	67.50	47.30	32.20
153A	77.10	56.10	42.20
153B	103.95	70.70	53.00

## **AGRICULTURAL SCHEDULE**

<b>MLRA</b>	<b>CLASS I</b>	<b>CLASS II</b>	<b>CLASS III</b>
130	\$1,200*	\$835	\$545
133A	\$1,200*	\$895	\$670
136	\$950	\$645	\$420
137	\$1,035	\$725	\$495
153A	\$1,185	\$860	\$645
153B	\$1,200*	\$1,085	\$815

--NOTE: All Class 4 or Non-Productive Land will be appraised at \$40.00 per acre.

--For the 2020 year, cash rents were capitalized at a rate of 6.5% to produce the Agricultural Schedule.

\* As required by statute, agricultural values cannot exceed \$1,200.



## HORTICULTURAL SCHEDULE

All horticultural crops requiring more than one growing season between planting or setting out and harvest, such as Christmas trees, ornamental shrubs and nursery stock, apple and peach orchards, grapes, blueberries, strawberries, sod and other similar horticultural crops should be classified as horticulture regardless of location in the state.

### HORTICULTURAL RENTS

<b>MLRA</b>	<b>BEST</b>	<b>AVERAGE</b>	<b>FAIR</b>
130	161.70	111.10	72.90
133A	99.10	68.40	52.25
136	89.20	58.05	40.15
137	84.35	56.85	37.70
153A	93.80	58.15	44.40
153B	122.40	92.80	84.35

### HORTICULTURAL SCHEDULE

<b>MLRA</b>	<b>CLASS I</b>	<b>CLASS II</b>	<b>CLASS III</b>
130	\$2,485	\$1,705	\$1,120
133A	\$1,520	\$1,050	\$803
136	\$1,370	\$890	\$615
137	\$1,295	\$870	\$580
153A	\$1,440	\$890	\$680
153B	\$1,880	\$1,425	\$1,295

--NOTE: All Class 4 or Non-Productive Land will be appraised at \$40.00 per acre.

--For the 2020 year, rents were increased cash rents were capitalized at a rate of 6.5% to produce the Horticultural Schedule.

### FORESTLAND NET PRESENT VALUES

<b>MLRA</b>	<b>Class I</b>	<b>Class II</b>	<b>Class III</b>	<b>Class IV</b>	<b>Class V</b>
130	\$29.59	\$20.66	\$6.67	\$4.27	\$2.47
133A	\$28.51	\$22.20	\$18.45	\$7.13	\$4.93
136	\$32.81	\$23.02	\$22.72	\$14.78	\$9.87
137	\$35.42	\$23.67	\$23.02	\$7.76	\$2.99
153A	\$28.51	\$22.20	\$18.45	\$7.13	\$4.93
153B	\$23.05	\$18.45	\$17.37	\$7.13	\$4.93

### FORESTLAND SCHEDULE

<b>MLRA</b>	<b>Class I</b>	<b>Class II</b>	<b>Class III</b>	<b>Class IV</b>	<b>Class V</b>
130	\$328	\$229	\$74	\$47	\$27
133A	\$316	\$246	\$205	\$79	\$54
136	\$364	\$255	\$252	\$164	\$109
137	\$393	\$263	\$255	\$86	\$40
153A	\$316	\$246	\$205	\$79	\$54
153B	\$256	\$205	\$193	\$79	\$54

--NOTE: All Class VI or Non-Productive Land will be appraised at \$40.00/Acre. Exception: For MLRA 130 use 80 % of the lowest valued productive land.

--Net Present Values were divided by a capitalization rate of 9.00% to produce the Forestland Schedule.

# **2009 Cash Rent Study**

## **INTRODUCTION**

The National Agricultural Statistics Service in cooperation with the North Carolina Department of Agricultural and Consumer Services collected cash rents data on the 2009 County Estimates Survey. North Carolina farmers were surveyed to obtain cash rent values per acre for three land types: Agricultural, horticultural, and Christmas tree land. Supporting funds for this project were provided by the North Carolina Legislature. Appreciation is expressed to all survey participants who provided the data on which this report is based.

## **THE SURVEY**

The survey was conducted by mail with telephone follow-up during September through February. Values relate to the data collection time period when the respondent completed the survey.

## **THE DATA**

This report includes the most current number of responses and average rental rate per acre. Producers were asked to provide their best estimate of cash rent values in their county by land quality. The data published here are simple averages of the best estimate of the cash rent value per acre. These averages are not official estimates of actual sales.

Reported data that did not represent agricultural usage were removed in order to give a more accurate reflection of agricultural rents and values. To ensure respondent confidentiality and provide more statistical reliability, counties and districts with fewer than 10 reports are not published individually, but are included in aggregate totals. Published values in this report should never be used as the only factor to establish rental arrangements.

Data were collected for three land types: Agricultural, horticultural, and Christmas tree land. Agricultural land includes land used to produce row crops such as soybeans, corn, peanuts, and small grains, pasture land, and hay. Agricultural land also includes any land on which livestock are grown. Horticultural land includes commercial production or growing of fruits or vegetables or nursery or floral products such as apple orchards, blueberries, cucumbers, tomatoes, potted plants, flowers, shrubs, sod, and turf grass. Christmas tree land includes any land to produce Christmas trees, including cut and balled Christmas trees.

2009 Average Cash Rents for Resource Area = 130 Mountains

County	Agricultural High Productivity		Agricultural Medium Productivity		Agricultural Low Productivity		Horticultural High Productivity		Horticultural Medium Productivity		Horticultural Low Productivity		Christmas Trees High Productivity		Christmas Trees Medium Productivity		Christmas Trees Low Productivity	
	No. of reports	Average	No. of reports	Average	No. of reports	Average	No. of reports	Average	No. of reports	Average	No. of reports	Average	No. of reports	Average	No. of reports	Average	No. of reports	Average
ALLEGHANY	22	89.80	21	55.50	21	33.30												
ASHE	17	76.50	15	43.50	15	28.30							12	162.50				
AVERY																		
BUNCOMBE	37	100.70	31	53.90	27	33.80												
BURKE	25	55.20	22	33.20	10	26.60												
CALDWELL	13	35.40	11	23.20	10	16.70												
CHEROKEE	16	88.10	11	48.60	10	29.50												
CLAY	15	68.70	14	39.10	13	25.20												
GRAHAM																		
HAYWOOD	41	117.90	28	73.80	29	43.50												
HENDERSON	24	83.50	18	57.60	18	36.90												
JACKSON																		
MACDOWELL																		
MACON	11	73.20	12	43.30														
MADISON	26	116.50	22	63.20	23	40.50												
MITCHELL																		
POLK																		
SWAIN																		
TRANSYLVANIA	14	93.60																
WATAUGA	27	79.10	18	49.70	14	32.50							11	181.36				
WILKES	79	57.30	71	39.30	59	27.00												
YANCEY	17	117.90	13	72.30	13	48.85												
AREA TOTAL	422	82.10	349	49.40	317	32.30	78	147.00	47	101.10	41	66.30	69	153.60	47	93.60	38	61.30

2009 Average Cash Rents for Resource Area = 133A Upper Coastal Plain

County	Agricultural High Productivity		Agricultural Medium Productivity		Agricultural Low Productivity		Horticultural High Productivity		Horticultural Medium Productivity		Horticultural Low Productivity		Christmas Trees High Productivity		Christmas Trees Medium Productivity		Christmas Trees Low Productivity	
	No. of reports	Average	No. of reports	Average	No. of reports	Average	No. of reports	Average	No. of reports	Average	No. of reports	Average	No. of reports	Average	No. of reports	Average	No. of reports	Average
BLADEN	36	63.10	32	49.20	25	33.80												
COLUMBUS	77	60.80	58	45.80	51	34.60												
CUMBERLAND	36	66.40	29	44.70	25	30.40												
DUPLIN	142	69.30	113	50.80	90	39.70												
EDGECOMBE	36	77.10	29	57.20	22	43.60												
GREENE	61	79.70	40	55.00	36	41.30												
HALIFAX	28	83.30	18	64.20	14	42.10												
HARNETT	58	74.50	52	51.70	39	36.40												
JOHNSTON	103	71.90	84	49.90	63	33.40	13	93.90	10	53.00								
LENOIR	60	81.60	45	58.70	33	42.10												
NASH	51	77.80	39	52.70	31	43.10												
NORTHAMPTON	23	102.60	17	73.80	13	57.30												
ROBESON	53	49.60	52	38.90	28	32.40												
SAMPSON	128	81.60	109	56.40	87	41.80	10	95.00										
SCOTLAND	10	44.50																
WAYNE	96	89.70	64	62.30	65	47.00												
WILSON	40	82.80	30	61.50	27	48.20												
AREA TOTAL	1038	74.70	819	53.00	655	39.70	61	90.10	46	62.20	35	47.50						

2009 Average Cash Rents for Resource Area = 136 Piedmont

County	Agricultural High Productivity		Agricultural Medium Productivity		Agricultural Low Productivity		Horticultural High Productivity		Horticultural Medium Productivity		Horticultural Low Productivity		Christmas Trees High Productivity		Christmas Trees Medium Productivity		Christmas Trees Low Productivity	
	No. of reports	Average	No. of reports	Average	No. of reports	Average	No. of reports	Average	No. of reports	Average	No. of reports	Average	No. of reports	Average	No. of reports	Average	No. of reports	Average
ALAMANCE	63	52.30	51	32.90	50	20.70												
ALEXANDER	35	49.10	28	33.40	29	20.00												
ANSON	35	50.10	31	41.30	25	28.40												
BURKE	25	55.20	22	33.20	19	26.60												
CABARRUS	20	42.20	16	37.80	13	23.90												
CALDWELL	13	35.40	11	23.50	10	16.70												
CASWELL	54	49.90	41	30.90	44	19.20												
CATAWBA	32	39.20	29	28.60	31	19.20												
CHATHAM	47	48.80	48	34.70	37	23.10												
CLEVELAND	44	36.50	39	29.20	34	21.20												
DAVIDSON	50	45.60	43	32.90	40	21.40												
DAVIE	38	60.70	27	39.30	24	21.30												
DURHAM	15	36.50	12	27.50	13	21.50												
FORSYTH	26	63.60	16	48.60	18	23.30												
FRANKLIN	41	59.20	38	37.10	35	21.90												
GASTON	17	33.50	15	27.30	15	18.80												
GRANVILLE	58	53.00	45	31.60	43	17.80												
GUILFORD	46	41.20	39	27.00	34	17.60												
HALIFAX	28	83.30	18	64.20	14	42.10												
IREDELL	52	53.90	49	43.40	43	27.90												
JOHNSTON	103	71.90	84	49.90	63	33.40	13	93.90	10	53.00								
LEE	25	72.40	20	45.40	16	33.10												
LINCOLN	16	35.60	14	21.80	12	15.60												
MECKLENBURG	11	61.40																
MONTGOMERY	16	41.60	16	39.10	14	20.00												
MOORE	37	56.50	33	37.30	25	23.90												
NASH	51	77.80	39	52.70	31	43.10												
ORANGE	31	37.60	26	31.80	25	19.40												
PERSON	38	60.70	26	40.60	22	23.30												
POLK																		
RANDOLPH	96	48.20	81	33.80	73	21.90												
RICHMOND	21	32.60	15	23.30	18	19.30												
ROCKINGHAM	55	55.10	41	30.30	40	16.60												
ROWAN	47	48.80	36	34.70	33	23.50												
RUTHERFORD	21	37.40	16	27.60	14	19.30												
STANLY	34	52.50	30	40.30	29	27.90												
STOKES	54	74.20	39	47.10	34	28.10												
SURRY	73	83.00	57	53.90	53	35.30												
UNION	55	66.30	50	47.80	40	40.30												
VANCE	32	55.00	22	29.30	23	17.20												
WAKE	55	61.20	46	36.20	39	26.20												
WARREN	24	40.90	15	25.30	20	17.80												
WILKES	79	57.30	71	39.30	59	27.00												
YADKIN	79	67.00	60	47.80	58	31.50												
AREA TOTAL	1798	56.20	1468	38.30	1324	24.90	125	81.10	101	52.80	89	36.50	46	77.90	43	52.90	41	35.00

## 2009 Average Cash Rents for Resource Area = 137 Sandhills

County	Agricultural High Productivity		Agricultural Medium Productivity		Agricultural Low Productivity		Horticultural High Productivity		Horticultural Medium Productivity		Horticultural Low Productivity		Christmas Trees High Productivity		Christmas Trees Medium Productivity		Christmas Trees Low Productivity	
	No. of reports	Average	No. of reports	Average	No. of reports	Average	No. of reports	Average	No. of reports	Average	No. of reports	Average	No. of reports	Average	No. of reports	Average	No. of reports	Average
HARNETT	58	74.50	52	51.70	39	36.40												
HOKE	17	56.50	11	45.00	11	29.10												
LEE	25	72.40	20	45.40	16	33.10												
MOORE	37	56.50	33	37.30	25	23.90												
RICHMOND	21	32.60	16	23.30	8	18.30												
SCOTLAND	10	44.50																
<b>AREA TOTAL</b>	<b>168</b>	<b>61.40</b>	<b>139</b>	<b>43.00</b>	<b>115</b>	<b>29.30</b>	*	<b>76.70</b>	*	<b>51.70</b>	*	<b>34.30</b>						

An \* indicates the data is published even though there are less than 10 reports.

2009 Average Cash Rents for Resource Area = 153A Lower Coastal Plain

	Agricultural High Productivity		Agricultural Medium Productivity		Agricultural Low Productivity		Horticultural High Productivity		Horticultural Medium Productivity		Horticultural Low Productivity		Christmas Trees High Productivity		Christmas Trees Medium Productivity		Christmas Trees Low Productivity	
	No. of reports	Average	No. of reports	Average	No. of reports	Average	No. of reports	Average	No. of reports	Average	No. of reports	Average	No. of reports	Average	No. of reports	Average	No. of reports	Average
County	30	83.70	23	52.00	21	37.10												
BEAUFORT																		
BERTIE	41	75.00	23	60.10	21	44.50												
BLADEN	36	63.10	32	49.20	25	33.80												
BRUNSWICK	23	44.40	16	38.00	13	30.00												
CARTERET																		
CHOWAN	20	87.00	13	58.90	12	51.70												
COLUMBUS	77	60.80	58	45.80	51	34.60												
CRAVEN	32	60.60	29	47.80	21	35.20												
DUPLIN	142	69.30	113	50.80	90	39.70												
EDGECOMBE	36	77.10	29	57.20	22	43.60												
GATES	13	81.20	11	62.30														
HERTFORD	15	73.00	11	49.60														
JONES	25	64.40	22	49.80	20	41.30												
MARTIN	46	80.70	33	53.20	29	40.50												
NEW HANOVER																		
ON SLOW	34	55.40	24	42.80	23	34.80												
PAMLICO	13	70.40	13	51.20	13	36.50												
PENDER	24	67.10	21	45.50	19	33.70												
PITT	45	73.70	39	56.20	33	40.50												
WASHINGTON	12	128.80	10	61.00														
AREA TOTAL	672	70.10	525	51.00	442	38.40	30	85.30	19	52.90	13	40.40						



2009 Average Cash Rents for Resource Area = 153B Tidewater

County	Agricultural High Productivity		Agricultural Medium Productivity		Agricultural Low Productivity		Horticultural High Productivity		Horticultural Medium Productivity		Horticultural Low Productivity		Christmas Trees High Productivity		Christmas Trees Medium Productivity		Christmas Trees Low Productivity	
	No. of reports	Average	No. of reports	Average	No. of reports	Average	No. of reports	Average	No. of reports	Average	No. of reports	Average	No. of reports	Average	No. of reports	Average	No. of reports	Average
BEAUFORT	30	83.70	23	52.00	21	37.10												
CAMDEN																		
CARTERET																		
CHOWAN	20	87.00	13	58.40	12	51.70												
CURRITUCK	10	88.00																
DARE																		
HYDE																		
PAMLICO	13	70.40	13	51.20	13	36.50												
PASQUOTANK	19	105.30	11	73.20	10	60.00												
PERQUIMANS	24	101.90	21	78.10	18	58.90												
TYRRELL	10	109.50																
WASHINGTON	12	128.80	10	61.00														
AREA TOTAL	163	94.50	117	64.30	111	48.20	12	111.30	*	84.40	*	76.70						

An \* indicates the data is published even though there are less than 10 reports.

2009 Average Cash Rents - State Total

County	Agricultural High Productivity		Agricultural Medium Productivity		Agricultural Low Productivity		Horticultural High Productivity		Horticultural Medium Productivity		Horticultural Low Productivity		Christmas Trees High Productivity		Christmas Trees Medium Productivity		Christmas Trees Low Productivity	
	No. of reports	Average	No. of reports	Average	No. of reports	Average	No. of reports	Average	No. of reports	Average	No. of reports	Average	No. of reports	Average	No. of reports	Average	No. of reports	Average
STATE TOTAL	3431	66.90	2743	45.60	2414	31.50	254	103.20	184	67.70	155	46.90	114	121.50	93	75.30	80	49.40

## Christmas Tree Guidelines

This information replaces a previous memorandum issued by our office dated December 12, 1989. The 1989 General Assembly enacted an “in-lieu of income” provision allowing land previously qualified as horticulture to continue to receive benefits of the present-use value program when the crop being produced changed from any horticultural product to Christmas trees. It also directed the Department of Revenue to establish a separate gross income requirement different from the \$1,000 gross income requirement for horticultural land, when the crop being grown was evergreens intended for use as Christmas trees. N.C.G.S. 105-289(a)(6) directs the Department of Revenue:

**“To establish requirements for horticultural land, used to produce evergreens intended for use as Christmas trees, in lieu of a gross income requirement until evergreens are harvested from the land, and to establish a gross income requirement for this type of horticultural land, that differs from the income requirement for other horticultural land, when evergreens are harvested from the land.”**

It should be noted that horticultural land used to produce evergreens intended for use as Christmas trees is the only use allowed benefit of the present-use value program without first having met a gross income requirement. The trade-off for this exception is a different gross income requirement in recognition of the potential for greater income than would normally be associated with other horticultural or agricultural commodities.

While the majority of Christmas tree production occurs in the western mountain counties (MLRA 130), surveys as far back as 1996 indicate that there are approximately 135 Christmas tree operations in non-mountain counties (MLRAs 136, 137, 133A, 153A & 153B). They include such counties in the piedmont and coastal plain as Craven, Halifax, Robeson, Wake, and Warren. For this reason we have prepared separate in-lieu of income requirements and gross income requirements for these two areas of the State. The different requirements recognize the difference in species, growing practices, markets, and resulting gross income potential.

After consulting with cooperative extension agents, the regional Christmas tree/horticultural specialist at the Western North Carolina Experimental Research Station, and various landowners/growers, we have determined the standards in the following attachments to be reasonable guidelines for compliance with G.S. 105-289(a)(6). Please note these requirements are subject to the whims of weather and other conditions that can have a significant impact. The combined effect of recent hurricanes, spring freezes, and ice storms across some parts of the State should be taken into consideration when appropriate within each county. As with other aspects of the present-use value program, owners of Christmas tree land should not be held accountable for conditions such as adverse weather or disease outbreak beyond their control.

We encourage every county to contact their local Cooperative Extension Service Office to obtain the appropriate local data and expertise to support particular situations in each county.

## **I. Gross Income Requirement for Christmas Trees**

For MLRA 130, the gross income requirement for horticultural land used to grow evergreens intended for use as Christmas trees is \$2,000 per acre.

For all other MLRAs, the gross income requirement for horticultural land used to grow evergreens intended for use as Christmas trees is \$1,500 per acre.

## **II. In-Lieu of Income Requirement**

### **MLRA 130 – Mountains**

The in-lieu of income requirement is for acreage in production but not yet undergoing harvest, and will be determined by sound management practices, best evidenced by the following:

1. Sites prepared by controlling problem weeds and saplings, taking soil samples, and applying fertilizer and/or lime as appropriate.
2. Generally, a 5' x 5' spacing producing approximately 1,750 potential trees per acre. Spacing must allow for adequate air movement around the trees. (There is very little 4' x 4' or 4.5' x 4.5' spacing. Some experimentation has occurred with 5' x 6' spacing, primarily aimed at producing a 6' tree in 5 years. All of the preceding examples should be acceptable.)
3. A program for insect and weed control.
4. Generally, an eight-to-ten year setting to harvest cycle. (Most leases are for 10 years, which allows for a replanting of non-established or dying seedlings up through the second year.)

The gross income requirement for acres undergoing Christmas tree harvest in the mountain region of North Carolina (MLRA 130) is \$2,000 per acre. Once Christmas trees are harvested from specific acreage, the requirement for those harvested acres will revert to the in-lieu of income requirement.

As an example, if the total amount of acres devoted to Christmas tree production is six acres, three of which are undergoing harvest and three of which have yet to reach maturity, the gross income requirement would be \$6,000.

**MLRA 136 – Piedmont, MLRA 137 – Sandhills, MLRA 133A – Upper Coastal Plain,  
MLRA 153A – Lower Coastal Plain, and MLRA 153B – Tidewater.**

The in-lieu of income requirement is for acreage in production but not yet undergoing harvest, and will be determined by sound management practices, best evidenced by the following:

1. Sites prepared by controlling problem weeds and saplings, taking soil samples, and applying fertilizer and/or lime as appropriate.
2. Generally, a 7' x 7' spacing producing approximately 900 potential trees per acre. Spacing must allow for adequate air movement around the trees. (There may be variations in the spacing dependent on the species being grown, most likely Virginia Pine, White Pine, Eastern Red Cedar, and Leyland Cypress. All reasonable spacing practices should be acceptable.)
3. A program for insect and weed control.
4. Generally a five-to-six year setting to harvest cycle. (Due to the species being grown, soil conditions and growing practices, most operations are capable of producing trees for market in the five-to-six year range. However, the combined effect of adverse weather and disease outbreak may force greater replanting of damaged trees thereby lengthening the current cycle beyond that considered typical.)

The gross income requirement for acres undergoing Christmas tree harvest in the non-mountain regions of North Carolina (MLRAs 136, 137, 133A, 153A, and 153B) is \$1,500 per acre. Once Christmas trees are harvested from specific acreage, the requirement for those harvested acres will revert to the in-lieu of income requirement.

As an example, if the total amount of acres devoted to Christmas tree production is six acres, three of which are undergoing harvest and three of which have yet to reach maturity, the gross income requirement would be \$4,500.

## **Procedure for Forestry Schedules**

The charge to the Forestry Group is to develop five net income per-acre ranges for each MLRA based on the ability of the soils to produce timber income. The task is confounded by variable species and stand type; management level, costs and opportunities; markets and stumpage prices; topographies; and landowner objectives across North Carolina.

In an attempt to develop realistic net income per acre in each MLRA, the Forestry Group considered the following items by area:

1. soil productivity and indicator tree species (or stand type);
2. average stand establishment and annual management costs;
3. average rotation length and timber yield; and
4. average timber stumpage prices.

Having selected the appropriate combinations above, the harvest value (gross income) from a managed rotation on a given soil productivity level can be calculated, netted of costs and amortized to arrive at the net income per acre per year soil expectation value. The ensuing discussion introduces users of this manual to the procedure, literature and software citations and decisions leading to the five forest land classes for each MLRA. Column numbers beside sub-headings refer to columns in the Forestry Net Present Values Table.

Soil Productivity/Indicator Species Selection (Col. 1). Soil productivity in forestry is measured by site index (SI). Site index is the height to which trees of a given species will grow on a given soil/site over a designed period of time (usually 50 or 25 years, depending on species, site or age

of site table). The Forestry Group identified key indicator species (or stand types) for each MLRA and then assigned site index ranges for the indicator species that captured the management opportunities for that region. The site index ranges became the productivity class basis for further calculations of timber yield and generally can be correlated to Natural Resource Conservation Service (NRCS) cubic foot per acre productivity classes for most stand types. By MLRA, the following site index ranges and species/stand types cover the overwhelming majority of soils/sites and management opportunities.

MLRA 153A, 153B, 137, 136, 133A:

<u>Species/Stand Type</u>	<u>SI Range</u> (50 yr. basis)
Loblolly pine	86-104
Loblolly pine	66-85
Loblolly pine	60-65
Mixed hardwoods	Mixed species and site indices on coves, river bottoms, bottomlands
Pond and/or longleaf pine	50-55
Upland hardwoods (MLRA 136)	40-68 (Upland oak)

MLRA 130:

<u>Species/Stand Type</u>	<u>SI Range</u> (50 yr. basis)
White pine	70-89
White pine	55-69
Shortleaf/mixed hardwoods	Mixed species/sites (SI 42-58 shortleaf)
Bottomland/cove hardwoods	Mixed species/site indices on coves and bottoms
Upland oak ridges	40-68

The site index ranges above, in most cases, can be correlated to individual soil series (and series' phases) according to NRCS cubic foot per acre productivity classes. An exception will be the cove, bottomland, river bottom, and other hardwood sites where topographic position must also be

considered. The Soils Group is responsible for assigning soil series to the appropriate class for agriculture, horticulture and forestry.

Stand Establishment and Annual Management Costs (Columns 2 and 3). Stand establishment costs include site preparation and tree planting costs. Costs vary from \$0 to over \$200 per acre depending on soils, species, and management objectives. No cost would be incurred for natural regeneration (as practiced for hardwoods) with costs increasing as pine plantations are intensively managed on highly productive sites. The second column in the Forestry Net Present Values Table contains average establishment costs for the past ten years as reported by the N.C. Forest Service for site classes in each MLRA.

Annual management may include costs of pine release, timber stand improvement activities, prescribed burning, boundary line maintenance, consultant fees and other contractual services. Cost may vary from \$0 on typical floodplain or bottomland stands to as high as \$6 per acre per year on intensively managed pine plantations. Annual management costs in Forestry Net Present Values Table are the best estimates under average stand management regimes by site class.

Rotation Length and Timber Yields (Columns 4, 5, 6). Saw timber rotations are recommended on all sites in North Carolina. This decision is based on the market situation throughout the state, particularly the scarce markets for low quality and small-diameter pine and hardwood, which normally would be used for pulpwood. Timber thinnings are not available to most woodlot managers and, therefore, rotations are assumed to proceed unthinned until the optimum economic product mix is achieved.

Timber yields are based on the most current yield models developed at the N.C. State University School of Forest Resources for loblolly pine. (Hafley, Smith, and Buford, 1982) and natural hardwood stands (Gardner et al. 1982). White pine yields, mountain mixed stand yields, and upland oak yields are derived from U.S. Forest Service yield models developed by Vimmerstedt (1962) and McClure and Knight. Longleaf and pond pine yields are from Schumacher and Coile (1960).

**Timber Stumpage Prices (Columns 7 and 8).** Cost of forestry operations are derived from the past five year regional data (provided by the NC DFR). For timber, stumpage prices (prices paid for standing timber to landowners) are derived over the same 5-year period from regional Forest2Market reports, a timber price reporting system.

**Harvest Values (Column 9).** Multiplication of timber yields (columns 5 and 6) times the respective timber stumpage prices (columns 7 and 8) gives the gross harvest value of one rotation.

**Annualized Net Present Value (NPV) (Column 10).** Harvest values (column 9) are discounted to present value at a 4 percent discount rate, which is consistent with rates used and documented by the U.S. Forest Service, forestry industry and forestry economists. This rate approximates the long-term measures of the opportunity cost of capital in the private sector of the U. S. economy (Row et al. 1981; Gunter and Haney, 1984). The respective establishment costs and the present value of annual management costs are subtracted from the present value of the income to obtain the net



present value of the timber stand. This is then amortized over the life of the rotation to arrive at the annualized net present value (or annual net income) figure.

## Forestry Net Present Values

*Indicator Species or Stand Types, Lengths of Rotation, Costs, Yields, Price and Annualized Net Present Value per Acre of Land by Site Index Ranges in Each Major Land Resource Area, North Carolina*

(1) Species/Stand Type	(2) Est. Cost	(3) Mgmt. Cost	(4) Rot. Lgth.	(5) Yield (MBF)	(6) Yield (cads)	(7) Price /mbf	(8) Price /cd	(9) Harvest Value	(10) Annualized NPV
<b>UP LCP</b>									
<b>MLRAs 153A and 133A LOWER &amp; UPPER CP</b>									
Mixed hardwoods	\$0.00	\$0.00	50	11.5	44	\$228.25	\$14.30	\$476.90	\$22.20
Loblolly pine (86-104)	\$366.00	\$51.88	30	12	14.4	\$209.00	\$31.00	\$910.90	\$28.51
Loblolly pine (66-85)	\$258.00	\$34.58	30	7	16.8	\$209.00	\$31.00	\$611.64	\$18.45
Loblolly pine (60-65)	\$130.00	\$19.79	40	4.8	12.7	\$209.00	\$31.00	\$290.96	\$7.13
Pond pine (50-55)	\$50.00	\$10.74	50	2.7	20	\$209.00	\$31.00	\$166.65	\$4.93
Longleaf pine	\$50.00	\$10.74	50	3.2	8	\$209.00	\$31.00	\$129.01	\$4.05
<b>MLRA 153B TIDEWATER</b>									
Mixed hardwoods	\$0.00	\$0.00	50	8.43	44	\$240.00	\$14.30	\$373.23	\$17.37
Loblolly pine (86-104)	\$460.50	\$51.88	30	12	14.4	\$209.00	\$31.00	\$910.90	\$23.05
Loblolly pine (66-85)	\$258.00	\$34.58	30	7	16.8	\$209.00	\$31.00	\$611.64	\$18.45
Loblolly pine (60-65)	\$130.00	\$19.79	40	4.8	12.7	\$209.00	\$31.00	\$290.96	\$7.13
Pond pine	\$50.00	\$10.74	50	2.7	20	\$209.00	\$31.00	\$166.65	\$4.93
<b>MLRA 137 SANDHILLS</b>									
Mixed hardwoods	\$0.00	\$0.00	50	11.9	46	\$240.00	\$14.30	\$494.44	\$23.02
Loblolly pine (86-104)	\$258.00	\$51.88	30	12	15.6	\$209.00	\$31.00	\$922.37	\$35.42
Loblolly pine (66-85)	\$130.00	\$34.58	30	6.4	16.9	\$209.00	\$31.00	\$573.94	\$23.67
Loblolly pine (60-65)	\$54.00	\$21.48	50	7.2	7	\$209.00	\$31.00	\$242.28	\$7.76
Longleaf pine (50-55)	\$54.00	\$10.74	50	3.2	8	\$209.00	\$31.00	\$129.01	\$2.99

## Forestry Net Present Values

*Indicator Species or Stand Types, Lengths of Rotation, Costs, Yields, Price and Annualized Net Present Value per Acre of Land by Site Index Ranges in Each Major Land Resource Area, North Carolina*

(1) Species/Stand Type	(2) Est. Cost	(3) Mgmt. Cost	(4) Rot. Lgth.	(5) Yield (MBF)	(6) Yield (cnds)	(7) Price /mbf	(8) Price /cd	(9) Harvest Value	(10) Annualized NPV
	(\$)	(\$)	(yrs)	(MBF)	(cnds)	(\$)	(\$)	(\$)	(\$)
<b>UP LCP</b>									
<b>MLRA 136</b>									
<b>PIEDMONT</b>									
Mixed hardwoods	\$0.00	\$0.00	50	11.9	46	\$240.00	\$14.30	\$494.44	\$23.02
Loblolly pine (86-104)	\$271.00	\$51.88	30	11.5	15.6	\$209.00	\$31.00	\$890.15	\$32.81
Loblolly pine (66-85)	\$146.40	\$34.58	30	6.4	16.9	\$209.00	\$31.00	\$573.94	\$22.72
Loblolly pine (60-65)	\$70.00	\$9.90	40	4.1	15	\$209.00	\$31.00	\$275.34	\$9.87
Upland hardwoods	\$0.00	\$0.00	50	6.05	32	\$209.00	\$31.00	\$317.51	\$14.78
<b>MLRA 130</b>									
<b>MOUNTAINS</b>									
Mixed hardwoods	\$0.00	\$0.00	50	10.95	0	\$288.00	\$16.43	\$443.75	\$20.66
White pine (70-89)	\$277.00	\$34.58	30	17.8	0	\$150.00	\$20.08	\$823.21	\$29.59
White pine (55-69)	\$180.00	\$18.66	35	8.5	0	\$150.00	\$20.08	\$323.10	\$6.67
Shortleaf/mixed hwd	\$0.00	\$0.00	60	6	0	\$169.20	\$20.08	\$96.51	\$4.27
Upland oak ridge (40-68)	\$0.00	\$0.00	70	5.32	0	\$169.20	\$16.40	\$57.81	\$2.47

MLRA 130 – Mountains

Map Unit Name	Agri	For	Hort
Alluvial land, wet	IV	II	IV
Arents, loamy	IV	II	IV
Arkaqua loam, 0 to 2 percent slopes, frequently flooded	IV	II	IV
Arkaqua loam, 0 to 2 percent slopes, occasionally flooded	II	III	II
Arkaqua loam, 0 to 2 percent slopes, rarely flooded	II	III	II
Ashe and Edneyville soils, 6 to 15 percent slopes	IV	I	III
Ashe and Edneyville soils, 15 to 25 percent slopes	IV	I	III
Ashe and Edneyville soils, 25 to 45 percent slopes	IV	I	IV
Ashe fine sandy loam, 6 to 15 percent slopes	IV	III	III
Ashe fine sandy loam, 10 to 25 percent slopes	IV	III	III
Ashe fine sandy loam, 15 to 25 percent slopes	IV	III	III
Ashe fine sandy loam, 25 to 45 percent slopes	IV	III	IV
Ashe gravelly fine sandy loam, 25 to 65 percent slopes	IV	III	IV
Ashe stony fine sandy loam, ALL	IV	III	IV
Ashe stony sandy loam, ALL	IV	III	IV
Ashe-Chestnut-Buladean complex, very stony, ALL	IV	III	IV
Ashe-Cleveland complex, stony, ALL	IV	IV	IV
Ashe-Cleveland-Rock outcrop complex, ALL	IV	IV	IV
Ashe-Rock outcrop complex, 15 to 70 percent slopes	IV	VI	IV
Augusta fine sandy loam, cool variant, 1 to 4 percent slopes (Delanco)	II	I	II
Balsam, ALL	IV	VI	IV
Balsam-Rubble land complex, windswept, ALL	IV	VI	IV
Balsam-Tanasee complex, extremely bouldery, ALL	IV	VI	IV
Bandana sandy loam, 0 to 3 percent slopes, occasionally flooded	II	II	II
Bandana-Ostin complex, 0 to 3 percent slopes, occasionally flooded	III	II	III
Biltmore, ALL	IV	II	IV
Braddock and Hayesville clay loams, eroded, ALL	III	I	III
Braddock clay loam, 2 to 6 percent slopes, eroded	II	I	III
Braddock clay loam, 2 to 8 percent slopes, eroded	II	I	III
Braddock clay loam, 6 to 15 percent slopes, eroded	II	I	III
Braddock clay loam, 8 to 15 percent slopes, eroded	II	I	III
Braddock clay loam, eroded, ALL OTHER	IV	I	III
Braddock clay loam, 15 to 30 percent slopes, eroded, stony	IV	I	IV
Braddock fine sandy loam, 15 to 30 percent slopes	III	I	III
Braddock gravelly loam, 2 to 8 percent slopes	I	I	I
Braddock gravelly loam, 8 to 15 percent slopes	II	I	I
Braddock loam, 2 to 8 percent slopes	I	I	I
Braddock loam, 8 to 15 percent slopes	II	I	I
Braddock-Urban land complex, ALL	IV	I	IV
Bradson gravelly loam, ALL	II	I	I
Brandywine stony soils, ALL	IV	IV	IV
Brasstown-Junaluska complex, 8 to 15 percent slopes	III	IV	III
Brasstown-Junaluska complex, 15 to 30 percent slopes	IV	IV	III
Brasstown-Junaluska complex, ALL OTHER	IV	IV	IV
Brevard fine sandy loam, 1 to 6 percent slopes, rarely flooded	I	I	I
Brevard loam, 2 to 6 percent slopes	I	I	I
Brevard loam, 6 to 10 percent slopes	II	I	I
Brevard loam, 7 to 15 percent slopes	II	I	I
Brevard loam, 10 to 25 percent slopes	IV	I	I
Brevard loam, 15 to 25 percent slopes	IV	I	I
Brevard loam, 25 to 45 percent slopes	IV	I	II
Brevard sandy loam, 8 to 15 percent slopes	II	I	I

MLRA 130 – Mountains

Map Unit Name	Agri	For	Hort
Brevard-Greenlee complex, extremely bouldery, ALL	IV	I	IV
Buladean-Chestnut complex, 15 to 30 percent slopes, stony	IV	I	III
Buladean-Chestnut complex, stony, ALL OTHER	IV	I	IV
Burton stony loam, ALL	IV	V	IV
Burton-Craggey complex, windswept, ALL	IV	VI	IV
Burton-Craggey-Rock outcrop complex, windswept, ALL	IV	VI	IV
Burton-Wayah complex, windswept, ALL	IV	VI	IV
Cashiers fine sandy loam, 2 to 8 percent slopes	II	I	I
Cashiers fine sandy loam, 8 to 15 percent slopes	II	I	II
Cashiers fine sandy loam, 15 to 30 percent slopes, stony	IV	I	II
Cashiers fine sandy loam, 30 to 50 percent slopes, stony	IV	I	III
Cashiers fine sandy loam, 50 to 95 percent slopes, stony	IV	I	IV
Cashiers gravelly fine sandy loam, 8 to 15 percent slopes	II	I	II
Cashiers gravelly fine sandy loam, 15 to 30 percent slopes	IV	I	II
Cashiers gravelly fine sandy loam, 30 to 50 percent slopes	IV	I	III
Cashiers gravelly fine sandy loam, 50 to 95 percent slopes	IV	I	IV
Cashiers sandy loam, 8 to 15 percent slopes, stony	II	I	II
Cashiers sandy loam, 15 to 30 percent slopes, stony	IV	I	II
Cashiers sandy loam, 30 to 50 percent slopes, stony	IV	I	III
Cashiers sandy loam, 50 to 95 percent slopes, stony	IV	I	IV
Cataska-Rock outcrop complex, 30 to 95 percent slopes	IV	VI	IV
Cataska-Sylco complex, 50 to 95 percent slopes	IV	VI	IV
Chandler and Fannin soils, 25 to 45 percent slopes	IV	I	IV
Chandler gravelly fine sandy loam, 8 to 15 percent slopes	IV	III	II
Chandler gravelly fine sandy loam, 15 to 30 percent slopes	IV	III	II
Chandler gravelly fine sandy loam, 30 to 50 percent slopes	IV	III	III
Chandler gravelly fine sandy loam, ALL OTHER	IV	III	IV
Chandler gravelly fine sandy loam, windswept, ALL	IV	VI	IV
Chandler loam, 2 to 8 percent slopes	III	III	II
Chandler loam, 8 to 15 percent slopes	IV	III	II
Chandler loam, 15 to 25 percent slopes	IV	III	III
Chandler loam, 25 to 65 percent slopes	IV	III	IV
Chandler silt loam, 10 to 25 percent slopes	IV	III	II
Chandler silt loam, 25 to 45 percent slopes	IV	III	III
Chandler stony loam, 45 to 70 percent slopes	IV	III	IV
Chandler stony silt loam, ALL	IV	III	IV
Chandler-Micaville complex, 8 to 15 percent slopes	IV	III	II
Chandler-Micaville complex, 15 to 30 percent slopes, stony	IV	III	II
Chandler-Micaville complex, 30 to 50 percent slopes, stony	IV	III	III
Chandler-Micaville complex, 50 to 95 percent slopes, stony	IV	III	IV
Cheoah channery loam, ALL	IV	I	IV
Cheoah channery loam, stony, ALL	IV	I	IV
Cheoah channery loam, windswept, stony	IV	VI	IV
Chester clay loam, 15 to 45 percent slopes, eroded (Evard)	IV	I	III
Chester fine sandy loam, 6 to 15 percent slopes (Evard)	II	I	I
Chester fine sandy loam, 15 to 25 percent slopes (Evard)	II	I	III
Chester fine sandy loam, 25 to 45 percent slopes (Evard)	IV	I	III
Chester loam, 2 to 6 percent slopes	II	I	I
Chester loam, 6 to 10 percent slopes	III	I	I
Chester loam, 10 to 25 percent slopes	IV	I	II
Chester loam, 25 to 45 percent slopes	IV	I	III
Chester stony loam, 10 to 15 percent slopes (Evard)	III	I	III

MLRA 130 – Mountains

Map Unit Name	Agri	For	Hort
Chester stony loam, (Evard), ALL OTHER	IV	I	IV
Chestnut and Edneyville soils, 15 to 25 percent slopes	IV	I	II
Chestnut and Edneyville soils, 25 to 50 percent slopes	IV	I	III
Chestnut gravelly loam, 50 to 80 percent slopes	IV	III	IV
Chestnut-Ashe complex, ALL	IV	III	IV
Chestnut-Buladean complex, 8 to 15 percent slopes, rocky	III	III	III
Chestnut-Buladean complex, stony, ALL	IV	III	IV
Chestnut-Cleveland-Rock outcrop complex, windswept, ALL	IV	VI	IV
Chestnut-Edneyville complex, 8 to 25 percent slopes, stony	IV	III	III
Chestnut-Edneyville complex, 25 to 60 percent slopes, stony	IV	III	IV
Chestnut-Edneyville complex, windswept, stony, ALL	IV	VI	IV
Chestoa-Ditney-Rock outcrop complex, 30 to 95 percent slopes, very bouldery	IV	VI	IV
Cleveland-Chestnut-Rock outcrop complex, windswept, ALL	IV	VI	IV
Cleveland-Rock outcrop complex, 8 to 90 percent slopes	IV	VI	IV
Clifffield-Cowee complex, 15 to 30 percent slopes, very stony	IV	V	IV
Clifffield-Fairview complex, 15 to 25 percent slopes	IV	V	IV
Clifffield-Pigeonroost complex, very stony, ALL	IV	V	IV
Clifffield-Rhodhiss complex, 25 to 60 percent slopes, very stony	IV	V	IV
Clifffield-Rock outcrop complex, 50 to 95 percent slopes	IV	VI	IV
Clifffield-Woolwine complex, 8 to 15 percent slopes	IV	V	IV
Clifton (Evard) stony loam, ALL	IV	I	IV
Clifton clay loam, 8 to 15 percent slopes, eroded	III	I	III
Clifton clay loam, 15 to 30 percent slopes, eroded	IV	I	III
Clifton clay loam, 30 to 50 percent slopes, eroded	IV	I	III
Clifton loam, 2 to 8 percent slopes	II	I	I
Clifton loam, 6 to 10 percent slopes	II	I	I
Clifton loam, 8 to 15 percent slopes	II	I	II
Clifton loam, 10 to 25 percent slopes	IV	I	II
Clifton loam, 15 to 25 percent slopes	IV	I	II
Clifton loam, 25 to 45 percent slopes	IV	I	III
Clifton stony loam, 15 to 45 percent slopes	IV	I	IV
Clingman-Craggey-Rock outcrop complex, windswept, 15 to 95 percent slopes, extremely bouldery	IV	VI	IV
Codorus, ALL	II	II	III
Colvard, ALL	I	II	III
Comus, ALL	I	II	III
Cowee gravelly loam, stony, ALL	IV	V	IV
Cowee-Evard-Urban land complex, 15 to 30 percent slopes	IV	III	IV
Cowee-Saluda complex, stony, ALL	IV	V	IV
Craggey-Rock outcrop complex, 40 to 90 percent slopes	IV	VI	IV
Craggey-Rock outcrop-Clingman complex, windswept, rubbly, ALL	IV	VI	IV
Crossnore-Jeffrey complex, very stony, ALL	IV	I	IV
Cullasaja cobbly fine sandy loam, 8 to 30 percent slopes, very bouldery	IV	II	IV
Cullasaja cobbly loam, extremely bouldery, ALL	IV	II	IV
Cullasaja very cobbly fine sandy loam, extremely bouldery, ALL	IV	II	IV
Cullasaja very cobbly loam, extremely bouldery, ALL	IV	II	IV
Cullasaja very cobbly sandy loam, extremely bouldery, ALL	IV	II	IV
Cullasaja-Tuckasegee complex, 8 to 15 percent slopes, stony	IV	II	II
Cullasaja-Tuckasegee complex, 15 to 30 percent slopes, stony	IV	II	II
Cullasaja-Tuckasegee complex, 30 to 50 percent slopes, stony	IV	II	III
Cullasaja-Tuckasegee complex, 50 to 90 percent slopes, stony	IV	II	IV
Cullasaja-Tuckasegee complex, 50 to 95 percent slopes, stony	IV	II	IV

MLRA 130 – Mountains

Map Unit Name	Agri	For	Hort
Cullasaja-Tusquitee complex, 10 to 45 percent slopes	IV	II	III
Cullowhee fine sandy loam, 0 to 2 percent slopes, occasionally flooded	II	II	II
Cullowhee, frequently flooded, ALL	IV	II	IV
Cullowhee-Nikwasi complex, 0 to 2 percent slopes, frequently flooded	IV	II	IV
Delanco (Dillard) loam, ALL	I	I	I
Delanco fine sandy loam, 2 to 6 percent slopes	II	I	I
Dellwood gravelly fine sandy loam, 0 to 5 percent slopes, frequently flooded	IV	II	IV
Dellwood, occasionally flooded, ALL	III	II	III
Dellwood-Reddies complex, 0 to 3 percent slopes, occasionally flooded	III	II	III
Dellwood-Urban land complex, 0 to 3 percent slopes, occasionally flooded	IV	II	IV
Dillard, ALL	I	I	I
Dillsboro clay loam, 2 to 8 percent slopes	I	I	I
Dillsboro clay loam, 8 to 15 percent slopes, rarely flooded	II	I	II
Dillsboro clay loam, 8 to 15 percent slopes, stony	III	I	II
Dillsboro clay loam, 15 to 30 percent slopes, stony	IV	I	II
Dillsboro loam, 2 to 8 percent slopes	I	I	I
Dillsboro loam, 8 to 15 percent slopes	II	I	II
Dillsboro-Urban land complex, 2 to 15 percent slopes	IV	I	IV
Ditney-Unicoi complex, very stony, ALL	IV	VI	IV
Ditney-Unicoi complex, 50 to 95 percent slopes, very rocky	IV	VI	IV
Ditney-Unicoi-Rock outcrop complex, ALL	IV	VI	IV
Edneytown gravelly sandy loam, 8 to 25 percent slopes	IV	I	III
Edneytown-Chestnut complex, 30 to 50 percent slopes, stony	IV	I	III
Edneytown-Chestnut complex, 50 to 80 percent slopes, stony	IV	I	IV
Edneytown-Pigeonroost complex, 8 to 15 percent slopes, stony	III	I	III
Edneytown-Pigeonroost complex, 15 to 30 percent slopes, stony	IV	I	III
Edneytown-Pigeonroost complex, 30 to 50 percent slopes, stony	IV	I	IV
Edneyville (Edneytown) fine sandy loam, 7 to 15 percent slopes	III	I	III
Edneyville (Edneytown) fine sandy loam, 15 to 25 percent slopes	IV	I	IV
Edneyville (Edneytown) fine sandy loam, 25 to 45 percent slopes	IV	I	IV
Edneyville loam, 15 to 25 percent slopes	IV	I	II
Edneyville loam, 25 to 45 percent slopes	IV	I	III
Edneyville stony loam, 45 to 70 percent slopes	IV	I	IV
Edneyville-Chestnut complex, 2 to 8 percent slopes, stony	III	I	III
Edneyville-Chestnut complex, 8 to 15 percent slopes, stony	IV	I	III
Edneyville-Chestnut complex, 10 to 25 percent slopes, stony	IV	I	III
Edneyville-Chestnut complex, 15 to 30 percent slopes, stony	IV	I	III
Edneyville-Chestnut complex, ALL OTHER	IV	I	IV
Edneyville-Chestnut-Urban land complex, ALL	IV	I	IV
Ellijay silty clay loam, 2 to 8 percent slopes, eroded	III	I	I
Ellijay silty clay loam, 8 to 15 percent slopes, eroded	IV	I	I
Ellijay silty clay loam, eroded, ALL OTHER	IV	I	II
Elsinboro loam, ALL	I	I	I
Eutrochrepts, mined, 30 to 50 percent slopes, very stony	IV	VI	IV
Evard and Saluda fine sandy loams, 25 to 60 percent slopes	IV	I	IV
Evard fine sandy loam, 7 to 15 percent slopes	III	I	II
Evard fine sandy loam, 15 to 25 percent slopes	IV	I	II
Evard fine sandy loam, 25 to 50 percent slopes	IV	I	III
Evard gravelly sandy loam, 6 to 15 percent slopes	III	I	II
Evard gravelly sandy loam, 15 to 25 percent slopes	IV	I	III
Evard loam, ALL	IV	I	IV
Evard soils, 15 to 25 percent slopes	IV	I	III

MLRA 130 – Mountains

Map Unit Name	Agri	For	Hort
Evard soils, ALL OTHER	IV	I	IV
Evard stony loam, 25 to 60 percent slopes	IV	I	IV
Evard-Cowee complex, 2 to 8 percent slopes	III	I	II
Evard-Cowee complex, 8 to 15 percent slopes	III	I	II
Evard-Cowee complex, 8 to 15 percent slopes, eroded	III	I	II
Evard-Cowee complex, 8 to 25 percent slopes, stony	IV	I	III
Evard-Cowee complex, ALL OTHER	IV	I	IV
Evard-Cowee-Urban land complex, ALL	IV	I	IV
Fannin fine sandy loam, 8 to 15 percent slopes	III	I	I
Fannin fine sandy loam, 15 to 30 percent slopes	IV	I	II
Fannin fine sandy loam, 15 to 30 percent slopes, stony	IV	I	II
Fannin fine sandy loam, 30 to 50 percent slopes	IV	I	II
Fannin fine sandy loam, 30 to 50 percent slopes, stony	IV	I	III
Fannin fine sandy loam, 50 to 95 percent slopes	IV	I	III
Fannin loam, 8 to 15 percent slopes	III	I	II
Fannin loam, 15 to 25 percent slopes	IV	I	III
Fannin loam, 25 to 45 percent slopes	IV	I	III
Fannin loam, 30 to 50 percent slopes, eroded	IV	I	III
Fannin loam, 45 to 70 percent slopes	IV	I	IV
Fannin sandy clay loam, 8 to 15 percent slopes, eroded	III	I	II
Fannin sandy clay loam, eroded, ALL OTHER	IV	I	III
Fannin silt loam, 6 to 10 percent slopes, eroded	III	I	II
Fannin silt loam, 7 to 15 percent slopes	III	I	II
Fannin silt loam, 10 to 25 percent slopes, eroded	IV	I	III
Fannin silt loam, 15 to 25 percent slopes	IV	I	III
Fannin silt loam, 25 to 45 percent slopes	IV	I	III
Fannin silty clay loam, 15 to 45 percent slopes, eroded	IV	I	IV
Fannin-Chestnut complex, 50 to 85 percent slopes, rocky	IV	I	IV
Fannin-Cowee complex, 15 to 30 percent slopes, stony	IV	I	III
Fannin-Cowee complex, stony, ALL OTHER	IV	I	IV
Fannin-Urban land complex, 2 to 15 percent slopes	IV	I	IV
Fletcher and Fannin soils, 6 to 15 percent slopes	III	I	II
Fletcher and Fannin soils, 15 to 25 percent slopes	IV	I	II
Fluvaquents-Udifluvents complex, occasionally flooded, ALL	III	II	IV
Fontaflora-Ostin complex	IV	II	IV
French fine sandy loam, 0 to 3 percent slopes, frequently flooded	IV	II	IV
Greenlee ALL	IV	I	IV
Greenlee-Ostin complex, 3 to 40 percent slopes, very stony	IV	I	IV
Greenlee-Tate complex, ALL	IV	I	IV
Greenlee-Tate-Ostin complex, 1 to 15 percent slopes, extremely stony	IV	I	IV
Gullied land	IV	VI	IV
Harmiller-Shinbone complex, 15 to 30 percent slopes, stony	IV	III	III
Harmiller-Shinbone complex, 30 to 50 percent slopes, stony	IV	III	III
Hatboro loam	IV	II	IV
Hayesville channery fine sandy loam, 8 to 15 percent slopes, very stony	IV	I	II
Hayesville channery fine sandy loam, 15 to 25 percent slopes, very stony	IV	I	III
Hayesville channery fine sandy loam, 25 to 60 percent slopes, very stony	IV	I	IV
Hayesville clay loam, 2 to 8 percent slopes, eroded	III	I	II
Hayesville clay loam, 6 to 15 percent slopes, eroded	IV	I	II
Hayesville clay loam, 8 to 15 percent slopes, eroded	IV	I	II
Hayesville clay loam, 10 to 25 percent slopes, severely eroded	IV	I	III
Hayesville clay loam, 15 to 30 percent slopes, eroded	IV	I	III



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Map Unit Name	Agri	For	Hort
Hayesville fine sandy loam, 6 to 15 percent slopes	III	I	I
Hayesville fine sandy loam, 8 to 15 percent slopes	III	I	I
Hayesville fine sandy loam, 15 to 25 percent slopes	III	I	II
Hayesville fine sandy loam, 15 to 30 percent slopes	III	I	II
Hayesville fine sandy loam, 25 to 50 percent slopes	IV	I	III
Hayesville loam, 2 to 7 percent slopes	II	I	I
Hayesville loam, 2 to 8 percent slopes	II	I	I
Hayesville loam, 6 to 10 percent slopes	II	I	I
Hayesville loam, 6 to 15 percent slopes	III	I	I
Hayesville loam, 7 to 15 percent slopes	III	I	I
Hayesville loam, 8 to 15 percent slopes	III	I	I
Hayesville loam, 10 to 25 percent slopes	III	I	II
Hayesville loam, 15 to 25 percent slopes	III	I	II
Hayesville loam, 15 to 30 percent slopes	III	I	II
Hayesville sandy clay loam, 15 to 30 percent slopes, eroded	IV	I	III
Hayesville sandy clay loam, eroded, ALL OTHER	III	I	II
Hayesville-Evard complex, 15 to 25 percent slopes	III	I	II
Hayesville-Evard-Urban land complex, 15 to 25 percent slopes	IV	I	IV
Hayesville-Sauratown complex, 2 to 8 percent slopes	II	I	II
Hayesville-Sauratown complex, 8 to 15 percent slopes	III	I	II
Hayesville-Sauratown complex, 15 to 25 percent slopes	III	I	III
Hayesville-Sauratown complex, 25 to 60 percent slopes	IV	I	III
Hayesville-Urban land complex, ALL	IV	I	IV
Haywood stony loam, 15 to 25 percent slopes	IV	I	III
Haywood stony loam, 25 to 50 percent slopes	IV	I	IV
Hemphill, rarely flooded, ALL	IV	II	IV
Humaquepts, loamy, 2 to 8 percent slopes, stony	IV	II	IV
Hunt Dale clay loam, 8 to 15 percent slopes, stony	III	I	II
Hunt Dale clay loam, 15 to 30 percent slopes, stony	IV	I	II
Hunt Dale clay loam, 30 to 50 percent slopes, stony	IV	I	III
Hunt Dale silty clay loam, 15 to 30 percent slopes, stony	IV	I	II
Hunt Dale silty clay loam, 30 to 50 percent slopes, very stony	IV	I	III
Hunt Dale silty clay loam, 50 to 95 percent slopes, very stony	IV	I	IV
Iotla sandy loam, 0 to 2 percent slopes, occasionally flooded	II	II	III
Junaluska-Brasstown complex, 6 to 25 percent slopes	IV	IV	II
Junaluska-Brasstown complex, 15 to 30 percent slopes	IV	IV	III
Junaluska-Brasstown complex, 25 to 60 percent slopes	IV	IV	III
Junaluska-Brasstown complex, 30 to 50 percent slopes	IV	IV	IV
Junaluska-Tsali complex, ALL	IV	IV	IV
Keener-Lostcove complex, 15 to 30 percent slopes, very stony	IV	I	III
Keener-Lostcove complex, 30 to 50 percent slopes, very stony	IV	I	IV
Kinkora loam	IV	I	III
Lonon loam, 2 to 8 percent slopes	I	I	I
Lonon loam, 8 to 15 percent slopes	II	I	I
Lonon loam, 15 to 30 percent slopes	IV	I	II
Lonon-Northcove complex, 6 to 15 percent slopes	IV	I	III
Maymead fine sandy loam, ALL	IV	I	II
Maymead-Greenlee-Potomac complex, 3 to 25 percent slopes	IV	I	IV
Nikwasi, ALL	IV	II	IV
Northcove very cobbly loam, ALL	IV	I	IV
Northcove-Maymead complex, extremely stony, ALL	IV	I	IV
Oconaluftee channery loam, ALL	IV	VI	IV

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Map Unit Name	Agri	For	Hort
Oconaluftee channery loam, windswept, ALL	IV	VI	IV
Ostin, occasionally flooded, ALL	IV	II	IV
Pigeonroost-Edneytown complex, stony, ALL	IV	I	III
Pineola gravelly loam, 2 to 8 percent slopes	IV	I	II
Pineola gravelly loam, 8 to 15 percent slopes, stony	IV	I	II
Pineola gravelly loam, 15 to 30 percent slopes, stony	IV	I	III
Pits, ALL	IV	VI	IV
Plott fine sandy loam, 8 to 15 percent slopes, stony	III	I	II
Plott fine sandy loam, 15 to 30 percent slopes, stony	IV	I	II
Plott fine sandy loam, 30 to 50 percent slopes, stony	IV	I	III
Plott fine sandy loam, 50 to 95 percent slopes, stony	IV	I	IV
Plott loam, 15 to 30 percent slopes, stony	IV	I	II
Plott loam, 30 to 50 percent slopes, stony	IV	I	III
Plott loam, 50 to 95 percent slopes, stony	IV	I	IV
Ponzer muck, cool variant	IV	VI	IV
Porters gravelly loam, 8 to 15 percent slopes, stony	III	I	II
Porters gravelly loam, 15 to 30 percent slopes, stony	IV	I	II
Porters gravelly loam, 30 to 50 percent slopes, stony	IV	I	III
Porters gravelly loam, 50 to 80 percent slopes, stony	IV	I	IV
Porters loam, 25 to 45 percent slopes	IV	I	III
Porters loam, 25 to 80 percent slopes, stony	IV	I	IV
Porters loam, 30 to 50 percent slopes, stony	IV	I	IV
Porters loam, ALL OTHER	IV	I	II
Porters stony loam, 10 to 25 percent slopes	IV	I	II
Porters stony loam, 15 to 25 percent slopes	IV	I	II
Porters stony loam, 15 to 45 percent slopes	IV	I	II
Porters stony loam, 25 to 45 percent slopes	IV	I	III
Porters stony loam, ALL OTHER	IV	I	IV
Porters-Unaka complex, 8 to 15 percent slopes, stony	IV	I	II
Porters-Unaka complex, 15 to 30 percent slopes, stony	IV	I	II
Porters-Unaka complex, 30 to 50 percent slopes, stony	IV	I	III
Porters-Unaka complex, 50 to 95 percent slopes, rocky	IV	I	IV
Potomac, frequently flooded, ALL	IV	II	IV
Potomac-Iotla complex, 0 to 3 percent slopes, mounded, frequently flooded	IV	II	IV
Rabun loam, 6 to 25 percent slopes	IV	I	II
Rabun loam, 25 to 50 percent slopes	IV	I	III
Reddies, occasionally flooded	II	II	II
Reddies, frequently flooded, ALL	IV	II	IV
Rock outcrop	IV	VI	IV
Rock outcrop-Ashe complex, ALL	IV	VI	IV
Rock outcrop-Ashe-Cleveland complex, ALL	IV	VI	IV
Rock outcrop-Cataska complex, ALL	IV	VI	IV
Rock outcrop-Cleveland complex, ALL	IV	VI	IV
Rock outcrop-Cleveland complex, windswept, ALL	IV	VI	IV
Rock outcrop-Craggey complex, windswept, ALL	IV	VI	IV
Rosman, frequently flooded, ALL	IV	II	IV
Rosman, ALL OTHER	I	II	I
Rosman-Reddies complex, 0 to 3 percent slopes, occasionally flooded	I	II	I
Saunook gravelly loam, 2 to 8 percent slopes	I	I	I
Saunook gravelly loam, 8 to 15 percent slopes	I	I	I
Saunook gravelly loam, 8 to 15 percent slopes, stony	II	I	II
Saunook gravelly loam, 15 to 30 percent slopes	IV	I	II

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Map Unit Name	Agri	For	Hort
Saunook gravelly loam, 15 to 30 percent slopes, stony	IV	I	II
Saunook gravelly loam, 30 to 50 percent slopes, stony	IV	I	III
Saunook loam, 2 to 8 percent slopes	I	I	I
Saunook loam, 8 to 15 percent slopes	I	I	I
Saunook loam, 8 to 15 percent slopes, stony	II	I	II
Saunook loam, 15 to 30 percent slopes, stony	IV	I	II
Saunook loam, 15 to 30 percent slopes, very stony	IV	I	III
Saunook loam, 30 to 50 percent slopes, very stony	IV	I	IV
Saunook sandy loam, 2 to 8 percent slopes	I	I	I
Saunook sandy loam, 8 to 15 percent slopes, stony	II	I	II
Saunook silt loam, 2 to 8 percent slopes	I	I	I
Saunook silt loam, 8 to 15 percent slopes, stony	II	I	II
Saunook-Nikwasi complex, 2 to 15 percent slopes	IV	I	III
Saunook-Thunder complex, ALL	IV	I	III
Saunook-Urban land complex, 2 to 15 percent slopes	IV	I	IV
Sauratown channery fine sandy loam, 8 to 15 percent slopes	IV	V	III
Sauratown channery fine sandy loam, 8 to 15 percent slopes, very stony	IV	V	III
Sauratown channery fine sandy loam, ALL OTHER	IV	V	IV
Soco-Cataska-Rock outcrop complex, 50 to 95 percent slopes	IV	VI	IV
Soco-Ditney complex, 6 to 25 percent slopes, stony	IV	III	III
Soco-Ditney complex, 8 to 15 percent slopes, very stony	IV	III	III
Soco-Ditney complex, 15 to 30 percent slopes, very stony	IV	III	III
Soco-Ditney complex, ALL OTHER	IV	III	IV
Soco-Stecoah complex, 8 to 15 percent slopes, stony	IV	III	II
Soco-Stecoah complex, 15 to 30 percent slopes	IV	III	III
Soco-Stecoah complex, 15 to 30 percent slopes, stony	IV	III	III
Soco-Stecoah complex, ALL OTHER	IV	III	IV
Soco-Stecoah complex, windswept, 30 to 50 percent slopes	IV	VI	IV
Spivey cobbly loam, extremely bouldery, ALL	IV	I	IV
Spivey stony loam, 10 to 40 percent slopes	IV	I	IV
Spivey-Santeetlah complex, 8 to 15 percent slopes, stony	IV	I	III
Spivey-Santeetlah complex, 15 to 30 percent slopes, stony	IV	I	III
Spivey-Santeetlah complex, stony, ALL OTHER	IV	I	IV
Spivey-Whiteoak complex, ALL	IV	I	IV
Statler, rarely flooded, ALL	I	I	I
Stecoah-Soco complex, 15 to 30 percent slopes, stony	IV	I	III
Stecoah-Soco complex, 30 to 50 percent slopes, stony	IV	I	III
Stecoah-Soco complex, 50 to 80 percent slopes, stony	IV	I	IV
Stony colluvial land	IV	II	IV
Stony land	IV	VI	IV
Stony steep land	IV	VI	IV
Suncook loamy sand, ALL	IV	II	II
Sylco-Cataska complex, ALL	IV	IV	IV
Sylco-Rock outcrop complex, 50 to 95 percent slopes	IV	IV	IV
Sylco-Soco complex, 10 to 30 percent slopes, stony	IV	IV	IV
Sylva-Whiteside complex, ALL	IV	I	II
Talladega, ALL	IV	IV	IV
Tanasee-Balsam complex, ALL	IV	VI	IV
Tate fine sandy loam, 2 to 6 percent slopes	I	I	I
Tate fine sandy loam, 2 to 7 percent slopes	I	I	I
Tate fine sandy loam, 2 to 8 percent slopes	I	I	I
Tate fine sandy loam, 2 to 8 percent slopes, very stony	IV	I	II

MLRA 130 – Mountains

Map Unit Name	Agri	For	Hort
Tate fine sandy loam, 6 to 15 percent slopes	II	I	I
Tate fine sandy loam, 7 to 15 percent slopes	II	I	I
Tate fine sandy loam, 8 to 15 percent slopes	II	I	I
Tate fine sandy loam, 8 to 25 percent slopes	IV	I	II
Tate fine sandy loam, 15 to 25 percent slopes	IV	I	II
Tate gravelly loam, 8 to 15 percent slopes	II	I	I
Tate gravelly loam, 8 to 15 percent slopes, stony	II	I	II
Tate gravelly loam, 15 to 30 percent slopes, stony	IV	I	II
Tate loam, 2 to 6 percent slopes	I	I	I
Tate loam, 2 to 8 percent slopes	I	I	I
Tate loam, 6 to 10 percent slopes	II	I	I
Tate loam, 6 to 15 percent slopes	II	I	I
Tate loam, 8 to 15 percent slopes	II	I	I
Tate loam, 10 to 15 percent slopes	II	I	I
Tate loam, 15 to 25 percent slopes	IV	I	II
Tate loam, 15 to 30 percent slopes	IV	I	II
Tate-Cullowhee complex, 0 to 25 percent slopes	IV	I	II
Tate-French complex, 2 to 10 percent slopes	II	I	II
Tate-Greenlee complex, ALL	IV	I	IV
Thunder-Saunook complex, ALL	IV	II	IV
Toecane-Tusquitee complex, ALL	IV	II	III
Toxaway, ALL	IV	II	IV
Transylvania silt loam	I	II	II
Trimont gravelly loam, ALL	IV	I	IV
Tuckasegee-Cullasaja complex, 8 to 15 percent slopes, stony	IV	II	III
Tuckasegee-Cullasaja complex, 15 to 30 percent slopes, very stony	IV	II	IV
Tuckasegee-Cullasaja complex, 30 to 50 percent slopes, extremely stony	IV	II	IV
Tuckasegee-Whiteside complex, 2 to 8 percent slopes	I	II	I
Tuckasegee-Whiteside complex, 8 to 15 percent slopes	II	II	I
Tusquitee and Spivey stony soils, ALL	IV	I	IV
Tusquitee loam, 6 to 10 percent slopes	I	I	I
Tusquitee loam, 6 to 15 percent slopes	II	I	I
Tusquitee loam, 7 to 15 percent slopes	II	I	I
Tusquitee loam, 8 to 15 percent slopes	II	I	I
Tusquitee loam, 10 to 15 percent slopes	II	I	I
Tusquitee loam, 15 to 25 percent slopes	IV	I	II
Tusquitee stony loam, 25 to 45 percent slopes	IV	I	IV
Tusquitee stony loam, ALL OTHER	IV	I	III
Udifluvents, frequently flooded, ALL	IV	II	IV
Udorthents, loamy, ALL	IV	V	IV
Udorthents-Pits complex, mounded, 0 to 2 percent slopes, occasionally flooded	IV	V	IV
Udorthents-Urban land complex, ALL	IV	V	IV
Unaka-Porters complex, very rocky, ALL	IV	V	IV
Unaka-Rock outcrop complex, 50 to 95 percent slopes, very bouldery	IV	VI	IV
Unicoi-Rock outcrop complex, 30 to 95 percent slopes, extremely bouldery	IV	V	IV
Unison fine sandy loam, 2 to 8 percent slopes	I	I	I
Unison fine sandy loam, 8 to 15 percent slopes	II	I	I
Unison fine sandy loam, 15 to 25 percent slopes	IV	I	II
Unison loam, 2 to 8 percent slopes	I	I	I
Unison loam, 8 to 15 percent slopes	II	I	I
Unison loam, 15 to 30 percent slopes	IV	I	II
Urban land	IV	VI	II

MLRA 130 – Mountains

Map Unit Name	Agri	For	Hort
Watauga loam, 6 to 10 percent slopes	III	I	II
Watauga loam, 6 to 15 percent slopes	III	I	II
Watauga loam, 8 to 15 percent slopes	III	I	II
Watauga loam, ALL OTHER	IV	I	III
Watauga sandy loam, 8 to 15 percent slopes, stony	III	I	II
Watauga sandy loam, 15 to 30 percent slopes, stony	IV	I	II
Watauga sandy loam, 30 to 50 percent slopes, stony	IV	I	III
Watauga stony loam, 15 to 45 percent slopes	IV	I	IV
Wayah loam, windswept, eroded, stony, ALL	IV	VI	IV
Wayah sandy loam, stony, ALL	IV	V	IV
Wayah sandy loam, windswept, stony, ALL	IV	VI	IV
Wayah-Burton complex, 15 to 30 percent slopes, bouldery	IV	V	IV
Wayah-Burton complex, 30 to 50 percent slopes, bouldery	IV	V	IV
Wayah-Burton complex, 50 to 95 percent slopes, very rocky	IV	V	IV
Wayah-Burton complex, windswept, ALL	IV	V	IV
Whiteoak cobbly loam, 8 to 15 percent slopes, stony	II	I	II
Whiteoak cobbly loam, 15 to 30 percent slopes, stony	IV	I	III
Whiteoak fine sandy loam, 2 to 8 percent slopes	I	I	I
Whiteoak fine sandy loam, 8 to 15 percent slopes, stony	II	I	II
Whiteoak fine sandy loam, 15 to 30 percent slopes, very stony	IV	I	III
Whiteside-Tuckasegee complex, 2 to 8 percent slopes	I	I	I

MLRA133A - Upper Coastal Plain

Map Unit Name	Agri	For	Hort
Alluvial land, wet	III	III	III
Alpin, ALL	IV	II	IV
Altavista, ALL	I	I	I
Altavista-Urban land complex, 0 to 3 percent slopes, rarely flooded	IV	I	IV
Augusta, ALL	I	I	I
Autryville loamy sand, ALL	III	II	III
Autryville, ALL OTHER	IV	II	IV
Autryville-Urban land complex, 0 to 6 percent slopes	IV	II	IV
Aycock very fine sandy loam, 2 to 6 percent slopes, eroded	II	II	II
Aycock, ALL OTHER	I	II	I
Ballahack fine sandy loam	I	I	I
Barclay very fine sandy loam	I	I	I
Bethera loam, 0 to 1 percent slopes	II	I	II
Bibb and Johnston soils, frequently flooded	IV	III	IV
Bibb, ALL	IV	III	IV
Blaney, ALL	IV	II	IV
Blanton, ALL	IV	V	IV
Bojac loamy fine sand, 0 to 3 percent slopes	III	II	III
Bonneau loamy fine sand, 0 to 4 percent slopes	II	II	II
Bonneau loamy sand, 0 to 4 percent slopes	II	II	II
Bonneau loamy sand, 0 to 6 percent slopes	II	II	II
Bonneau loamy sand, 6 to 12 percent slopes	III	II	III
Bonneau sand, 0 to 3 percent slopes	II	II	II
Butters fine sand, 0 to 2 percent slopes	II	II	II
Butters loamy sand, 0 to 2 percent slopes	II	II	II
Byars loam	II	I	II
Candor sand, 1 to 8 percent slopes	IV	V	IV
Candor sand, 8 to 15 percent slopes	IV	V	IV
Cape Fear loam	I	I	I
Caroline sandy loam, 0 to 2 percent slopes	II	II	II
Caroline sandy loam, 2 to 6 percent slopes	II	II	II
Centenary sand	IV	II	IV
Chastain and Bibb soils, 0 to 1 percent slopes, frequently flooded	IV	III	IV
Chastain silt loam, frequently flooded	IV	III	IV
Chewacla and Chastain soils, frequently flooded	IV	III	IV
Chewacla and Congaree loams, frequently flooded	III	III	III
Chewacla and Wehadkee soils, 0 to 1 percent slopes, frequently flooded	IV	III	IV
Chewacla loam	II	III	II
Chewacla loam, 0 to 1 percent slopes, occasionally flooded	II	III	II
Chewacla loam, frequently flooded	IV	III	IV
Chewacla silt loam	II	III	II
Chipley loamy sand (Pactolus)	IV	II	IV
Chipley sand, 0 to 2 percent slopes	IV	II	IV
Conetoe loamy sand, ALL	III	II	III
Congaree silt loam	I	III	I
Congaree silt loam, frequently flooded	I	III	I
Cowarts loamy sand, 2 to 6 percent slopes	II	I	II
Cowarts loamy sand, 6 to 10 percent slopes	III	I	III
Cowarts sandy loam, 6 to 12 percent slopes, eroded	IV	I	IV
Coxville loam	II	I	II
Coxville sandy loam	II	I	II
Craven fine sandy loam, 0 to 1 percent slopes	II	I	II

MLRA133A - Upper Coastal Plain

Map Unit Name	Agri	For	Hort
Craven fine sandy loam, 1 to 4 percent slopes	II	I	II
Craven fine sandy loam, 4 to 10 percent slopes	III	I	III
Craven loam, 1 to 4 percent slopes	II	I	II
Craven sandy clay loam, 1 to 4 percent slopes, eroded	II	I	II
Craven sandy loam, 2 to 6 percent slopes, eroded	II	I	II
Craven sandy loam, 2 to 6 percent slopes, eroded (Gritney)	II	I	II
Craven sandy loam, 6 to 10 percent slopes, eroded (Gritney)	III	I	III
Craven-Urban land complex, 0 to 4 percent slopes	IV	I	IV
Croatan muck	I	V	I
Deloss loam	I	III	I
Dogue, ALL	II	I	II
Dothan loamy sand, 2 to 6 percent slopes	II	I	II
Dothan, ALL OTHER	I	I	I
Dragston loamy sand	I	III	I
Dunbar, ALL	II	I	II
Duplin, ALL	II	I	II
Duplin-Urban land complex, 0 to 5 percent slopes	IV	I	IV
Dystrochrepts, steep	IV	II	IV
Emporia, ALL	II	II	II
Emporia-Urban land complex, 0 to 6 percent slopes	IV	II	IV
Emporia-Wedowee complex, 2 to 6 percent slopes	II	II	II
Eustis, ALL	IV	II	IV
Exum, ALL	I	II	I
Faceville fine sandy loam, ALL	II	II	II
Faceville loamy sand, 6 to 10 percent slopes, eroded	IV	II	IV
Faceville loamy sand, ALL OTHER	II	II	II
Faceville sandy loam, 0 to 2 percent slopes	II	II	II
Faceville sandy loam, 2 to 6 percent slopes	II	II	II
Faceville sandy loam, 2 to 6 percent slopes, eroded	III	II	III
Faceville sandy loam, 6 to 10 percent slopes, eroded	IV	II	IV
Faceville-Urban land complex, 0 to 6 percent slopes	IV	II	IV
Foreston loamy sand, ALL	II	II	II
Fuquay, ALL	IV	II	IV
Gilead loamy sand, 0 to 2 percent slopes	III	II	III
Gilead loamy sand, 10 to 15 percent slopes	IV	II	IV
Gilead loamy sand, 2 to 6 percent slopes	IV	II	IV
Gilead loamy sand, 2 to 6 percent slopes, eroded	III	II	III
Gilead loamy sand, 6 to 10 percent slopes	IV	II	IV
Gilead loamy sand, 6 to 10 percent slopes, eroded	IV	II	IV
Gilead sandy loam, 2 to 8 percent slopes	III	II	III
Gilead sandy loam, 8 to 15 percent slopes	IV	II	IV
Goldsboro, ALL	I	I	I
Goldsboro-Urban land complex, ALL	IV	I	IV
Grantham, ALL	I	I	I
Grantham-Urban land complex	IV	I	IV
Grifton-Meggett complex, occasionally flooded	IV	I	IV
Gritney fine sandy loam, 2 to 6 percent slopes	II	II	II
Gritney fine sandy loam, 2 to 7 percent slopes	II	II	II
Gritney fine sandy loam, 4 to 8 percent slopes	III	II	III
Gritney fine sandy loam, 5 to 12 percent slopes, eroded	IV	II	IV
Gritney fine sandy loam, 6 to 10 percent slopes	III	II	III
Gritney fine sandy loam, 7 to 15 percent slopes	IV	II	IV

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Map Unit Name	Agri	For	Hort
Gritney fine sandy loam, 10 to 15 percent slopes	IV	II	IV
Gritney loamy fine sand, 2 to 7 percent slopes	II	II	II
Gritney sandy clay loam, ALL	III	II	III
Gritney sandy loam, 2 to 5 percent slopes, eroded	III	II	III
Gritney sandy loam, 2 to 6 percent slopes	II	II	II
Gritney sandy loam, 5 to 12 percent slopes, eroded	IV	II	IV
Gritney sandy loam, 6 to 10 percent slopes	III	II	III
Gritney-Urban land complex, 2 to 12 percent slopes	IV	II	IV
Hoffman loamy sand, 6 to 10 percent slopes, eroded (Gilead)	IV	II	IV
Hoffman loamy sand, 10 to 20 percent slopes (Gilead)	III	II	III
Johns, ALL	II	I	II
Johnston, ALL	IV	III	IV
Kalmia loamy sand, 0 to 2 percent slopes	II	II	II
Kalmia loamy sand, 0 to 3 percent slopes	II	II	II
Kalmia loamy sand, 2 to 6 percent slopes	II	II	II
Kalmia loamy sand, 10 to 15 percent slopes	III	II	III
Kalmia loamy sand, 15 to 25 percent slopes	IV	II	IV
Kenansville, ALL	III	II	III
Kinston, ALL	IV	III	IV
Kureb sand, 1 to 8 percent slopes	IV	V	IV
Lakeland, ALL	IV	V	IV
Leaf loam	III	I	III
Lenoir loam	III	I	III
Leon sand, ALL	IV	V	IV
Liddell very fine sandy loam	I	I	I
Lillington-Turbeville complex, 8 to 15 percent slopes	III	II	III
Lucy loamy sand	II	II	II
Lumbee, ALL	II	I	II
Lynchburg, ALL	I	I	I
Lynchburg-Urban land complex	IV	I	IV
Lynn Haven and Torhunta soils	II	II	II
Mantachie soils, local alluvium	II	III	II
Marlboro, ALL	II	II	II
Marlboro-Cecil complex, 2 to 8 percent slopes	II	II	II
Marvyn and Gritney soils. 6 to 15 percent slopes	IV	I	IV
Marvyn loamy sand, 6 to 12 percent slopes	IV	I	IV
Maxton loamy sand, 0 to 2 percent slopes	II	II	II
McCull loam	III	II	III
McQueen loam, 1 to 6 percent slopes	II	II	II
Meggett, ALL	IV	I	IV
Muckalee, ALL	IV	III	IV
Myatt very fine sandy loam	II	I	II
Nahunta, ALL	I	I	I
Nankin ,ALL	II	II	II
Nixonton very fine sandy loam	I	I	I
Norfolk and Faceville soils, 6 to 10 percent slopes	II	II	II
Norfolk loamy fine sand, ALL	I	II	I
Norfolk loamy sand, 0 to 2 percent slopes	I	II	I
Norfolk loamy sand, 2 to 6 percent slopes	I	II	I
Norfolk loamy sand, 2 to 6 percent slopes, eroded	II	II	II
Norfolk loamy sand, 6 to 10 percent slopes	II	II	II
Norfolk loamy sand, 6 to 10 percent slopes, eroded	III	II	III



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Map Unit Name	Agri	For	Hort
Norfolk sandy loam, 0 to 2 percent slopes	I	II	I
Norfolk sandy loam, 2 to 6 percent slopes	I	II	I
Norfolk sandy loam, 2 to 6 percent slopes, eroded	II	II	II
Norfolk sandy loam, 6 to 10 percent slopes	II	II	II
Norfolk, Georgeville, and Faceville soils, 2 to 8 percent slopes	II	II	II
Norfolk-Urban land complex, 0 to 3 percent slopes	IV	II	IV
Norfolk-Wedowee complex, 2 to 6 percent slopes	II	II	II
Ocilla, ALL	III	II	III
Okenee loam (Paxville)	II	III	II
Orangeburg loamy sand, eroded, ALL	II	II	II
Orangeburg loamy sand, ALL OTHER	I	II	I
Pactolus, ALL	IV	II	IV
Pamlico muck	III	V	III
Pantego, ALL	I	I	I
Paxville fine sandy loam	II	III	II
Paxville loam	II	III	II
Peawick, ALL	II	II	II
Pits-Tarboro complex	IV	VI	IV
Plummer and Osier soils	IV	I	IV
Plummer, ALL	IV	V	IV
Pocalla loamy sand, 0 to 3 percent slopes	III	II	III
Polawana loamy sand, frequently flooded	IV	III	IV
Ponzer muck, siliceous subsoil variant	I	V	I
Portsmouth, ALL	I	I	I
Rains, ALL	I	I	I
Rains-Toisnot complex, 0 to 2 percent slopes	IV	I	IV
Rains-Urban land complex, ALL	IV	I	IV
Rimini sand	IV	V	IV
Riverview loam, 0 to 1 percent slopes, occasionally flooded	I	III	I
Roanoke and Wahee loams	II	III	II
Roanoke, ALL	II	III	II
Roanoke-Urban land complex	IV	III	IV
Ruston loamy sand, ALL	III	II	III
Ruston sandy loam, 2 to 6 percent slopes, eroded	IV	II	IV
Rutlege loamy sand	IV	V	IV
Seabrook loamy sand, rarely flooded	IV	II	IV
Smoothed sandy land	IV	VI	IV
St. Lucie sand (Kureb)	IV	V	IV
Stallings, ALL	II	II	II
State, ALL	I	I	I
Swamp	IV	III	IV
Tarboro, ALL	IV	II	IV
Toisnot, ALL	IV	II	IV
Tomahawk sand	III	II	III
Tomotley, ALL	I	I	I
Torhunta and Lynn Haven soils	II	I	II
Torhunta, ALL	I	I	I
Trebloc loam	I	I	I
Troup sand	IV	II	IV
Turbeville fine sandy loam, 2 to 6 percent slopes	I	II	I
Turbeville gravelly sandy loam, 2 to 8 percent slopes	II	II	II
Turbeville loamy sand, 0 to 2 percent slopes	I	II	I

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Map Unit Name	Agri	For	Hort
Turbeville loamy sand, 2 to 6 percent slopes	I	II	I
Turbeville sandy clay loam, 2 to 6 percent slopes, eroded	II	II	II
Turbeville sandy loam, 0 to 2 percent slopes	I	II	I
Turbeville sandy loam, 2 to 6 percent slopes	I	II	I
Turbeville sandy loam, 2 to 8 percent slopes	I	II	I
Turbeville sandy loam, 6 to 12 percent slopes	II	II	II
Turbeville-Urban land complex, 0 to 8 percent slopes	IV	II	IV
Uchee, ALL	III	V	III
Udorthents, loamy	IV	VI	IV
Urban land	IV	VI	IV
Varina, ALL	II	II	II
Vaocluse loamy sand, 10 to 15 percent slopes	IV	II	IV
Vaocluse loamy sand, 10 to 15 percent slopes, eroded	IV	II	IV
Vaocluse loamy sand, 2 to 6 percent slopes	III	II	III
Vaocluse loamy sand, 2 to 6 percent slopes, eroded	III	II	III
Vaocluse loamy sand, 6 to 10 percent slopes	III	II	III
Vaocluse loamy sand, 6 to 10 percent slopes, eroded	III	II	III
Wagram fine sand, 0 to 6 percent slopes	II	II	II
Wagram loamy sand, 0 to 2 percent slopes	II	II	II
Wagram loamy sand, 0 to 6 percent slopes	II	II	II
Wagram loamy sand, 2 to 6 percent slopes	II	II	II
Wagram loamy sand, 6 to 10 percent slopes	III	II	III
Wagram loamy sand, 10 to 15 percent slopes	III	II	III
Wagram sand, thick surface, 0 to 6 percent slopes	II	II	II
Wagram sand, thick surface, 6 to 10 percent slopes	III	II	III
Wagram sand, thick surface, 10 to 15 percent slopes	III	II	III
Wagram-Troup sands, 0 to 4 percent slopes	IV	II	IV
Wagram-Urban land complex, ALL	IV	II	IV
Wahee, ALL	I	I	I
Wakulla, ALL	IV	V	IV
Wehadkee and Chewacla loams	IV	III	IV
Wehadkee, ALL	IV	III	IV
Wehadkee-Chastain association, frequently flooded	IV	III	IV
Weston loamy sand	III	I	III
Wickham fine sandy loam, 6 to 15 percent slopes, rarely flooded	II	I	II
Wickham fine sandy loam, ALL OTHER	I	I	I
Wickham loamy sandy, ALL	I	I	I
Wickham sandy loam, 0 to 4 percent slopes	I	I	I
Wickham sandy loam, 2 to 6 percent slopes, eroded	II	I	II
Wickham-Urban land complex, 1 to 6 percent slopes	IV	I	IV
Wilbanks loam, frequently flooded	IV	III	IV
Wilbanks silt loam	IV	III	IV
Winton fine sandy loam, ALL	IV	I	IV
Woodington loamy sand	II	II	II

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Map Unit Name	Agri	For	Hort
Ailey-Appling complex, 2 to 8 percent slopes	II	II	II
Ailey-Appling complex, 8 to 15 percent slopes, bouldery	IV	II	III
Alamance silt loam, gently sloping phase	II	II	II
Alamance variant gravelly loam, ALL	IV	II	II
Altavista fine sandy loam, 2 to 6 percent slopes, eroded	II	I	I
Altavista fine sandy loam, 7 to 10 percent slopes	II	I	I
Altavista fine sandy loam, 0 to 2 percent slopes occasionally flooded	I	I	II
Altavista fine sandy loam, ALL OTHER	I	I	I
Altavista fine sandy loam, clayey variant	I	I	I
Altavista loam, 0 to 3 percent slopes, rarely flooded	I	I	I
Altavista sandy loam, ALL	I	I	I
Altavista silt loam, ALL	I	I	I
Appling coarse sandy loam, eroded gently sloping phase	II	II	II
Appling coarse sandy loam, eroded sloping phase	II	II	II
Appling coarse sandy loam, ALL OTHER	II	II	I
Appling fine sandy loam, 2 to 6 percent slopes	II	II	I
Appling fine sandy loam, 2 to 6 percent slopes, eroded	II	II	II
Appling fine sandy loam, 2 to 7 percent slopes	II	II	I
Appling fine sandy loam, 2 to 7 percent slopes, eroded	II	II	II
Appling fine sandy loam, 6 to 10 percent slopes	II	II	I
Appling fine sandy loam, 6 to 10 percent slopes, eroded	II	II	II
Appling fine sandy loam, 7 to 10 percent slopes(Wedowee)	II	II	I
Appling fine sandy loam, 7 to 10 percent slopes, eroded (Wedowee)	II	II	II
Appling fine sandy loam, 10 to 14 percent slopes (Wedowee)	III	II	II
Appling fine sandy loam, 10 to 14 percent slopes, eroded (Wedowee)	III	II	II
Appling fine sandy loam, (Wedowee), ALL OTHER	IV	II	II
Appling gravelly sandy loam, 2 to 6 percent slopes	II	II	I
Appling gravelly sandy loam, 2 to 6 percent slopes, eroded	II	II	II
Appling gravelly sandy loam, 6 to 10 percent slopes	II	II	I
Appling gravelly sandy loam, 6 to 10 percent slopes, eroded	II	II	II
Appling loamy sand, 2 to 6 percent slopes	II	II	I
Appling sandy clay loam, 6 to 10 percent slopes, severely eroded	III	II	II
Appling sandy clay loam, 10 to 15 percent slopes, severely eroded	IV	II	II
Appling sandy clay loam, severely eroded sloping phase	III	II	III
Appling sandy loam, 1 to 6 percent slopes	II	II	I
Appling sandy loam, 2 to 6 percent slopes	II	II	I
Appling sandy loam, 2 to 6 percent slopes, eroded	II	II	II
Appling sandy loam, 2 to 8 percent slopes	II	II	I
Appling sandy loam, 6 to 10 percent slopes	II	II	I
Appling sandy loam, 6 to 10 percent slopes, eroded	II	II	II
Appling sandy loam, 6 to 12 percent slopes	II	II	II
Appling sandy loam, 8 to 15 percent slopes	II	II	II
Appling sandy loam, 10 to 15 percent slopes	III	II	II
Appling sandy loam, 10 to 15 percent slopes, eroded	III	II	II
Appling sandy loam, 10 to 25 percent slopes, eroded (Wedowee)	IV	II	II
Appling sandy loam, 15 to 25 percent slopes (Wedowee)	IV	II	II
Appling sandy loam, 15 to 25 percent slopes, eroded (Wedowee)	IV	II	II
Appling sandy loam, eroded gently sloping phase	II	II	II
Appling sandy loam, eroded sloping phase	II	II	II
Appling sandy loam, eroded strongly sloping phase	III	II	II
Appling sandy loam, gently sloping phase	II	II	I
Appling sandy loam, moderately steep phase (Wedowee)	III	II	II

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Map Unit Name	Agri	For	Hort
Appling sandy loam, sloping phase	II	II	II
Appling sandy loam, strongly sloping phase	II	II	II
Appling-Marlboro complex, 1 to 6 percent slopes	II	II	II
Appling-Urban land complex, ALL	IV	II	IV
Armenia, ALL	IV	III	III
Ashlar-Rock outcrop complex, ALL	IV	V	IV
Augusta, ALL	III	I	II
Ayersville gravelly loam, ALL	IV	V	II
Badin channery loam, 8 to 15 percent slopes	III	II	II
Badin channery silt loam, 2 to 8 percent slopes	III	II	II
Badin channery silt loam, 8 to 15 percent slopes	III	II	II
Badin channery silt loam, ALL OTHER	IV	II	II
Badin channery silty clay loam, eroded, ALL	III	II	II
Badin silty clay loam, 2 to 8 percent slopes, moderately eroded	III	II	II
Badin silty clay loam, 8 to 15 percent slopes, moderately eroded	IV	II	II
Badin-Goldston complex, 2 to 8 percent slopes	III	II	II
Badin-Goldston complex, 8 to 15 percent slopes	IV	II	III
Badin-Goldston complex, 15 to 25 percent slopes	IV	II	IV
Badin-Nanford complex, 15 to 30 percent slopes	IV	II	IV
Badin-Tarrus complex, 2 to 8 percent slopes	II	II	I
Badin-Tarrus complex, 2 to 8 percent slopes, moderately eroded	III	II	I
Badin-Tarrus complex, 8 to 15 percent slopes	III	II	II
Badin-Tarrus complex, 8 to 15 percent slopes, moderately eroded	IV	II	II
Badin-Tarrus complex, 15 to 25 percent slopes	IV	II	II
Badin-Tarrus complex, 25 to 45 percent slopes	IV	II	IV
Badin-Urban land complex, ALL	IV	II	IV
Banister loam, 1 to 6 percent slopes, rarely flooded	II	I	I
Bethlehem gravelly sandy loam, 2 to 8 percent slopes	III	II	II
Bethlehem gravelly sandy loam, 8 to 15 percent slopes	IV	II	II
Bethlehem-Hibriten complex, 6 to 15 percent slopes	IV	II	III
Bethlehem-Urban land complex, 2 to 15 percent slopes	IV	II	IV
Buncombe, ALL	IV	III	IV
Callison-Lignum complex, 2 to 6 percent slopes	III	II	II
Callison-Misenheimer complex, 6 to 10 percent slopes	III	II	II
Carbonton-Brickhaven complex, ALL	IV	II	IV
Cartecay and Chewacla soils	II	III	III
Cecil clay loam, 2 to 6 percent slopes, eroded	III	II	II
Cecil clay loam, 2 to 6 percent slopes, severely eroded	III	II	II
Cecil clay loam, 2 to 7 percent slopes, severely eroded	III	II	II
Cecil clay loam, 2 to 8 percent slopes, eroded	III	II	II
Cecil clay loam, 6 to 10 percent slopes, eroded	III	II	II
Cecil clay loam, 6 to 10 percent slopes, severely eroded	IV	II	II
Cecil clay loam, ALL OTHER	IV	II	II
Cecil fine sandy loam, 2 to 6 percent slopes	II	II	I
Cecil fine sandy loam, 2 to 6 percent slopes, eroded	II	II	II
Cecil fine sandy loam, 2 to 7 percent slopes	II	II	I
Cecil fine sandy loam, 2 to 7 percent slopes, eroded	II	II	II
Cecil fine sandy loam, 2 to 8 percent slopes	II	II	I
Cecil fine sandy loam, 6 to 10 percent slopes	III	II	II
Cecil fine sandy loam, 6 to 10 percent slopes, eroded	III	II	II
Cecil fine sandy loam, 7 to 10 percent slopes (Pacolet)	III	II	II
Cecil fine sandy loam, 7 to 10 percent slopes, eroded (Pacolet)	III	II	II

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Map Unit Name	Agri	For	Hort
Cecil fine sandy loam, 8 to 15 percent slopes	III	II	II
Cecil fine sandy loam, 10 to 14 percent slopes (Pacolet)	III	II	II
Cecil fine sandy loam, 10 to 14 percent slopes, eroded (Pacolet)	III	II	II
Cecil fine sandy loam, 10 to 15 percent slopes	III	II	II
Cecil fine sandy loam, 10 to 15 percent slopes (Pacolet)	III	II	II
Cecil fine sandy loam, 10 to 15 percent slopes, eroded (Pacolet)	III	II	II
Cecil fine sandy loam, 14 to 25 percent slopes (Pacolet)	IV	II	II
Cecil fine sandy loam, 14 to 25 percent slopes, eroded (Pacolet)	IV	II	II
Cecil fine sandy loam, 25 to 40 percent slopes (Pacolet)	IV	II	III
Cecil fine sandy loam, 25 to 40 percent slopes, eroded (Pacolet)	IV	II	III
Cecil fine sandy loam, eroded gently sloping phase	II	II	II
Cecil fine sandy loam, eroded sloping phase	II	II	II
Cecil fine sandy loam, eroded strongly sloping phase	III	II	II
Cecil fine sandy loam, gently sloping phase	II	II	I
Cecil fine sandy loam, moderately steep phase	III	II	II
Cecil fine sandy loam, sloping phase	III	II	II
Cecil fine sandy loam, strongly sloping phase	III	II	II
Cecil gravelly fine sandy loam, 2 to 6 percent slopes	II	II	I
Cecil gravelly fine sandy loam, 2 to 6 percent slopes, eroded	II	II	II
Cecil gravelly fine sandy loam, 2 to 7 percent slopes	II	II	I
Cecil gravelly fine sandy loam, 2 to 7 percent slopes, eroded	III	II	II
Cecil gravelly fine sandy loam, 6 to 10 percent slopes	III	II	II
Cecil gravelly fine sandy loam, 6 to 10 percent slopes, eroded	III	II	II
Cecil gravelly fine sandy loam, 7 to 10 percent slopes	III	II	II
Cecil gravelly fine sandy loam, 7 to 10 percent slopes, eroded (Pacolet)	III	II	II
Cecil gravelly fine sandy loam, 10 to 14 percent slopes (Pacolet)	III	II	II
Cecil gravelly fine sandy loam, 10 to 14 percent slopes, eroded (Pacolet)	III	II	II
Cecil gravelly fine sandy loam, 10 to 15 percent slopes	III	II	II
Cecil gravelly fine sandy loam, 10 to 15 percent, eroded (Pacolet)	III	II	II
Cecil gravelly fine sandy loam, ALL OTHER	IV	II	II
Cecil gravelly sandy clay loam, 2 to 8 percent slopes, eroded	III	II	II
Cecil gravelly sandy clay loam, 8 to 15 percent slopes, eroded	IV	II	II
Cecil gravelly sandy loam, 2 to 6 percent slopes	II	II	I
Cecil gravelly sandy loam, 2 to 6 percent slopes, eroded	II	II	I
Cecil gravelly sandy loam, 6 to 10 percent slopes	III	II	II
Cecil gravelly sandy loam, 6 to 10 percent slopes, eroded	III	II	II
Cecil gravelly sandy loam, 10 to 15 percent slopes	IV	II	IV
Cecil loam, 2 to 6 percent slopes	II	II	I
Cecil loam, ALL OTHER	III	II	II
Cecil sandy clay loam, 8 to 15 percent slopes, eroded	IV	II	II
Cecil sandy clay loam, 8 to 15 percent slopes, moderately eroded	IV	II	II
Cecil sandy clay loam, ALL OTHER	III	II	II
Cecil sandy loam, 2 to 6 percent slopes	II	II	I
Cecil sandy loam, 2 to 6 percent slopes, eroded	III	II	II
Cecil sandy loam, 2 to 8 percent slopes	II	II	I
Cecil sandy loam, 2 to 8 percent slopes, eroded	III	II	II
Cecil sandy loam, 6 to 10 percent slopes	III	II	I
Cecil sandy loam, 6 to 10 percent slopes, eroded	III	II	II
Cecil sandy loam, 8 to 15 percent slopes	III	II	II
Cecil sandy loam, 8 to 15 percent slopes, eroded	IV	II	II
Cecil sandy loam, 10 to 15 percent slopes	III	II	II
Cecil sandy loam, 10 to 15 percent slopes, eroded	III	II	II

## MLRA136 – Piedmont

Map Unit Name	Agri	For	Hort
Cecil sandy loam, 10 to 15 percent slopes, eroded (Pacolet)	III	II	II
Cecil sandy loam, 15 to 45 percent slopes (Pacolet)	IV	II	II
Cecil sandy loam, eroded gently sloping phase	III	II	II
Cecil sandy loam, eroded sloping phase	III	II	II
Cecil sandy loam, gently sloping phase	II	II	I
Cecil sandy loam, sloping phase	III	II	I
Cecil soils, (Pacolet), ALL	IV	II	II
Cecil stony fine sandy loam, (Uwharrie), ALL	IV	II	II
Cecil-Urban land complex, ALL	IV	II	IV
Chastain silty clay loam	IV	III	III
Chenneby silt loam, 0 to 2 percent slopes, frequently flooded	III	III	III
Chewacla and Chastain soils, 0 to 2 percent slopes, frequently flooded	IV	III	III
Chewacla and Wehadkee, ALL	IV	III	III
Chewacla silt loam, frequently flooded	III	III	III
Chewacla, ALL OTHER	II	III	III
Cid, ALL	III	II	II
Cid-Lignum complex, 1 to 6 percent slopes	II	II	II
Cid-Misenheimer complex, 0 to 4 percent slopes	III	II	II
Cid-Urban land complex, 1 to 5 percent slopes	IV	II	IV
Meadowfield-Fairview complex, 15 to 25 percent slopes	IV	IV	IV
Meadowfield-Rhodhiss complex, 25 to 60 percent slopes, very stony	IV	IV	IV
Meadowfield-Woolwine complex, 8 to 15 percent slopes	IV	IV	IV
Claycreek fine sandy loam, 0 to 2 percent slopes	III	I	II
Colfax sandy loam, ALL	III	II	II
Colvard sandy loam, 0 to 3 percent slopes, occasionally flooded	I	III	III
Colfax silt loam	III	II	II
Congaree, frequently flooded	II	III	III
Congaree, ALL OTHER	I	III	III
Coronaca clay loam, ALL	II	II	I
Coronaca-Urban land complex, 2 to 10 percent slopes	IV	II	IV
Creedmoor coarse sandy loam, ALL	III	I	II
Creedmoor fine sandy loam, 8 to 15 percent slopes	IV	I	II
Creedmoor fine sandy loam, ALL OTHER	III	I	II
Creedmoor loam, 2 to 8 percent slopes	III	I	II
Creedmoor sandy loam, 10 to 15 percent slopes	IV	I	II
Creedmoor sandy loam, 10 to 20 percent slopes	IV	I	II
Creedmoor sandy loam, ALL OTHER	III	I	II
Creedmoor silt loam, ALL	III	I	II
Cullen clay loam, ALL	II	II	II
Cullen-Wynott complex, 15 to 35 percent slopes	IV	II	III
Cut and fill land	IV	VI	IV
Davidson clay, severely eroded strongly sloping phase	III	I	II
Davidson sandy clay loam, 15 to 25 percent slopes	III	I	I
Davidson, ALL OTHER	II	I	I
Dillard fine sandy loam, 2 to 8 percent slopes, rarely flooded	I	III	I
Dogue, ALL	II	I	I
Dogue-Roanoke complex, 0 to 6 percent slopes, rarely flooded	II	I	III
Durham coarse sandy loam, gently sloping phase	II	I	I
Durham coarse sandy loam, sloping phase	III	I	I
Durham loamy sand, 6 to 10 percent slopes, eroded	III	I	I
Durham loamy sand, ALL OTHER	II	I	I
Durham sandy loam, eroded sloping phase	II	I	I

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Map Unit Name	Agri	For	Hort
Durham sandy loam, ALL OTHER	III	I	I
Efland silt loam, eroded gently sloping phase (Badin)	II	II	II
Efland silt loam, eroded sloping phase (Badin)	III	II	II
Efland silt loam, gently sloping phase (Badin)	II	II	II
Efland silt loam, sloping phase (Badin)	II	II	II
Efland silt loam, strongly sloping phase (Badin)	III	II	II
Efland silty clay loam severely eroded strongly sloping phase (Badin)	III	II	II
Efland silty clay loam, severely eroded sloping phase (Badin)	III	II	II
Enon clay loam, 2 to 6 percent slopes, eroded	III	II	II
Enon clay loam, 6 to 10 percent slopes, eroded	III	II	II
Enon clay loam, 10 to 15 percent slopes, eroded	IV	II	II
Enon clay loam, severely eroded sloping phase	III	II	II
Enon clay loam, severely eroded strongly sloping phase	IV	II	II
Enon cobbly loam, 2 to 8 percent slopes	II	II	II
Enon cobbly loam, 8 to 15 percent slopes	III	II	II
Enon complex, gullied	IV	II	IV
Enon fine sandy loam, 2 to 15 percent slopes, very stony	IV	II	II
Enon fine sandy loam, 2 to 6 percent slopes	II	II	II
Enon fine sandy loam, 2 to 6 percent slopes, eroded	III	II	II
Enon fine sandy loam, 2 to 8 percent slopes	II	II	II
Enon fine sandy loam, 6 to 10 percent slopes	III	II	II
Enon fine sandy loam, 6 to 10 percent slopes, eroded	III	II	II
Enon fine sandy loam, 8 to 15 percent slopes	III	II	II
Enon fine sandy loam, 10 to 15 percent slopes	III	II	II
Enon fine sandy loam, 10 to 15 percent slopes, eroded	III	II	II
Enon fine sandy loam, eroded gently sloping phase	II	II	II
Enon fine sandy loam, eroded sloping phase	III	II	II
Enon fine sandy loam, gently sloping phase	II	II	II
Enon fine sandy loam, sloping phase	III	II	II
Enon gravelly loam, 2 to 8 percent slopes	II	II	II
Enon gravelly loam, 8 to 15 percent slopes	III	II	II
Enon loam, 2 to 6 percent slopes	II	II	II
Enon loam, 6 to 10 percent slopes	II	II	II
Enon loam, 6 to 12 percent slopes	III	II	II
Enon loam, eroded gently sloping phase	II	II	II
Enon loam, eroded sloping phase	III	II	II
Enon loam, eroded strongly sloping phase	III	II	II
Enon loam, gently sloping phase	II	II	II
Enon loam, sloping phase	III	II	II
Enon loam, strongly sloping phase	III	II	II
Enon sandy loam, 2 to 8 percent slopes	II	II	II
Enon sandy loam, 8 to 15 percent slopes	III	II	II
Enon very cobbly loam, very stony, ALL	IV	II	IV
Enon very stony loam, ALL	IV	II	IV
Enon-Mayodan complex, 15 to 35 percent slopes, very stony	IV	II	III
Enon-Urban land complex, ALL	IV	II	IV
Enon-Wynott complex, 2 to 8 percent slopes	II	II	II
Enon-Wynott complex, 4 to 15 percent slopes, very bouldery	IV	II	IV
Fairview sandy clay loam, 2 to 8 percent slopes, moderately eroded	II	II	II
Fairview sandy clay loam, 8 to 15 percent slopes, moderately eroded	III	II	II
Fairview sandy clay loam, 15 to 25 percent slopes, moderately eroded	IV	II	II
Fairview-Urban land complex, ALL	IV	II	IV

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Map Unit Name	Agri	For	Hort
Fluvaquents-Udifluvents complex, 0 to 3 percent slopes, mounded, occasionally flooded	IV	VI	IV
Gaston clay loam, 2 to 8 percent slopes, eroded	II	II	II
Gaston clay loam, 8 to 15 percent slopes, eroded	III	II	II
Gaston loam, 15 to 25 percent slopes	III	II	II
Gaston sandy clay loam, 2 to 8 percent slopes, eroded	II	II	II
Gaston sandy clay loam, 8 to 15 percent slopes, eroded	III	II	II
Georgeville clay loam, 2 to 6 percent slopes, eroded	II	I	II
Georgeville clay loam, 2 to 8 percent slopes, eroded	II	I	II
Georgeville clay loam, 8 to 15 percent slopes, eroded	III	I	II
Georgeville gravelly loam, 2 to 6 percent slopes	II	I	I
Georgeville gravelly loam, 2 to 8 percent slopes, stony	III	I	II
Georgeville gravelly loam, 6 to 10 percent slopes	II	I	I
Georgeville gravelly loam, 10 to 25 percent slopes	IV	I	II
Georgeville gravelly silt loam, 2 to 8 percent slopes	II	I	I
Georgeville gravelly silt loam, 8 to 15 percent slopes	III	I	II
Georgeville loam, 2 to 6 percent slopes	II	I	I
Georgeville loam, 2 to 8 percent slopes	II	I	I
Georgeville loam, 6 to 10 percent slopes	II	I	I
Georgeville loam, 8 to 15 percent slopes	III	I	I
Georgeville loam, ALL OTHER	IV	I	II
Georgeville silt loam, 2 to 6 percent slopes	II	I	I
Georgeville silt loam, 2 to 6 percent slopes, eroded	III	I	II
Georgeville silt loam, 2 to 8 percent slopes	II	I	I
Georgeville silt loam, 2 to 10 percent slopes, eroded	III	I	II
Georgeville silt loam, 4 to 15 percent slopes, extremely stony	IV	I	IV
Georgeville silt loam, 6 to 10 percent slopes	II	I	I
Georgeville silt loam, 6 to 10 percent slopes, eroded	III	I	II
Georgeville silt loam, 8 to 15 percent slopes	III	I	I
Georgeville silt loam, 10 to 15 percent slopes	III	I	I
Georgeville silt loam, 10 to 15 percent slopes, eroded	III	I	II
Georgeville silt loam, 10 to 25 percent slopes	IV	I	II
Georgeville silt loam, 15 to 45 percent slopes, extremely bouldery	IV	I	IV
Georgeville silt loam, eroded gently sloping phase	II	I	II
Georgeville silt loam, eroded sloping phase	III	I	II
Georgeville silt loam, eroded strongly sloping phase	III	I	II
Georgeville silt loam, gently sloping phase	II	I	I
Georgeville silt loam, moderately steep phase	III	I	II
Georgeville silt loam, sloping phase	II	I	I
Georgeville silt loam, strongly sloping phase	III	I	I
Georgeville silty clay loam, 2 to 6 percent slopes, moderately eroded	II	I	II
Georgeville silty clay loam, 2 to 8 percent slopes	II	I	II
Georgeville silty clay loam, 2 to 8 percent slopes, eroded	II	I	II
Georgeville silty clay loam, 2 to 8 percent slopes, moderately eroded	II	I	II
Georgeville silty clay loam, 6 to 10 percent slopes, moderately eroded	III	I	II
Georgeville silty clay loam, 8 to 15 percent slopes, eroded	IV	I	II
Georgeville silty clay loam, 8 to 15 percent slopes, moderately eroded	IV	I	II
Georgeville silty clay loam, severely eroded gently sloping phase	III	I	II
Georgeville silty clay loam, severely eroded moderately steep phase	IV	I	III
Georgeville silty clay loam, severely eroded sloping phase	III	I	III
Georgeville silty clay loam, severely eroded strongly sloping phase	IV	I	III
Georgeville-Badin complex, ALL	IV	I	II
Georgeville-Montonia complex, very stony ALL	IV	I	III



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Map Unit Name	Agri	For	Hort
Georgeville-Urban land complex, ALL	IV	I	IV
Goldston, ALL	IV	II	III
Goldston-Badin complex, ALL	IV	II	III
Granville gravelly sandy loam, 2 to 8 percent slopes	II	II	I
Granville sandy loam, 2 to 6 percent slopes	II	II	I
Granville sandy loam, 2 to 6 percent slopes, eroded	II	II	I
Granville sandy loam, 2 to 8 percent slopes	II	II	I
Granville sandy loam, 6 to 10 percent slopes	III	II	I
Granville sandy loam, 6 to 10 percent slopes, eroded	III	II	I
Granville sandy loam, 10 to 15 percent slopes	IV	II	I
Grover, ALL	IV	II	III
Gullied land, ALL	IV	VI	IV
Halewood stony sandy loam, (Edneyville), ALL	IV	III	II
Hatboro sandy loam, 0 to 2 percent slopes, frequently flooded	IV	III	IV
Hayesville and Cecil clay loams, 7 to 14 percent slopes, severely eroded (Cecil and Cecil)	II	II	II
Hayesville and Cecil clay loams, 7 to 14 percent slopes, severely eroded (Cecil and Cecil)	III	II	II
Hayesville and Cecil clay loams, 14 to 25 percent slopes, severely eroded (Pacolet and Pacolet)	IV	II	II
Hayesville and Cecil fine sandy loam, eroded, ALL	IV	II	II
Helena clay loam, severely eroded sloping phase	IV	II	II
Helena coarse sandy loam, sloping phase	IV	II	II
Helena coarse sandy loam, ALL OTHER	III	II	II
Helena fine sandy loam, 2 to 8 percent slopes	III	II	II
Helena sandy loam, 10 to 15 percent slopes	IV	II	II
Helena sandy loam, ALL OTHER	III	II	II
Helena-Sedgefield sandy loams, ALL	III	II	II
Helena-Urban land complex, ALL	IV	II	IV
Helena-Worsham complex, 1 to 6 percent slopes	IV	II	III
Herndon loam, 2 to 6 percent slopes	II	II	I
Herndon loam, 6 to 10 percent slopes	II	II	I
Herndon silt loam, 2 to 6 percent slopes	II	II	I
Herndon silt loam, 2 to 6 percent slopes, eroded	II	II	II
Herndon silt loam, 2 to 8 percent slopes	II	II	I
Herndon silt loam, 6 to 10 percent slopes	III	II	I
Herndon silt loam, 6 to 10 percent slopes, eroded	III	II	II
Herndon silt loam, 8 to 15 percent slopes	III	II	I
Herndon silt loam, 10 to 15 percent slopes, eroded	III	II	II
Herndon silt loam, 15 to 25 percent slopes	III	II	I
Herndon silt loam, eroded gently sloping phase	II	II	II
Herndon silt loam, eroded sloping phase	III	II	II
Herndon silt loam, eroded strongly sloping phase	III	II	II
Herndon silt loam, gently sloping phase	II	II	I
Herndon silt loam, moderately steep phase	III	II	I
Herndon silt loam, sloping phase	II	II	I
Herndon silt loam, strongly sloping phase	III	II	I
Herndon silty clay loam, ALL	IV	II	II
Herndon stony silt loam, 2 to 10 percent slopes	III	II	II
Hibriten very cobbly sandy loam, ALL	IV	V	III
Hiwassee clay loam, 8 to 15 percent slopes, eroded	III	II	II
Hiwassee clay loam, 8 to 15 percent slopes, moderately eroded	III	II	II
Hiwassee clay loam, 10 to 15 percent slopes, eroded	III	II	II

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Map Unit Name	Agri	For	Hort
Hiwassee clay loam, 15 to 30 percent slopes, moderately eroded	IV	II	II
Hiwassee clay loam, ALL OTHER	II	II	II
Hiwassee gravelly loam, 2 to 8 percent slopes	II	II	I
Hiwassee gravelly loam, 8 to 15 percent slopes	II	II	II
Hiwassee loam, 2 to 6 percent slopes	II	II	I
Hiwassee loam, 2 to 6 percent slopes, eroded	II	II	II
Hiwassee loam, 2 to 7 percent slopes, eroded	II	II	II
Hiwassee loam, 2 to 8 percent slopes	II	II	I
Hiwassee loam, 6 to 10 percent slopes	II	II	I
Hiwassee loam, 6 to 10 percent slopes, eroded	II	II	II
Hiwassee loam, 8 to 15 percent slopes	II	II	I
Hiwassee loam, 10 to 15 percent slopes	II	II	I
Hiwassee loam, 10 to 15 percent slopes, eroded	III	II	II
Hiwassee loam, 15 to 25 percent slopes	IV	II	II
Hornsboro, ALL	I	I	I
Hulett, ALL	IV	II	II
Hulett-Saw complex, 4 to 15 percent slopes, very rocky	IV	II	III
Hulett-Urban Land complex, 2 to 8 percent slopes	IV	II	IV
Iotla sandy loam, 0 to 2 percent slopes, occasionally flooded	II	III	III
Iredell clay loam, 2 to 6 percent slopes	III	II	III
Iredell fine sandy loam, 10 to 14 percent slopes (Wilkes)	IV	II	III
Iredell fine sandy loam, 10 to 14 percent slopes, eroded (Wilkes)	IV	II	III
Iredell fine sandy loam, ALL OTHER	III	II	III
Iredell gravelly loam, 1 to 4 percent slopes	III	II	III
Iredell loam, ALL	III	II	III
Iredell sandy loam, ALL	III	II	III
Iredell very stony loam, gently sloping phase (Enon)	IV	II	IV
Iredell-Urban land complex, ALL	IV	II	IV
Iredell-Urban land-Picture complex, 0 to 10 percent slopes	IV	II	IV
Kirksey silt loam, ALL	II	II	II
Kirksey-Cid complex, 2 to 6 percent slopes	III	II	II
Leaksville silt loam, 0 to 4 percent slopes	III	III	III
Leaksville-Urban land complex, 0 to 4 percent slopes	IV	III	IV
Leveled clayey land	IV	VI	IV
Lignum gravelly silt loam, 2 to 8 percent slopes	II	III	II
Lignum loam, 2 to 6 percent slopes	II	III	II
Lignum silt loam, 7 to 12 percent slopes	III	III	II
Lignum silt loam, ALL OTHER	II	III	II
Lloyd clay loam, 2 to 6 percent slopes, severely eroded (Gaston)	II	II	II
Lloyd clay loam, 2 to 10 percent slopes, severely eroded (Pacolet)	II	II	II
Lloyd clay loam, 6 to 10 percent slopes, severely eroded (Gaston)	II	II	II
Lloyd clay loam, 10 to 14 percent slopes, severely eroded (Pacolet)	III	II	III
Lloyd clay loam, 10 to 15 percent slopes, severely eroded (Gaston)	III	II	III
Lloyd clay loam, 14 to 25 percent slopes, severely eroded (Pacolet)	IV	II	IV
Lloyd clay loam, 15 to 25 percent slopes, severely eroded (Gaston)	IV	II	IV
Lloyd clay loam, severely eroded gently sloping phase (Gaston)	II	II	II
Lloyd clay loam, severely eroded sloping phase (Gaston)	II	II	II
Lloyd clay loam, severely eroded strongly sloping phase (Gaston)	III	II	III
Lloyd clay loam, severely eroded, moderately steep phase (Cecil)	IV	II	III
Lloyd fine sandy loam, 2 to 6 percent slopes (Cecil)	II	II	II
Lloyd fine sandy loam, 2 to 6 percent slopes, eroded (Cecil)	II	II	II
Lloyd fine sandy loam, 6 to 10 percent slopes (Cecil)	III	II	II

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Map Unit Name	Agri	For	Hort
Lloyd fine sandy loam, 6 to 10 percent slopes, eroded (Cecil)	III	II	II
Lloyd fine sandy loam, 10 to 15 percent slopes (Pacolet)	II	II	II
Lloyd fine sandy loam, 10 to 15 percent slopes, eroded (Pacolet)	III	II	II
Lloyd fine sandy loam, 15 to 25 percent slopes (Pacolet)	IV	II	II
Lloyd fine sandy loam, 15 to 25 percent slopes, eroded (Pacolet)	IV	II	III
Lloyd loam, 2 to 6 percent slopes (Gaston)	II	II	I
Lloyd loam, 2 to 6 percent slopes, eroded (Davidson)	II	II	II
Lloyd loam, 2 to 6 percent slopes, eroded (Gaston)	II	II	I
Lloyd loam, 2 to 7 percent slopes (Pacolet)	II	II	I
Lloyd loam, 2 to 7 percent slopes, eroded (Pacolet)	II	II	II
Lloyd loam, 6 to 10 percent slopes (Cecil)	III	II	II
Lloyd loam, 6 to 10 percent slopes, eroded (Cecil)	III	II	II
Lloyd loam, 6 to 10 percent slopes, eroded (Davidson)	II	II	II
Lloyd loam, 7 to 10 percent slopes (Pacolet)	III	II	II
Lloyd loam, 7 to 10 percent slopes, eroded (Pacolet)	III	II	II
Lloyd loam, 10 to 14 percent slopes (Pacolet)	IV	II	II
Lloyd loam, 10 to 14 percent slopes, eroded (Pacolet)	IV	II	III
Lloyd loam, 10 to 15 percent slopes (Cecil)	IV	II	II
Lloyd loam, 10 to 15 percent slopes, eroded (Davidson)	II	II	III
Lloyd loam, 10 to 15 percent slopes, eroded (Pacolet)	III	II	III
Lloyd loam, 14 to 25 percent slopes (Pacolet)	IV	II	II
Lloyd loam, 14 to 25 percent slopes, eroded (Pacolet)	IV	II	III
Lloyd loam, 15 to 25 percent slopes (Pacolet)	IV	II	II
Lloyd loam, 15 to 25 percent slopes, eroded (Pacolet)	IV	II	III
Lloyd loam, 25 to 40 percent slopes (Pacolet)	IV	II	IV
Lloyd loam, eroded gently sloping phase (Gaston)	III	II	II
Lloyd loam, eroded sloping phase (Cecil)	III	II	II
Lloyd loam, eroded strongly sloping phase (Cecil)	IV	II	II
Lloyd loam, gently sloping phase (Gaston)	II	II	I
Lloyd loam, level phase (Gaston)	II	II	I
Lloyd loam, moderately steep phase (Cecil)	II	II	II
Lloyd loam, sloping phase (Cecil)	II	II	II
Lloyd loam, strongly sloping phase (Cecil)	IV	II	II
Local alluvial land, ALL	IV	III	III
Louisa fine sandy loam, 25 to 45 percent slopes	IV	II	III
Louisa sandy loam, 25 to 45 percent slopes	IV	II	III
Louisburg and Louisa soils, 25 to 55 percent slopes	IV	II	II
Louisburg and Louisa soils, ALL OTHER	IV	II	III
Louisburg coarse sandy loam, ALL	IV	II	II
Louisburg loamy coarse sand, ALL	IV	II	IV
Louisburg loamy sand, 2 to 6 percent slopes	III	II	II
Louisburg loamy sand, 6 to 10 percent slopes	III	II	II
Louisburg loamy sand, 6 to 15 percent slopes	IV	II	II
Louisburg loamy sand, 10 to 15 percent slopes	IV	II	II
Louisburg loamy sand, 15 to 45 percent slopes	IV	II	III
Louisburg sandy loam, ALL	IV	II	II
Louisburg-Wedowee complex, 15 to 25 percent slopes	IV	II	II
Louisburg-Wedowee complex, ALL OTHER	III	II	II
Made land	IV	VI	IV
Madison clay loam, 2 to 6 percent slopes, eroded	III	II	II
Madison clay loam, 6 to 10 percent slopes, eroded	III	II	II
Madison clay loam, eroded, ALL OTHER	IV	II	II

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Map Unit Name	Agri	For	Hort
Madison complex, gullied	IV	II	IV
Madison fine sandy loam, 2 to 6 percent slopes	II	II	II
Madison fine sandy loam, 2 to 7 percent slopes	II	II	II
Madison fine sandy loam, 2 to 7 percent slopes, eroded	II	II	II
Madison fine sandy loam, 6 to 10 percent slopes	III	II	II
Madison fine sandy loam, 7 to 10 percent slopes	III	II	II
Madison fine sandy loam, 7 to 10 percent slopes, eroded	III	II	II
Madison fine sandy loam, 10 to 14 percent slopes	III	II	II
Madison fine sandy loam, 10 to 14 percent slopes, eroded	IV	II	II
Madison fine sandy loam, 10 to 15 percent slopes	III	II	II
Madison fine sandy loam, 14 to 25 percent slopes	IV	II	II
Madison fine sandy loam, 15 to 45 percent slopes	IV	II	II
Madison gravelly fine sandy loam, 2 to 6 percent slopes	II	II	II
Madison gravelly fine sandy loam, 2 to 6 percent slopes, eroded	II	II	II
Madison gravelly fine sandy loam, 6 to 10 percent slopes	III	II	II
Madison gravelly fine sandy loam, 6 to 10 percent slopes, eroded	III	II	II
Madison gravelly fine sandy loam, 7 to 10 percent slopes	III	II	II
Madison gravelly fine sandy loam, 10 to 14 percent slopes	III	II	II
Madison gravelly fine sandy loam, 10 to 15 percent slopes	III	II	II
Madison gravelly fine sandy loam, ALL OTHER	IV	II	II
Madison gravelly sandy clay loam, 2 to 8 percent slopes, moderately eroded	III	II	II
Madison gravelly sandy clay loam, 8 to 15 percent slopes, moderately eroded	IV	II	II
Madison gravelly sandy loam, 10 to 25 percent slopes, eroded	IV	II	II
Madison gravelly sandy loam, ALL OTHER	III	II	II
Madison sandy clay loam, 2 to 8 percent slopes, eroded	III	II	II
Madison sandy clay loam, 8 to 15 percent slopes, eroded	IV	II	II
Madison sandy clay loam, 15 to 25 percent slopes, eroded	IV	II	II
Madison sandy loam, 2 to 6 percent slopes	II	II	II
Madison sandy loam, 2 to 6 percent slopes, eroded	II	II	II
Madison sandy loam, 6 to 10 percent slopes	II	II	II
Madison sandy loam, 6 to 10 percent slopes, eroded	III	II	II
Madison sandy loam, 8 to 15 percent slopes	III	II	II
Madison sandy loam, 10 to 15 percent slopes	III	II	II
Madison sandy loam, ALL OTHER	IV	II	II
Madison-Bethlehem complex, 2 to 8 percent slopes, stony, moderately eroded	III	II	II
Madison-Bethlehem complex, 8 to 15 percent slopes, very stony, moderately eroded	IV	II	III
Madison-Bethlehem-Urban Land complex, 2 to 8 percent slopes	IV	II	IV
Madison-Udorthents complex, 2 to 15 percent slopes, gullied	IV	II	IV
Madison-Urban land complex, 2 to 10 percent slopes	IV	II	IV
Mantachie soils	III	III	II
Masada fine sandy loam, ALL	I	II	I
Masada gravelly sandy clay loam, eroded, ALL	II	II	I
Masada loam, 2 to 8 percent slopes	I	II	I
Masada loam, 8 to 15 percent slopes	II	II	I
Masada sandy clay loam, eroded ALL	II	II	I
Masada sandy loam, 2 to 8 percent slopes	I	II	I
Masada sandy loam, 8 to 15 percent slopes	II	II	I
Masada sandy loam, 15 to 25 percent slopes	IV	II	II
Masada-Urban land complex, 2 to 15 percent slopes	IV	II	IV
Mayodan fine sandy loam, 2 to 6 percent slopes	II	I	I
Mayodan fine sandy loam, 2 to 6 percent slopes, eroded	II	I	I
Mayodan fine sandy loam, 2 to 7 percent slopes	II	I	I

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Map Unit Name	Agri	For	Hort
Mayodan fine sandy loam, 2 to 8 percent slopes	II	I	I
Mayodan fine sandy loam, 6 to 10 percent slopes	III	I	I
Mayodan fine sandy loam, 7 to 10 percent slopes	III	I	I
Mayodan fine sandy loam, 7 to 10 percent slopes, eroded	III	I	I
Mayodan fine sandy loam, 8 to 15 percent slopes	III	I	I
Mayodan fine sandy loam, 10 to 14 percent slopes	III	I	I
Mayodan fine sandy loam, 10 to 14 percent slopes, eroded	III	I	II
Mayodan fine sandy loam, ALL OTHER	IV	I	II
Mayodan gravelly sandy loam, 2 to 6 percent slopes	II	I	I
Mayodan gravelly sandy loam, 2 to 6 percent slopes, eroded	II	I	I
Mayodan gravelly sandy loam, 2 to 8 percent slopes	II	I	I
Mayodan gravelly sandy loam, 6 to 10 percent slopes	III	I	I
Mayodan gravelly sandy loam, 6 to 10 percent slopes, eroded	IV	I	I
Mayodan gravelly sandy loam, 8 to 15 percent slopes	III	I	II
Mayodan gravelly sandy loam, 10 to 15 percent slopes	III	I	II
Mayodan gravelly sandy loam, 15 to 25 percent slopes	IV	I	II
Mayodan sandy clay loam, 2 to 8 percent slopes, eroded	II	I	II
Mayodan sandy clay loam, 8 to 15 percent slopes, eroded	III	I	II
Mayodan sandy clay loam, 15 to 25 percent slopes, eroded	IV	I	II
Mayodan sandy loam, 2 to 6 percent slopes	II	I	I
Mayodan sandy loam, 2 to 6 percent slopes, eroded	II	I	I
Mayodan sandy loam, 2 to 8 percent slopes	II	I	I
Mayodan sandy loam, 6 to 10 percent slopes	III	I	I
Mayodan sandy loam, 6 to 10 percent slopes, eroded	III	I	I
Mayodan sandy loam, 8 to 15 percent slopes	III	I	II
Mayodan sandy loam, 10 to 15 percent slopes	III	I	II
Mayodan sandy loam, 10 to 15 percent slopes, eroded	IV	I	II
Mayodan sandy loam, 15 to 25 percent slopes	IV	I	II
Mayodan sandy loam, 15 to 25 percent slopes, stony	IV	I	IV
Mayodan silt loam, 2 to 8 percent slopes	II	I	I
Mayodan silt loam, 8 to 15 percent slopes	III	I	II
Mayodan silt loam, 15 to 25 percent slopes	IV	I	II
Mayodan silt loam, 25 to 45 percent slopes	IV	I	III
Mayodan silt loam, thin, ALL	III	I	II
Mayodan silty clay loam, 2 to 8 percent slopes, eroded	III	I	II
Mayodan silty clay loam, 8 to 15 percent slopes, eroded	IV	I	II
Mayodan-Brickhaven complex, 15 to 30 percent slopes	IV	I	III
Mayodan-Exway complex, eroded, ALL	III	I	II
Mayodan-Pinkston complex, 25 to 45 percent slopes	IV	I	III
Mayodan-Urban land complex, ALL	IV	I	IV
McQueen loam, 1 to 6 percent slopes	II	II	II
Mecklenburg clay loam, 2 to 8 percent slopes, eroded	II	II	II
Mecklenburg clay loam, 2 to 8 percent slopes, moderately eroded	II	II	II
Mecklenburg clay loam, 6 to 15 percent slopes, severely eroded	IV	II	II
Mecklenburg clay loam, 8 to 15 percent slopes, eroded	III	II	II
Mecklenburg clay loam, 8 to 15 percent slopes, moderately eroded	III	II	II
Mecklenburg clay loam, severely eroded sloping phase	IV	II	II
Mecklenburg fine sandy loam, 2 to 6 percent slopes	II	II	I
Mecklenburg fine sandy loam, 2 to 8 percent slopes	II	II	II
Mecklenburg fine sandy loam, 8 to 15 percent slopes	III	II	II
Mecklenburg loam, 2 to 6 percent slopes	II	II	I
Mecklenburg loam, 2 to 6 percent slopes, eroded	II	II	II

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Map Unit Name	Agri	For	Hort
Mecklenburg loam, 2 to 7 percent slopes, eroded	II	II	II
Mecklenburg loam, 2 to 8 percent slopes	II	II	I
Mecklenburg loam, 6 to 10 percent slopes	II	II	II
Mecklenburg loam, 6 to 10 percent slopes, eroded	II	II	II
Mecklenburg loam, 7 to 14 percent slopes, eroded	III	II	II
Mecklenburg loam, 8 to 15 percent slopes	III	II	II
Mecklenburg loam, 10 to 15 percent slopes, eroded	III	II	II
Mecklenburg loam, ALL OTHER	IV	II	II
Mecklenburg loam, dark surface variant, 2 to 6 percent slopes	II	II	I
Mecklenburg loam, dark surface variant, 6 to 10 percent slopes	II	II	II
Mecklenburg loam, dark surface variant, 10 to 15 percent slopes	III	II	II
Mecklenburg loam, eroded gently sloping phase	II	II	II
Mecklenburg loam, eroded sloping phase	II	II	II
Mecklenburg loam, eroded strongly sloping phase	III	II	II
Mecklenburg sandy clay loam, eroded, ALL	III	II	II
Mecklenburg-Urban land complex, ALL	IV	II	IV
Miscellaneous water	IV	VI	IV
Misenheimer channery silt loam, 0 to 4 percent slopes	IV	V	III
Misenheimer-Callison complex, 0 to 3 percent slopes	IV	V	III
Misenheimer-Cid complex, 0 to 3 percent slopes	IV	V	III
Misenheimer-Kirksey complex, 0 to 5 percent slopes	IV	V	III
Mixed alluvial land, ALL	IV	III	III
Mocksville sandy loam, 2 to 8 percent slopes	II	II	II
Mocksville sandy loam, 8 to 15 percent slopes	III	II	II
Mocksville sandy loam, 15 to 45 percent slopes	IV	II	III
Moderately gullied land, ALL	IV	VI	IV
Monacan and Arents soils	I	III	IV
Monacan loam	I	III	III
Montonia very channery silt loam, 25 to 60 percent slopes, very stony	IV	V	IV
Mooshaunee-Hallison complex, 2 to 8 percent slopes	III	II	II
Mooshaunee-Hallison complex, 8 to 15 percent slopes	IV	II	III
Mooshaunee-Hallison complex, 15 to 25 percent slopes	IV	II	IV
Mooshaunee-Hallison complex, ALL OTHER	IV	II	IV
Nanford gravelly fine sandy loam, 8 to 15 percent slopes	III	II	II
Nanford silt loam, 2 to 6 percent slopes	II	II	I
Nanford silt loam, 2 to 8 percent slopes	II	II	I
Nanford silt loam, 8 to 15 percent slopes	III	II	II
Nanford silty clay loam, 2 to 6 percent slopes, moderately eroded	III	II	II
Nanford-Badin complex, 6 to 10 percent slopes	III	II	II
Nanford-Badin complex, 10 to 15 percent slopes	IV	II	II
Nanford-Emporia complex, 2 to 8 percent slopes	II	II	I
Nason gravelly loam, 2 to 6 percent slopes	III	II	I
Nason gravelly loam, 6 to 10 percent slopes	III	II	II
Nason gravelly loam, 10 to 25 percent slopes	IV	II	II
Nason gravelly loam, 25 to 50 percent slopes	IV	II	III
Nason gravelly silt loam, 2 to 8 percent slopes	II	II	I
Nason gravelly silt loam, 8 to 15 percent slopes	III	II	II
Nason loam, 2 to 6 percent slopes	II	II	I
Nason loam, 6 to 10 percent slopes	III	II	I
Nason silt loam, 2 to 6 percent slopes	II	II	I
Nason silt loam, 2 to 8 percent slopes	II	II	I
Nason silt loam, 6 to 12 percent slopes	III	II	I

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Map Unit Name	Agri	For	Hort
Nason silt loam, 8 to 15 percent slopes	III	II	I
Nason silt loam, 10 to 15 percent slopes	III	II	I
Nason silt loam, 15 to 25 percent slopes	IV	II	II
Nason stony silt loam, 10 to 15 percent slopes (Uwharrie)	IV	II	IV
Oakboro silt loam, ALL	III	III	III
Orange gravelly loam, 2 to 7 percent slopes	II	II	II
Orange loam, 0 to 2 percent slopes	II	II	II
Orange silt loam, 0 to 3 percent slopes	II	II	II
Orange silt loam, eroded gently sloping moderately well drained variant	III	II	II
Orange silt loam, eroded gently sloping phase	III	II	II
Orange silt loam, eroded sloping moderately well drained variant	III	II	II
Orange silt loam, gently sloping moderately well drained variant	III	II	II
Orange silt loam, gently sloping phase	II	II	II
Orange silt loam, nearly level phase	II	II	II
Orange silt loam, sloping moderately well drained variant	III	II	II
Pacolet clay loam, 2 to 6 percent slopes, eroded	II	II	II
Pacolet clay loam, 2 to 8 percent slopes, moderately eroded	II	II	II
Pacolet clay loam, 6 to 10 percent slopes, eroded	III	II	II
Pacolet clay loam, 6 to 10 percent slopes, severely eroded	III	II	II
Pacolet clay loam, 8 to 15 percent slopes, moderately eroded	III	II	II
Pacolet clay loam, 10 to 15 percent slopes, eroded	III	II	II
Pacolet clay loam, 15 to 45 percent slopes, eroded	IV	II	II
Pacolet complex, 10 to 25 percent slopes, severely eroded	IV	II	III
Pacolet fine sandy loam, 2 to 6 percent slopes	II	II	I
Pacolet fine sandy loam, 6 to 10 percent slopes	III	II	I
Pacolet fine sandy loam, 8 to 15 percent slopes	III	II	II
Pacolet fine sandy loam, 10 to 15 percent slopes	III	II	II
Pacolet fine sandy loam, ALL OTHER	IV	II	II
Pacolet gravelly fine sandy loam, 2 to 6 percent slopes	II	II	I
Pacolet gravelly fine sandy loam, 6 to 10 percent slopes	III	II	II
Pacolet gravelly fine sandy loam, 8 to 15 percent slopes	III	II	II
Pacolet gravelly fine sandy loam, 15 to 25 percent slopes	IV	II	II
Pacolet gravelly sandy clay loam, 15 to 30 percent slopes, eroded	IV	II	II
Pacolet gravelly sandy loam, 2 to 8 percent slopes	II	II	I
Pacolet gravelly sandy loam, 8 to 15 percent slopes	III	II	II
Pacolet gravelly sandy loam, ALL OTHER	IV	II	II
Pacolet loam, 10 to 15 percent slopes	III	II	II
Pacolet loam, 15 to 25 percent slopes	IV	II	II
Pacolet sandy clay loam, 2 to 6 percent slopes, eroded	II	II	II
Pacolet sandy clay loam, 2 to 6 percent slopes, moderately eroded	II	II	II
Pacolet sandy clay loam, 2 to 8 percent slopes, eroded	II	II	II
Pacolet sandy clay loam, 6 to 10 percent slopes, moderately eroded	III	II	II
Pacolet sandy clay loam, 8 to 15 percent slopes, eroded	III	II	II
Pacolet sandy clay loam, 8 to 15 percent slopes, moderately eroded	III	II	II
Pacolet sandy clay loam, 10 to 15 percent slopes, moderately eroded	III	II	II
Pacolet sandy clay loam, ALL OTHER	IV	II	II
Pacolet sandy loam, 2 to 6 percent slopes	II	II	I
Pacolet sandy loam, 2 to 8 percent slopes	II	II	I
Pacolet sandy loam, 6 to 10 percent slopes	III	II	II
Pacolet sandy loam, 8 to 15 percent slopes	III	II	II
Pacolet sandy loam, 10 to 15 percent slopes	III	II	II
Pacolet sandy loam, ALL OTHER	IV	II	II

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Map Unit Name	Agri	For	Hort
Pacolet soils, 10 to 25 percent slopes	IV	II	III
Pacolet-Bethlehem complex, 2 to 8 percent slopes, eroded	III	II	II
Pacolet-Bethlehem complex, 2 to 8 percent slopes, moderately eroded	III	II	II
Pacolet-Bethlehem complex, ALL OTHER	IV	II	II
Pacolet-Bethlehem complex, 15 to 25 percent slopes, stony	IV	II	III
Pacolet-Bethlehem-Urban Land complex, ALL	IV	II	IV
Pacolet-Madison-Urban land complex, ALL	IV	II	IV
Pacolet-Saw complex, 2 to 8 percent slopes, eroded	III	II	II
Pacolet-Saw complex, 2 to 8 percent slopes, moderately eroded	III	II	II
Pacolet-Saw complex, ALL OTHER	IV	II	II
Pacolet-Udorthents complex, gullied, ALL	IV	II	IV
Pacolet-Urban land complex, ALL	IV	II	IV
Pacolet-Wilkes complex, 8 to 15 percent slopes	III	II	II
Pacolet-Wilkes complex, 15 to 25 percent slopes	IV	II	II
Picture loam, 0 to 3 percent slopes	IV	II	III
Pinkston, ALL	IV	II	III
Pinoka, ALL	IV	II	III
Pinoka-Carbonton complex, 2 to 8 percent slopes	IV	II	III
Pits, ALL	IV	VI	IV
Poindexter and Zion sandy loams, 2 to 8 percent slopes	III	II	II
Poindexter and Zion sandy loams, 8 to 15 percent slopes	IV	II	II
Poindexter and Zion sandy loams, ALL OTHER	IV	II	III
Poindexter fine sandy loam, 25 to 60 percent slopes	IV	II	III
Poindexter loam, 2 to 8 percent slopes	III	II	II
Poindexter loam, 8 to 15 percent slopes	IV	II	II
Poindexter loam, 15 to 45 percent slopes	IV	II	III
Poindexter-Mocksville complex, 2 to 8 percent slopes	IV	II	II
Poindexter-Mocksville complex, 8 to 15 percent slopes	IV	II	II
Poindexter-Mocksville complex, ALL OTHER	IV	II	III
Poindexter-Zion-Urban land complex, 2 to 15 percent slopes	IV	II	IV
Polkton-White Store complex, 2 to 8 percent slopes, severely eroded	III	II	III
Polkton-White Store complex, ALL OTHER	IV	II	III
Quarry, ALL	IV	VI	IV
Rhodhiss, ALL	IV	II	II
Rhodhiss-Bannertown complex, 25 to 50 percent slopes	IV	II	III
Rion fine sandy loam, 2 to 8 percent slopes	III	II	II
Rion fine sandy loam, 8 to 15 percent slopes	IV	II	II
Rion fine sandy loam, 15 to 25 percent slopes	IV	II	II
Rion fine sandy loam, 25 to 60 percent slopes	IV	II	III
Rion loamy sand, 8 to 15 percent slopes	IV	II	II
Rion loamy sand, 15 to 25 percent slopes	IV	II	III
Rion sandy loam, 2 to 8 percent slopes	III	II	II
Rion sandy loam, 8 to 15 percent slopes	III	II	II
Rion sandy loam, 15 to 25 percent slopes	IV	II	II
Rion sandy loam, 15 to 30 percent slopes	IV	II	II
Rion sandy loam, ALL OTHER	IV	II	III
Rion, Pacolet, and Wateree soils, 25 to 60 percent slopes	IV	II	IV
Rion-Ashlar complex, 15 to 35 percent slopes, stony	IV	II	III
Rion-Ashlar complex, 25 to 60 percent slopes, rocky	IV	II	IV
Rion-Ashlar-Rock outcrop complex, 45 to 70 percent slopes	IV	II	IV
Rion-Cliffside complex, 25 to 60 percent slopes, very stony	IV	II	IV
Rion-Hibriten complex, 25 to 45 percent slopes, very stony	IV	II	IV



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Map Unit Name	Agri	For	Hort
Rion-Urban land complex, 2 to 10 percent slopes	IV	II	IV
Rion-Wateree-Wedowee complex, 8 to 15 percent slopes	IV	II	III
Rion-Wedowee complex, ALL	III	II	II
Rion-Wedowee-Ashlar complex, ALL	IV	II	III
Riverview and Buncombe soils, 0 to 3 percent slopes, frequently flooded	II	III	III
Riverview and Toccoa soils, 0 to 4 percent slopes, occasionally flooded	II	III	III
Riverview, frequently flooded, ALL	II	III	III
Riverview, occasionally flooded, ALL	I	III	III
Roanoke, ALL	II	III	III
Roanoke-Wahee complex, 0 to 3 percent slopes, occasionally flooded	II	III	III
Rock outcrop	IV	VI	IV
Rock outcrop-Ashlar complex, 2 to 15 percent slopes	IV	VI	IV
Rock outcrop-Wake complex, ALL	IV	VI	IV
Sauratown channery fine sandy loam, 25 to 60 percent slopes, very stony	IV	IV	IV
Saw-Pacolet complex, ALL	IV	II	II
Saw-Wake Complex, very rocky, ALL	IV	II	IV
Secrest-Cid complex, 0 to 3 percent slopes	III	II	II
Sedgefield fine sandy loam, 1 to 4 percent slopes	II	II	II
Sedgefield fine sandy loam, 1 to 6 percent slopes	III	II	II
Sedgefield sandy loam, 1 to 6 percent slopes	III	II	II
Sedgefield sandy loam, 2 to 8 percent slopes	III	II	II
Severely gullied land, ALL	IV	VI	IV
Shellbluff loam, 0 to 2 percent slopes, occasionally flooded	II	III	III
Shellbluff silt loam, 0 to 2 percent slopes, frequently flooded	IV	III	III
Skyuka clay loam, 2 to 8 percent slopes, eroded	II	I	II
Skyuka loam, 2 to 8 percent slopes	I	I	II
Spray loam, 0 to 5 percent slopes	IV	II	III
Spray-Urban land complex, 0 to 5 percent slopes	IV	II	IV
Starr loam, ALL	II	I	III
State, ALL	I	I	I
Stoneville loam, 2 to 8 percent slopes	II	II	I
Stoneville loam, 8 to 15 percent slopes	III	II	I
Stoneville loam, 15 to 25 percent slopes	IV	II	II
Stoneville-Urban land complex, 2 to 10 percent slopes	IV	II	IV
Stony land	IV	VI	IV
Swamp	IV	III	IV
Tallapoosa fine sandy loam, ALL	IV	II	III
Tarrus gravelly silt loam, 2 to 8 percent slopes	II	II	I
Tarrus-Georgeville complex, 8 to 15 percent slopes	II	II	I
Tatum and Nason channery silt loams, 15 to 25 percent slopes	IV	II	II
Tatum channery silt loam, ALL	III	II	I
Tatum channery silty clay loam, ALL	III	II	II
Tatum gravelly loam, 2 to 8 percent slopes	II	II	I
Tatum gravelly loam, 8 to 15 percent slopes	III	II	I
Tatum gravelly loam, ALL OTHER	IV	II	II
Tatum gravelly silt loam, 2 to 8 percent slopes	II	II	I
Tatum gravelly silt loam, 8 to 15 percent slopes	III	II	I
Tatum gravelly silt loam, ALL OTHER	IV	II	II
Tatum gravelly silty clay loam, eroded, ALL	III	II	II
Tatum loam, 2 to 6 percent slopes	II	II	I
Tatum loam, 10 to 15 percent slopes	III	II	II
Tatum loam, ALL OTHER	IV	II	II

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Map Unit Name	Agri	For	Hort
Tatum silt loam, 2 to 8 percent slopes	II	II	I
Tatum silt loam, 8 to 15 percent slopes	III	II	I
Tatum silt loam, ALL OTHER	IV	II	II
Tatum silty clay loam, eroded, ALL	III	II	II
Tatum-Badin complex, 2 to 8 percent slopes	III	II	I
Tatum-Badin complex, 2 to 8 percent slopes, eroded	III	II	II
Tatum-Badin complex, 8 to 15 percent slopes	III	II	II
Tatum-Montonia complex, 15 to 30 percent slopes	IV	II	II
Tatum-Montonia complex, ALL OTHER	III	II	II
Tatum-Urban land complex, 2 to 8 percent slopes	IV	II	IV
Tetotum fine sandy loam, 1 to 4 percent slopes	I	I	I
Tetotum silt loam, 0 to 3 percent slopes	I	I	I
Tirzah silt loam, eroded gently sloping phase (Tatum)	III	II	I
Tirzah silt loam, eroded sloping phase (Tatum)	II	II	I
Tirzah silt loam, eroded strongly sloping phase (Tatum)	III	II	II
Tirzah silt loam, gently sloping phase (Stoneville)	II	II	II
Tirzah silt loam, sloping phase (Stoneville)	III	II	II
Tirzah silt loam, strongly sloping phase (Stoneville)	III	II	II
Tirzah silty clay loam, severely eroded gently sloping phase (Tatum)	III	II	II
Tirzah silty clay loam, severely eroded sloping phase (Tatum)	III	II	II
Tirzah silty clay loam, severely eroded strongly sloping phase (Tatum)	IV	II	II
Toast sandy loam, 2 to 8 percent slopes	II	I	I
Toast sandy loam, 8 to 15 percent slopes	III	I	II
Toccoa, ALL	I	III	III
Turbeville fine sandy loam, 0 to 3 percent slopes	I	II	I
Udorthents, ALL	IV	VI	IV
Udorthents-Pits complex, mounded, 0 to 2 percent slopes, occasionally flooded	IV	VI	IV
Udorthents-Urban land complex, ALL	IV	VI	IV
Urban land, ALL	IV	VI	IV
Urban land-Arents complex, occasionally flooded	IV	III	IV
Urban land-Iredell-Creedmoor complex, 2 to 10 percent slopes	IV	II	IV
Urban land-Masada complex, 2 to 15 percent slopes	IV	II	IV
Uwharrie clay loam, 2 to 8 percent slopes, eroded	III	II	III
Uwharrie clay loam, 8 to 15 percent slopes, eroded	IV	II	III
Uwharrie loam, 15 to 25 percent slopes	IV	II	III
Uwharrie loam, very stony, ALL	IV	II	III
Uwharrie silt loam, 2 to 8 percent slopes	II	II	I
Uwharrie silty clay loam, 2 to 8 percent slopes, eroded	III	II	II
Uwharrie silty clay loam, 2 to 8 percent slopes, moderately eroded	III	II	II
Uwharrie silty clay loam, 8 to 15 percent slopes, eroded	IV	II	II
Uwharrie stony loam, ALL	IV	II	III
Uwharrie stony loam, very bouldery, ALL	IV	II	IV
Uwharrie-Badin complex, ALL	IV	II	III
Uwharrie-Tatum complex, 8 to 15 percent slopes	III	II	III
Uwharrie-Tatum complex, 8 to 15 percent slopes, moderately eroded	IV	II	III
Uwharrie-Urban Land, 2 to 8 percent slopes	IV	II	IV
Vance clay loam, severely eroded sloping phase	IV	II	II
Vance coarse sandy loam, 2 to 8 percent slopes	II	II	II
Vance coarse sandy loam, eroded gently sloping phase	III	II	II
Vance coarse sandy loam, eroded sloping phase	III	II	II
Vance coarse sandy loam, gently sloping phase	II	II	II

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Map Unit Name	Agri	For	Hort
Vance sandy clay loam, ALL	III	II	II
Vance sandy loam, 2 to 6 percent slopes	II	II	II
Vance sandy loam, 2 to 6 percent slopes, eroded	III	II	II
Vance sandy loam, 2 to 8 percent slopes	II	II	II
Vance sandy loam, 6 to 10 percent slopes	III	II	II
Vance sandy loam, 6 to 10 percent slopes, eroded	III	II	II
Vance sandy loam, 8 to 15 percent slopes	III	II	II
Vance sandy loam, 10 to 15 percent slopes	III	II	II
Vance sandy loam, eroded gently sloping phase	III	II	II
Vance sandy loam, eroded moderately sloping phase	III	II	II
Vance sandy loam, eroded strongly sloping phase	IV	II	II
Vance sandy loam, gently sloping phase	II	II	II
Vance-Urban land complex, 2 to 10 percent slopes	IV	II	IV
Wadesboro clay loam, 2 to 8 percent slopes, moderately eroded	II	I	II
Wadesboro clay loam, 8 to 15 percent slopes, moderately eroded	III	I	II
Wadesboro fine sandy loam, 2 to 7 percent slopes (Mayodan)	II	I	II
Wadesboro fine sandy loam, 2 to 7 percent slopes, eroded (Mayodan)	II	I	II
Wadesboro fine sandy loam, 7 to 10 percent slopes (Mayodan)	III	I	II
Wadesboro fine sandy loam, 7 to 10 percent slopes, eroded (Mayodan)	III	I	II
Wadesboro fine sandy loam, 10 to 14 percent slopes (Mayodan)	III	I	II
Wadesboro fine sandy loam, 10 to 14 percent slopes, eroded (Mayodan)	IV	I	II
Wadesboro fine sandy loam, 14 to 30 percent slopes (Mayodan)	IV	I	II
Wahee, ALL	II	III	I
Wake soils, ALL	IV	II	III
Wake-Saw-Wedowee complex, 2 to 8 percent slopes, rocky	IV	II	III
Wake-Wateree complex, 15 to 30 percent slopes, very rocky	IV	II	III
Wake-Wateree-Wedowee complex, 8 to 15 percent slopes, rocky	IV	II	III
Warne and Roanoke fine sandy loams (Dogue)	IV	III	II
Wateree fine sandy loam, ALL	IV	II	II
Wateree-Rion complex, 40 to 95 percent slopes	IV	II	III
Wateree-Rion-Wedowee complex, 15 to 30 percent slopes	IV	II	III
Wedowee coarse sandy loam, 2 to 6 percent slopes	II	I	I
Wedowee coarse sandy loam, 6 to 10 percent slopes	III	I	II
Wedowee loam, 2 to 8 percent slopes	II	I	I
Wedowee loam, 8 to 15 percent slopes	III	I	II
Wedowee loam, 15 to 25 percent slopes	IV	I	II
Wedowee sandy clay loam, 8 to 15 percent slopes, eroded	IV	I	II
Wedowee sandy loam, 2 to 10 percent slopes, extremely bouldery	IV	I	IV
Wedowee sandy loam, 2 to 15 percent slopes, bouldery	IV	I	III
Wedowee sandy loam, 2 to 6 percent slopes	II	I	I
Wedowee sandy loam, 2 to 6 percent slopes, eroded	II	I	II
Wedowee sandy loam, 2 to 8 percent slopes	II	I	I
Wedowee sandy loam, 6 to 10 percent slopes	III	I	II
Wedowee sandy loam, 6 to 10 percent slopes, eroded	III	I	II
Wedowee sandy loam, 6 to 15 percent slopes	III	I	II
Wedowee sandy loam, 8 to 15 percent slopes	III	I	II
Wedowee sandy loam, 10 to 15 percent slopes	III	I	II
Wedowee sandy loam, 10 to 15 percent slopes, eroded	III	I	II
Wedowee sandy loam, 10 to 25 percent slopes	III	I	II
Wedowee sandy loam, 15 to 25 percent slopes	IV	I	II
Wedowee sandy loam, 15 to 35 percent slopes, bouldery	IV	I	III
Wedowee sandy loam, 15 to 40 percent slopes	IV	I	II

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Map Unit Name	Agri	For	Hort
Wedowee-Louisburg complex, 2 to 6 percent slopes	II	I	II
Wedowee-Louisburg complex, ALL OTHER	III	I	III
Wedowee-Urban land-Udorthents complex, 2 to 10 percent slopes	IV	I	IV
Wehadkee and Bibb soils	IV	III	III
Wehadkee, ALL	IV	III	III
White Store clay loam, ALL	IV	II	III
White Store fine sandy loam, moderately eroded, ALL	IV	II	III
White Store loam, 8 to 15 percent slopes	IV	II	III
White Store loam, ALL OTHER	III	II	III
White Store sandy loam, 2 to 6 percent slopes	III	II	III
White Store sandy loam, ALL OTHER	IV	II	III
White Store silt loam, 8 to 15 percent slopes	IV	II	III
White Store silt loam, ALL OTHER	III	II	III
White Store-Polkton complex, ALL	IV	II	III
White Store-Urban land complex, ALL	IV	II	IV
Wickham fine sandy loam, 0 to 3 percent slopes, rarely flooded	I	I	I
Wickham fine sandy loam, 2 to 6 percent slopes	I	I	I
Wickham fine sandy loam, 2 to 6 percent slopes, eroded	II	I	I
Wickham fine sandy loam, 2 to 7 percent slopes, eroded	II	I	I
Wickham fine sandy loam, 2 to 8 percent slopes	II	I	I
Wickham fine sandy loam, 6 to 10 percent slopes	II	I	I
Wickham fine sandy loam, 6 to 10 percent slopes, eroded	III	I	II
Wickham fine sandy loam, 7 to 14 percent slopes, eroded	III	I	II
Wickham fine sandy loam, 10 to 15 percent slopes	III	I	II
Wickham sandy loam, ALL	I	I	I
Wilkes, ALL	IV	II	III
Wilkes-Poindexter-Wynott complex, ALL	IV	II	III
Wilkes-Urban land complex, 8 to 15 percent slopes	IV	II	IV
Winnsboro fine sandy loam, 2 to 8 percent slopes	II	II	I
Winnsboro loam, 2 to 8 percent slopes	III	II	I
Winnsboro loam, 8 to 15 percent slopes	IV	II	II
Winnsboro-Wilkes complex, 2 to 8 percent slopes	III	II	II
Winnsboro-Wilkes complex, ALL OTHER	IV	II	III
Woolwine-Fairview complex, 2 to 8 percent slopes, moderately eroded	III	II	II
Woolwine-Fairview complex, moderately eroded, ALL OTHER	IV	II	II
Woolwine-Fairview-Urban land complex, ALL	IV	II	IV
Worsham, ALL	IV	III	III
Wynott cobbly loam, 2 to 10 percent slopes, extremely stony	IV	II	IV
Wynott loam, 2 to 8 percent slopes	III	II	II
Wynott-Enon complex, 2 to 8 percent slopes	II	II	II
Wynott-Enon complex, 2 to 8 percent slopes, moderately eroded	II	II	II
Wynott-Enon complex, 8 to 15 percent slopes	II	II	II
Wynott-Enon complex, 8 to 15 percent slopes, moderately eroded	III	II	II
Wynott-Enon complex, 15 to 25 percent slopes	IV	II	II
Wynott-Enon complex, extremely bouldery, ALL	IV	II	IV
Wynott-Wilkes-Poindexter complex, 2 to 8 percent slopes	IV	II	II
Wynott-Winnsboro complex, 2 to 8 percent slopes	II	II	II
Wynott-Winnsboro complex, 8 to 15 percent slopes	II	II	II
Wynott-Winnsboro complex, 15 to 25 percent slopes	IV	II	II
Zion gravelly loam, 2 to 8 percent slopes	III	II	II
Zion gravelly loam, 8 to 15 percent slopes	IV	II	II
Zion-Enon complex, 2 to 8 percent slopes	III	II	III

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Map Unit Name	Agri	For	Hort
Zion-Enon complex, 8 to 15 percent slopes	IV	II	II
Zion-Mocksville complex, 25 to 45 percent slopes	IV	II	III
Zion-Wilkes complex, 8 to 15 percent slopes	IV	II	II
Zion-Winnsboro-Mocksville complex, ALL	IV	II	II

MLRA137 – Sandhills

Map Unit Name	Agri	For	Hort
Ailey gravelly loamy sand, 8 to 15 percent slopes	III	V	III
Ailey gravelly loamy sand, 15 to 25 percent slopes	IV	V	IV
Ailey loamy sand, ALL	III	V	III
Ailey sand, moderately wet, 0 to 6 percent slopes	II	V	II
Ailey-Urban land complex, ALL	IV	V	IV
Bibb loam, 0 to 2 percent slopes, frequently flooded	IV	III	IV
Blaney loamy sand, 2 to 8 percent slopes	II	II	II
Blaney loamy sand, 8 to 15 percent slopes	III	II	III
Blaney-Urban land complex, ALL	IV	II	IV
Bragg sandy loam, 1 to 4 percent slopes	IV	V	IV
Candor and Wakulla soils, 8 to 15 percent slopes	IV	V	IV
Candor sand, ALL	IV	V	IV
Candor-Urban land complex, 2 to 12 percent slopes	IV	V	IV
Dothan gravelly loamy sand, 0 to 6 percent slopes	I	II	I
Dothan loamy sand, ALL	I	II	I
Emporia loamy sand, ALL	II	II	II
Faceville sandy clay loam, 2 to 6 percent slopes, eroded	II	II	II
Fuquay, ALL	II	II	II
Fuquay-Urban land complex, 0 to 6 percent slopes	IV	II	IV
Gilead loamy sand, ALL	II	II	II
Johns fine sandy loam, 0 to 2 percent slopes	I	I	I
Johnston, ALL	IV	III	IV
Kalmia sandy loam, wet substratum, 0 to 2 percent slopes	I	II	I
Kenansville loamy sand, 0 to 4 percent slopes	II	I	II
Lakeland, ALL	IV	V	IV
Lakeland-Urban land complex, 1 to 8 percent slopes	IV	V	IV
Lillington gravelly sandy loam, 2 to 8 percent slopes	III	II	III
Lillington gravelly sandy loam, 8 to 15 percent slopes	IV	II	IV
Lillington gravelly sandy loam, 15 to 25 percent slopes	IV	II	IV
Pactolus sand, 0 to 3 percent slopes	IV	II	IV
Paxville fine sandy loam, 0 to 2 percent slopes	I	III	I
Pelion loamy sand, 0 to 2 percent slopes	II	II	II
Pelion loamy sand, 1 to 4 percent slopes	IV	II	IV
Pelion loamy sand, 2 to 8 percent slopes	III	II	III
Pelion loamy sand, 8 to 15 percent slopes	IV	II	IV
Pelion-Urban land complex, ALL	IV	II	IV
Pelion-Urban land complex, 8 to 15 percent slopes	IV	II	IV
Pocalla loamy sand, 0 to 6 percent slopes	II	II	II
Rains fine sandy loam, 0 to 2 percent slopes	III	I	III
Tetotum silt loam, 0 to 3 percent slopes, rarely flooded	I	I	I
Udorthents, ALL	IV	VI	IV
Urban land, ALL	IV	VI	IV
Vaocluse gravelly loamy sand, 2 to 8 percent slopes	III	II	III
Vaocluse gravelly loamy sand, 8 to 15 percent slopes	IV	II	IV
Vaocluse gravelly loamy sand, 15 to 25 percent slopes	IV	II	IV
Vaocluse gravelly sandy loam, ALL	III	II	III
Vaocluse gravelly sandy loam, 8 to 15 percent slopes	III	II	III
Vaocluse gravelly sandy loam, 15 to 25 percent slopes	III	II	III
Vaocluse loamy sand, 2 to 8 percent slopes	II	II	II
Vaocluse loamy sand, 8 to 15 percent slopes	III	II	III
Vaocluse loamy sand, 15 to 25 percent slopes	IV	II	IV
Vaocluse very gravelly loamy sand, ALL	IV	II	IV

MLRA137 – Sandhills

Map Unit Name	Agri	For	Hort
Vaucluse-Gilead loamy sands, 15 to 25 percent slopes	IV	II	IV
Vaucluse-Urban land complex, ALL	IV	II	IV
Wakulla and Candor soils, 0 to 8 percent slopes	IV	V	IV
Wakulla sand, ALL	IV	V	IV
Wakulla-Candor-Urban land complex, 0 to 10 percent slopes	IV	V	IV
Wehadkee fine sandy loam	IV	III	IV
Wehadkee loam, 0 to 2 percent slopes, frequently flooded	IV	III	IV

MLRA153A – Lower Coastal Plain

Map Unit Name	Agri	For	Hort
Alaga, ALL	IV	II	IV
Alpin, ALL	IV	II	IV
Altavista, ALL	I	I	I
Altavista-Urban land complex, 0 to 2 percent slopes	IV	I	IV
Arapahoe fine sandy loam	II	I	II
Augusta, ALL	II	I	II
Autryville fine sand, 1 to 4 percent slopes	IV	II	IV
Autryville, ALL OTHER	III	II	III
Aycock, ALL ERODED	II	I	II
Aycock, ALL OTHER	I	I	I
Ballahack loam, 0 to 2 percent slopes, occasionally flooded	I	I	I
Bayboro, ALL	I	I	I
Baymeade and Marvyn soils, 6 to 12 percent slopes	IV	V	IV
Baymeade fine sand, ALL	IV	V	IV
Baymeade-Urban land complex, 0 to 6 percent slopes	IV	V	IV
Bethera, ALL	II	I	II
Bibb and Johnston loams, frequently flooded	IV	III	IV
Bibb, ALL	IV	III	IV
Bladen, ALL	III	I	III
Blanton, ALL	IV	V	IV
Bohicket, ALL	IV	VI	IV
Bonneau loamy fine sand, 0 to 6 percent slopes	II	II	II
Bonneau loamy sand, 0 to 4 percent slopes	II	II	II
Bonneau loamy sand, 0 to 6 percent slopes	II	II	II
Bonneau loamy sand, 6 to 10 percent slopes	III	II	III
Bonneau loamy sand, 6 to 12 percent slopes	III	II	III
Borrow pits	IV	VI	IV
Bragg, ALL	IV	VI	IV
Brookman loam, frequently flooded	IV	III	IV
Butters loamy fine sand, 0 to 3 percent slopes	III	II	III
Byars loam	II	III	II
Cainhoy, ALL	IV	V	IV
Cape Fear loam, ALL	I	I	I
Caroline fine sandy loam, ALL	II	II	II
Carteret, ALL	IV	VI	IV
Centenary fine sand	IV	II	IV
Chastain and Chenneby soils, frequently flooded	IV	III	IV
Chastain silt loam, frequently flooded	IV	III	IV
Chewacla and Chastain soils, frequently flooded	IV	III	IV
Chewacla loam, frequently flooded	IV	III	IV
Chipley sand	IV	II	IV
Chowan silt loam	IV	III	IV
Conetoe, ALL	III	II	III
Congaree silt loam, 0 to 4 percent slopes, occasionally flooded	I	III	I
Corolla fine sand	IV	VI	IV
Coxville, ALL	II	I	II
Craven clay loam, 4 to 12 percent slopes, eroded	IV	I	IV
Craven fine sandy loam, 0 to 1 percent slopes	II	I	II
Craven fine sandy loam, 1 to 4 percent slopes	II	I	II
Craven fine sandy loam, 1 to 6 percent slopes, eroded	III	I	III
Craven fine sandy loam, 4 to 8 percent slopes	III	I	III
Craven fine sandy loam, 4 to 8 percent slopes, eroded	IV	I	IV



MLRA153A – Lower Coastal Plain

Map Unit Name	Agri	For	Hort
Craven fine sandy loam, 6 to 10 percent slopes	IV	I	IV
Craven fine sandy loam, 8 to 12 percent slopes, eroded	IV	I	IV
Craven loam, 1 to 4 percent slopes	II	I	II
Craven loam, 1 to 4 percent slopes, eroded	III	I	III
Craven silt loam, 1 to 4 percent slopes	II	I	II
Craven very fine sandy loam, 1 to 4 percent slopes	II	I	II
Craven very fine sandy loam, 4 to 8 percent slopes	IV	I	IV
Craven-Urban land complex, 0 to 2 percent slopes	IV	I	IV
Croatan muck, frequently flooded	III	V	III
Croatan muck, ALL OTHER	II	V	II
Dogue sandy loam, 0 to 2 percent slopes	II	I	II
Dogue sandy loam, 2 to 6 percent slopes	III	I	III
Dogue sandy loam, 6 to 12 percent slopes	IV	I	IV
Dorovan, ALL	IV	V	IV
Duckston fine sand	IV	VI	IV
Echaw, ALL	IV	V	IV
Exum fine sandy loam, 0 to 1 percent slopes	I	II	I
Exum fine sandy loam, 1 to 6 percent slopes	II	II	II
Exum loam, 0 to 2 percent slopes	I	II	I
Exum silt loam, 0 to 2 percent slopes	I	II	I
Exum very fine sandy loam, 0 to 2 percent slopes	I	II	I
Exum very fine sandy loam, 2 to 5 percent slopes	II	II	II
Exum-Urban land complex, 0 to 2 percent slopes	IV	II	IV
Foreston loamy fine sand, ALL	II	II	II
Goldsboro sandy loam, 1 to 6 percent slopes	I	I	I
Goldsboro, ALL OTHER	I	I	I
Goldsboro-Urban land complex, ALL	IV	I	IV
Grantham, ALL	I	I	I
Grifton, ALL	II	I	II
Hobonny muck	IV	VI	IV
Icaria fine sandy loam, ALL	II	I	II
Invershiel-Pender complex, 0 to 2 percent slopes	I	II	I
Johns, ALL	II	I	II
Johnston and Pamlico soils, 0 to 1 percent slopes, frequently flooded	IV	III	IV
Johnston soils	IV	III	IV
Kalmia, ALL	II	II	II
Kenansville, ALL	III	II	III
Kinston loam, frequently flooded	IV	III	IV
Kureb, ALL	IV	V	IV
Lafitte muck	IV	VI	IV
Lakeland sand, 0 to 6 percent slopes	IV	V	IV
Leaf, ALL	III	I	III
Lenoir, ALL	III	I	III
Leon, ALL	IV	V	III
Leon-Urban land complex	IV	V	IV
Liddell silt loam	II	I	II
Lucy loamy sand, 0 to 6 percent slopes	II	II	II
Lumbee, ALL	II	I	II
Lynchburg, ALL	II	I	II
Lynchburg-Urban land complex	IV	I	IV
Lynn Haven sand	IV	II	IV
Mandarin, ALL	IV	V	IV

MLRA153A – Lower Coastal Plain

Map Unit Name	Agri	For	Hort
Mandarin-Urban land complex	IV	V	IV
Marvyn and Craven soils, 6 to 12 percent slopes	IV	I	IV
Marvyn, ALL	IV	I	IV
Masada sandy loam, 0 to 4 percent slopes	I	II	I
Masontown, ALL	IV	III	IV
Masontown mucky fine sandy loam and Muckalee sandy loam, frequently flooded	IV	III	IV
Meggett fine sandy loam, frequently flooded	IV	III	IV
Meggett, ALL OTHER	III	I	III
Mine pits	IV	VI	IV
Muckalee loam, ALL	IV	III	IV
Murville, ALL	IV	V	IV
Nahunta, ALL	I	I	I
Nakina fine sandy loam	I	I	I
Nawney loam, 0 to 2 percent slopes, frequently flooded	IV	III	IV
Newhan, ALL	IV	VI	IV
Newhan-Corolla complex, 0 to 30 percent slopes	IV	VI	IV
Newhan-Corolla-Urban land complex, 0 to 30 percent slopes	IV	VI	IV
Noboco fine sandy loam, 0 to 2 percent slopes	I	I	I
Noboco fine sandy loam, 2 to 6 percent slopes	II	I	II
Norfolk, ALL	II	II	II
Norfolk-Urban land complex, 0 to 6 percent slopes	IV	II	IV
Ocilla loamy fine sand, 0 to 4 percent slopes	IV	II	IV
Olustee loamy sand, sandy subsoil variant (Murville)	IV	II	IV
Onslow, ALL	II	II	II
Osier loamy sand, loamy substratum	IV	I	IV
Pactolus, ALL	IV	II	IV
Pamlico muck, frequently flooded	IV	V	IV
Pamlico muck, ALL OTHER	III	V	III
Pantego, ALL	I	I	I
Paxville sandy loam	II	III	II
Pender fine sandy loam	II	I	II
Pender-Urban land complex	IV	I	IV
Pits, ALL	IV	VI	IV
Pocalla loamy sand, 0 to 6 percent slopes	III	II	III
Rains, ALL	I	I	I
Rains-Urban land complex	IV	I	IV
Rimini sand 1 to 6 percent slopes	IV	V	IV
Roanoke, frequently flooded	IV	III	IV
Roanoke, ALL OTHER	II	III	II
Rumford, ALL	III	II	III
Rutlege mucky loamy fine sand	IV	V	IV
Seabrook, ALL	IV	II	IV
Seabrook-Urban land complex	IV	II	IV
Stallings, ALL	II	II	II
State fine sandy loam, 0 to 2 percent slopes	I	I	I
State fine sandy loam, 2 to 6 percent slopes	II	I	II
State loamy sand, 0 to 2 percent slopes	I	I	I
Stockade fine sandy loam	I	I	I
Suffolk loamy sand, 10 to 30 percent slopes	I	II	I
Swamp	IV	III	IV
Tarboro, ALL	IV	II	IV
Tarboro-Urban land complex, 0 to 6 percent slopes	IV	II	IV

MLRA153A – Lower Coastal Plain

Map Unit Name	Agri	For	Hort
Tomahawk fine sand, 0 to 3 percent slopes	IV	II	IV
Tomahawk loamy fine sand	IV	II	IV
Tomahawk loamy fine sand	IV	II	IV
Tomahawk loamy sand, 0 to 3 percent slopes	III	II	III
Tomotley, ALL	I	I	I
Torhunta, ALL	II	I	II
Torhunta-Urban land complex	IV	I	IV
Tuckerman fine sandy loam	II	II	II
Udorthents, ALL	IV	VI	IV
Udults, steep	IV	VI	IV
Umbric Ochraqualfs	IV	VI	IV
Urban land	IV	VI	IV
Valhalla fine sand, 0 to 6 percent slopes	III	II	III
Wagram loamy fine sand, 0 to 6 percent slopes	II	II	II
Wagram loamy sand, 6 to 10 percent slopes	III	II	III
Wagram loamy sand, 0 to 6 percent slopes	II	II	II
Wagram loamy sand, 10 to 15 percent slopes	IV	II	IV
Wahee, ALL	II	I	II
Wando fine sand, 0 to 6 percent slopes	IV	II	IV
Wando-Urban land complex, 0 to 6 percent slopes	IV	II	IV
Wakulla sand, ALL	IV	V	IV
Wasda muck	I	I	I
Wehadkee silt loam	IV	III	IV
Wickham fine sandy loam, 0 to 2 percent slopes	I	I	I
Wickham fine sandy loam, 2 to 6 percent slopes	II	I	II
Wickham fine sandy loam, 6 to 10 percent slopes	II	I	II
Wickham loamy sand, 1 to 6 percent slopes	II	I	II
Wickham sandy loam, 0 to 2 percent slopes	I	I	I
Wickham sandy loam, 0 to 6 percent slopes	II	I	II
Wickham sandy loam, 0 to 6 percent slopes, rarely flooded	II	I	II
Wickham sandy loam, 2 to 6 percent slopes	II	I	II
Wickham-Urban land complex, 2 to 10 percent slopes	IV	I	IV
Wilbanks, ALL	IV	III	IV
Winton, ALL	IV	I	IV
Woodington, ALL	II	II	II
Wrightsboro fine sandy loam 0 to 2 percent slopes	I	I	I
Yaupon silty clay loam, 0 to 3 percent slopes	III	VI	III

MLRA153B – Tidewater Area

Map Unit Name	Agri	For	Hort
Acredale silt loam, 0 to 2 percent slopes, rarely flooded	I	I	I
Altavista ,ALL	I	I	I
Altavista-Urban land complex, 0 to 2 percent slopes	IV	I	IV
Arapahoe, ALL	I	I	I
Argent, ALL	II	I	II
Augusta ,ALL	II	I	II
Augusta-Urban land complex	IV	I	IV
Backbay mucky peat, 0 to 1 percent slopes, very frequently flooded	IV	VI	IV
Ballahack fine sandy loam, occasionally flooded	I	I	I
Barclay very fine sandy loam	I	I	I
Bayboro, ALL	I	I	I
Baymeade ,ALL	IV	V	IV
Baymeade-Urban land complex 1 to 6 percent slopes	IV	V	IV
Beaches, ALL	IV	VI	IV
Beaches-Newhan association	IV	VI	IV
Beaches-Newhan complex, ALL	IV	VI	IV
Belhaven muck, 0 to 2 percent slopes, frequently flooded	IV	V	IV
Belhaven muck, ALL OTHER	II	V	II
Bertie ,ALL	II	I	II
Bibb soils	IV	III	IV
Bladen ,ALL	III	I	III
Bohicket silty clay loam	IV	VI	IV
Bojac, ALL	III	II	III
Bolling loamy fine sand, 0 to 3 percent slopes, rarely flooded	II	I	II
Borrow pits	IV	VI	IV
Brookman loam, 0 to 2 percent slopes, rarely flooded	II	I	II
Brookman mucky loam, frequently flooded	IV	III	IV
Brookman mucky silt loam	I	I	I
Cape Fear, ALL	I	I	I
Carteret, ALL	IV	VI	IV
Chapanoke silt loam, ALL	I	I	I
Charleston loamy fine sand	III	II	III
Chowan, ALL	IV	III	IV
Conaby muck, ALL	II	I	II
Conetoe, ALL	III	II	III
Corolla, ALL	IV	VI	IV
Corolla-Duckston complex, ALL	IV	VI	IV
Corolla-Urban land complex	IV	VI	IV
Currituck, ALL	IV	VI	IV
Dare muck	IV	V	IV
Deloss fine sandy loam	I	III	I
Deloss mucky loam, frequently flooded	IV	III	IV
Delway muck, 0 to 1 percent slopes, very frequently flooded	IV	VI	IV
Dogue, ALL	II	I	II
Dorovan, ALL	IV	V	IV
Dragston, ALL	II	I	II
Duckston, ALL	IV	VI	IV
Duckston-Corolla complex, 0 to 6 percent slopes, rarely flooded	IV	VI	IV
Dune land, ALL	IV	VI	IV
Dune land-Newhan complex, 2 to 40 percent slopes	IV	VI	IV
Elkton, ALL	II	I	II
Engelhard loamy very fine sand, 0 to 2 percent slopes, frequently flooded	IV	III	IV

MLRA153B – Tidewater Area

Map Unit Name	Agri	For	Hort
Engelhard loamy very fine sand, 0 to 2 percent slopes, rarely flooded	II	III	II
Fallsington fine sandy loam	IV	I	IV
Fork fine sandy loam, 0 to 2 percent slopes, rarely flooded	I	I	I
Fork loamy fine sand	II	I	II
Fortescue, ALL	I	III	I
Fripp fine sand, 2 to 30 percent slopes	IV	VI	IV
Galestown loamy fine sand	IV	II	IV
Gullrock muck, 0 to 2 percent slopes, rarely flooded	II	I	II
Hobonny muck, 0 to 1 percent slopes, frequently flooded	IV	VI	IV
Hobucken, ALL	IV	VI	IV
Hyde, ALL	I	I	I
Hydeland silt loam, 0 to 2 percent slopes, rarely flooded	I	I	I
Icaria loamy fine sand, 0 to 2 percent slopes, rarely flooded	II	I	II
Johns loamy sand, 0 to 2 percent slopes	II	I	II
Klej loamy fine sand	IV	II	IV
Kureb sand 1 to 8 percent slopes	IV	V	IV
Kureb-Urban land complex 1 to 8 percent slopes	IV	V	IV
Lafitte muck, ALL	IV	VI	IV
Lakeland sand 1 to 8 percent slopes	IV	V	IV
Leaf silt loam	III	I	III
Lenoir, ALL	III	I	III
Leon fine sand, 0 to 2 percent slopes, rarely flooded	IV	V	III
Leon sand	IV	V	III
Longshoal mucky peat, 0 to 1 percent slopes, very frequently flooded	IV	VI	IV
Lynn Haven, ALL	IV	II	IV
Made land and dumps	IV	VI	IV
Masontown mucky fine sandy loam	IV	III	IV
Matapeake fine and very fine sandy loams	I	II	I
Mattapex, ALL	II	I	II
Munden, ALL	II	I	II
Newhan, ALL	IV	VI	IV
Newhan-Beaches complex,	IV	VI	IV
Newhan-Corolla complex, ALL	IV	VI	IV
Newhan-Corolla-Urban land complex, 0 to 30 percent slopes	IV	VI	IV
Newhan-Urban land complex, ALL	IV	VI	IV
Newholland mucky loamy sand, 0 to 2 percent slopes, frequently flooded	IV	V	IV
Newholland mucky loamy sand, 0 to 2 percent slopes, rarely flooded	I	V	I
Nimmo, ALL	II	I	II
Nixonton very fine sandy loam	I	I	I
Osier fine sand, ALL	IV	I	IV
Othello, ALL	I	II	I
Ousley fine sand, ALL	IV	V	IV
Pactolus fine sand	IV	II	IV
Pasquotank, ALL	I	I	I
Paxville mucky fine sandy loam	II	III	II
Perquimans, ALL	I	I	I
Pettigrew muck, ALL	II	I	II
Pits, mine	IV	VI	IV
Pocomoke, ALL	II	I	II
Ponzer, ALL	II	V	II
Portsmouth, ALL	I	I	I
Psamments, 0 to 6 percent slopes	IV	VI	IV

MLRA153B – Tidewater Area

Map Unit Name	Agri	For	Hort
Pungo muck, ALL	III	V	III
Roanoke, ALL	II	I	II
Roper muck, ALL	I	I	I
Sassafras loamy fine sand	II	I	II
Scuppernong muck, ALL	II	V	II
Seabrook, ALL	IV	II	IV
Seabrook-Urban land complex	IV	II	IV
Seagate fine sand	IV	II	IV
Seagate-Urban land complex	IV	II	IV
State fine sandy loam, ALL	I	I	I
State loamy fine sand, ALL	II	I	II
State sandy loam, ALL	I	I	I
State-Urban land complex, 0 to 2 percent slopes	IV	I	IV
Stockade loamy fine sand	I	III	I
Stockade mucky loam, ALL	IV	III	IV
Stono, ALL	I	I	I
Tarboro sand, ALL	IV	II	IV
Tidal marsh	IV	VI	IV
Tomotley fine sandy loam, ALL	I	I	I
Udorthents, ALL	IV	VI	IV
Urban land ALL	IV	VI	IV
Wahee, ALL	II	I	II
Wakulla sand, ALL	IV	V	IV
Wando, ALL	IV	II	IV
Wasda muck ALL	I	I	I
Weeksville loam, 0 to 2 percent slopes, frequently flooded	IV	I	IV
Weeksville, ALL OTHER	I	I	I
Wickham loamy sand, 0 to 4 percent slopes	II	I	II
Woodstown fine sandy loam	I	I	I
Wysocking very fine sandy loam, 0 to 3 percent slopes, rarely flooded	I	III	I
Yaupon fine sandy loam, 0 to 3 percent slopes	III	VI	III
Yeopim loam, 0 to 2 percent slopes	I	I	I
Yeopim loam, 2 to 6 percent slopes	II	I	II
Yeopim silt loam, ALL	I	I	I
Yonges, ALL	I	I	I

# Standard on Mass Appraisal of Real Property

Approved July 2017

## **International Association of Assessing Officers**

This standard replaces the January 2012 *Standard on Mass Appraisal of Real Property* and is a complete revision. The 2012 *Standard on Mass Appraisal of Real Property* was a partial revision that replaced the 2002 standard. The 2002 standard combined and replaced the 1983 *Standard on the Application of the Three Approaches to Value in Mass Appraisal*, the 1984 *Standard on Mass Appraisal*, and the 1988 *Standard on Urban Land Valuation*. IAAO assessment standards represent a consensus in the assessing profession and have been adopted by the Executive Board of IAAO. The objective of IAAO standards is to provide a systematic means by which concerned assessing officers can improve and standardize the operation of their offices. IAAO standards are advisory in nature and the use of, or compliance with, such standards is purely voluntary. If any portion of these standards is found to be in conflict with the *Uniform Standards of Professional Appraisal Practice (USPAP)* or state laws, *USPAP* and state laws shall govern.

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phone: 816.701.8100  
fax: 816.701.8149  
toll-free: 800.616.4226  
web site: [www.iaao.org](http://www.iaao.org)

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# Standard on Mass Appraisal of Real Property

## 1. Scope

This standard defines requirements for the mass appraisal of real property. The primary focus is on mass appraisal for ad valorem tax purposes. However, the principles defined here should also be relevant to CAMAs (CAMAs) (or automated valuation models) used for other purposes, such as mortgage portfolio management. The standard primarily addresses the needs of the assessor, assessment oversight agencies, and taxpayers.

This standard addresses mass appraisal procedures by which the fee simple interest in property can be appraised at market value, including mass appraisal application of the three traditional approaches to value (cost, sales comparison, and income). Single-property appraisals, partial interest appraisals, and appraisals made on an other-than-market-value basis are outside the scope of this standard. Nor does this standard provide guidance on determining assessed values that differ from market value because of statutory constraints such as use value, classification, or assessment increase limitations.

Mass appraisal requires complete and accurate data, effective valuation models, and proper management of resources. Section 2 introduces mass appraisal. Section 3 focuses on the collection and maintenance of property data. Section 4 summarizes the primary considerations in valuation methods, including the role of the three approaches to value in the mass appraisal of various types of property. Section 5 addresses model testing and quality assurance. Section 6 discusses certain managerial considerations: staff levels, data processing support, contracting for reappraisals, benefit-cost issues, and space requirements. Section 7 discusses reference materials.

## 2. Introduction

Market value for assessment purposes is generally determined through the application of mass appraisal techniques. Mass appraisal is the process of valuing a group of properties as of a given date and using common data, standardized methods, and statistical testing. To determine a parcel's value, assessing officers must rely upon valuation equations, tables, and schedules developed through mathematical analysis of market data. Values for individual parcels should not be based solely on the sale price of a property; rather, valuation schedules and models should be consistently applied to property data that are correct, complete, and up-to-date.

Properly administered, the development, construction, and use of a CAMA system results in a valuation system characterized by accuracy, uniformity, equity, reliability, and low per-parcel costs. Except for unique properties, individual analyses and appraisals of properties are not practical for ad valorem tax purposes.

## 3. Collecting and Maintaining Property Data

The accuracy of values depends first and foremost on the completeness and accuracy of property characteristics and market data. Assessors will want to ensure that their CAMA systems provide for the collection and maintenance of relevant land, improvement, and location features. These data must also be accurately and consistently collected. The CAMA system must also provide for the storage and processing of relevant sales, cost, and income and expense data.

### 3.1 Overview

Uniform and accurate valuation of property requires correct, complete, and up-to-date property data. Assessing offices must establish effective procedures for collecting and maintaining property data (i.e., property ownership, location, size, use, physical characteristics, sales price, rents, costs, and operating expenses). Such data are also used for performance audits, defense of appeals, public relations, and management information. The following sections recommend procedures for collecting these data.

### 3.2 Geographic Data

Assessors should maintain accurate, up-to-date cadastral maps (also known as assessment maps, tax maps, parcel boundary maps, and property ownership maps) covering the entire jurisdiction with a unique identification number for each parcel. Such cadastral maps allow assessing officers to identify and locate all parcels, both in the field and in the office. Maps become especially valuable in the mass appraisal process when a geographic information system (GIS) is used. A GIS permits graphic displays of sale prices, assessed values, inspection dates, work assignments, land uses, and much more. In addition, a GIS permits high-level analysis of nearby sales, neighborhoods, and market trends; when linked to a CAMA system, the results can be very useful. For additional information on cadastral maps, parcel identification systems, and GIS, see the *Standard on Manual Cadastral Maps and Parcel Identifiers* (IAAO 2016b), *Standard on Digital Cadastral Maps and Parcel Identifiers* (IAAO 2015), *Procedures and Standards for a Multipurpose Cadastre* (National Research Council 1983), and *GIS Guidelines for Assessors* (URISA and IAAO 1999).

### 3.3 Property Characteristics Data

The assessor should collect and maintain property characteristics data sufficient for classification, valuation, and other purposes. Accurate valuation of real property by any method requires descriptions of land and building characteristics.

#### 3.3.1 Selection of Property Characteristics Data

Property characteristics to be collected and maintained should be based on the following:

- Factors that influence the market in the locale in question
- Requirements of the valuation methods that will be employed
- Requirements of classification and property tax policy
- Requirements of other governmental and private users
- Marginal benefits and costs of collecting and maintaining each property characteristic

Determining what data on property characteristics to collect and maintain for a CAMA system is a crucial decision with long-term consequences. A pilot program is one means of evaluating the benefits and costs of collecting and maintaining a particular set of property characteristics (see Gloudemans and Almy 2011, 46–49). In addition, much can be learned from studying the data used in successful CAMAs in other jurisdictions. Data collection and maintenance are usually the costliest aspects of a CAMA. Collecting data that are of little

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importance in the assessment process should be avoided unless another governmental or private need is clearly demonstrated.

The quantity and quality of existing data should be reviewed. If the data are sparse and unreliable, a major recanvass will be necessary. Data that have been confirmed to be reliable should be used whenever possible. New valuation programs or enhancements requiring major recanvass activity or conversions to new coding formats should be viewed with suspicion when the existing database already contains most major property characteristics and is of generally good quality.

The following property characteristics are usually important in predicting residential property values:

### *Improvement Data*

- Living area
- Construction quality or key components thereof (foundation, exterior wall type, and the like)
- Effective age or condition
- Building design or style
- Secondary areas including basements, garages, covered porches, and balconies
- Building features such as bathrooms and central air-conditioning
- Significant detached structures including guest houses, boat houses, and barns

### *Land Data*

- Lot size
- Available utilities (sewer, water, electricity)

### *Location Data*

- Market area
- Submarket area or neighborhood
- Site amenities, especially view and golf course or water frontage
- External nuisances, (e.g., heavy traffic, airport noise, or proximity to commercial uses).

For a discussion of property characteristics important for various commercial property types, see *Fundamentals of Mass Appraisal* (Gloude-mans and Almy 2011, chapter 9).

## 3.3.2 Data Collection

Collecting property characteristics data is a critical and expensive phase of reappraisal. A successful data collection program requires clear and standard coding and careful monitoring through a quality control program. The development and use of a data collection manual is essential to achieving accurate and consistent data collection. The data collection program should result in complete and accurate data.

### 3.3.2.1 Initial Data Collection

A physical inspection is necessary to obtain initial property characteristics data. This inspection can be performed either by appraisers or by specially trained data collectors. In a joint approach, experienced appraisers make key subjective decisions, such as the assignment of construction quality class or grade, and data collectors gather all other details. Depending on the data required, an interior inspection might be necessary. At a minimum, a comprehensive exterior inspection should be conducted. Measurement is an important part of data collection.

### 3.3.2.2 Data Collection Format

Data should be collected in a prescribed format designed to facilitate both the collecting of data in the field and the entry of the data into the computer system.

A logical arrangement of the collection format makes data collection easier. For example, all items requiring an interior inspection should be grouped together. The coding of data should be as objective as possible, with measurements, counts, and check-off items used in preference to items requiring subjective evaluations (such as “number of plumbing fixtures” versus “adequacy of plumbing: poor, average, good”). With respect to check-off items, the available codes should be exhaustive and mutually exclusive, so that exactly one code logically pertains to each observable variation of a building feature (such as structure or roof type). The data collection format should promote consistency among data collectors, be clear and easy to use, and be adaptable to virtually all types of construction. Specialized data collection formats may be necessary to collect information on agricultural property, timberland, commercial and industrial parcels, and other property types.

### 3.3.2.3 Data Collection Manuals

A clear, thorough, and precise data collection manual is essential and should be developed, updated, and maintained. The written manual should explain how to collect and record each data item. Pictures, examples, and illustrations are particularly helpful. The manual should be simple yet complete. Data collection staff should be trained in the use of the manual and related updates to maintain consistency. The manual should include guidelines for personal conduct during field inspections, and if interior data are required, the manual should outline procedures to be followed when the property owner has denied access or when entry might be risky.

### 3.3.2.4 Data Accuracy Standards

The following standards of accuracy for data collection are recommended.

- Continuous or area measurement data, such as living area and exterior wall height, should be accurate within 1 foot (rounded to the nearest foot) of the true dimensions or within 5 percent of the area. (One foot equates to approximately 30 centimeters in the metric system.) If areas, dimensions, or volumes must be estimated, the property record should note the instances in which quantities are estimated.
- For each objective, categorical, or binary data field to be collected or verified, at least 95 percent of the coded entries should be accurate. Objective, categorical, or binary data characteristics include such attributes as exterior wall material, number of full bathrooms, and waterfront view. As an example, if a data collector captures 10 objective, categorical, or binary data items for 100 properties, at least 950 of the 1,000 total entries should be correct.
- For each subjective categorical data field collected or verified, data should be coded correctly at least 90 percent of the time. Subjective categorical data characteristics include data items such as quality grade, physical condition, and architectural style.
- Regardless of specific accuracy requirements, consistent measurement is important. Standards including national, local and regional practices exist to support consistent measurement. The standard of measurement should be documented as part of the process. (American Institute of Architects 1995; Marshall & Swift Valuation Service 2017; International Property Measurement Standards Coalition n.d.; Building Owners and Managers Association International 2017)

### 3.3.2.5 Data Collection Quality Control

A quality control program is necessary to ensure that data accuracy standards are achieved and maintained. Independent quality control inspections should occur immediately after the data collection phase begins and may be performed by jurisdiction staff, project consultants,

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auditing firms, or oversight agencies. The inspections should review random samples of finished work for completeness and accuracy and keep tabulations of items coded correctly or incorrectly, so that statistical tests can be used to determine whether accuracy standards have been achieved. Stratification by geographic area, property type, or individual data collector can help detect patterns of data error. Data that fail to meet quality control standards should be recollected.

The accuracy of subjective data should be judged primarily by conformity with written specifications and examples in the data collection manual. The data reviewer should substantiate subjective data corrections with pictures or field notes.

### 3.3.3 Data Entry

To avoid duplication of effort, the data collection form should be able to serve as the data entry form. Data entry should be routinely audited to ensure accuracy.

Data entry accuracy should be as close to 100 percent as possible and should be supported by a full set of range and consistency edits. These are error or warning messages generated in response to invalid or unusual data items. Examples of data errors include missing data codes and invalid characters. Warning messages should also be generated when data values exceed normal ranges (e.g., more than eight rooms in a 1,200-square-foot residence). The warnings should appear as the data are entered. When feasible, action on the warnings should take place during data entry. Field data entry devices provide the ability to edit data as it is entered and also eliminate data transcription errors.

### 3.3.4 Maintaining Property Characteristics Data

Property characteristics data should be continually updated in response to changes brought about by new construction, new parcels, remodeling, demolition, and destruction. There are several ways of updating data. The most efficient method involves building permits. Ideally, strictly enforced local ordinances require building permits for all significant construction activity, and the assessor's office receives copies of the permits. This method allows the assessor to identify properties whose characteristics are likely to change, to inspect such parcels on a timely basis (preferably as close to the assessment date as possible), and to update the files accordingly.

Another method is aerial photography, which also can be helpful in identifying new or previously unrecorded construction and land use. Some jurisdictions use self-reporting, in which property owners review the assessor's records and submit additions or corrections. Information derived from multiple listing sources and other third-party vendors can also be used to validate property records.

Periodic field inspections can help ensure that property characteristics data are complete and accurate. Assuming that most new construction activity is identified through building permits or other ongoing procedures, a physical review including an on-site verification of property characteristics should be conducted at least every 4 to 6 years. Reinspections should include partial remeasurement of the two most complex sides of improvements and a walk around the improvement to identify additions and deletions. Photographs taken at previous physical inspections can help identify changes.

### 3.3.5 Alternative to Periodic On-site Inspections

Provided that initial physical inspections are timely completed and that an effective system of building permits or other methods of routinely identifying physical changes is in place, jurisdictions may employ a set of digital imaging technology tools to supplement field reinspections

with a computer-assisted office review. These imaging tools should include the following:

- Current high-resolution street-view images (at a sub-inch pixel resolution that enables quality grade and physical condition to be verified)
- Orthophoto images (minimum 6-inch pixel resolution in urban/suburban and 12-inch resolution in rural areas, updated every 2 years in rapid-growth areas or 6–10 years in slow-growth areas)
- Low-level oblique images capable of being used for measurement verification (four cardinal directions, minimum 6-inch pixel resolution in urban/suburban and 12-inch pixel resolution in rural areas, updated every 2 years in rapid-growth areas or 6–10 years in slow-growth areas).

These tool sets may incorporate change detection techniques that compare building dimension data (footprints) in the CAMA system to georeferenced imagery or remote sensing data from sources (such as LiDAR [light detection and ranging]) and identify potential CAMA sketch discrepancies for further investigation.

Assessment jurisdictions and oversight agencies must ensure that images meet expected quality standards. Standards required for vendor-supplied images should be spelled out in the Request for Proposal (RFP) and contract for services, and images should be checked for compliance with specified requirements. For general guidance on preparing RFPs and contracting for vendor-supplied services, see the *Standard on Contracting for Assessment Services* [IAAO 2008].

In addition, appraisers should visit assigned areas on an annual basis to observe changes in neighborhood condition, trends, and property characteristics. An on-site physical review is recommended when significant construction changes are detected, a property is sold, or an area is affected by catastrophic damage. Building permits should be regularly monitored and properties that have significant change should be inspected when work is complete.

## 3.4 Sale Data

States and provinces should seek mandatory disclosure laws to ensure comprehensiveness of sale data files. Regardless of the availability of such statutes, a file of sale data must be maintained, and sales must be properly reviewed and validated. Sale data are required in all applications of the sales comparison approach, in the development of land values and market-based depreciation schedules in the cost approach, and in the derivation of capitalization rates or discount rates in the income approach. Refer to *Mass Appraisal of Real Property* (Gloude-mans 1999, chapter 2) or *Fundamentals of Mass Appraisal* (Gloude-mans and Almy 2011 chapter 2) for guidelines on the acquisition and processing of sale data.

## 3.5 Income and Expense Data

Income and expense data must be collected for income-producing property and reviewed by qualified appraisers to ensure their accuracy and usability for valuation analysis (see Section 4.4.). Refer to *Mass Appraisal of Real Property* (Gloude-mans 1999, chapter 2) or *Fundamentals of Mass Appraisal* (Gloude-mans and Almy 2011, chapter 2) for guidelines addressing the collection and processing of income and expense data.

## 3.6 Cost and Depreciation Data

Current cost and depreciation data adjusted to the local market are required for the cost approach (see Section 4.2). Cost and depreciation manuals and schedules can be purchased from commercial services or created in-house. See *Mass Appraisal of Real Property* (Gloude-mans 1999, chapter 4) or *Fundamentals of Mass Appraisal* (Gloude-mans and Almy 2011, 180–193) for guidelines on creating manuals and schedules.

## 4. Valuation

Mass appraisal analysis begins with assigning properties to use classes or strata based on highest and best use, which normally equates to current use. Some statutes require that property be valued for ad valorem tax purposes at current use regardless of highest and best use. Zoning and other land use controls normally dictate highest and best use of vacant land. In the absence of such restrictions, the assessor must determine the highest and best use of the land by analyzing the four components—legally permissible, physically possible, appropriately supported, and financially feasible—thereby resulting in the highest value. Special attention may be required for properties in transition, interim or nonconforming uses, multiple uses, and excess land.

### 4.1 Valuation Models

Any appraisal, whether single-property appraisal or mass appraisal, uses a model, that is, a representation in words or an equation of the relationship between value and variables representing factors of supply and demand. Mass appraisal models attempt to represent the market for a specific type of property in a specified area. Mass appraisers must first specify the model, that is, identify the supply and demand factors and property features that influence value, for example, square feet of living area. Then they must calibrate the model, that is, determine the adjustments or coefficients that best represent the value contribution of the variables chosen, for example, the dollar amount the market places on each square foot of living area. Careful and extensive market analysis is required for both specification and calibration of a model that estimates values accurately. Mass appraisal models apply to all three approaches to value: the cost approach, the sales comparison approach, and the income approach.

Valuation models are developed for defined property groups. For residential properties, geographic stratification is appropriate when the value of property attributes varies significantly among areas and each area is large enough to provide adequate sales. It is particularly effective when housing types and styles are relatively uniform within areas. Separate models are developed for each market area (also known as economic or model areas). Subareas or neighborhoods can serve as variables in the models and can also be used in land value tables and selection of comparable sales. (See *Mass Appraisal of Real Property* [Gloude-mans 1999, 118–120] or *Fundamentals of Mass Appraisal* [Gloude-mans and Almy 2011, 139–143] for guidelines on stratification.) Smaller jurisdictions may find it sufficient to develop a single residential model.

Commercial and income-producing properties should be stratified by property type. In general, separate models should be developed for apartment, warehouse/industrial, office, and retail properties. Large jurisdictions may be able to stratify apartment properties further by type or area or to develop multiple models for other income properties with adequate data.

### 4.2 The Cost Approach

The cost approach is applicable to virtually all improved parcels and, if used properly, can produce accurate valuations. The cost approach is more reliable for newer structures of standard materials, design, and workmanship. It produces an estimate of the value of the fee simple interest in a property.

Reliable cost data are imperative in any successful application of the cost approach. The data must be complete, typical, and current. Current construction costs should be based on the cost of replacing a structure with one of equal utility, using current materials, design, and building standards. In addition to specific property types, cost models should

include the cost of individual construction components and building items in order to adjust for features that differ from base specifications. These costs should be incorporated into a construction cost manual and related computer software. The software can perform the valuation function, and the manual, in addition to providing documentation, can be used when nonautomated calculations are required.

Construction cost schedules can be developed in-house, based on a systematic study of local construction costs, obtained from firms specializing in such information, or custom-generated by a contractor. Cost schedules should be verified for accuracy by applying them to recently constructed improvements of known cost. Construction costs also should be updated before each assessment cycle.

The most difficult aspects of the cost approach are estimates of land value and accrued depreciation. These estimates must be based on non-cost data (primarily sales) and can involve considerable subjectivity. Land values used in the cost approach must be current and consistent. Often, they must be extracted from sales of improved property because sales of vacant land are scarce. Section 4.5 provides standards for land valuation in mass appraisal.

Depreciation schedules can be extracted from sales data in several ways. See *Mass Appraisal of Real Property* (Gloude-mans 1999, chapter 4) or *Fundamentals of Mass Appraisal* (Gloude-mans and Almy 2011, 189–192).

### 4.3 The Sales Comparison Approach

The sales comparison approach estimates the value of a subject property by statistically analyzing the sale prices of similar properties. This approach is usually the preferred approach for estimating values for residential and other property types with adequate sales.

Applications of the sales comparison approach include direct market models and comparable sales algorithms (see *Mass Appraisal of Real Property* [Gloude-mans 1999, chapters 3 and 4], *Fundamentals of Mass Appraisal* [Gloude-mans and Almy 2011, chapters 4 and 6], and the *Standard on Automated Valuation Models (AVMs)* [IAAO 2003]). Comparable sales algorithms are most akin to single-property appraisal applications of the sales comparison approach. They have the advantages of being familiar and easily explained and can compensate for less well-specified or calibrated models, because the models are used only to make adjustments to the selected comparables. They can be problematic if the selected comparables are not well validated or representative of market value. Because they predict market value directly, direct market models depend more heavily on careful model specification and calibration. Their advantages include efficiency and consistency, because the same model is directly applied against all properties in the model area.

Users of comparable sales algorithms should be aware that sales ratio statistics will be biased if sales used in the ratio study are used as comparables for themselves in model development. This problem can be avoided by (1) not using sales as comparables for themselves in modeling or (2) using holdout or later sales in ratio studies.

### 4.4 The Income Approach

In general, for income-producing properties, the income approach is the preferred valuation approach when reliable income and expense data are available, along with well-supported income multipliers, overall rates, and required rates of return on investment. Successful application of the income approach requires the collection, maintenance, and careful analysis of income and expense data.

Mass appraisal applications of the income approach begin with collecting and processing income and expense data. (These data should be expressed on an appropriate per-unit basis, such as per square foot or per apartment unit.) Appraisers should then compute normal or typical gross incomes, vacancy rates, net incomes, and expense ratios for various homogeneous strata of properties. These figures can be used to judge the reasonableness of reported data for individual parcels and to estimate income and expense figures for parcels with unreported data. Actual or

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reported figures can be used as long as they reflect typical figures (or typical figures can be used for all properties).

Alternatively, models for estimating gross or net income and expense ratios can be developed by using actual income and expense data from a sample of properties and calibrated by using multiple regression analysis. For an introduction to income modeling, see *Mass Appraisal of Real Property* (Gloude-mans 1999, chapter 3) or *Fundamentals of Mass Appraisal* (Gloude-mans and Almy 2011, chapter 9). The developed income figures can be capitalized into estimates of value in a number of ways. The most direct method involves the application of gross income multipliers, which express the ratio of market value to gross income. At a more refined level, net income multipliers or their reciprocals, overall capitalization rates, can be developed and applied. Provided there are adequate sales, these multipliers and rates should be extracted from a comparison of actual or estimated incomes with sale prices (older income and sales data should be adjusted to the valuation date as appropriate). Income multipliers and overall rates developed in this manner tend to provide reliable, consistent, and readily supported valuations when good sales and income data are available. When adequate sales are not available, relevant publications and local market participants can be consulted.

### 4.5 Land Valuation

State or local laws may require the value of an improved parcel to be separated into land and improvement components. When the sales comparison or income approach is used, an independent estimate of land value can be made and subtracted from the total property value to obtain a residual improvement value. Some computerized valuation techniques provide a separation of total value into land and building components.

Land values should be reviewed annually. At least once every 4 to 6 years the properties should be physically inspected and revalued. The sales comparison approach is the primary approach to land valuation and is always preferred when sufficient sales are available. In the absence of adequate sales, other techniques that can be used in land appraisal include allocation, abstraction, anticipated use, capitalization of ground rents, and land residual capitalization. (See *Mass Appraisal of Real Property* [Gloude-mans 1999, chapter 3] or *Fundamentals of Mass Appraisal* [Gloude-mans and Almy 2011, 178–180].)

### 4.6 Considerations by Property Type

The appropriateness of each valuation approach varies with the type of property under consideration. Table 1 ranks the relative usefulness of the three approaches in the mass appraisal of major types of properties. The table assumes that there are no major statutory barriers to using all three approaches or to obtaining cost, sales, and income data. Although relying only on the single best approach for a given type of property can have advantages in terms of efficiency and consistency, the use of two or more approaches provides helpful cross-checks and flexibility and can thus produce greater accuracy, particularly for less typical properties.

**Table 1.** Rank of typical usefulness of the three approaches to value in the mass appraisal of major types of property

Type of Property	Cost Approach	Sales Comparison Approach	Income Approach
Single-family residential	2	1	3
Multifamily residential	3	1,2	1,2
Commercial	3	2	1
Industrial	1,2	3	1,2
Nonagricultural land	–	1	2
Agricultural <sup>a</sup>	–	2	1
Special-purpose <sup>b</sup>	1	2,3	2,3

<sup>a</sup> Includes farm, ranch, and forest properties.

<sup>b</sup> Includes institutional, governmental, and recreation properties.

#### 4.6.1 Single-Family Residential Property

The sales comparison approach is the best approach for single-family residential property, including condominiums. Automated versions of this approach are highly efficient and generally accurate for the majority of these properties. The cost approach is a good supplemental approach and should serve as the primary approach when the sales data available are inadequate. The income approach is usually inappropriate for mass appraisal of single-family residential properties, because most of these properties are not rented.

#### 4.6.2 Manufactured Housing

Manufactured or *mobile* homes can be valued in a number of ways depending on the local market and ownership status. Often mobile homes are purchased separately and situated on a rented space in a mobile home park. In this case the best strategy is to model the mobile homes separately from the land. At other times mobile homes are situated on individual lots and bought and sold similar to stick-built homes. Particularly in rural areas they may be intermixed with stick-built homes. In these cases, they can be modeled in a manner similar to that for other residential properties and included in the same models, as long as the model includes variables to distinguish them and recognize any relevant differences from other homes (e.g., mobile homes may appreciate at a rate different from that for stick-built homes).

#### 4.6.3 Multifamily Residential Property

The sales comparison and income approaches are preferred in valuing multifamily residential property when sufficient sales and income data are available. Multiple regression analysis (MRA) and related techniques have been successfully used in valuing this property type. Where adequate sales are available, direct sales models can be used. MRA also can be used to calibrate different portions of the income approach, including the estimation of market rents and development of income multipliers or capitalization rates. As with other residential property, the cost approach is useful in providing supplemental valuations and can serve as the primary approach when good sales and income data are not available.

#### 4.6.4 Commercial and Industrial Property

The income approach is the most appropriate method in valuing commercial and industrial property if sufficient income data are available. Direct sales comparison models can be equally effective in large jurisdictions with sufficient sales. When a sufficient supply of sales data and income data is not available, the cost approach should be

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applied. However, values generated should be checked against available sales data. Cost factors, land values, and depreciation schedules must be kept current through periodic review.

### 4.6.5 Nonagricultural Land

The sales comparison approach is preferred for valuing nonagricultural land. Application of the sales comparison approach to vacant land involves the collection of sales data, the posting of sales data on maps, the calculation of standard unit values (such as value per square foot, per front foot, or per parcel) by area and type of land use, and the development of land valuation maps or computer-generated tables in which the pattern of values is displayed. When vacant land sales are not available or are few, additional benchmarks can be obtained by subtracting the replacement cost less depreciation of improvements from the sale prices of improved parcels. The success of this technique requires reliable cost data and tends to work best for relatively new improvements, for which depreciation is minimal.

Another approach is a *hybrid* model decomposable into land and building values. Although these models can be calibrated from improved sales alone, separation of value between land and buildings is more reliable when both vacant and improved sales are available.

### 4.6.6 Agricultural Property

If adequate sales data are available and agricultural property is to be appraised at market value, the sales comparison approach is preferred. However, most states and provinces provide for the valuation of agricultural land at use value, making the sales comparison approach inappropriate for land for which market value exceeds use value. Thus, it is often imperative to obtain good income data and to use the income approach for agricultural land. Land rents are often available, sometimes permitting the development and application of overall capitalization rates. Many states and provinces have soil maps that assign land to different productivity classes for which typical rents can be developed. Cost tables can be used to value agricultural buildings.

### 4.6.7 Special-Purpose Property

The cost approach tends to be most appropriate in the appraisal of special-purpose properties, because of the distinctive nature of such properties and the general absence of adequate sales or income data.

## 4.7 Value Reconciliation

When more than one approach or model is used for a given property group, the appraiser must determine which to use or emphasize. Often this can be done by comparing ratio study statistics. Although there are advantages to being consistent, sometimes an alternative approach or method is more reliable for special situations and atypical properties. CAMA systems should allow users to document the approach or method being used for each property.

## 4.8 Frequency of Reappraisals

Section 4.2.2 of the *Standard on Property Tax Policy* (IAAO 2010) states that current market value implies annual assessment of all property. Annual assessment does not necessarily mean, however, that each property must be re-examined each year. Instead, models can be recalibrated, or market adjustment factors derived from ratio studies or other market analyses applied based on criteria such as property type, location, size, and age.

Analysis of ratio study data can suggest groups or strata of properties in greatest need of physical review. In general, market adjustments can be highly effective in maintaining equity when appraisals are uniform within strata and recalibration can provide even greater accuracy. However, only physical reviews can correct data errors and, as stated in

Sections 3.3.4 and 3.3.5, property characteristics data should be reviewed and updated at least every 4 to 6 years. This can be accomplished in at least three ways:

- Reinspecting all property at periodic intervals (i.e., every 4 to 6 years)
- Reinspecting properties on a cyclical basis (e.g., one-fourth or one-sixth each year)
- Reinspecting properties on a priority basis as indicated by ratio studies or other considerations while still ensuring that all properties are examined at least every sixth year

## 5. Model Testing, Quality Assurance, and Value Defense

Mass appraisal allows for model testing and quality assurance measures that provide feedback on the reliability of valuation models and the overall accuracy of estimated values. Modelers and assessors must be familiar with these diagnostics so they can evaluate valuation performance properly and make improvements where needed.

### 5.1 Model Diagnostics

Modeling software contains various statistical measures that provide feedback on model performance and accuracy. MRA software contains multiple sets of diagnostic tools, some of which relate to the overall predictive accuracy of the model and some of which relate to the relative importance and statistical reliability of individual variables in the model. Modelers must understand these measures and ensure that final models not only make appraisal sense but also are statistically sound.

### 5.2 Sales Ratio Analyses

Regardless of how values were generated, sales ratio studies provide objective, bottom-line indicators of assessment performance. The IAAO literature contains extensive discussions of this important topic, and the *Standard on Ratio Studies* (2013) provides guidance for conducting a proper study. It also presents standards for key ratio statistics relating to the two primary aspects of assessment performance: level and uniformity. The following discussion summarizes these standards and describes how the assessor can use sales ratio metrics to help ensure accurate, uniform values.

#### 5.2.1 Assessment Level

Assessment level relates to the overall or general level of assessment of a jurisdiction and various property classes, strata, and groups within the jurisdiction. Each group must be assessed at market value as required by professional standards and applicable statutes, rules, and related requirements. The three common measures of central tendency in ratio studies are the median, mean, and weighted mean. The *Standard on Ratio Studies* (2013) stipulates that the median ratio should be between 0.90 and 1.10 and provides criteria for determining whether it can be concluded that the standard has not been achieved for a property group. Current, up-to-date valuation models, schedules, and tables help ensure that assessment levels meet required standards, and values can be statistically adjusted between full reappraisals or model recalibrations to ensure compliance.

#### 5.2.2 Assessment Uniformity

Assessment uniformity relates to the consistency and equity of values. Uniformity has several aspects, the first of which relates to consistency in assessment levels between property groups. It is important to ensure, for example, that residential and commercial properties are appraised at similar percentages of market value (regardless of the legal assessment ratios that may then be applied) and that residential assessment levels are consistent among neighborhoods, construction classes, age groups, and size groups. Consistency among property groups can be evaluated by comparing measures of central tendency calculated for each group.

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Various graphs can also be used for this purpose. The *Standard on Ratio Studies* (IAAO 2013) stipulates that the level of appraisal for each major group of properties should be within 5 percent of the overall level for the jurisdiction and provides criteria for determining whether it can be concluded from ratio data that the standard has not been met.

Another aspect of uniformity relates to the consistency of assessment levels within property groups. There are several such measures, the preeminent of which is the coefficient of dispersion (COD), which represents the average percentage deviation from the median ratio. The lower the COD, the more uniform the ratios within the property group. In addition, uniformity can be viewed spatially by plotting sales ratios on thematic maps.

The *Standard on Ratio Studies* (IAAO 2013) provides the following standards for the COD:

- Single-family homes and condominiums: CODs of 5 to 10 for newer or fairly similar residences and 5 to 15 for older or more heterogeneous areas
- Income-producing properties: CODs of 5 to 15 in larger, urban areas and 5 to 20 in other areas
- Vacant land: CODs of 5 to 20 in urban areas and 5 to 25 in rural or seasonal recreation areas
- Rural residential, seasonal, and manufactured homes: CODs of 5 to 20.

The entire appraisal staff must be aware of and monitor compliance with these standards and take corrective action where necessary. Poor uniformity within a property group is usually indicative of data problems or deficient valuation procedures or tables and cannot be corrected by application of market adjustment factors.

A final aspect of assessment uniformity relates to equity between low- and high-value properties. Although there are statistical subtleties that can bias evaluation of price-related uniformity, the IAAO literature (see particularly *Fundamentals of Mass Appraisal* [Gloudeans and Almy 2011, 385–392 and Appendix B] and the *Standard on Ratio Studies* [IAAO 2013]) provides guidance and relevant measures, namely, the price-related differential (PRD) and coefficient of price-related bias (PRB).

The PRD provides a simple gauge of price-related bias. The *Standard on Ratio Studies* (IAAO 2013) calls for PRDs of 0.98 to 1.03. PRDs below 0.98 tend to indicate assessment progressivity, the condition in which assessment ratios increase with price. PRDs above 1.03 tend to indicate assessment regressivity, in which assessment ratios decline with price.

The PRB indicates the percentage by which assessment ratios change whenever values double or are halved. For example, a PRB of  $-0.03$  would mean that assessment levels fall by 3 percent when value doubles. The *Standard on Ratio Studies* calls for PRBs of  $-0.05$  to  $+0.05$  and regards PRBs outside the range of  $-0.10$  to  $+0.10$  as unacceptable.

Because price is observable only for sale properties, there is no easy correction for the PRB, which is usually due to problems in valuation models and schedules. Sometimes other ratio study diagnostics will provide clues. For example, high ratios for lower construction classes may indicate that base rates should be reduced for those classes, which should in turn improve assessment ratios for low-value properties.

### 5.3 Holdout Samples

Holdout samples are validated sales that are not used in valuation but instead are used to test valuation performance. Holdout samples should be randomly selected with a view to obtaining an adequate sample while ensuring that the number of sales available for valuation will provide

reliable results for the range of properties that must be valued (holdout samples of 10 to 20 percent are typical). If too few sales are available, later sales can be validated and used for the same purpose. (For a method of using sales both to develop and test valuation models, see "The Use of Cross-validation in CAMA Modeling to Get the Most Out of Sales" (Jensen 2011).)

Since they were not used in valuation, holdout samples can provide more objective measures of valuation performance. This can be particularly important when values are not based on a common algorithm as cost and MRA models are. Manually assigning land values, for example, might produce sales ratio statistics that appear excellent but are not representative of broader performance for both sold and unsold properties. Comparable sales models that value a sold property using the sale of a property as a comparable for itself can produce quite different results when tested on a holdout group.

When a new valuation approach or technique is used for the first time, holdout sales can be helpful in validating use of the new method. In general, however, holdout samples are unnecessary as long as valuation models are based on common algorithms and schedules and the value assigned to a sale property is not a function of its price. Properly validated later sales can provide follow-up performance indicators without compromising the number of sales available for valuation.

### 5.4 Documentation

Valuation procedures and models should be documented. Appraisal staff should have at least a general understanding of how the models work and the various rates and adjustments made by the models. Cost manuals should be current and contain the rates and adjustments used to value improvements by the cost approach. Similarly, land values should be supported by tables of rates and adjustments for features such as water frontage, traffic, and other relevant influences. MRA models and other sales comparison algorithms should document final equations and should be reproducible, so that rerunning the model produces the same value. Schedules of rental rates, vacancy rates, expense ratios, income multipliers, and capitalization rates should document how values based on the income approach were derived.

It can be particularly helpful to prepare a manual, booklet, or report for each major property type that provides a narrative summary of the valuation approach and methodology and contains at least the more common rates and adjustments. Examples of how values were computed for sample properties can be particularly helpful. The manuals serve as a resource for current staff and can be helpful in training new staff or explaining the valuation process to other interested parties. Once prepared, the documents should be updated when valuation schedules change or methods and calculation procedures are revised.

### 5.5 Value Defense

The assessment office staff must have confidence in the appraisals and be able to explain and defend them. This confidence begins with application of reliable appraisal techniques, generation of appropriate valuation reports, and review of preliminary values. It may be helpful to have reports that list each parcel, its characteristics, and its calculated value. Parcels with unusual characteristics, extreme values, or extreme changes in values should be identified for subsequent individual review. Equally important, summary reports should show average values, value changes, and ratio study statistics for various strata of properties. These should be reviewed to ensure the overall consistency of values for various types of property and various locations. (See the *Uniform Standards of Professional Appraisal Practice*, Standards Rule 6-7, for reporting requirements for mass appraisals [The Appraisal Foundation 2012–2013].)

The staff should also be prepared to support individual valuations as required, preferably through comparable sales. At a minimum, staff should be able to produce a property record and explain the basic

## STANDARD ON MASS APPRAISAL OF REAL PROPERTY—2017

approach (cost, sales comparison, or income) used to estimate the value of the property. A property owner should never be told simply that “the computer” or “the system” produced the appraisal. In general, the staff should tailor the explanation to the taxpayer’s knowledge and expertise. Equations converted to tabular form can be used to explain the basis for valuation. In all cases, the assessment office staff should be able to produce sales or appraisals of similar properties in order to support (or at least explain) the valuation of the property in question. Comparable sales can be obtained from reports that list sales by such features as type of property, area, size, and age. Alternatively, interactive programs can be obtained or developed that identify and display the most comparable properties.

Assessors should notify property owners of their valuations in sufficient time for property owners to discuss their appraisals with the assessor and appeal the value if they choose to do so (see the *Standard on Public Relations* [IAAO 2011]). Statutes should provide for a formal appeals process beyond the assessor’s level (see the *Standard on Assessment Appeal* [IAAO 2016a]).

## 6. Managerial and Space Considerations

### 6.1 Overview

Mass appraisal requires staff, technical, and other resources. This section discusses certain key managerial and facilities considerations.

### 6.2 Staffing and Space

A successful in-house appraisal program requires trained staff and adequate facilities in which to work and meet with the public.

#### 6.2.1 Staffing

Staff should comprise persons skilled in general administration, supervision, appraisal, mapping, data processing, ~~and secretarial~~ and clerical functions. Typical staffing sizes and patterns for jurisdictions of various sizes are illustrated in *Fundamentals of Mass Appraisal* (Gloude-mans and Almy 2011, 22–25). Staffing needs can vary significantly based on factors such as frequency of reassessments.

#### 6.2.2 Space Considerations

The following minimum space standards are suggested for managerial, supervisory, and support staff:

- *Chief assessing officer (e.g., Assessor, director)*—a private office, enclosed by walls or windows extending to the ceiling, of 200 square feet (18 to 19 square meters)
- *Management position (e.g., chief deputy assessor, head of a division in a large jurisdiction, and so on)*—a private office, enclosed by walls or windows extending to the ceiling, of 170 square feet (15 to 16 square meters)
- *Supervisory position (head of a section, unit, or team of appraisers, mappers, analysts, technicians, or clerks)*—a private office or partitioned space of 150 square feet (14 square meters)
- *Appraisers and technical staff*—private offices or at least partitioned, quiet work areas of 50 to 100 square feet (5 to 10 square meters), not including aisle and file space, with a desk and chair
- *Support staff*—adequate workspace, open or partitioned, to promote intended work functions and access.

In addition, there should be adequate space for

- File storage and access
- Training and meetings

- Mapping and drafting
- Public service areas
- Printing and photocopy equipment
- Library facilities.

### 6.3 Data Processing Support

CAMAs require considerable data processing support.

#### 6.3.1 Hardware

The hardware should be powerful enough to support applications of the cost, sales comparison, and income approaches, as well as data maintenance and other routine operations. Data downloading, mass calculations, GIS applications, and Web support tend to be the most computer-intensive operations. Processing speed and efficiency requirements should be established before hardware acquisition. Computer equipment can be purchased, leased, rented, or shared with other jurisdictions. If the purchase option is chosen, the equipment should be easy to upgrade to take advantage of technological developments without purchasing an entirely new system.

#### 6.3.2 Software

CAMA software can be developed internally, adapted from software developed by other public agencies, or purchased (in whole or in part) from private vendors. (Inevitably there will be some tailoring needed to adapt externally developed software to the requirements of the user’s environment.) Each alternative has advantages and disadvantages. The software should be designed so that it can be easily modified; it should also be well documented, at both the appraiser/user and programmer levels.

CAMA software works in conjunction with various general-purpose software, typically including word processing, spreadsheet, statistical, and GIS programs. These programs and applications must be able to share data and work together cohesively.

Security measures should exist to prevent unauthorized use and to provide backup in the event of accidental loss or destruction of data.

#### 6.3.2.1 Custom Software

Custom software is designed to perform specific tasks, identified by the jurisdiction, and can be specifically tailored to the user’s requirements. The data screens and processing logic can often be customized to reflect actual or desired practices, and the prompts and help information can be tailored to reflect local terminology and convention.

After completing the purchase or license requirements, the jurisdiction should retain access to the program source code, so other programmers are able to modify the program to reflect changing requirements.

The major disadvantages of custom software are the time and expense of writing, testing, and updating. Particular attention must be paid to ensuring that user requirements are clearly conveyed to programmers and reflected in the end product, which should not be accepted until proper testing has been completed. Future modifications to programs, even those of a minor nature, can involve system administrator approval and can be a time-consuming, costly, and rigorous job. (See *Standard on Contracting for Assessment Services* [IAAO 2008].)

#### 6.3.2.2 Generic Software

An alternative to custom software is generic software, of which there are two major types: vertical software, which is written for a specific industry, and horizontal software, which is written for particular applications regardless of industry. Examples of the latter include database, spreadsheet, word processing, and statistical software. Although the actual instruction code within these programs cannot be modified, they typically permit the user to create a variety of customized



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templates, files, and documents that can be processed. These are often referred to as commercial off-the-shelf software (COTS) packages.

Generic vertical software usually requires modification to fit a jurisdiction's specific needs. In considering generic software, the assessor should determine

- System requirements
- The extent to which the software meets the agency's needs
- A timetable for implementation
- How modifications will be accomplished
- The level of vendor support
- Whether the source code can be obtained.

(See Standard on Contracting for Assessment Services [IAAO 2008].)

Horizontal generic software is more flexible, permitting the user to define file structures, relational table layout, input and output procedures, including form or format, and reports. Assessment offices with expertise in such software (which does not imply a knowledge of programming) can adapt it for

- Property (data) file maintenance
- Market research and analysis
- Valuation modeling and processing
- Many other aspects of assessment operations.

Horizontal generic software is inexpensive and flexible. However, it requires considerable customization to adapt it to local requirements. Provisions should be made for a sustainable process that is not overly dependent on a single person or resource.

### 6.4 Contracting for Appraisal Services

Reappraisal contracts can include mapping, data collection, data processing, and other services, as well as valuation. They offer the potential of acquiring professional skills and resources quickly. These skills and resources often are not available internally. Contracting for these services not only can allow the jurisdiction to maintain a modest staff and to budget for reappraisal on a periodic basis, but also makes the assessor less likely to develop in-house expertise. (See the *Standard on Contracting for Assessment Services* [IAAO 2008].)

### 6.5 Benefit-Cost Considerations

#### 6.5.1 Overview

The object of mass appraisal is to produce equitable valuations at low costs. Improvements in equity often require increased expenditures.

Benefit-cost analysis in mass appraisal involves two major issues: policy and administration.

#### 6.5.2 Policy Issues

An assessment jurisdiction requires a certain expenditure level simply to inventory, list, and value properties. Beyond that point, additional expenditures make possible rapid improvements in equity initially, but marginal improvements in equity diminish as expenditures increase. At a minimum, jurisdictions should budget to meet statutory requirements and the performance standards contained in the *Standard on Ratio Studies* (IAAO 2013) and summarized in Section 5.2.

#### 6.5.3 Administrative Issues

Maximizing equity per dollar of expenditure is the primary responsibility of assessment administration. To maximize productivity, the assessor and managerial staff must effectively plan, budget, organize, and control operations and provide leadership. This must be accomplished within the

office's legal, fiscal, economic, and social environment and constraints (Eckert, Gloudemans, and Kenyon 1990, chapter 16).

## 7. Reference Materials

Reference materials are needed in an assessment office to promote compliance with laws and regulations, uniformity in operations and procedures, and adherence to generally accepted assessment principles and practices.

### 7.1 Standards of Practice

The standards of practice may incorporate or be contained in laws, regulations, policy memoranda, procedural manuals, appraisal manuals and schedules, standard treatises on property appraisal and taxation (see section 6.2). Written standards of practice should address areas such as personal conduct, collection of property data, coding of information for data processing. The amount of detail will vary with the nature of the operation and the size of the office.

### 7.2 Professional Library

Every assessment office should have access to a comprehensive professional library that contains the information staff needs. A resource library may be digital or physical and should include the following:

- Property tax laws and regulations
- IAAO standards
- Historical resources
- Current periodicals
- Manuals and schedules
- Equipment manuals and software documentation.

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# **International Association of Assessing Officers Code of Ethics and Standards of Professional Conduct**

Adopted by the IAAO Executive Board, November 14, 2015.

## **Preamble**

As a matter of fundamental principle, IAAO members should adhere to the highest ethical standards. Public trust in our performance is the foundation of our credibility. Assessment professionals support IAAO because they trust us to be good stewards of their resources, to uphold rigorous standards of conduct and to serve as a catalyst for excellence in the assessment profession.

Nonprofit organizations must earn this trust every day. It is up to all members of the IAAO – Executive Board members, committee members, volunteers, staff and the general membership – to demonstrate their ongoing commitment to the core values of integrity, honesty, fairness, openness, respect and responsibility.

The purpose of this Code of Ethics and Standards of Professional Conduct is to establish guidelines for assessing officials and all members of the International Association of Assessing Officers (IAAO) and set forth standards by which to judge an IAAO member whose conduct is in question. Members shall conduct themselves in a professional manner that reflects favorably upon themselves, the organization, the appraisal profession, and the property tax system, and avoid any action that could discredit themselves or these entities.

Adherence to the IAAO Constitution, Bylaws, Procedural Rules and Code of Ethics is the minimum standard of expected behavior. We must do more, however, than simply obey the rules. We must embrace the spirit of the governing documents, and go beyond stated requirements, making sure that what we do is matched by what the membership perceives and expects.

Transparency, openness and responsiveness to member's concerns must be integral to our behavior.

## **Statement of Values**

The Code of Ethics of the International Association of Assessing Officers is built on a foundation of widely shared values. These values include our:

- Commitment to the improvement of the property tax system worldwide;
- Accountability to the public good;
- Commitment to excellence in assessment administration beyond property tax law;
- Respect for the worth and dignity of all individuals;
- Promotion of inclusiveness, fairness and diversity;
- Obligation to organizational transparency, integrity, and honesty in all professional activities;
- Practice of responsible stewardship of resources;

- Dedication to excellence, and maintenance of the public trust;

The values are reflected in the following Code of Ethics of the International Association of Assessing Officers.

## **Definitions**

For definitions of terms relating to appraisal practice, refer to the definitions section of the Uniform Standards of Professional Appraisal Practice (USPAP).

## **Exceptions**

If compliance with or adherence to any Canon or Ethical Rule set forth in the IAAO *Code of Ethics and Standards of Professional Conduct* would constitute a violation of the law of any jurisdiction, such Canon or Ethical Rule shall be void and of no force or effect in such jurisdiction.

In stating each individual Canon or Ethical Rule, no attempt has been made to enumerate all of the various circumstances and conditions that will excuse an IAAO member from strict observance; however, the IAAO recognizes that illness, acts of God, and various other events beyond the control of an IAAO member may make it inequitable to insist upon a strict observance in a particular case. When an IAAO member, in the exercise of reasonable care, commits a violation due to illness, acts of God, or other circumstances beyond his or her control, it is expected that the Ethics Committee will act in a manner that will avoid an inequitable result.

Inasmuch as there are other remedies under applicable federal, state/provincial, and local laws, nothing in this *Code* shall apply to the conduct of a member toward his or her employees and other workers in the member's workplace, including, but not limited to, employment discrimination and harassment.

## **Canon 1: (Professional Duties)**

**Members shall conduct their professional duties and any activities as a member of IAAO in a manner that reflects credit upon themselves, their profession and the organization.**

### **Ethical Rules**

ER 1-1 It is unethical for members to conduct their professional duties in a manner that could reasonably be expected to create the appearance of impropriety.

ER 1-2 It is unethical for members to accept an appraisal or assessment-related assignment which they are not qualified to perform.

ER 1-3 It is unethical for members to knowingly violate applicable laws and regulations in the performance of their duties or to apply such laws and regulations in an inequitable manner

ER 1-4 It is unethical for members to refuse (by intent or omission) to make available all public records in their custody for public review, unless access to such records is specifically limited or prohibited by law, or the information has been obtained on a confidential basis and the law permits such information to be treated confidentially. Assessing officers must make every reasonable effort to inform the public about their rights and responsibilities under the law and the property tax system.

ER 1-5 It is unethical for members to refuse to cooperate with public officials to improve the efficiency and effectiveness of the property tax in particular and public administration in general.

ER 1-6 It is unethical to engage in misconduct of any kind that leads to a conviction for a crime involving fraud, dishonesty, false statements, or moral turpitude.

ER 1-7 It is unethical to perform any appraisal, assessment, or consulting service that is not in compliance with the IAAO governing documents or the *Uniform Standards of Professional Appraisal Practice*.

## **Canon 2: (Truthfulness)**

**Members shall not make public statements (written or oral) that are untrue or tend to mislead or deceive the public in the course of performing their professional duties.**

### **Ethical Rules**

ER 2-1 It is unethical to provide inaccurate, untruthful, or misleading information to solicit assessment-related assignments or to use misleading claims or promises of relief that could lead to loss of confidence in appraisal or assessment professionals by the public.

ER 2-2 It is unethical to claim an IAAO professional designation unless authorized, whether the claim is verbal or written, or to claim qualifications that are not factual or may be misleading.

ER 2-3 It is unethical to fail to recognize the source(s) of any materials quoted or cited in writings or speeches.

## **Canon 3: (Conflict of Interest)**

**Members shall not engage in any activities in which they have, or may reasonably be considered by the public as having, a conflict of interest.**

### **Ethical Rules**

ER 3-1 It is unethical for members to accept an appraisal or assessment-related assignment that can reasonably be construed as being in conflict with their responsibility to their jurisdiction, employer, or client, or in which they have an unrevealed personal interest or bias.

ER 3-2 It is unethical to accept an assignment or responsibility in which there is a personal interest without full disclosure of that interest.

ER 3-3 It is unethical to accept an assignment or participate in an activity where a conflict of interest exists and could be perceived as a bias, or impair objectivity.

#### **Canon 4: (Support of IAAO)**

**Members shall abide by and support the provisions of the IAAO Constitution, Bylaws, and Procedural Rules.**

#### **Ethical Rules**

ER 4-1 It is unethical for an IAAO member to:

(a) Knowingly to make false statements or submit misleading information when completing a membership application, or to refrain from promptly submitting any significant information in the possession of such member when requested to do so as part of an IAAO membership application.

(b) Knowingly to submit misleading information to the duly authorized Ethics Committee or subcommittee; to refrain from promptly submitting any significant information in the possession of the member as requested by the committee or subcommittee; to refuse to appear for a personal interview or participate in an interview conducted by telephone as scheduled by the committee or subcommittee; or to refuse to answer promptly all relevant questions concerning an appraisal or assessment-related assignment or related testimony being investigated by the committee or subcommittee.

(c) Fail or refuse to submit promptly to an authorized IAAO committee a written appraisal report or file memorandum containing data, reasoning, and conclusions, or to fail or refuse to permit an authorized committee to review an appraisal report, assessment-related assignment, or file memorandum when requested to do so by a person or persons authorized to review such material.

(d) Fail or refuse to submit promptly any significant information in the possession of a member concerning the status of litigation related to an ethics matter when requested to do so by the chair of the Ethics Committee; or knowingly to submit misleading information to the chair of the Ethics Committee concerning the status of litigation.

ER 4-2 It is unethical to fail to comply with the terms of a summons issued by the Ethics Committee.

ER 4-3 It is unethical to refuse to cooperate fully with the IAAO Executive Board, Ethics Committee and the staff of IAAO in all matters related to the enforcement of this *Code*, as set forth in the Ethics Committee's Rules and Procedures, as amended from time to time.

ER 4-4 It is unethical to violate the IAAO Constitution, Bylaws, or Procedural Rules.

ER 4-5 Any member who has submitted misleading information to the Ethics Committee or does not comply with the terms of these Canons may be subject to ethical charges by the Committee.

**Canon 5: (Professional Duties)**

**Members shall comply with the requirements of the *Uniform Standards of Professional Appraisal Practice*.**

**Ethical Rules**

ER 5-1 It is unethical to knowingly fail to observe the requirements of the *Uniform Standards of Professional Appraisal Practice*. Members residing outside the United States must follow appraisal standards that govern appraisers within their jurisdiction.

# UNIFORM STANDARDS OF PROFESSIONAL APPRAISAL PRACTICE 2018-2019 EDITION

APPRAISAL STANDARDS BOARD

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THE APPRAISAL FOUNDATION

*Authorized by Congress as the Source of Appraisal Standards and Appraiser Qualifications*

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## **Standard 5: MASS APPRAISAL, DEVELOPMENT**

**In developing a mass appraisal, an appraiser must be aware of, understand, and correctly employ those recognized methods and techniques necessary to produce and communicate credible mass appraisals.**

Comment: STANDARD 5 applies to all mass appraisals of real or personal property regardless of the purpose or use of such appraisals.<sup>53</sup> STANDARD 5 is directed toward the substantive aspects of developing credible analyses, opinions, and conclusions in the mass appraisal of properties. The reporting and jurisdictional exceptions applicable to public mass appraisals prepared for ad valorem taxation do not apply to mass appraisals prepared for other purposes.

A mass appraisal includes:

1. Identifying properties to be appraised;
2. Defining market area of consistent behavior that applies to properties
3. Identifying characteristics (supply and demand) that affect the creation of value in that market area;
4. Developing a model structure that reflects the relationship among the characteristics affecting value in the market area;
5. Calibrating the model structure to determine the contribution of the individual characteristics affecting value;
6. Applying the conclusions reflected in the model to the characteristics of the property(ies) being appraised; and
7. Reviewing the mass appraisal results.

The JURISDICTIONAL EXCEPTION RULE may apply to several sections of STANDARD 5 because ad valorem tax administration is subject to various state, county, and municipal laws.

### **STANDARDS RULE 5-1**

**In developing a mass appraisal, an appraiser must:**

- (a) Be aware of, understand, and correctly employ those recognized methods and techniques necessary to produce a credible mass appraisal;**

Comment: Mass appraisal provides for a systematic approach and uniform application of appraisal methods and techniques to obtain estimates of value that allow for statistical review and analysis of results.

This requirement recognizes that the principle of change continues to affect the manner in which appraisers perform mass appraisals. Changes and developments in the real property and personal property fields have a substantial impact on the appraisal profession.

To keep abreast of these changes and developments, the appraisal profession is constantly reviewing and revising appraisal methods and techniques and devising new methods and techniques to meet new circumstances. For this reason, it is not sufficient for appraisers to simply maintain the skills and the knowledge they possess when they become appraisers. Each appraiser must continuously improve his or her skills to remain proficient in mass appraisal.

- (b) Not commit a substantial error of omission or commission that significantly affects a mass appraisal; and**

<sup>53</sup> See Advisory Opinion 32, *Ad Valorem Property Tax Appraisal and Mass Appraisal Assignments*

Comment: An appraiser must use sufficient care to avoid errors that would significantly affect his or her opinions and conclusions. Diligence is required to identify and analyze the factors, conditions, data, and other information that would have a significant effect on the credibility of the assignment results.

**(c) Not render a mass appraisal in a careless or negligent manner.**

Comment: Perfection is impossible to attain, and competence does not require perfection. However, an appraiser must not render appraisal services in a careless or negligent manner. This Standards Rule requires an appraiser to use due diligence and due care.

**STANDARDS RULE 5-2**

**In developing a mass appraisal, an appraiser must:**

**(a) Identify the client and other intended users;<sup>54</sup>**

Comment: It is the appraiser's responsibility to identify the client and other intended users. In ad valorem mass appraisal, the assessor, or party responsible for certification of the assessment or tax roll is required to apply the relevant law or statute and identify the client, and other intended user (if any).

**(b) Identify the intended use of the appraisal;<sup>55</sup>**

Comment: An appraiser must not allow the intended use of an assignment or a client's objectives to cause the assignment results to be biased.

**(c) Identify the type and definition of value, and, if the value opinion to be developed is market value, ascertain whether the value is to be the most probable price:**

- (i) In terms of cash; or**
- (ii) In terms of financial arrangements equivalent to cash; or**
- (iii) In such other terms as may be precisely defined; and**
- (iv) If the opinion of value is based on non-market financing with unusual conditions or incentives, the terms of such financing must be clearly identified and the appraiser's opinion of their contributions to or negative influence on value must be developed by analysis of relevant market data;**

**(d) Identify the effective date of the appraisal;<sup>56</sup>**

**(e) Identify the characteristics of the properties that are relevant to the type and definition of value and intended use,<sup>57</sup> including:**

- (i) The group with which a property is identified according to similar market influence;**
- (ii) The appropriate market area and time frame relative to the property being valued; and**
- (iii) Their location and physical, legal, and economic characteristics;**

<sup>54</sup> See Advisory Opinion 36, *Identification and Disclosure of Client, Intended Use, and Intended Users*

<sup>55</sup> See Advisory Opinion 36, *Identification and Disclosure of Client, Intended Use, and Intended Users*

<sup>56</sup> See Advisory Opinion 34, *Retrospective and Prospective Value Opinions*

<sup>57</sup> See Advisory Opinion 23, *Identifying the Relevant Characteristics of the Subject Property of a Real Property Appraisal Assignment, if applicable*

Comment: The properties must be identified in general terms, and each individual property in the universe must be identified, with the information on its identify stored or referenced in its property record.

When appraising proposed improvements, an appraiser must examine and have available for future examination, plans, specifications, or other documentation sufficient to identify the extent and character of the proposed improvement.<sup>58</sup>

Ordinary, proposed improvements are not appraised for ad valorem tax purposes. Appraisers, however, are sometimes asked to provide opinions of value of proposed improvements so that developers can estimate future property tax burdens. Sometimes units in condominiums and planned unit developments are sold with an interest in un-built community property, the pro rata value of which, if any, must be considered in the analysis of sales data.

**(f) Identify the characteristics of the market that are relevant to the purpose and intended use of the mass appraisal including:**

- (i) Location of the market area;**
- (ii) Physical, legal, and economic attributes;**
- (iii) Time frame of market activity; and**
- (iv) Property interests reflected in the market;**

**(g) In appraising real property or personal property:**

- (i) Identify the appropriate market area and time frame relative to the property being valued;**
- (ii) When the subject is real property, identify and consider any personal property, trade fixtures, or intangibles that are not real property but are included in the appraisal;**
- (iii) When the subject is personal property, identify and consider any real property or intangibles that are not personal property but are included in the appraisal;**
- (iv) Identify known easements, restrictions, encumbrances, leases, reservations, covenants, contracts, declarations, special assessments, ordinances, of other items of similar nature; and**
- (v) Identify and analyze whether an appraised fractional interest, physical segment or partial holding contributes pro rata to the value of the whole;**

Comment: The above requirements do not obligate the appraiser to value the whole when the subject of the appraisal is a fractional interest, physical segment, or a partial holding. However, if the value of the whole is not identified, the appraisal must clearly reflect that the value of the property being appraised cannot be used to develop the value opinion of the whole by mathematical extension.

**(h) Analyze the relevant economic conditions at the time of valuation, including market acceptability of the property and supply, demand, scarcity, or rarity;**

**(i) Identify any extraordinary assumptions and any hypothetical conditions necessary in the assignment; and**

<sup>58</sup> See Advisory Opinion 17, *Appraisals of Real Property with Proposed Improvements, if applicable*

Comment: An extraordinary assumption may be used in an assignment only if;

- It is required to properly develop credible opinions and conclusions;
- The appraiser has a reasonable basis for the extraordinary assumption;
- Use of the extraordinary assumption results in a credible analysis; and
- The appraiser complies with the disclosure requirements set forth in USPAP for extraordinary assumption.

A hypothetical condition may be used in an assignment only if:

- Use of the hypothetical condition is clearly required for legal purposes, for purposes of reasonable analysis, or for purposes of comparison
- Use of the hypothetical condition results in a credible analysis; and
- The appraiser complies with the disclosure requirements set forth in the USPAP for hypothetical conditions.

**(j) Determine the scope of work necessary to produce credible assignment results in accordance with the SCOPE OF WORK RULE.<sup>59</sup>**

**STANDARDS RULE 5-3**

**When necessary for credible assignment results, an appraiser must:**

**(a) In appraising real property, identify and analyze the affect on use and value of the following factors: existing land use regulations, reasonably probable modifications of such regulations, economic supply and demand, the physical adaptability of the real estate, neighborhood trends, and highest and best use of the real state; and**

Comment: This requirement sets forth a list of factors that affect use and value. In considering neighborhood trends, an appraiser must avoid stereotyped or biased assumptions relating to race, age, color, gender, or national origin or an assumption that race, ethnic, or religious homogeneity is necessary to maximize value in a neighborhood. Further, an appraiser must avoid making an unsupported assumption or premise about neighborhood decline, effective age, and remaining life. In considering highest and best use, an appraiser must develop the concept to the extent required for a proper solution to the appraisal problem.

**(b) In appraising personal property, identify and analyze the effects on use and value of industry trends, value-in-use, and trade level of personal property. Where applicable, analyze the current use and alternative uses to encompass what is profitable, legal, and physically possible, as relevant to the type and definition of value and intended use of the appraisal. Personal property has several measurable marketplaces; therefore, the appraiser must define and analyze the appropriate market consistent with the type and definition of value.**

Comment: The appraiser must recognize that there are distinct levels of trade and each may generate its own data. For example, a property may have a different value at a wholesale level of trade, a retail level of trade, or under various auction conditions. Therefore, the appraiser must analyze the subject property within the correct market context.

<sup>59</sup> See advisory Opinion 28, *Scope of Work Decision, Performance, and Disclosure*, and Advisory Opinion 29, *An Acceptable Scope of Work*

#### **STANDARDS RULES 5-4**

**In developing a mass appraisal, an appraiser must:**

- (a) Identify the appropriate procedures and market information required to perform the appraisal, including all physical, functional, and external market factors as they may affect the appraisal;**

Comment: Such efforts customarily include the development of standardized data collection forms, procedures, and training materials that are used uniformly on the universe or properties under consideration.

- (b) Employ recognized techniques for specifying property valuation models; and**

Comment: The formal development of a model in a statement or equation is called model specification. Mass appraisers must develop mathematical models that, with reasonable accuracy, represent the relationship between property value and supply and demand factors, as represented by quantitative and qualitative property characteristics. The models may be specified using the cost, sales comparison, or income approaches to value. The specification format may be tabular, mathematical, linear, nonlinear, or any other structure suitable for representing the observable property characteristics. Appropriate approaches must be used in appraising a class of properties. The concept of recognized techniques applies to both real and personal property valuation models.

- (c) Employ recognized techniques for calibrating mass appraisal models.**

Comment: Calibration refers to the process of analyzing sets of property and market data to determine the specific parameters of a model. The table entries in a cost manual are examples of calibrated parameters, as well as the coefficients in a linear or nonlinear model. Models must be calibrated using recognized techniques, including, but not limited to, multiple linear regression, nonlinear regression, and adaptive estimation.

#### **STANDARDS RULE 5-5**

**In developing a mass appraisal, when necessary for credible assignment results, an appraiser must:**

- (a) Collect, verify, and analyze such data as are necessary and appropriate to develop:**

- (i) The cost new of the improvements;**
- (ii) Depreciation;**
- (iii) Value of the land by sales of comparable properties;**
- (iv) Value of property by sales of comparable properties;**
- (v) Value by capitalization of income or potential earnings (i.e., rentals, expenses, interest rates, capitalization rates, and vacancy data);**

Comment: This Standard Rule requires appraisers engaged in mass appraisal to take reasonable steps to ensure that the quantity and quality of the factual data that are collected are sufficient to produce credible appraisals. For example, in real property, where applicable and feasible, systems for routinely collecting and maintaining ownership, geographic, sales, income and expense, cost, and property characteristics data must be established. Geographic data must be contained in as complete a set of cadastral maps as possible, compiled according to current standards of detail and accuracy. Sales data must be collected, confirmed, screened, adjusted, and filed according to current standards of practice. The sales file must contain, for each sale, property characteristics data that are contemporaneous with the date of sale. Property characteristics data must be appropriate and relevant to the mass appraisal models being used. The property characteristics data file must contain data contemporaneous with the date of appraisal including historical data on sales, where appropriate and available. The data collection program must incorporate a

quality control program, including checks and audits of the data to ensure current and consistent records.

- (b) Base estimates of capitalization rates and projections of future rental rates and/or potential earnings capacity, expenses, interest rates, and vacancy rates on reasonable and appropriate evidence;<sup>60</sup>**

Comment: This requirement calls for an appraiser, in developing income and expense statements and cash flow projections, to weigh historical information and trends, current market factors affecting such trends, and reasonably anticipated events, such as competition from developments either planned or under construction.

- (c) Identify and, as applicable, analyze terms and conditions of any available leases; and**

- (d) Identify the need for and extent of any physical inspection.<sup>61</sup>**

#### **STANDARDS RULE 5-6**

**When necessary for credible assignment results in applying a calibrated mass appraisal model an appraiser must:**

- (a) Value improved parcels by recognized methods or techniques based on the cost approach, the sales comparison approach, and income approach;**
- (b) Value sites by recognized methods or techniques; such techniques include but are not limited to the sale comparison approach, allocation method, abstraction method, capitalization of ground rent, and land residual technique;**
- (c) When developing the value of a leased fee estate or a leasehold estate, analyze the effect on value, if any, of the terms and conditions of the lease;**

Comment: In ad valorem taxation the appraiser may be required by rules or law to appraise the property as if in fee simple, as though unencumbered by existing leases. In such cases, market rent would be used in the appraisal, ignoring the effect of the individual, actual contract rents.

- (d) Analyze the effect on value, if any, of the assemblage of the various parcels, divided interests, or component parts of a property; the value of the whole must be developed by adding together the individual values of the various parcels, divided interests, or component parts; and**

Comment: When the value of the whole has been established and the appraiser seeks to value a part, the value of any such part must be tested by reference to appropriate market data and supported by an appropriate analysis of such data.

- (e) When analyzing anticipated public or private improvements, located on or off the site, analyze the effect on value, if any, of such anticipated improvements to the extent they are reflected in market actions.**

<sup>60</sup> See Advisory Opinion 33, *Discounted Cash Flow Analysis*

<sup>61</sup> See Advisory Opinion 2, *Inspection of Subject Property*

## **STANDARDS RULE 5-7**

**In reconciling a mass appraisal, an appraiser must:**

- (a) Reconcile the quality and quantity of data available and analyzed within the approaches used and the applicability and relevance of the approaches, methods and techniques used; and**
- (b) Employ recognized mass appraisal testing procedures and techniques to ensure that standards of accuracy are maintained**

Comment: It is implicit in mass appraisal that, even when properly specified and calibrated mass appraisal models are used, some individual value conclusions will not meet standards or reasonableness, consistency, and accuracy. However, appraisers engaged in mass appraisal have a professional responsibility to ensure that, on an overall basis, models produce value conclusions that meet attainable standards of accuracy. This responsibility requires appraisers to evaluate the performance of models, using techniques that may include but are not limited to, goodness-of-fit statistics, and model performance statistics such as appraisal-to-sale ratio studies, evaluation of holdout samples, or analysis of residuals

## Standard 6: MASS APPRAISAL, REPORTING

**In reporting the results of a mass appraisal, an appraiser must communicate each analysis, opinion, and conclusion in a manner that is not misleading.**

Comment: STANDARD 6 addresses the content and level of information required in a report that communicates the results of a mass appraisal.

STANDARD 6 does not dictate the form, format, or style of mass appraisal reports. The form, format, and style of a report are functions of the needs of intended users and appraisers. The substantive content of a report determines its compliance.

### **STANDARDS RULE 6-1**

**Each written report of a mass appraisal must:**

- (a) Clearly and accurately set forth the appraisal in a manner that will not be misleading;**
- (b) Contain sufficient information to enable the intended users of the appraisal to understand the report properly; and**

Comment: Documentation for a mass appraisal for ad valorem taxation may be in the form of (1) property records, (2) sales ratios and other statistical studies, (3) appraisal manuals and documentation, (4) market studies, (5) model building documentation, (6) regulations, (7) statutes, and (8) other acceptable forms.

- (c) Clearly and accurately disclose all assumptions, extraordinary assumptions, hypothetical conditions, and limiting conditions used in the assignment.**

Comment: The report must clearly and conspicuously:

- State all extraordinary assumptions and hypothetical conditions; and
- State that their use might have affected the assignment results

### **STANDARDS RULES 6-2**

**Each written report of a mass appraisal must:**

- (a) State the identity of the client, unless the client has specifically requested otherwise; state the identity of any intended users by name or type; <sup>62</sup>**

Comment: An appraiser must use care when identifying the client to avoid violations of the Confidentiality section of the ETHICS RULE. If a client requests that the client's identity be withheld from the report, the appraiser may comply with this request. In these instances, the appraiser must document the identity of the client in the work file and must state in the report that the identity of the client has been withheld at the client's request.

- (b) State the intended use of the appraisal; <sup>63</sup>**
- (c) Disclose any assumptions or limiting conditions that result in the deviation from recognized methods and techniques or that affect analysis, opinions, and conclusions;**

<sup>62</sup> See Advisory Opinion 36, *Identification and Discloser of Client, Intended Use, and Intended Users*.

<sup>63</sup> See Advisory Opinion 36, *Identification and Discloser of Client, Intended Use, and Intended Users*.



**(d) State the effective date of the appraisal and the date of the report;**

Comment: In ad valorem taxation the effective date of the appraisal may be prescribed by law. If no effective date is prescribed by law, the effective date of the appraisal, if not stated, is presumed to be contemporaneous with the data and appraisal conclusions.

The effective date of the appraisal establishes the context for the value opinion, while the date of the reports indicates whether the perspective of the appraiser on the market and property as of the effective date of the appraisal was prospective, current, or retrospective.<sup>64</sup>

**(e) State the type and definition of value and cite the source of the definition;**

Comment: Stating the type and definition of value also requires any comments needed to clearly indicate to intended users how the definition is being applied.<sup>65</sup>

When reporting an opinion of market value, state whether the opinion of value is:

- In terms of cash or of financing terms equivalent to cash; or
- Based on non-market financing with unusual conditions or incentives.

When an opinion of market value is not in terms of cash or based on financing terms equivalent to cash, summarize the terms of such financing and explain their contributions to or negative influence on value.

**(f) State the properties appraised including the property rights;**

Comment: The report documents the sources for location, describing and listing the property. When applicable, include references to legal descriptions, addresses, parcel identifiers, photos, and building sketches. In mass appraisal this information is often included in property records. When the property rights to be appraised are specified in a statute or court ruling, the law must be referenced.

**(g) Summarize the scope of work used to develop the appraisal;<sup>66</sup> exclusion of the sales comparison approach, cost approach, or income approach must be explained;**

Comment: Because intended users' reliance on an appraisal may be affected by the scope of work, the report must enable them to be properly informed and not misled. Sufficient information includes disclosure of research and analyses performed and might also include disclosure of research and analyses not performed.

When any portion of the work involves significant mass appraisal assistance, the appraiser must describe the extent of that assistance. The signing appraiser must also state the name(s) of those providing the significant mass appraisal assistance in the certification, in accordance with Standard Rule 6-3.<sup>67</sup>

64 See Advisory Opinion 34, *Retrospective and Prospective Value Opinions*.

65 See Advisory Opinion 34, *Retrospective and Prospective Value Opinions*.

66 See Advisory Opinion 28, *Scope of Work Decision, Performance and Disclosure* and Advisory Opinion 29, *An Acceptable Scope of Work*.

67 See Advisory Opinion 31, *Assignments Involving More than One Appraiser*.

- (h) Summarize and support the model specification(s) considered, data requirements, and the model(s) chosen;**

Comment: The appraiser must provide sufficient information to enable the client and intended users to have confidence that the process and procedures used conform to accepted methods and result in credible value conclusions. In the case of mass appraisal for as valorem taxation, stability and accuracy are important to the credibility of value opinions. The report must include a summary of the rationale for each model, the calibration techniques to be used, and performance measures to be used.

- (i) Summarize the procedure for collecting, validating, and reporting data;**

Comment: The report must summarize the sources of data and the data collection and validation processes. References to detailed data collection manuals or electronic records must be made, as appropriate, including where they may be found for inspection.

- (j) Summarize calibration methods considered and chosen, including the mathematical form of the final model(s); summarize how value conclusions were reviewed; and, if necessary, state the availability and location of individual value conclusions;**

- (k) When an opinion of highest and best use, or the appropriate market or market level was developed, summarize how that opinion was determined;**

Comment: The mass appraisal report must reference case law, statute, or public policy that describes highest and best use requirements. When actual use is the requirement, the report must discuss how use-value opinions were developed. The appraiser's reasoning in support of the highest and best use opinion must be provided in the depth and detail required by its significance to the appraisal.

- (l) Identify the appraisal performance test used and the performance measures attained;**

- (m) Summarize the reconciliation performed, in accordance with Standards Rule 5-7; and**

- (n) Include a signed certification in accordance with Standards Rule 6-3.**

### **STANDARDS RULE 6-3**

**Each written mass appraisal report must contain a signed certification that is similar in content to the following form:**

**I certify that, to the best of my knowledge and belief:**

- **The statements of fact contained in this report are true and correct**
- **The reported analysis, opinions, and conclusions are limited only by the reported assumptions and limiting conditions, and are my personal, impartial, and unbiased professional analysis, opinions, and conclusions.**
- **I have no (or the specified) present or prospective interest in the property that is the subject of this report, and I have no (or the specified) personal interest with respect to the parties involved.**
- **I have performed no (or the specified) services, as an appraiser or in any other capacity, regarding the property that is the subject of this report within the three-year period immediately preceding acceptance of this assignment.**
- **I have no bias with respect to any property that is the subject of this report or to the parties involved with this assignment.**
- **My engagement in this assignment was not contingent upon developing or reporting predetermined results.**

- **My compensation for completing this assignment is not contingent upon the reporting of a predetermined value or direction in value that favors the cause of the client, the amount of the value opinion, the attainment of a stipulated result, or the occurrence of a subsequent event directly related to the intended use of his appraisal.**
- **My analyses, opinions, and conclusions were developed, and this report has been prepared, in conformity with the *Uniform Standards of Professional Appraisal Practice*.**
- **I have (or have not) made a personal inspection of the properties that are the subject of this report. (If more than one person signs the report, this certification must clearly specify which individuals did and which individuals did not make a personal inspection of the appraised property.)<sup>68</sup>**
- **No one provided significant mass appraisal assistance to the person signing this certification. (If there are exceptions, the name of each individual providing significant mass appraisal assistance must be stated.)**

Comment: The above certification is not intended to disturb an elected or appointed assessor's work plans or oaths of office. A signed certification is an integral part of the appraisal report. An appraiser, who signs any part of the mass appraisal report, including a letter of transmittal, must also sign this certification.

In an assignment that includes only assignment results developed by the real property appraiser(s), any appraiser(s) who signs a certification accepts full responsibility for all elements of the certification, for the assignment results, and for the contents of the appraisal report. In an assignment that includes personal property assignment results not developed by the real property appraiser(s), any real property appraiser(s) who signs a certification accepts full responsibility for the real property elements of the certification, for the real property assignment results, and for the real property contents of the appraisal report.

In an assignment that includes only assignment results developed by the personal property appraiser(s), any appraiser(s) who signs a certification accepts full responsibility for all elements of the certification, for the assignment results, and for the contents of the appraisal report. In an assignment that includes real property assignment results not developed by the personal property appraiser(s), any personal property appraiser(s) who signs a certification accepts full responsibility for the personal property elements of the certification, for the personal property assignment results, and for the personal property contents of the appraisal report.

When a signing appraiser(s) has relied on work done by appraisers and others who do not sign the certification, the signing appraiser is responsible for the decision to rely on their work. The signing appraiser(s) is required to have a reasonable basis for believing that those individuals performing the work are competent. The signing appraiser(s) also must have no reason to doubt that the work of those individuals is credible.

The names of individuals providing significant mass appraisal assistance who do not sign a certification must be stated in the certification. It is not required that the description of their assistance be contained in the certification, but disclosure of their assistance is required in accordance with the Standards Rule 6-2(g).<sup>69</sup>

<sup>68</sup> See Advisory Opinion 2, *Inspection of Subject Property*.

<sup>69</sup> See Advisory Opinion 31, *Assignments Involving More than One Appraiser*.

**NEW CONSTRUCTION  
PERCENTAGE OF COMPLETION  
GUIDE**

This guide is to be used in estimating the percentage of completion of both residential and commercial buildings under construction.

**PERCENT COMPLETION GUIDE**

<b>FOOTING.....</b>	<b>2%</b>
<b>FOUNDATION.....</b>	<b>7%</b>
<b>SUBFLOOR.....</b>	<b>4%</b>
<b>ROUGH EXTERIOR WALLS.....</b>	<b>8%</b>
<b>ROOF.....</b>	<b>7%</b>
<b>ROOF COMPLETE.....</b>	<b>4%</b>
<b>EXTERIOR DOORS/WINDOWS.....</b>	<b>6%</b>
<b>ROUGH ELECTRICAL.....</b>	<b>3%</b>
<b>ROUGH PLUMBING.....</b>	<b>4%</b>
<b>ROUGH HVAC.....</b>	<b>3%</b>
<b>EXTERIOR WALLS FINISH.....</b>	<b>8%</b>
<b>INSULATION.....</b>	<b>3%</b>
<b>DRYWALL.....</b>	<b>8%</b>
<b>CABINETS INSTALLED.....</b>	<b>4%</b>
<b>FINISH FLOORING.....</b>	<b>5%</b>
<b>FINISH ELECTRICAL.....</b>	<b>2%</b>
<b>FINISH PLUMBING.....</b>	<b>3%</b>
<b>FINISH HVAC.....</b>	<b>3%</b>
<b>PAINTING/TRIM.....</b>	<b>8%</b>
<b>WATER/SEWER/SEPTIC.....</b>	<b>4%</b>
<b>OTHER.....</b>	<b>4%</b>
<b>TOTAL.....</b>	<b>100%</b>

## WEIGHTS AND MEASURES

Tables of Weights and Measures and Other Information That May Be Helpful to the Assessor/Appraiser.

<b>Metric Measure</b>		
Millimeter	=	0.001 meter
Centimeter	=	0.01 meter
Decimeter	=	0.1 meter
Meter	=	39.3685 inches
Kilometer	=	1000 meters
Kilometer	=	.062137 miles
Meter	=	1.0935 yards
Meter	=	3.2807 feet
1 Foot	=	0.30480 meter
1 Foot	=	3.04 centimeters
1 Inch	=	2.54 centimeters
<b>Linear Measure</b>		
1 Foot	=	12 inches
1 Yard	=	3 feet-36 inches
1 Rod	=	5½ yards-16½ feet
1 Furlong	=	40 rods-220 yards-660 feet
1 Mile	=	8 furlongs-320 rods-1,760 yards-5,280 feet
<b>Surveyor's Linear Measure</b>		
1 Link	=	7.92 inches
1 Rod	=	25 links
1 Chain	=	4 rods-100 links-66 feet
1 Furlong	=	10 chains
1 Mile	=	8 furlong-80 chains
<b>Square Measure</b>		
1 Square Foot	=	144 square inches
1 Square Yard	=	9 square feet-1,296 square inches
1 Square Rod	=	1 pole/perch-30¼ square yards-272¼ square feet
1 Rood	=	40 square rods
1 Acre	=	160 square rods-4,840 square yards-43,560 square ft
1 Square Mile	=	640 acres
<b>Surveyor's Square Measure</b>		
1 Square Rod	=	625 square links
1 Square Chain	=	16 square rods
1 Acre	=	10 square chains
1 Square Mile	=	640 acres
<b>Cubic Measure</b>		
1 Cubic Foot	=	1,728 cubic inches-7,481 gallons
1 Cubic Yard	=	27 cubic feet
1 Cord Foot	=	16 cubic feet
1 Cord of Wood	=	8 cord-128 cubic feet
1 Perch of Masonry	=	24¾ cubic feet
1 Bushel	=	1.2445 cubic feet
<b>Angles And Arcs Measure</b>		

# Schedule of Values

# Chatham County 2021

1 Minute	=	60 seconds
1 Degree	=	60 minutes
1 Right Angle	=	90 degrees-1 quadrant
1 Circumference	=	360 degrees-4 quadrants
<b>Board Measure</b>		
1 Board Foot	=	Length in feet x width in feet x thickness in inches

Measurement In General Use		
1 Link	=	7.92 inches
1 foot	=	12 inches
1 yard	=	3 feet or 36 inches
1 rod	=	16½ feet, 5½ yards or 25 links
1 surveyor's chain	=	66 feet, or 4 rods, or 100 links
1 furlong	=	660 feet, or 40 rods
1 mile	=	8 furlongs, 320 rods, 80 chains, or 5,280 feet
1 square rod	=	272¼ square feet or 30¼ square yards
1 acre contains	=	43,560 square feet
1 acre contains	=	160 square rods
1 span	=	9 inches
1 hand	=	(horse measurement) 4 inches
1 knot	=	(nautical) 6,080.27 feet
1 fathom	=	(nautical) 6 feet
1 stone	=	14 pounds
1 square acre	=	Approximately 208.7 feet on each side
1 acre	=	Approx 8 rods by 20 rods, or any two combinations or rods whose product is 160

## SIMPLE FORMULA CONVERTING SQUARE FEET TO ACRES

Multiply by 23 and point off 6 places (This method is not exact but is useful for rough calculations)

Example: 1500 feet x 2050 feet = 3,075,000 square feet x 23 = 70.73 acres

## BOARD MEASURE

Multiply thickness in inches by width in inches, divide product by 12 and multiply result by the length in feet.  
The result is board measure content.

Conversion factors for converting lineal feet of lumber into board feet.

Example: 50 –2 inches x 10 inches 20 feet long

50 x 20 feet = 1000 lineal feet

2 inches x 10 inches = 20 square inches divided by 12 =

1.667 board feet x 1000 lineal feet equals 1,667 board feet

**Table For The Conversion Of Lineal Feet Into Board Feet**

2 inches x 4 inches	(1 lineal foot)	.667 board feet
3 inches x 4 inches	(1 lineal foot)	1.000 board feet
2 inches x 6 inches	(1 lineal foot)	1.000 board feet
2 inches x 8 inches	(1 lineal foot)	1.333 board feet
2 inches x 10 inches	(1 lineal foot)	1.667 board feet
2 inches x 12 inches	(1 lineal foot)	2.000 board feet
2 inches x 14 inches	(1 lineal foot)	2.333 board feet
2 inches x 16 inches	(1 lineal foot)	2.667 board feet
3 inches x 6 inches	(1 lineal foot)	1.500 board feet
4 inches x 6 inches	(1 lineal foot)	2.000 board feet
4 inches x 8 inches	(1 lineal foot)	2.667 board feet
4 inches x 10 inches	(1 lineal foot)	3.333 board feet
4 inches x 12 inches	(1 lineal foot)	4.000 board feet
6 inches x 6 inches	(1 lineal foot)	3.000 board feet
6 inches x 8 inches	(1 lineal foot)	4.000 board feet
10 inches x 12 inches	(1 lineal foot)	10.000 board feet
12 inches x 12 inches	(1 lineal foot)	12.000 board feet

**PRINCIPLES**

PLANE FIGURE –A plane surface bounded by either straight or curved lines and having no thickness.

SOLID – A body, such as a barrel, building, etc.

SQUARE MEASURE – Area calculation requiring only two dimensions, length and width.

CUBIC MEASURE – Cubic or cubage means volume and gives size in terms of its bulk. Calculation requires 3 dimensions, length x width x depth or height or thickness.

**MEASURES AND THEIR EQUIVALENTS**

A gallon of water (U.S. Standard) weighs 8 1/3 pounds and contains 231 cubic inches.

A cubic foot of water contains 7½ gallons, 1,728 cubic inches and weighs 62½ pounds.

Doubling the diameter of a pipe increases its capacity four times.

To find the pressure in pounds per square inch of a column of water, multiply the height of the column in feet by .434.

To find the capacity of tanks any size, given the dimensions of a cylinder in inches, to find its capacity in U.S. gallons: square the diameter, multiply by the length and by .0034 (Note: See table of tank capacities.)

Rectangular tanks multiply the length by the width by the depth (All in inches) and divide the result by 231. The answer is the capacity in gallons.

31½ gallons equals one barrel.

# Schedule of Values

# Chatham County 2021

B.T.U. (British Thermal Unit) is the amount of the heat required to raise one pound of water one degree Fahrenheit.

A ton of refrigeration is measured by the displacement of the amount of heat required to melt a ton of ice in 24 hours. One motor horsepower of an electrically powered unit is normally required to produce one ton of refrigeration. 12,000 B.T.U. equals one tone.

Kilowatts multiplied by 1.3405 equal horsepower.

## WEIGHTS & MEASURES

1 cubic inch of Cast Iron weighs	0.26 pounds
1 cubic inch Wrought Iron weighs	0.28 pounds
1 cubic inch Water weighs	0.036 pounds
1 inch of Water weighs	62.321 pounds
1 United States gallon weighs	8.33 pounds
1 Imperial gallon weighs	10.00 pounds
1 United States gallon equals	231.01 cubic inches
1 Imperial gallon equals	277.274 cubic inches
1 cubic foot of Water equals	7.48 U.S. gallons
1 gallon of water weighs	8.34 pounds
1 gallon equals	.1337 cubic feet
1 gallon equals	.1074 bushels
1 cubic foot equals	.8032 bushels
1 barrel (oil) equals	42 gallons
1 barrel (water) equals	31.5 gallons

Pressure in pounds per square inch of column of water equals .434 times the height of the column in feet.

## AREAS

Square foot area of surface equals square of one side multiplied by factors shown.

Regular Shaped	Number of Sides	Factor
Equilateral Triangle	3	.433
Pentagon	5	1.721
Hexagon	6	2.598
Heptagon	7	3.634
Octagon	8	4.828
Nonagon	9	6.182
Decagon	10	7.694
Undecagon	11	9.366
Dodecagon	12	11.196



# Schedule of Values

# Chatham County 2021

TABLES – For Use in Area and Content Capacity Computations

Capacity of Circular Tanks – Per Foot of Height in Gallons & Bushels

Diameter in Feet	Circum.	Square Foot Area	Gallons	Bushels	Barrels (Oil) (Oil-42 gals. Ea.)
3	9.42	7.07	53	6	1.26
4	12.57	12.57	94	10	2.24
5	15.71	19.63	147	16	3.5
6	18.85	28.27	212	23	5.0
7	21.99	38.48	288	31	6.8
8	25.13	50.27	376	42	9.0
9	28.27	63.62	477	51	11.3
10	31.42	78.54	587	63	14.0
11	34.56	95.03	711	76	16.9
12	37.69	113.10	846	91	20.2
13	40.84	132.73	993	107	23.7
14	43.98	153.94	1,151	124	27.4
15	47.12	176.72	1,322	142	31.5
16	50.26	201.06	1,504	162	35.8
17	53.41	226.98	1,698	182	40.4
18	56.55	254.47	1,903	204	45.3
19	59.69	283.53	2,121	228	50.5
20	62.83	314.16	2,350	252	56.0
21	65.97	346.36	2,591	278	61.7
22	69.12	380.13	2,843	305	67.7
23	72.26	415.48	3,108	334	74.0
24	75.40	452.39	3,384	364	80.6
25	78.54	490.87	3,672	394	87.4
26	81.68	530.93	3,971	427	94.6
27	84.82	572.56	4,283	460	102.0
28	87.97	615.75	4,606	495	109.7
29	91.11	660.52	4,941	531	117.6
30	94.25	706.86	5,287	568	125.8
31	97.39	754.77	5,646	606	134.4
32	100.53	804.25	6,016	646	143.2
33	103.67	855.30	6,398	687	152.3
34	106.81	907.92	6,791	730	161.6
35	109.96	962.11	7,197	773	171.3
36	113.10	1,017.88	7,614	818	181.3
37	116.24	1,075.21	8,043	864	191.5
38	119.38	1,134.11	8,483	911	202.0
39	122.52	1,194.59	8,936	960	212.7
40	125.66	1,256.64	9,400	1,010	223.8

To find the capacity in barrels (oil) = Diameter squared x height.

To find the capacity in gallons = Diameter squared x 5.8748 x height  
(Diameter & height in feet).

**AREAS AND MEASUREMENTS**

To find the circumference of a circle, multiply the diameter by 3.1416.

To find the diameter, multiply circumference by 0.3183 or divide circumference by 3.1416.

To find the radius, multiply circumference by 0.15915.

To find the side of an inscribed square, multiply the diameter by 0.07071 or multiply the circumference by 0.2551.

To find the side of an equal square, multiply the diameter by 0.8863 or multiply the circumference by 0.2821.

Square: A side multiplied by 1.1142 equals the diameter of its circumscribing circle.

A side multiplied by 4.443 equals the circumference of its circumscribing circle.

A side multiplied by 1.126 equals the diameter of an equal circle.

A side multiplied by 3.547 equals circumference of an equal circle.

To find the area of a circle, multiply the circumference by one-quarter of the diameter or multiply the square of the diameter by 0.7854 or multiply the square of the circumference by 0.07958 or multiply the square of one-half of the diameter by 3.1416.

To find the surface of a sphere or globe, multiply the diameter by the circumference or multiply the square of the diameter by 3.1416 or multiply four times the square of the radius by 3.1416.

To find tank capacities, diameter square x .0034 = gallons per inch of height – Base 42 gallons per barrel.

To find area of a triangle – multiply base by  $\frac{1}{2}$  perpendicular height.

To find area of an ellipse – product of both diameters x .7854.

To find area of a parallelogram – base x altitude.

To find cu. inches in a ball – multiply cube of diameter by .5236.

To find cubic contents of a cone – multiply area of base by one-third the altitude.

Area of rectangle equals length multiplied by width.

Surface of frustum of cone or pyramid equals sum of circumference of both ends x  $\frac{1}{2}$  slant height plus area both ends.

Contents of frustum of cone or pyramid: multiply area of two ends and get square root – add the two areas and time  $\frac{1}{3}$  altitude.

**CONVERSION TABLES**

To convert bushels to ton, multiply number of bushels by 60 and divide the product by 2000 (average maximum weight of commodities 60 pounds per bushel.)

To convert gallons to bushels, divide gallons by 9.35. Answer in bushels.

To convert cubic measure into bushels, multiply by 0.8035.

To find capacity of cylindrical tanks standing on end: To find the capacity in cubic feet of a round tank or cistern, multiply the square of the average diameter by the depth and multiply the product by .785.

**STRUCTURAL COMPONENTS****DESIGN**

One of the most significant factors influencing quality classification and cost of Construction is design. The design of a house relates not only to the degree of functional efficiency attained in layout, but also to its overall appearance. In this sense, appearance means the refinement of exterior elevations, interior finish, and perimeter shape. The degree of refinement is usually evident in the complexity of foundation and roof outlines, plus the elaborateness of finishing materials and attention given to details.

Lower quality houses will generally be simple rectangular shaped structures with straight lines on all four walls, and a higher ratio of floor area per lineal foot of exterior wall. Higher quality structures will generally have an irregular foundation outline and a lower ratio of floor area per lineal foot of exterior wall. In other words, the design of a higher quality house substitute's esthetics for efficiency (economy of construction) but does not sacrifice functional utility. In fact, the integration of areas given to living, dining, food preparation, sleeping, hygiene and storage into a functional or logical whole can best be accomplished when design is not restricted by a rectangular or "boxed" perimeter shape.

An irregular perimeter or foundation outline generally denotes higher quality construction, because replacement cost is increased by a greater amount of exterior wall area plus special floor and roof framing.

**ELECTRICAL**

In new construction, the typical electrical service consists of 120-240 volt; 3 wire, 200 amp circuit breaker systems for houses with electric heat and 150 amp services for houses with gas heat. Minimum Property Standards requires one wall switch per room with a minimum of 6' between convenience outlets. 220 volt service is required for electric ranges and clothes dryers, whereas 110 volt service is required for convenience outlets. The majority of residential wiring is done with Romex, a non-metallic sheathed cable. More expensive homes have BX or steel armored cable. Conduit wiring is seldom found in residential construction. Older homes may be wired with Knob & Tube or porcelain insulators. Houses with old style fuse boxes, Knob & Tube wiring, or 60 amp service are generally of low quality or will soon need rewiring.

**EXTERIOR WALLS**

Exterior wall construction represents one of the most significant components of a residential building. It normally accounts for 25% to 35% of replacement cost new and consists of (1) The Basic Structure – wood framed houses usually have 2" X 4" studs placed directly over floor joists on 16" centers - a 2" X 4" sole plate secures the studs at floor level and a 4" X 4" ceiling plate ties the studs together at the ceiling line (2) Exterior Finish- consists of sheathing, the visible exterior wall cover, trim and painting. The materials used in the basic structure and exterior wall finish will determine the type of construction, i.e., wood framed - brick veneer, etc. (3) Interior Facing & Finish - new construction is generally 1/2" to 5/8" dry wall, taped & painted; older houses may have lath and plaster; 2" to 3 1/2" batt insulation is normally placed between the studs behind the drywall. (4) Window & Door Openings - the size and number of openings will have a significant influence on replacement cost.

**FLOOR STRUCTURE & FINISH**

Conventional wood floor construction consists of the sill plates, girders, floor joists, bridging, sub floor and finished flooring. The sill plate is the first wood member of a frame structure; and is usually a horizontally laid 2" X 6" board secured to the foundation by 1/2" X 16" anchor bolts. A girder is the main horizontal interior supporting member of the floor structure. It may be steel or wood, but a 3-ply 2" X 10" frame girder is typical. Minimum Property Standards call for no less than 2" X 8" floor joists on 16" centers with a maximum span of 13 1/2'; and 2" X 10" floor joists on 16" centers if span is between 13 1/2' and 16'. Better quality construction will have 1" X 3" cross bridging every 8' to 10' span. However, 2" X 6" or 2" X 8" block-bridging is typical of fair and average quality construction. However, diagonally laid 1" X 5" tongue & groove boards are found in some older homes and in high quality new construction. Basically, the finished flooring of a house will be either pine or hardwood. Generally, the kitchen will have an inlaid linoleum cover and the bath will have ceramic or vinyl tile. Wall to wall carpets may be laid over a hardwood finished floor or over 5/8" pressboard (particleboard).

**FOUNDATION**

The foundation of a residence with conventional wood floor construction consists of the footings, foundation wall and interior piers. A solid perimeter foundation wall is generally constructed with 8" concrete blocks; brick-to grade construction has 12" blocks to grade level with the balance being 8" block allowing a 4" brick to rest on the outer edge of the 12" block. Interior piers are generally of the same materials as the foundation wall. Footings are poured concrete and must be a minimum of 8" deep and 3" wider (on each side) than the foundation wall.

With concrete slab floor construction, the floor, foundation walls and footings are poured monolithically. In such, case, there are no framing members for the floor structure.

Obviously, the footings and lower levels of the foundation wall cannot be seen. Therefore, unless you are informed of structural weakness or see evidence of excessive settlement, you must assume that the foundation has been properly constructed.

### HEATING

The type and adequacy of the heating system is not only a cost important factor, but also one which has a significant influence on the functional utility and value of a building. There are several types and variations of heating systems used depending on location and availability of fuel. The systems described here are those most frequently encountered.

*Floor Furnace* - may be oil or gas fired. This type heating system is normally found in lower quality one story houses with crawl space. There is no duct work, and circulation is by gravity. The unit is generally placed near the center of the house. Its capacity is rated from 30,000 to 50,000 ETU.

*Gravity Furnace* - This system is generally found in the basements of older houses, since it must be below the level of the rooms to be heated. Coal, either stoker or hand-fired, was the main source of fuel. However, many systems still in use have been converted to oil or gas. Heat is provided as the air comes in contact with heated surfaces in the furnace. The warm air rises and flows through inclined leader pipes to supply registers usually installed in the floor or baseboard adjacent to the outside walls of the various rooms. The cooler air is drawn down through large return-air-intakes located in the floor near an outside wall to the bottom of the furnace casing for re-heating. The duct work for a gravity warm-air heating system is quite large and must be slanted in such a way as to permit the natural flow of warm and cool air. This significantly reduces the amount of useable head room in the basement. The gravity warm-air heating system is relatively inexpensive and lacks functional utility when compared to more modern systems. The cost of this type system generally ranges from 15% to 20% less than a forced warm-air system with a comparable BTU rating.

*Forced Warm Air* - May be electric, oil or gas fired. Air is warmed by heated surfaces in the furnace and then distributed to the various rooms through supply ducts by a blower (fan) in the furnace. The blower also draws the room air back to the furnace through return-air intakes which are usually located at the baseboard of inside walls. Adjustable registers or diffusers for the warm air are generally located on the outside wall at the floor level (baseboard), preferably below windows. This system requires less space for the furnace and ducts than the gravity system, and it does not need to be centrally located or below the level of the heated area.

*Electric Radiant Ceiling* - Perhaps one of the most frequently encountered heating systems. Found in fair to average quality homes. Each room is thermostatically controlled. The heating element (cable) is attached to the ceiling drywall; coated with a layer of plaster and then laminated between a second thickness of drywall. The wattage required for each room is determined by factoring ceiling height by 1.5 and multiplying that product times the square feet of floor area. For example, a 12' X 12' room with an 8' ceiling height would require 1728 watts of heating. ( $8' \times 1.5 = 12 \times 12 \times 12 = 1728$  watts).

*Electrical Wall Heaters* - This system follows the same principle as electric ceiling heat but is substantially cheaper; and concentrates all heat from one point in the room. Its size is also measured in wattage per coil or unit stack. The typical unit will range from 1500 watts up to 4000 watts.

*Electric Baseboard Heat* - This is merely a modification of the electric wall heater. However, it distributes the heat over a somewhat wider area, and costs approximately 20% more than electric wall heaters of the same wattage.

*Hot-Water (Gravity System)* - may be coal, oil or gas fired. In this system, hot water serves as the medium for carrying heat to all parts of the building. Circulation in a gravity system is created when the hot water ascends through the flow pipe and then flows down through return pipes which pass successively through radiators on the various floors of the building. Since heat is released as the water passes through each radiator, the ones on the lower floors must be larger. The "two-pipe" system relieves this problem since each radiator has its own individual hot-water feed. A hot water system for residential use is rather uncommon due to the cost of the system (which may run from 40% to 60% more than forced warm-air or radiant ceiling systems) and the bulkiness of the materials.

*Steam Heating* - Maybe coal, oil or gas fired. In this type system, water in the boiler is converted to steam which rises through the main distribution pipe. From this pipe, the steam moves into the radiators, gives off its heat and condenses. The condensed steam (water) then flows back to the boiler for reheating. In the "two-pipe" the steam and the condensate flow in separate pipes. With the two – pipe system, the steam always enters the radiators from the top and subsequently emerges as condensate from the bottom. If the return-flow pipe is situated below the water level of the boiler, it is described as a "wet" condensate return, whereas if it is above the water level, it is a "dry" condensate return. In a single pipe system, the steam and condensate flow in the same pipe and must enter the bottom of the radiator. As with the hot-water system, steam heating is expensive and somewhat cumbersome.

### **INTERIOR FINISH**

Interior construction and finish, as a whole can account for 10% to 30% of replacement cost new, depending on the elaborateness of trim, number and sizes of closets, kitchen cabinets, special wall finishes, etc.

Interior partitions are generally wood framed with 2" X 4" studs on 16" centers. The most common basic interior facing is 1/2" or 5/8" drywall, taped and painted. Older houses often have walls and ceilings finished with plaster on wood or gypsum lath. However, due to the wide use and acceptance of drywall in most quality levels, plaster does not necessarily increase value in proportion to cost. The exception occurs in the luxury or mansion type house where plaster is consistent in cost and quality with the entire structure.

The type and quality of materials available for finishing the interior of a house varies greatly. However, the basic wall and ceiling finish will generally conform to the grade of materials and quality of workmanship evidenced by exterior wall finish and design. Special attention should be given to the amount and quality of kitchen cabinets, closets and the finish of special areas such as the bath and den.

### **MECHANICAL - CENTRAL AIR CONDITIONING**

The majority of residential central air-conditioning is done with either "split" refrigerated systems, ranging from one to five- ton capacity. The combination heating/ cooling or package unit utilizes the same duct work with gas heating and electric cooling. This is a central system for original construction and generally results in some savings (per system capacity) in construction costs.

The split system is usually added to an existing forced warm-air furnace. The fan coil is normally installed in the top of the furnace and the condensing unit (with compressor and condenser in the same cabinet) is located outside the house. The efficiency of this system is equal to that of the package system, although cost may be somewhat higher if it is added after original construction.



The heat-pump is an electric powered combination heating and cooling unit which consists of a compressor, condenser, throttle valve and evaporator. It operates on the principle that fluids under high pressure evaporate at a higher temperature than fluids under low pressure. The heat transfer medium is heated under low pressure in the evaporator then transferred by the compressor to the high- pressure condenser where the heat is given off and blown through a duct system in the house. The cooling system is activated by thermostatically reversing a four-way valve which reverses the cycle of the unit. The heat pump is somewhat more expensive than the comparable gas-electric package unit described above, and generally requires electric resistance heaters to provide supplementary heat during periods when the temperature drops below 25°F.

The variation in models, sizes and capacities of central air-conditioning systems is virtually boundless. The only sure way to determine the type, size and capacity of a system is to note the model number and brand name and call the dealer. Generally speaking, however, the horse power of the compressor motor is approximately equal to the ton capacity of the cooling unit. Using the same duct work as the forced air heating system, central air-conditioning may run 20° to 30° more if separate duct work is required.

## **PLUMBING**

A standard complement of plumbing for a fair or average quality house consists of one 2 to 3-fixture bath with shower over tub, one flat rim kitchen sink with two compartments and one 40- gallon gas or 52- gallon electric water heater. Plumbing represents a relatively fixed cost in building construction. Some nominal additional cost for laterals would be incurred in the larger house, but this would be hardly noticeable in the overall price per square foot. It is pointed out that colored fixtures cost approximately 5 % more than white fixtures. The kitchen sink and each bathroom should be vented with a metal stack extending through the roof. It is also important to determine whether waste is disposed of by public sewer or individual septic system.

## **ROOF**

There are generally six types or styles of roof structures used in residential construction. The typical roof structure consists of 2" X 6" rafters placed on 16" centers and secured at the peak by a 2" X 8" ridge board. Sheathing is typically 3/8" to 1/2" plywood covered with felt under-lament and 235 lb. composition shingles. Ceiling joists, which are often considered part of the composite roof structure, should be at least 2" X 6" on 16" centers with a maximum span of 14'. The rafters and ceiling joists are attached to the 4" X 4" ceiling plates at the line of the exterior wall. The span of a roof is the distance between the outer edges of the ceiling plates, typically the width of the house. The rise of the roof is the distance from the level of the ceiling plates to the top of the ridge. The Run of a

rafter is the horizontal distance from the outside of the ceiling plate to the right-angle intersection of the ridge. The slope of a roof is expressed in terms of the rise of the roof in inches per foot of run of rafters. The slope of a roof is typically 5/12 but should not be less than 4/12. Generally better- quality construction will be reflected by steeper pitched roofs with more overhangs at the eaves. Pitch is the ratio of the rise of the roof to the span. Therefore, to find the rise of the roof in inches per foot of run of rafters (slope), multiply pitch by 24.

With exception of a trussed frame, 2" X 4" rafters do not meet Basic Standards. With a residential truss roof, rafters and ceiling joists are placed on 24" centers and are constructed with 2" X 4" boards, however, the engineering design of the truss creates structural capacity similar to a conventionally framed roof and results in a savings in construction cost.

## TERMS AND DEFINITIONS

### ARCHITECTURAL TERMS

<b>Apartment hotel</b>	a building designed for non-transient residential use, divided into dwelling units similar to an apartment house, but having such hotel apartment hotel accommodations as room furnishings, lounges, public dining room, maid service, etc.
<b>Apartment house</b>	a multi-family residence containing three or more non-transient residential living units and generally providing them with a number of common facilities and services.
<b>Attic</b>	An unfinished or semi-finished portion of a building lying between the highest finished story and the roof and wholly within the roof framing.
<b>Basement</b>	a building story which is wholly or partly below the grade level.
<b>Bay</b>	(1) a horizontal area division of a building usually defined as the space between columns or division walls. (2) an internal recess formed by causing a wall to project beyond its general line.
<b>Bay window</b>	a window, or group of continuous windows, projecting from the main wall of a building.
<b>Beam</b>	a long structural load-bearing member which is placed horizontally or nearly so and which is supported at both ends or, infrequently, at intervals along its length.
<b>Beam, spandrel</b>	a wall beam supporting the wall, above, as well as the floor.
<b>Building</b>	any structure partially or wholly above ground which is designed to afford shelter to persons, animals, or goods. See also <i>construction</i> .
<b>Building, fireproof</b>	a building in which all parts carrying loads or resisting stresses and all exterior and interior walls, floors, and staircases are made of incombustible materials, and in which all metallic structural members are encased in materials which remain rigid at the highest probable temperature in case its contents are burned, or which provide ample insulation from such a temperature.
<b>Building, loft</b>	a building having three or more stories with few or no interior bearing walls and designed for storage, wholesaling, or light industrial purposes.

<b>Building, single-purpose</b>	a building designed for a specific purpose, which cannot be used for another purpose without substantial alterations; e.g., a theater or church.
<b>Bungalow</b>	a one-story dwelling unit which is somewhat more pretentious than a cottage.
<b>Column</b>	a structurally isolated vertical member which is at least 8 to 10 times as long as its least lateral dimension and which is designed to carry loads. Compare <i>pier</i> .
<b>Conduit</b>	a tube, pipe, or small artificial tunnel used to enclose wires or pipes or to convey water or other fluids.
<b>Construction, brick</b>	a type of construction in which the exterior walls are bearing walls (q.v.) made of solid brick or brick and tile masonry.
<b>Construction, brick veneer</b>	a type of construction in which the exterior walls are one-layer brick curtain walls backed by a wood frame.
<b>Construction, fireproof</b>	<i>see fireproof building.</i>
<b>Construction, mill</b>	a type of construction in which the exterior walls are substantial masonry bearing walls, in which the structural members are of heavy timber, and which is further characterized by an open design and by other safeguards against fire hazards. Sometimes called "slow-burning construction."
<b>Construction, reinforced</b>	a type of construction in which the principal structural members, such
<b>Concrete</b>	as the floors, columns, beams, etc., are made of concrete poured around isolated steel bars or steel meshwork in such manner that the two materials act together in resisting forces.
<b>Construction, steel frame</b>	a type of construction in which there is a framework of steel structural members for the support of all loads and the resistance of all stresses.
<b>Construction, wood frame</b>	a type of construction in which there is a framework of wooden structural members for the support of all loads and the resistance of all stresses. Loosely called "frame construction."
<b>Coping</b>	a special capping at the top of a wall, serving principally as a watershed.
<b>Cornice</b>	a projecting element at the top of a wall, serving principally as a decoration or as part of the coping (q.v.).

<b>Cottage</b>	a one story to two story dwelling unit of small size and humble character.
<b>Course</b>	a uniform horizontal layer of brick, stone, terra cotta, shingles, or some other structural material extending continuously around a building or along a wall.
<b>Court</b>	an open space bordered on two or more sides by the walls of a single building, or of two or more buildings, and by a lot line or a yard on any side not so bordered.
<b>Dormer</b>	(1) a relatively small structure projecting from a sloping roof. (2) a window set upright in the face of such a structure.
<b>Dwelling</b>	any building or portion thereof designed or occupied in whole or in part as a place of residence.
<b>Dwelling, attached</b>	a multi-family dwelling in which the dwelling units are separated vertically by means of common or party walls. See <i>terrace</i> .
<b>Dwelling, double</b>	a two-family dwelling in which the dwelling units are separated vertically, by means of a common or party wall. Synonymous with "semi-detached dwelling."
<b>Dwelling, duplex</b>	a two-family dwelling in which the two dwelling units are separated horizontally with a private street entrance for each; i.e., a two-family flat.
<b>Dwelling, Multi-family</b>	a building designed as a place of residence for more than two families or households; e.g., an apartment house or tenement.
<b>Dwelling, row</b>	any one of a series of similar single family, two family, or multi-family dwellings having one or more contiguous common or party walls. Compare <i>terrace</i> ; <i>dwelling, double</i> .
<b>Dwelling unit</b>	any room or group of rooms designed as the living quarters of one family or household, equipped with cooking and toilet facilities, and having an independent entrance from a public hall or from the outside.
<b>Eaves</b>	the portion of a sloping roof which projects beyond the outside walls of a building.
<b>Elevation</b>	a drawing which represents a projection of any one of the vertical sides or vertical cross-sections of a building or of any other object. Compare plan.
<b>Façade</b>	the face of a building.

<b>Firewall</b>	a wall of fire-resisting material erected between two parts of a building to prevent the spread of fire from one part to the other.
<b>Flashing</b>	small metal strips used to prevent leaking of roofs around chimneys, dormers, hips, and valleys.
<b>Flat</b>	(1) any one floor of a building two or more stories high, each floor of which constitutes a single dwelling unit and has a private street entrance. (2) the building containing two or more such floors. Compare <i>dwelling</i> , <i>duplex</i> .
<b>Footing</b>	a spreading base to a wall, column, or other supporting member, which serves to widen the ground area to which structural loads are transmitted.
<b>Foundation</b>	the structural members below grade level, or below the first tier of beams above grade level, which transmit the load of a superstructure to the ground.
<b>Gable</b>	(1) the triangular portion of a wall between the slopes of a double-sloping (i.e., gable) roof. (2) the whole of the wall containing such a triangular portion. (3) a portion of a buildings extending from the remainder of the building and covered with a gable roof.
<b>Girder</b>	a large or principal beam (q.v.) used to support concentrated loads at isolated points along its length. (Girders usually support the beams and structure above).
<b>Header</b>	(1) a structural member which is laid perpendicularly to a parallel series of similar members and against which the latter members abut. (2) a brick or other piece of masonry which is laid in a wall in such manner that its longest dimension extends along the thickness of the wall. Contrast <i>stretcher</i> .
<b>Hip</b>	(1) a sloping line along which two roof surfaces meet to form an external angle of more than 180 degrees. (2) a hip rafter (q.v.) Compare <i>ridge</i> ; <i>valley</i> .
<b>Hotel</b>	a building designed for transient or semi-transient residential use, divided into furnished single rooms and suites, and having such accommodations as lounges, public dining rooms and maid service, etc
<b>Hotel, apartment</b>	see <i>apartment hotel</i> .
<b>Joist</b>	one of a series of small parallel beams laid on edge and used to support floor and ceiling loads, and usually supported in turn by larger beams and girders.

<b>Lintel</b>	a beam over a wall opening, such as a door or windows, designed to carry the load of the wall over such opening.
<b>Loft</b>	a non-partitioned or relatively open upper story of a building, designed for storage, Wholesaling, or light manufacturing. See also <i>loft building</i> .
<b>Louver (or louvre)</b>	a ventilator containing slats which are placed lengthwise across the ventilator opening, each slat being slanted in such manner as to overlap the next lower slat and to permit ventilation but exclude rain.
<b>Marquee</b>	a flat roof-like structure which shelters a doorway, which has no floor beneath it, and which is usually supported wholly from the walls or the building.
<b>Mezzanine</b>	a low story formed by placing a floor between what would ordinarily be the floor and ceiling of a high story, <i>Note:</i> the mezzanine floor frequently has a smaller area than other floors and, if present at all, is usually between the first and second stories.
<b>Millwork</b>	all of the wooden portions of a building, whether frame construction or otherwise, which are customarily purchased in finished form from a planing mill, such as doors, windows, trim, balusters, etc.
<b>Overhang</b>	a finished portion of a building having full story height which extends beyond the foundation wall line if part of the ground story, or beyond the exterior walls of the ground story if part of any higher story.
<b>Overhead structure</b>	similar to overhang above ground story, such as O.H. bridge or passage, O.H. walk, O.H. Addition.
<b>Partition</b>	see <i>wall, partition</i> .
<b>Pier</b>	(1) a thick, solid mass of masonry which is fully or partially isolated from a structural standpoint and which is designed to transmit vertical loads to the earth. (2) a structure projecting from land into water for use in loading and unloading vessels. Compare column.
<b>Pilaster</b>	a flat-faced pillar projecting somewhat from, but engaged in, the wall of a building and used for decorative purposes or to help support truss and girder loads or both.
<b>Pile</b>	a heavy timber, metallic, or masonry pillar forced into the earth to form a foundation member.

<b>Pitch</b>	the slope of any structural member, such as a roof or rafter, usually expressed as a simple fraction representing the rise per lateral foot.
<b>Plan</b>	a drawing representing a projection of any one of the floors or horizontal cross-sections of a building or of the horizontal plane of any other object or area. Compare elevation.
<b>Purlin</b>	a beam running along the underside of a sloping roof surface and at right angles to the rafters, used to support the common rafters, and usually supported in turn by larger structural members, such as trusses or girders (usually run along length of building).
<b>Rafter</b>	a structural member placed, as a rule, in a sloping position and used as the supporting element for the structural material forming the plane of the roof. See also purlin.
<b>Rafter, hip</b>	a rafter placed in an inclined position to support the edges of two sloping roof surfaces which meet to form an external angle of more than 180 degrees.
<b>Rafter, valley</b>	a rafter placed in an inclined position to support the edges of two sloping roof surfaces which meet to form an external angle of less than 180 degrees.
<b>Ramp</b>	an inclined walk or passage connecting two different floor levels and used in lieu of steps.
<b>Residence</b>	see <i>dwelling</i> .
<b>Ridge</b>	a horizontal line along which the upper edges of two roof surfaces meet to form an external angle of more than 180 degrees. Compare <i>hip</i> ; <i>valley</i> .
<b>Rise</b>	(1) in general, any vertical distance. (2) specifically, the rise of a roof being the distance between the top of an exterior wall and the peak of the roof; the rise of a stair being the distance from tread to tread.
<b>Roof</b>	the top portion of a structure. Types of roofs include double pitch, flat, gable, gambrel, hip, lean-to, single pitch.
<b>Roof, curb (or curbed)</b>	a roof with a ridge at the center and a double slope on each of its two sides.
<b>Roof, flat drainage.</b>	a roof which is flat or sloped only enough to provide proper



<b>Roof, gable</b>	a double-sloped roof having a cross section similar in general to the shape of the inverted letter "V".
<b>Roof, gambrel</b>	a ridged roof with two slopes on each side, the lower having a steeper pitch.
<b>Roof, hip (or hipped)</b>	(1) in general, any roof having one or more hips (q.v.) (2) usually, a roof with four sloping sides meeting along four hips or along four hips and a ridge. Compare <i>roof, pyramid</i> .
<b>Roof, lean-to</b>	(1) a roof having a single sloping side which is supported at the upper edge by the wall of an attached building or of a larger and higher portion of the same building (preferred). (2) any roof with a single slope. Compare <i>roof, flat</i> ,
<b>Roof, mansard</b>	a special type of curb roof (q.v.) in which the pitch of the upper part of each of the four equally sloping sides is small or negligible and that of the lower part is very great; a series of dormers projects from the lower part.
<b>Roof, monitor</b>	a type of gable roof commonly found on industrial buildings - having a small raised portion along the ridge, with openings for the admission of light and air.
<b>Roof, pyramid</b>	a hip roof having four sloping triangular sides, usually of equal pitch, meeting together at the peak.
<b>Roof, ridged</b>	a roof having one or more ridges (q.v.).
<b>Roof, saw tooth</b>	a roof with a series of parallel sloping surfaces interspersed between a series of vertical surfaces which rise from the lower edges of such sloping surfaces and which contain windows for the admission of light and air.
<b>Roof, single pitch</b>	any roof with a single slope, other than a lean-to roof.
<b>Sash</b>	the wooden or metal framework in which the glass of a door or window is set.
<b>Sheathing</b>	the covering, usually of rough lumber, placed immediately over studding or rafters.
<b>Sill</b>	(1) the lower horizontal part of a door-case (the threshold) or of a window. (2) the lowest horizontal structural member of a frame building, upon which the superstructure is supported.
<b>Sleeper</b>	a structural member laid horizontally on the ground or upon a masonry base as a support to a floor or other superstructures.

<b>Specifications</b>	a detailed description of the dimensions, materials, quantities, structural procedures, etc. applicable to a projected or completed piece of construction.
<b>Story</b>	that portion of a building enclosed by a floor, a ceiling, and the exterior walls.
<b>Story, ground</b>	the first story lying wholly above the ground level. Synonymous with "first story."
<b>Story, half (or one-half)</b>	(1) for buildings with a mansard or gambrel roof, a finished portion of a building which lies above the wall plate or cornice and which has a usable floor area substantially less than that of the next lower story. (2) for all other buildings, a finished portion of a building which is above one or more full stories, which is wholly or partly within the roof frame and which has one or more exterior walls substantially lower than the full height of the story.
<b>Story, one</b>	a building having no finished story above the ground story.
<b>Stretcher</b>	a brick or other piece of masonry which is laid lengthwise in a wall. contrast header.
<b>Strut</b>	any structural member, which holds apart two <b>or</b> more other members by counteracting a pressure, which tends to bring them together. Contrast tie.
<b>Stud</b>	one of a series of small slender structural members placed vertically and used as the supporting element of exterior or interior walls. (Plural: studs or studding)
<b>Sub floor</b>	the flooring laid directly on top of the floor joists, but beneath the finish floor.
<b>Tenement</b>	a building, usually of obsolete nature, designed primarily for non- transient residential use and divided into three or more dwelling units having common stairs, halls, and street entrances, and sometimes-common bath and toilet rooms. Compare <i>apartment house; flat; terrace</i> .
<b>Terrace</b>	(1) an unroofed level area covered with grass or masonry or both raised above the surrounding ground level, and having a vertical or sloping front. (2) a multi-family dwelling in which the dwelling units are separated vertically by means of common or party walls. Compare <i>dwelling, row; dwelling, double</i> .
<b>Terra cotta</b>	a hard-baked ceramic clay molded into decorative tiles, bricks, etc., and used particularly for facing and trim on buildings.

<b>Tie</b>	any structural member, which binds together two or more members by counteracting a stress which tends to draw them apart. Contrast <i>strut</i> .
<b>Trim</b>	(1) the wooden portions of a plastered room, such as the doors, windows, wainscoting, and molding, or the corresponding portions of a room finished otherwise than with plaster. (2) the contrasting elements on the exterior of a building which serve no structural purpose, but are intended to enhance its appearance, e.g., the cornice. (3) occasionally, the hardware of a house, such as locks, hinges, doorknobs, etc.
<b>Truss</b>	a combination of structural pieces fastened together into a rigid open member which is supported at both ends and upon which loads are superimposed. Compare <i>girder</i> .
<b>Valley</b>	a sloping line along which two roof surfaces meet to form an external angle of less than 180 degrees. Compare <i>hip</i> ; <i>ridge</i> .
<b>Veneer</b>	a thin ornamental or protective facing which does not add appreciably to the strength of the body to which it is attached.
<b>Wainscot (or wainscoting)</b>	(1) a wooden facing on the lower portion of a contrasting interior wall. (2) by extension, a facing of marble tile, or the like, on the lower portion of interior walls.
<b>Wall</b>	a vertical structure serving to enclose, support, divide; such as one of the vertical enclosing sides of a building or room.
<b>Wall, bearing</b>	a wall designed primarily to withstand vertical pressure in addition to its own weight.
<b>Wall, common</b>	a wall owned by one or two parties and jointly used by both, one or both of whom is entitled to such use under the provisions of ownership.
<b>Wall, curtain</b>	a non-bearing wall which is supported by columns, beams, or other structural members, and whose primary function is to enclose space.
<b>Wall, fire</b>	<i>see firewall</i>
<b>Wall, partition</b>	an interior bearing or non-bearing wall which separates portions of a story. Synonymous <i>with partition</i> .
<b>Wall, party</b>	a wall jointly used by two parties under easement agreement and erected at or upon a line separating two parcels of land held under different ownership.

<b>Wall, retaining</b>	a wall designed primarily to withstand lateral pressures of earth or other filling or backing deposited behind it after construction.
<b>Window, bay</b>	see <i>bay window</i> .
<b>Window, dormer</b>	see dormer.
<b>Wing</b>	a subordinate part of a building extending from the main part, or any one of two or more substantially co-ordinate parts of a building which extend out from one or more common junctions.

## **DATA PROCESSING TERMS**

<b>BAUD</b>	unit of signaling speed equal to the number of discrete conditions or signal events per second.
<b>Binary</b>	a characteristic or property involving a selection, choice, or condition in which there are two possibilities, such as the number representation with a radix of two.
<b>Bits</b>	the smallest unit of information in the binary number system. An abbreviation of binary digits. Normally, a bit refers to one "on", while a no bit means zero "off".
<b>Block</b>	a group of machine words considered or transported as a unit. In flowcharts, each block represents a logical unit of programming.
<b>Bytes</b>	a sequence of adjacent binary digits operated upon as a unit; a unit of computer storage capacity equal to eight binary bits.
<b>Calculator</b>	a keyboard machine for the automatic performance of arithmetic operations.
<b>CAMA</b>	Computer-Assisted Mass Appraisal - Utilizing data processing to compare parcels, calculate values, and maintain property characteristics to increase efficiency and accuracy in the appraisal process.
<b>Columns binary</b>	pertaining to the binary representation of data on punched cards in which adjacent positions in a column correspond to adjacent bits of data; each column in a 12-row card may be used to represent 12 consecutive bits of 36-bit word.
<b>Computer</b>	a computational device distinguished by its high speed, programmable operation, and large memory.

<b>Computer program</b>	a series of instructions, in a form acceptable to the computer, prepared so as to achieve a certain result.
<b>CPU</b>	central Processing Unit - The heart of the computing system, which contains the arithmetic, logical and control circuits necessary for the interpretation, execution of a program and controls the functioning of the entire system.
<b>CRT</b>	see <i>video display terminal</i> .
<b>Data base</b>	a minimally redundant stored collection of data. A collection of data maintained by a computer.
<b>Data Base Management</b>	A combination of hardware and software that controls and processes all requests for data in data bases.
<b>Data element</b>	the smallest unit of data stored on some medium to which a reference or none may be assigned.
<b>Data entry</b>	the process of placing information into machine-readable form.
<b>Data path</b>	the input-processing-output flow followed by data (often repeatedly) during normal computer operations.
<b>Data processing</b>	performing operations on machine-readable data, either with or without the use of a computer.
<b>Data structure</b>	the particular form in which data are to be treated by the computer program: whether as whole numbers, decimal fractions, or alphabetic characters, and whether as single pieces of information or as related sets or arrays of data.
<b>Data verification</b>	checking the accuracy of data that has been placed into a data processing system.
<b>Direct access</b>	an addressing scheme or random access storage medium that permits direct addressing of data locations.
<b>Disk file</b>	a means for storing data on a magnetic disk or platter.
<b>Encode</b>	to apply a set of rules specifying the manner in which data may be represented such that a subsequent decoding is possible.
<b>Feedback</b>	the process of returning portions of the output of a machine, process, or system for use as input in a further operation.
<b>Flowchart</b>	a graphical representation of the definition, analysis, or solution of a problem using symbols to represent operations, data flow, and equipment.

<b>Hard copy</b>	output that appears on paper.
<b>Hardware</b>	the physical equipment in a data processing system.
<b>Indexed sequential</b>	a file in which records are organized sequentially with indexes that permit quick access to individual records as well as rapid sequential processing.
<b>Kilobytes</b>	(kilo = 1000, bytes = characters) byte: A form of saying a character - numerical, letter, or symbol, in machine-readable form. Data processing personnel measure the size of records by bytes, instead of number of characters. Exactly, a kilobyte (KB or K) has 1,024 "characters".
<b>Library</b>	a collection of standard proven computer routines, usually kept on a library tape or random access file, by which problems or portions of problems may be solved.
<b>Master file</b>	a file of records containing a cumulative history or the results of accumulation; updated in each file processing cycle, and carried forward to the next cycle.
<b>Megabyte</b>	(1 million bytes) This unit is quite large and is usually used to measure the volume of a file, a disc, etc.
<b>Memory</b>	the part of the computer that stores the program, holds intermediate results, and various constant data. Same as <i>storage</i> ,
<b>Modem</b>	a contraction of "Modulator Demodulator." Its function is to interface with data processing devices and convert data to a form compatible for sending and receiving on transmission facilities.
<b>MRA</b>	Multivariate Regression Analysis - Also called the least squares method, is a mathematical method for producing a model for a dependent variable as a linear function of independent factors. As an example - the predicted sales price (dependent variable) is a function of independent factors such as Square Feet, Style, Neighborhood, etc.
<b>Multiplexor</b>	a computer hardware device used as a screening agent to the main computer. It polls all the messages from all terminals and transmits one by one to the main computer. It also dispatches "messages" to receiving ends ... it can be compared to the secretary of a big boss!
<b>Multiprocessing</b>	systems software that enables several CPU's to be connected together to provide faster, more reliable computing.
<b>Multiprogramming</b>	systems software that enables the computer to run several programs simultaneously.

<b>On-line</b>	peripheral equipment or devices in direct communication with the central processing unit, and from which information reflecting current activity is introduced into the data processing system as soon as it occurs.
<b>Operating system</b>	the systems software that manages all other software in the computer (also known as an executive or monitor).
<b>Operator's instructions</b>	these are sets of operation instructions, which tell the operator what to do to get the jobs done on the computer. The instructions are designed for two types of operators: 1. Computer operators - run the computer, execute a job, mount a tape, etc. 2. Use operators - run different applications such as payroll, CAMA. The instructions tell them how to add a new record, delete a word, on a terminal or using cards.
<b>Output</b>	information that has been processed by the computer.
<b>Peripheral equipment</b>	units that work in conjunction with the computer, but are not part of the computer itself, such as tape reader, card reader, magnetic tape feed, high-speed printer, typewriter, etc.
<b>Printer</b>	hardware for outputting on paper.
<b>Program</b>	the instructions that enable a computer to process data.
<b>Programming Language</b>	a system for coding instructions for computer processing.
<b>Punched cards</b>	a storage medium similar to index cards.
<b>Random access</b>	for device or media, the accessing of data by address rather than by sequence.
<b>Record</b>	a collection of related items of data treated as a unit.
<b>Sequence</b>	an arrangement of items of data according to a specified set of rules.
<b>Sequential processing</b>	the procedure of processing data records in the same order that they occur.
<b>Sequential storage</b>	storing of data in sequential order.
<b>Software</b>	the programs and routines used to extend the capabilities of computers, such as compilers, assemblers, routines, and subroutines. Also, all documents associated with a computer, e.g., manuals, circuit diagrams.
<b>Source</b>	that which provides information to be entered into the computer.
<b>Source document</b>	a form containing raw data for entry into the computer.

<b>Source file</b>	a computer program in high-level language code.
<b>Standard deviation</b>	a statistical measure of the variation of a characteristic about its average value. Standard deviation is the square root of the variance of a characteristic about its average observed value. Variance is the sum of the squared deviations of each observed value from the average, divided by one less than the number of observations. For normally distributed observations, approximately 70% of the observations will fall within one standard deviation of the mean or average value.
<b>Storage</b>	the retention of information in the computer system.
<b>Summary report</b>	output that displays only the end product of processing in a concise format.
<b>System software</b>	computer software that provides overall housekeeping functions for the computer.
<b>Systems design</b>	the development of a computer system (hardware and software) to suit a particular application, by using the program development cycle.
<b>Terminal</b>	a device in a system or communication network at which point data can either enter or leave the system.
<b>Transaction file</b>	a file containing transient data to be processed in combination with a master file.
<b>Turn-around document</b>	a document or form prepared as output at one stage of the data processing cycle, and sent to a customer or other user with the intention of having it returned and used as input at a later stage.
<b>Unit record</b>	a record in which all data concerning each item in a transaction is punched into one card.
<b>Variable</b>	a quantity that, when identified by a symbolic name, can assume any of a given set of values.
<b>Verify</b>	To determine whether a transcription of data or other operation has been accomplished accurately. To check the results of key punching.
<b>Video display terminal</b>	hardware for output on a television-style picture tube (cathode-ray tube or CRT).
<b>Word</b>	a set of characters that occupies one storage location and is treated by the computer circuits as a unit and transported as such.



## REAL ESTATE APPRAISAL TERMS

<b>Abstract</b>	a computer-printed report of appraised and/or assessed values for each parcel of real property in a given taxing district; generally sequenced geographically.
<b>Accrued depreciation</b>	<i>see depreciation.</i>
<b>Actual age</b>	the number of years elapsed since the original construction, as of the effective valuation date. Compare with <i>effective age</i> .
<b>Ad valorem tax</b>	in reference to property, a tax based upon the value of the property.
<b>Aesthetic value</b>	a value, intangible in nature, which is attributable to the pleasing appearance of a property.
<b>Agricultural property</b>	land and improvements devoted to or best adaptable for the production of crops, fruits, and timber, and the raising of livestock.
<b>Air rights</b>	the right to the use of a certain specified space within the boundaries of a parcel of land and above a specified elevation.
<b>Alley influence</b>	the enhancement to the value of a property rising out of the presence of an abutting alley; most generally applicable to commercial properties.
<b>Amenities</b>	in reference to property, the intangible benefits arising out of owner- ship; <i>amenity value</i> refers to the enhancement of value attributable to such amenities.
<b>Appraisal</b>	an estimate, usually in written form, of the value of a specifically described property as of a specified date; may be used synonymously with <i>valuation or appraised value</i> .
<b>Appraisal schedules</b>	any standardized schedules and tables used in conjunction with a revaluation program, such as replacement cost pricing schedules, depreciation tables, land depth tables, etc.
<b>Appraised value</b>	<i>see appraisal.</i>
<b>Appraiser</b>	one who estimates value. More specifically, one who possesses the expertise to execute or direct the execution of an appraisal.
<b>Assessed value</b>	<i>see assessment.</i>
<b>Assessing</b>	the act of valuing a property for the purpose of establishing a tax base.

<b>Assessment</b>	the value of taxable property to which the tax rate is to be applied in order to compute the amount of taxes; may be used synonymously with <i>assessed value</i> , <i>taxable value</i> , and <i>tax base</i> .
<b>Assessment district</b>	an assessor's jurisdiction; it may or may not be an entire tax district.
<b>Assessment period</b>	the period of time during which the assessment of all properties within a given assessment district must be completed; the period between tax lien dates.
<b>Assessment ratio</b>	the ratio of assessed value to a particular standard of value, generally the appraised value. A percentage to be applied to the appraised value in order to derive the assessed value.
<b>Assessment roll</b>	the official listing of all properties within a given taxing jurisdiction by ownership, description, and location showing the corresponding assessed values for each; also referred to as <i>tax list</i> , <i>tax book</i> , <i>tax duplicate</i> , and <i>tax roll</i> .
<b>Assessor</b>	the administrator charged with the assessment of property for ad valorem taxes; his precise duties differ from state to state depending upon state statutes.
<b>Aesthetic value</b>	a value, intangible in nature, which is attributable to the pleasing appearance of a property.
<b>Average deviation</b>	in a distribution of values, the average amount of deviation of all the values from the mean value, equal to the total amount of deviation from the mean divided by the number of deviations. As applied to an assessment-to-sale ratio distribution, the average amount which all the ratios within the distribution deviate from the mean ratio.
<b>Base price</b>	a value or unit rate established for a certain specified model, and subject to adjustments to account for variations between that particular model and the subject property under appraisal.
<b>Blighted area</b>	a declining area characterized by marked structural deterioration and/or environmental deficiencies.
<b>Board of Equalization</b>	a non-jurisdictional board charged with the responsibility of reviewing assessments across properties and taxing districts and to assure that said properties and districts are assessed at a uniform level, either raising or lowering assessments accordingly; also referred to as <i>Board of Appeals</i> , and <i>Board of Review</i> .

<b>Building residual technique</b>	a building valuation technique which requires the value of the land to be a known factor; the value of the buildings can then be indicated by capitalizing the residual net income remaining after deducting the portion attributable to the land.
<b>Capitalization</b>	a mathematical procedure for converting the net income which a property is capable of producing into an indication of its current value. See <i>income approach</i> .
<b>CDU rating</b>	a composite rating of the overall condition, desirability, and usefulness of a structure as developed by the Cole-Layer-Trumble Company and used nationally as a simple, direct, and uniform method of estimating accrued depreciation.
<b>Central business district</b>	the center of a city - in which the primary commercial, governmental, and recreational activities are concentrated.
<b>Certified assessment Evaluator</b>	a professional designation (C.A.E.) conferred upon qualifying assessors by the International Association of Assessing Officers (IAAO).
<b>Classified property tax</b>	an ad valorem property tax under which the assessment ratio varies for different property classes.
<b>Component part-in-place Method</b>	the application of the unit-in-place method to unit groupings or construction components. See <i>unit-in-place method</i> .
<b>Corner influence</b>	the enhancement to the value of a property due to its corner location; most generally applicable to commercial properties.
<b>Cost approach</b>	one of the three traditional approaches to determination of the value of a property; arrived at by estimating the value of the land, the replacement or reproduction cost new of the improvement, and the amount of accrued depreciation to the improvement. The estimated land value is then added to the estimated depreciated value of the improvements to arrive at the estimated property value. Also referred to as the "cost-to-market approach" to indicate that the value estimates are derived from market data abstraction and analysis.
<b>Cost factor</b>	a factor or multiplier applied to a replacement or reproduction cost to account for variations in location and time, as well as for other elements of construction costs not otherwise considered.
<b>Cubic content</b>	the cubic volume of a building within the outer surface of the exterior walls and roof and the upper surface of the lowest floor.

<b>Deed</b>	a written instrument, which conveys an interest in real property. A <i>quitclaim deed</i> conveys the interest described therein without warranty of title. A <i>trust deed</i> conveys interest described therein to a trustee. A <i>warranty deed</i> conveys the interest described therein with the provisions that the freehold is guaranteed by the grantor, his heirs, or successors.
<b>Depreciation</b>	loss in value from all causes; may be further classified as <i>physical</i> , referring to the loss of value caused by physical deterioration; <i>functional</i> , referring to the loss of value caused by obsolescence inherent in the property itself; and economic, referring to the loss of value caused by factors extraneous to the property. <i>Accrued</i> depreciation refers to the actual depreciation existing in a particular property as of a specified date. <i>Normal</i> depreciation refers to that amount of accrued depreciation one would normally expect to find in buildings of certain construction, design, quality, and age.
<b>Depreciation allowance</b>	a loss of value expressed in terms of a percentage of replacement or reproduction cost new.
<b>Depth factor</b>	a factor or multiplier applied to a unit land value to adjust the value in order to account for variations in depth from an adopted standard depth.
<b>Depth table</b>	a table of depth factors.
<b>Design factor</b>	a factor or multiplier applied to a computed replacement cost as an adjustment to account for cost variations attributable to the particular design of the subject property which were not accounted for in the particular pricing schedule used.
<b>Deterioration</b>	impairment of structural condition evidenced by the wear and tear caused by physical use and the action of the elements, also referred to as <i>physical depreciation</i> .
<b>Economic depreciation</b>	<i>See depreciation.</i>
<b>Economic life</b>	the life expectancy of a property during which it can be expected to be profitably utilized.
<b>Economic obsolescence</b>	obsolescence caused by factors extraneous to the property. Also referred to as <i>economic depreciation</i> .
<b>Economic rent</b>	the rent which a property can be expected to bring in the open market as opposed to <i>contract rent</i> or the rent the property is actually realizing at a given time.

<b>Effective age</b>	an age assigned to a structure based upon its condition as of the effective valuation date; it may be greater or less than the structure's actual age. Compare with <i>actual age</i> .
<b>Effective depth</b>	in reference to property valuation, that depth, expressed in feet, upon which the selection of the depth factor is based.
<b>Effective frontage</b>	in reference to property valuation, that total frontage, expressed in lineal feet, to which the unit land value is applied, it may or may not be the same as the actual frontage.
<b>Effective gross income</b>	the estimated gross income of a property less an appropriate allowance for vacancies and credit losses.
<b>Effective valuation Date</b>	in reference to a revaluation program, the date as of which the value estimate is applicable.
<b>Encroachment</b>	the displacement of an existing use by another use.
<b>Environmental deficiency</b>	a neighborhood condition such as adverse land uses, congestion, poorly designed streets, etc., operating to cause economic obsolescence and, when coupled with excessive structural deterioration, blight.
<b>Equalization Program</b>	a mass appraisal (or reappraisal) of all property within a given taxing jurisdiction with the goal of equalizing values in order to assure that each taxpayer is bearing only his fair share of the tax load; may be used synonymously with a <i>revaluation program</i> .
<b>Equity</b>	in reference to property taxes, a condition in which the tax load is distributed fairly or <i>equitably</i> ; opposite of <i>inequity</i> which refers to a condition characterized by an unfair or unequitable distribution of the tax burden. <i>Inequity</i> is a natural product of changing economic conditions, which can only be effectively cured by periodic equalization programs. In reference to value, it is that value of the property remaining after deducting all liens and charges against it.
<b>Excessive frontage</b>	frontage, which because of the particular utility of the lot does not serve to add value to the lot.
<b>Exempt property</b>	see <i>tax exemption</i> .
<b>Fee appraisal</b>	see <i>mass appraisal</i> .
<b>Field crew</b>	the total professional staff assigned to a specific appraisal project, including listers, reviewers, staff appraisers, and clerical and administrative supporting personnel.

<b>Functional depreciation</b>	<i>see depreciation.</i>
<b>Functional Obsolescence</b>	obsolescence caused by factors inherent in the property itself. Also referred to as <i>functional depreciation</i> .
<b>Functional utility</b>	the composite effect of a property's usefulness and desirability upon its marketability.
<b>Grade</b>	the classification of an improvement based upon certain construction specifications, and quality of materials and workmanship.
<b>Grade factor</b>	a factor or multiplier applied to a base grade level for the purpose of interpolating between grades or establishing an intermediate grade.
<b>Grantee</b>	a person to whom property is transferred and property rights are granted by deed, trust instrument, or other similar documents. Compare with <i>grantor</i> .
<b>Grantor</b>	a person who transfers property or grants property rights by deed, trust instrument, or other similar documents. Compare with <i>grantee</i> .
<b>Gross area</b>	the total floor area of a building measured from the exterior of the walls.
<b>Gross income</b>	the scheduled annual income produced by the operation of a business or by the property itself.
<b>Gross income Multiplier</b>	a multiplier representing the relationship between the gross income of a property and its estimated value.
<b>Gross sales</b>	the total amount of invoiced sales before making any deductions for returns, allowances, etc.
<b>Ground lease</b>	a document entitling the lessee certain specified rights relating to the use of the land.
<b>Ground rent</b>	net rent from a ground lease; that portion of the total rent which is attributable to the land only.
<b>Improved land</b>	land developed for use by the erection of buildings and other improvements.
<b>Income approach</b>	one of the three traditional approaches to determination of value; measures the present worth of the future benefits of a property by the capitalization of its net income stream over its remaining economic life. The approach involves making an estimate of the potential net income the property may be

	expected to yield, and capitalizing that income into an indication of value.
<b>Income property</b>	a property primarily used to produce a monetary income.
<b>Industrial park</b>	a subdivision designed and developed to accommodate specific types of industry.
<b>Industrial property</b>	land, improvements, and/or machinery used or adaptable for use in the production of goods either for materials, or by changing other materials and products.i.e. assembling, processing and manufacturing ...as well as the supporting auxiliary facilities thereof.
<b>Inequity</b>	see <i>equity</i> .
<b>Influence factor</b>	a factor serving to either devalue or enhance the value of a particular parcel of land, or portions thereof, relative to the norm for which the base unit values were established; generally expressed in terms of a percentage adjustment.
<b>Institutional Property</b>	land and improvements used in conjunction with providing public services and generally owned and operated by the government or other nonprofit organizations ... hospitals, schools, prisons, etc. Such property is generally held exempt from paying property taxes.
<b>Interest rate</b>	the rate of return from an investment.
<b>Land classification</b>	the classification of land based upon its capabilities for use; and/or production.
<b>Land contract</b>	a purchase contract wherein the grantee takes possession of the property with the grantor retaining the deed to the property until the terms of the contract are met as specified.
<b>Land residual technique</b>	a land valuation technique which requires the value of the buildings to be known; the value of the land can then be indicated by capitalizing the residual net income remaining after deducting the portion attributable to the building(s).
<b>Landscaping</b>	natural features such as lawns, shrubs and trees added to a plot of ground or modified in such a way as to make it more attractive.
<b>Land use restrictions</b>	legal restrictions regulating the use to which land may be put.
<b>Land value maps</b>	a map used in conjunction with mass appraising; generally drawn at a small scale, and showing comparative unit land values on a block to block basis.

<b>Lease, Lessee, Lessor</b>	a written contract by which one party (lessor) gives to another party (lessee) the possession and use of a specified property, for a specified time, and under specified terms and conditions
<b>Leasehold</b>	a property held under the terms of a lease.
<b>Leasehold Improvements</b>	additions, renovations, and similar improvements made to a leased property by the lessee.
<b>Leasehold Value</b>	the value of a leasehold, the difference between the contract rent and the currently established economic or market rent.
<b>Legal description</b>	a description of a parcel of land which serves to identify the parcel in a manner sanctioned by law.
<b>Lister</b>	a field inspector or data collector whose principle duty is to collect and record property data (not an appraiser).
<b>Market data Approach</b>	one of the three traditional approaches to determination of the value of a property; arrived at by compiling data on recently sold property which are comparable to the subject property and adjusting their selling prices to account for variations in time, location, and property characteristics between the comparables and the subject property.
<b>Market value</b>	the price an informed and intelligent buyer, fully aware of the existence of competing properties, and not compelled to act, would be justified in paying for a particular property.
<b>Mass appraisal</b>	appraisal of property on a mass scale - such as an entire community, generally for ad valorem tax purposes, using standardized appraisal techniques and procedures to accomplish uniform equitable valuation with a minimum of detail, within a limited time period, and at a limited cost ... as opposed to a <i>fee appraisal</i> which is generally used to refer to a rather extensive, detailed appraisal of a single property or singularly used properties for a specified purpose.
<b>Member Appraisal Institute</b>	a professional designation (M.A.I.) conferred upon qualifying real estate appraisers by the American Institute of Real Estate Appraisers.
<b>Mineral rights</b>	the right to extract subterranean deposits such as oil, gas, coal, and minerals, as specified in the grant.
<b>Minimum rental</b>	that portion of the rent in a percentage lease which is fixed.



<b>Model method</b>	a method of computing the replacement or the reproduction cost of an improvement by applying the cost of a specified model and adjusting the cost to account for specified variations between the subject improvement and the model.
<b>Modernization</b>	the corrective action taken to update a property so that it may conform with current standards.
<b>Mortgage, Mortgagee Mortgagor</b>	a legal document by which the owner of a property (mortgagor) pledges the property to a creditor (mortgagee) as security for the payment of a debt.
<b>Neighborhood</b>	a geographical area exhibiting a high degree of homogeneity in residential amenities, land use, economic and social trends, and housing characteristics.
<b>Neighborhood trend</b>	three stages in the life cycle of a neighborhood "the <i>improving stage</i> characterized by development and growth; the <i>static stage</i> characterized by a leveling off of values; and the <i>declining stage</i> characterized by infiltration and decay.
<b>Net income</b>	the income remaining from the effective gross income after deducting all operating expenses related to the cost of ownership.
<b>Net lease</b>	a lease wherein the lessee assumes to pay all applicable operating expenses related to the cost of ownership; also referred to as <i>net net</i> , or <i>net net net lease</i> .
<b>Net sales</b>	gross sales less returns and allowances.
<b>Net sales area</b>	the actual floor area used for merchandising, excluding storage rooms, utility and equipment rooms, etc.
<b>Non-conforming use</b>	a use which, because of modified or new zoning ordinances, no longer conforms to current use regulations, but which is nevertheless upheld to be legal so long as certain conditions are adhered to.
<b>Observed depreciation</b>	that loss in value which is discernable through physical observation by comparing the subject property with a comparable property either new or capable of rendering maximum utility.
<b>Obsolescence</b>	a diminishing of a property's desirability and usefulness brought about by either functional inadequacies and over-adequacies inherent in the property itself, or adverse economic factors external to the property. Refer to <i>functional depreciation and economic depreciation</i> .

<b>Operating expenses</b>	the fixed expenses, operating costs, and reserves for replacements which are required to produce net income before depreciation, and which are to be deducted from effective gross income in order to arrive at net income.
<b>Average income</b>	rental received in addition to the minimum contract rental, based upon a specified percentage of a tenant's business receipts.
<b>Overall rate</b>	a capitalization rate representing the relationship of the net income (before recapture) of a property to its value as a single rate; it necessarily contains, in their proper proportions, the elements of both the land and the building capitalization rates.
<b>Over assessed</b>	a condition wherein a property is assessed proportionately higher than comparable properties.
<b>Parcel</b>	piece of land held in one ownership,
<b>Percentage lease</b>	a type of lease in which the rental is stipulated to be a percentage of the tenant's gross or net sales, whichever specified.
<b>Permanent parcel number</b>	an identification number which is assigned to a parcel of land to uniquely identify that parcel from any other parcel within a given taxing jurisdiction.
<b>Personal property</b>	property, which is not permanently affixed to and a part of the real estate, as specified by state statutes.
<b>Physical depreciation</b>	<i>see depreciation.</i>
<b>Preferential assessment</b>	an assessing system which provides preferential treatment in the form of reduced rates to a particular class of property; such as a system providing for farm properties to be assessed in accordance to their value in use as opposed to their value in the open market.
<b>Property class</b>	a division of like properties generally defined by statutes and generally based upon their present use. The basis for establishing assessment ratios in a classified property assessment system. See <i>classified property tax</i> .
<b>Property inspection</b>	a physical inspection of a property for the purpose of collecting and/or reviewing property data.
<b>Property record card</b>	a document specially designed to record and process specified property data; may serve as a source document, a processing form, and/or a permanent property record.

<b>Public utility property</b>	properties devoted to the production of commodities or services for public consumption under the control of governmental agencies such as the Public Utility Commission.
<b>Quantity survey Method</b>	a method of computing the replacement or the reproduction cost of an improvement by applying unit costs to the actual or estimated material and labor quantities and adding an allowance for overhead, profit, and all other indirect construction costs.
<b>Real estate</b>	the physical land and appurtenances affixed thereto; often used synonymously with <i>real property</i> .
<b>Real property</b>	all the interests, benefits, and rights enjoyed by the ownership of the real estate.
<b>Reassessment</b>	the revaluation of all properties within a given jurisdiction for the purpose of establishing a new tax base.
<b>Rent</b>	the amount paid for the use of a capital good. See <i>economic rent</i> .
<b>Replacement cost</b>	the current cost of reproducing an improvement of equal utility to the subject property; it may or may not be the cost of reproducing a replica property. Compare with <i>reproduction cost</i> .
<b>Reproduction cost</b>	the current cost of reproducing a replica property. Compare with <i>replacement cost</i> .
<b>Reserve for replacements</b>	a reserve established to cover renewal and replacements of fixed assets.
<b>Residential property</b>	vacant or improved land devoted to or available for use primarily as a place to live.
<b>Revaluation program</b>	see <i>equalization program</i> .
<b>Sales ratio study</b>	a statistical analysis of the distribution of assessment or appraisal-to-sale ratios of a sample of recent sales, made for the purpose of drawing inferences regarding the entire population of parcels from which the sample was abstracted.
<b>Salvage value</b>	the price one would be justified in paying for an item of property to be removed from the premises and used elsewhere.
<b>Site development costs</b>	all costs incurred in the preparation of a site for use.
<b>Soil productivity</b>	the capacity of a soil to produce crops.

<b>Sound value</b>	the depreciated value of an improvement.
<b>Sound value estimate</b>	an estimate of the depreciated value of an improvement made directly by comparing it to improvements of comparable condition, desirability, and usefulness without first estimating its replacement cost new.
<b>Standard depth</b>	that lot depth selected as the norm against which other lots are to be compared; generally the most typical depth.
<b>Sublease</b>	see <i>lease</i> ; the lessee in a prior lease simply becomes a lessor in a sublease.
<b>Tax bill</b>	an itemized statement showing the amount of taxes owed for certain property described therein and traceable to the party(s) legally liable for payment thereof.
<b>Tax book</b>	<i>see assessment roll.</i>
<b>Tax district</b>	a political subdivision over which a governmental unit has authority to levy a tax.
<b>Tax duplicate</b>	<i>see assessment roll.</i>
<b>Tax exemption</b>	either total or partial freedom from tax; total exemption such as that granted to governmental, educational, charitable, religious, and similar nonprofit organizations, and partial exemption such as that granted on homesteads, etc.
<b>Tax levy</b>	in reference to property taxes, the total revenue, which is to be realized, by the tax.
<b>Tax list</b>	<i>see assessment roll.</i>
<b>Tax mapping</b>	the creation of accurate representations of property boundary lines at appropriate scales to provide a graphic inventory of parcels for use in accounting, appraising and assessing; such maps show dimensions and the relative size and location of each tract with respect to other tracts.
<b>Tax notice</b>	a written notification to a property owner of the assessed value of certain properties described therein; often mandated by law to be given to each property owner following a revaluation.
<b>Tax rate</b>	the rate - generally expressed in dollars per hundred or dollars per thousand (mills) - which is to be applied against the tax base (assessed value) to compute the amount of taxes. The tax rate is derived by dividing the total tax levy, by the total assessed value of the taxing district.

<b>Tax roll</b>	<i>see assessment roll.</i>
<b>Tillable land</b>	land suitable for growing annual crops.
<b>Under assessed</b>	a condition wherein a property is assessed proportionately lower than computable properties.
<b>Uniformity</b>	as applied to assessing, a condition wherein all properties are assessed at the same ratio to market value, or other standard of value depending upon the particular assessing practices followed.
<b>Unimproved land</b>	vacant land; a parcel for which there is no improvement value.
<b>Unit cost or price</b>	the price or cost of one item of a quantity of similar items.
<b>Unit-in-place method</b>	a method of computing the replacement or reproduction cost of an improvement by applying established unit-in-place rates, developed to include the cost of materials, equipment, labor, overhead and profit, to the various construction units.
<b>Use density</b>	the number of buildings in a particular use per unit of area, such as a density of so many apartment units per acre.
<b>Use value</b>	the actual value of a commodity to a specific owner, as opposed to its value in exchange or market value.
<b>Vacancy</b>	an un-rented unit of rental property.
<b>Vacant land</b>	unimproved land; a parcel for which there is no improvement value.
<b>Valuation</b>	<i>see appraisal.</i>
<b>View</b>	the scene as viewed from a property.
<b>Water frontage</b>	land abutting on a body of water.
<b>Woodland</b>	land which is fairly densely covered with trees.
<b>Zoning regulations</b>	governmental restrictions relating to the use of land.

## **STATISTICAL TERMS**

<b>Aggregate ratio</b>	as applied to real estate, the ratio of the total assessed value to the total selling price.
<b>Average deviation</b>	in a distribution of values, the average amount of deviation of all the values from the mean value equal to the total amount of deviation from the mean divided by the number of deviations.

<b>Cells</b>	the basic units making up a stratified sample; each sale representing a distinct group within the total universe.
<b>Coefficient</b>	a value prefixed as a multiplier to a variable or an unknown quantity.
<b>Coefficient of dispersion</b>	as applied to an assessment-to-sale ratio distribution, a measure of dispersion in a given distribution equal to the average deviation of the ratios from the mean ratio divided by the mean ratio.
<b>Frequency distribution</b>	a display of the frequency with which each value in a given distribution occurs, or in a <i>grouped frequency distribution</i> , a display of the frequency with which the values within various intervals, or value groupings, occur.
<b>Mean</b>	a measure of central tendency equal to the sum of the values divided by the number. Also referred to as <i>arithmetic average or arithmetic mean</i> .
<b>Median</b>	a measure of central tendency equal to that point in a distribution above which 50% of the values fall and below which 50% of the values fall. The 50th percentile. The 2nd quartile.
<b>Mode</b>	a measure of central tendency equal to that value occurring most frequently in a given distribution. In a grouped frequency distribution, the mode is equal to the mid point of the interval with the greatest frequency.
<b>Normal distribution</b>	a distribution in which all the values are distributed symmetrically about the mean value, with 68.26% of the values falling between +/- 1 standard deviation, 95.44% between +/- 2 standard deviations, and 99.74% between +/- 3 standard deviations.
<b>Percentile rank</b>	the relative position of a value in a distribution of values expressed in percentage terms; for instance, as applied to an assessment-to-sale ratio distribution, a ratio with a percentile rank of 83 would indicate that 83% of the ratios were lower and 17% of the ratios were higher than that particular ratio.
<b>Precision</b>	as applied to real estate, it refers to the closeness of estimated value to actual selling price on an aggregate basis.
<b>Price related differential</b>	as applied to real estate, an analytical measure of the vertical uniformity of values in a given distribution calculated by dividing the mean ratio by the aggregate ratio; a ratio of more than 1 being generally indicative of the relative undervaluation of high priced properties as compared to the less valuable properties, whereas a ratio of less than 1 would indicate the converse relationship.

<b>Quartile</b>	positions in a distribution at 25 percentile intervals; the <i>first quartile</i> being equal to the 25th percentile, the <i>second quartile</i> being equal to the 50th percentile or the median, and the <i>third quartile</i> being equal to the 75th percentile.
<b>Regression analysis</b>	a statistical technique for making statements as to the degree of linear association between a criterion (dependent) variable and one or more predictor (independent) variables; a simple linear regression having one independent variable, and multiple linear regression having more than one independent variable.
<b>Range</b>	the difference between the highest and the lowest value in a distribution.
<b>Ratio</b>	a fixed relationship between two similar things expressed in terms of the number of times the first contains the second; the quotient of one quantity divided by another quantity of the same type, generally expressed as a fraction.
<b>Sample</b>	<p>as applied to real estate, a set of parcels taken from a given universe which is used to make inferences about values for the universe.</p> <p><i>A probability sample</i> is a sample in which each parcel in the universe is given equal chance of being included. Also referred to as random <i>sample</i>.</p> <p><i>A non-probability sample</i> is a sample in which each parcel in the universe being chosen by other criteria is not given an equal chance of being included. Essentially all assessment-to-sale ratio studies are non-probability samples.</p>
<b>Sample size</b>	as applied to real estate, the number of parcels needed from a universe to achieve a desired level of precision, given the total number of parcels in the universe and the standard deviation thereof.
<b>Standard deviation</b>	a measure of dispersion, variability or scatter of values in a given distribution equal to the square root of the arithmetic mean of the squares of the deviations from the mean.
<b>Standard error of the mean</b>	a measure of the statistical variability of the mean equal to the standard deviation of the distribution divided by the square root of the sample size.
<b>Stratified sampling</b>	the selection of sample parcels from distinct groups within the total universe based upon the known sizes and characteristics of these distinct groups.
<b>Universe</b>	as applied to real estate, all the parcels of a given type in the group under study, i.e., all the parcels of a given neighborhood, district, etc. Also referred to as <i>population</i> .

## **CLASSIFICATION OF REAL AND TANGIBLE PERSONAL PROPERTY**

In general, machinery and equipment used primarily as part of a manufacturing process (process equipment) is taken as Personal Property. Machinery and equipment which is part of the land or building improvement is taken as Real Property.



# Schedule of Values

# Chatham County 2021

DESCRIPTION	REAL	PERSONAL
AIR CONDITIONING- BUILDING	XX	
AIR CONDITIONING- MANUFACTURING/PRODUCT		XX
AIR CONDITIONING- WINDOW UNITS		XX
AIRPLANES		XX
ALARM SYSTEMS (SECURITY OR FIRE) & WIRING		XX
ASPHALT PLANTS & EQUIPMENT		XX
ATM- ALL EQUIP/ & SELF STANDING BOOTHS		XX
AUTO EXHAUST SYSTEMS FOR BUILDING	XX	
AUTO EXHAUST FOR EQUIPMENT		XX
AWNINGS		XX
BALERS (PAPER, CARDBOARD, ETC)		XX
BANK TELLER LOCKERS- MOVEABLE OR BUILT-IN		XX
BAR AND BAR EQUIPMENT- MOVEABLE OR BUILT-IN		XX
BARNS		XX
BILLBOARDS		XX
BOAT AND MOTORS- ALL		XX
BOILER- FOR SERVICE OF BUILDING	XX	
BOWLING ALLEY LANES		XX
BROADCASTING EQUIPMENT		XX
C-I-P EQUIPMENT		XX
CABINETS		XX
CABLE TV DISTRIBUTION SYSTEMS		XX
CABLE TV EQUIPMENT & WIRING		XX
CABLE TV SUBSCRIBER CONNECTIONS		XX
CAMERA EQUIPMENT		XX
CANOPIES-FABRIC, VINYL, PLASTIC		XX
CANOPIES- GENERAL	XX	
CANOPY LIGHTING	XX	
CAR WASH- ALL EQUIPMENT, FILTERS & TANKS		XX
CARPET-INSTALLED	XX	
CATWALKS		XX
CEMENT PLANTS		XX
CHAIRS- ALL TYPES		XX
CLOSED CIRCUIT TV		XX
COLD STORAGE- EQUIPMENT, ROOMS, PARTITIONS		XX

# Schedule of Values

# Chatham County 2021

DESCRIPTION	REAL	PERSONAL
COMPRESSED AIR OR GAS SYSTEMS (OTHER THAN BLDG HEAT)		XX
COMPUTER ROOM A/C		XX
COMPUTER ROOM RAISED FLOOR		XX
COMPUTER SCANNING EQUIPMENT		XX
COMPUTERS AND DATA LINES		XX
CONCRETE PLANTS		XX
CONSTRUCTION AND GRADING EQUIPMENT		XX
CONTROL SYSTEMS- BUILDING AND EQUIPMENT		XX
CONVEYOR & MATERIAL HANDLING SYSTEM		XX
COOLERS- WALK-IN OR SELF STANDING		XX
COOLING TOWERS- PRIMARY USE FOR BUILDING	XX	
COOLING TOWERS- PRIMARY USE IN MANUFACTURING		XX
COUNTERS/RECEPTION DESKS- MOVEABLE OR BUILT-IN		XX
DAIRY PROCESSING PLANTS- ALL PROCESS ITEMS, BINS, TANKS		XX
DANCE FLOORS		XX
DATA PROCESSING EQUIPMENT- ALL ITEMS		XX
DELI EQUIPMENT		XX
DESK- ALL		XX
DIAGNOSTIC CENTER EQUIPMENT- MOVEABLE OR BUILT-IN		XX
DISPLAY CASES- MOVEABLE OR BUILT-IN		XX
DOCK LEVELERS		XX
DRAPES & CURTAINS, BLINDS, ETC		XX
DRINKING FOUNTAINS		XX
DRIVE-THRU WINDOWS- ALL		XX
DRYING SYSTEMS- PROCESS OR PRODUCT		XX
DUMPSTERS		XX
DUST CATCHERS, CONTROL SYSTEMS, ETC		XX
ELECTRONIC CONTROL SYSTEMS		XX
ELEVATORS	XX	
ESCALATORS	XX	
FARM EQUIPMENT- ALL		XX
FENCING- INSIDE		XX
FENCING- OUTSIDE	XX	
FLAGPOLE		XX
FOUNDATIONS FOR MACHINERY AND EQUIP	XX	XX

# Schedule of Values

# Chatham County 2021

DESCRIPTION	REAL	PERSONAL
FREIGHT CHARGES		XX
FUELS- NOT FOR SALE (LIST AS SUPPLIES)		XX
FURNACES- STEEL MILL PROCESS, ETC		XX
FURNITURE AND FIXTURES		XX
GAZEBOS	XX	
GENERATOR		XX
GOLF COURSE AND IMPROVEMENTS (DRAINAGE/IRRIGATION)	XX	
GRAIN BINS		XX
GREENHOUSE BENCHES, HEATING SYSTEM, ETC		XX
GREENHOUSES- STRUCTURE IF PERM. AFFIXED	XX	
HEATING SYSTEMS, PROCESS		XX
HOPPERS- METAL BIN TYPE		XX
HOSPITAL SYSTEMS, EQUIPMENT & PIPING		XX
HOT AIR BALLOONS		XX
HOTEL.MOTEL TELEVISIONS & WIRING		XX
HUMIDIFIERS- PROCESS		XX
INCINERATORS- EQUIPMENT AND/OR MOVEABLE		XX
INDUSTRIAL PIPING- PROCESS		XX
INSTALLATION COST		XX
IRRIGATION EQUIPMENT		XX
KILN HEATING SYSTEM		XX
KILNS- METAL TUNNEL OR MOVEABLE		XX
LABORATORY EQUIPMENT		XX
LAGOONS/SETTLING PONDS	XX	
LAUNDRY BINS		XX
LAW & PROFESSIONAL LIBRARIES		XX
LEASED EQUIPMENT- LESSOR OR LESSEE POSSESSION		XX
LEASEHOLD IMPROVEMENTS (LIST IN DETAIL YEARLY)		
LIFTS-OTHR THAN ELEVATOR		XX
LIGHTING- PORTABLE, MOVEABLE, SPECIAL		XX
LIGHTING- YARD LIGHTING	XX	
MACHINERY AND EQUIPMENT		XX
MILK HANDLING- MILKING, COOLING, PIPING, STORAGE		XX
MINERAL RIGHTS	XX	
MIRRORS (OTHER THAN BATHROOM)		XX
MONITORING SYSTEMS BUILDING OR EQUIPMENT		XX
NEWSPAPER STANDS		XX
NIGHT DEPOSITORY		XX
OFFICE EQUIPMENT- ALL		XX
OFFICE SUPPLIES (LIST AS SUPPLIES)		XX
OIL COMPANY EQUIPMENT- PUMPS, SUPPLIES, ETC		XX
OVENS- PROCESSING.MANUFACTURING		XX

# Schedule of Values

# Chatham County 2021

DESCRIPTION	REAL	PERSONAL
OVERHEAD CONVEYOR SYSTEM		XX
PACKAGE AND LABELING EQUIPMENT		XX
PAGING SYSYTEMS		XX
PAINT SPRAY BOOTHS		XX
PAINTING- NO ADDED VALUE		
PARTITIONS		XX
PAVING	XX	
PIPING SYSTEMS- PROCESS PIPING		XX
PLAYGROUND EQUIPMENT- ALL		XX
PNEUMATIC TUBE SYSTEMS		XX
PORTABLE BUILDINGS		XX
POWER GENERATORS SYSTEM (AUXILLARY, EMERGENCY, ETC)		XX
POWER TRANSFORMERS- EQUIPMENT		XX
PUBLIC ADDRESS SYSTEM (INTERCOM, MUSIC, ETC)		XX
RAILROAD SIDINGS (OTHER THAN RAILROAD OWNERS)	XX	
REFRIGERATION SYSTEM- COMPRESSORS, ETC		XX
REPAIRS- BUILDING	XX	
REPAIRS- EQUIPMENT (50% COST)		XX
RESTAURANT FURNITURE (INCLUDE ATTACHED FLOOR OR BLDG)		XX
RESTAURANT/KITCHEN EQUIPMENT, VENT HOODS, SINKS, ETC (COMMERCIAL)		XX
RETURNABLE CONTAINERS		XX
ROLL-UP DOORS (INSIDE WALL)		XX
ROLL-UP DOORS (OUTSIDE WALL)	XX	
ROOFING	XX	
ROOM DIVIDERS/PARTITIONS- MOVEABLE OR BUILT-IN		XX
ROOMS SELF CONTAINED OR SPECIAL PUROSE (WALLS, CEILING, FLOOR)		XX
SAFES WALL OR SELF-STANDING		XX
SALES/USE TAX		XX
SATELLITE DISHES (ALL WIRING & INSTALLATION TO TV & EQUIPMENT)		XX
SCALE HOUSES (UNLESS MOVEABLE)	XX	
SCALES		XX
SECURITY SYSTEMS		XX
SERVICE STATIONS EQUIPMENT- PUMPS, TANKS, LIFTS, & RELATED		XX
SEWER SYSTEMS	XX	
SHELVING		XX
SIGNS ALL TYPES INCLUDING ATTACHED TO BUILDING		XX
SINKS- BATHROOM	XX	

# Schedule of Values

# Chatham County 2021

DESCRIPTION	REAL	PERSONAL
SINKS- KITCHEN AREA		XX
SOFTWARE- CAPITALIZED		XX
SOLAR PANELS		XX
SOUND SYSTEMS & PROJECTION EQUIPMENT		XX
SPARE PARTS-LIST AS SUPPLIES		XX
SPEAKERS- BUILT-IN OR FREESTANDING		XX
SPRAY BOOTHS		XX
SPRINKLER SYSTEM- ATTACHED TO PRODUCTS STORAGE RACKS		XX
SPRINKLER SYSTEM- BUILDING	XX	
SUPPLIES (OFFICE & OTHER)		XX
SWIMMING POOLS	XX	
TANKS (ALL ABOVE & BELOW GROUND)		XX
TELEPHONE SYSTEMS & WIRING- PRIVATE		XX
THEATRE SCREENS- INDOOR		XX
THEATRE SCREENS- OUTDOOR	XX	
THEATRE SEATS		XX
TOOLING, DIES, MOLDS		XX
TOWERS- MICROWAVE, EQUIPMENT, WIRING & FOUNDATION		XX
TOWERS- TV, RADIO, CATV, TWO-WAY RADIO, WIRING & FDN		XX
TRANSPORTATION COST-ALL		XX
TUNNELS-UNLESS PART OF PROCESS SYSTEM	XX	
UPGRADES TO EQUIPMENT		XX
VACUUM SYSTEM, PROCESS		XX
VAULT	XX	
VAULT DOOR, INNER GATES, VENTS, & EQUIPMENT		XX
VENDING MACHINES		XX
VENT FANS		XX
VENTILATION SYSTEMS- GENERAL BUILDING	XX	
VENTILATION SYSTEMS- NEEDED FOR MANUFACTUREING, PROCESS		XX
VIDEO TAPES/MOVIES/REEL MOVIES		XX
WALLCOVERING	XX	
WALLS- PARTITIONS, MOVEABLE 7 ROOM DIVIDERS		XX
WATER COOLERS-ALL		XX
WATER LINES- FOR PROCESS ABOVE OR BELOW GROUND		XX
WATER SYSTEM- RESIDENTIAL OR GENERAL BUILDING	XX	
WATER TANKS & SYSTEM- FOR PROCESS EQUIPMENT		XX
WHIRLPOOL/JACUZZI/HOT TUBS		XX
WIRING- POWER WIRING FOR MACHINERY AND EQUIPM	XX	XX