ALAMANCE COUNTY

TAX DEPARTMENT

SCHEDULE OF VALUES

2023

Schedule of rules, standards, and values to be used in appraising property in Alamance County for the reappraisal effective January 1, 2023.

ALAMANCE COUNTY
BOARD OF COMMISSIONERS

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Approved

November 21, 2022
Date

ALAMANCE COUNTY BOARD OF COMMISSIONERS

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TABLE OF CONTENTS

SECTION 1: INTRODUCTION

Chapter 1: General Considerations 1-1
Statutory Requirements 1-1
Time for General Reappraisal 1-1
Uniform Appraisal Standards 1-1
Appraisal of Real Property; Adoption of Schedules 1-1
What the Abstract Shall Contain 1-3
In Whose Name Real Property is to be Listed 1-4
Powers and Duties of the Assessor 1-4
Employment of Experts 1-5
Appraisal Theory 1-6
Bundle of Rights 1-6
The Nature and Meaning of Value 1-7
Value in Use as Opposed to Value in Exchange 1-8
Price, Cost and Value 1-8
The Principle of Supply and Demand 1-9
The Principle of Highest and Best Use 1-9
The Principle of Change 1-10
The Principle of Substitution 1-10
The Principle of Anticipation 1-10
The Principle of Balance 1-11
The Principle of Competition 1-11
The Principle of Conformity 1-12
The Principle of Consistent Use 1-12
The Principle of Contribution 1-12
The Principle of Increasing and Decreasing Returns 1-12
The Principles of Progression and Regression 1-13
The Principle of Surplus Productivity 1-13
Traditional Approaches to Value 1-13
Applying the Cost Approach 1-15
Replacement Cost 1-15
Estimating Replacement Cost 1-16
Depreciation 1-17
Estimating Depreciation 1-17
Applying the Sales Comparison Approach 1-19
Selecting Valid Comparables 1-19
Processing Comparable Sales 1-20
Applying the Income Approach 1-21
Introduction 1-21
The Principles of Capitalization 1-21
Exploring the Rental Market 1-21
Questions Relating to Income Data 1-22

Analysis of Expense Data 1-23
Capitalization Methods 1-25
Current Techniques 1-26
Residual Techniques 1-27
Mortgage Equity Method Example 1-28
Land Valuation Techniques 1-29
Comparable Sales Method 1-29
The Soil Productivity Method 1-31
The Land Residual Technique 1-35
Ratio Method 1-35
Mass Appraising 1-37
Overview 1-37
Data Inventory 1-40
Processing the Data 1-44

Chapter 2: Methodology & Data Inventory 2-1
Revaluation Process Overview 2-1
Initial Planning and Preparation 2-1
Data Collection and Processing 2-1
Selecting a Vendor 2-2
Schedule of Values Development 2-2
Time Adjustments 2-3
Neighborhood Review 2-4
Proper Method of Making Corrections and Disqualifying Sales 2-5
Use of Two Review Phases 2-5
Appeals and Adjustments 2-6
Effective Date of The Reappraisal 2-6
Maintaining the Assessments Between Revaluations 2-7
Data Inventory 2-7
Property Record Card 2-8
Description of Fields on Property Record Card 2-9
New Construction Form 2-15
Description of Fields on New Construction Form 2-16
Assumptions, Limiting Conditions, and Assignment Conditions 2-18

SECTION 2: RESIDENTIAL & AGRICULTURAL

Chapter 3: Residential & Agricultural – Land Valuation 3-1
Lot Basis vs. Acre Basis 3-2
Buildable & Residual Land 3-3
Combining the Types 3-3
Assessing the Types – Lot Basis 3-4
Assessing the Types – Multiple Neighborhood Rate Zones 3-4
Assessing the Types – Acre Basis 3-5
Assessing the Types – Special Land Types 3-5
Scaling the Land – Acre Basis 3-5

Scaling the Land – Minimum Lot Size ... 3-6
Scaling the Land – “Back Lots” ... 3-6
Scaling the Land – Multiple Main Improvements ... 3-6
Scaling the Land – Lot Basis ... 3-6
Applying the Rate Schedule ... 3-7
Neighborhood Delineation ... 3-8
Neighborhood Codes ... 3-8
“How are Neighborhood Codes Used in Assessing My Property?” ... 3-8
Land Adjustments (general) ... 3-9
Land Value Adjustment - Access ... 3-9
Land Value Adjustment – Floodplain ... 3-9
Land Value Adjustment – No Perc ... 3-10
Land Value Adjustment – Topography ... 3-10
Land Value Adjustment – Shape ... 3-10
Land Value Adjustment – Easement ... 3-11
Land Value Adjustment – Location ... 3-11
Land Value Adjustment – Other ... 3-12
Special Land Type: Secondary Sites (AC S / LT S) ... 3-13
Special Land Type: Non-Perc Acres (AC NP) ... 3-13
Special Land Type: Floodplain Acres (AC FP) ... 3-13
Assessment of Residential Developments (Single Zone) ... 3-14
Assessment of Residential Developments (Multiple Zones) ... 3-16
Additional Land Usage Types ... 3-16
Condo/Townhome Land Values ... 3-17
Transitional Lots ... 3-17
Land Use Codes ... 3-18
Topography Adjustment Illustrations ... 3-20
Shape Adjustment Illustrations ... 3-21
Easement Adjustment Illustrations ... 3-22

Chapter 4: Residential & Agricultural – Main Improvements ... 4-1
The Base Model ... 4-1
Residential Structure Type ... 4-2
Square footage ... 4-2
The Basic Value Formula ... 4-3
General Adjustments ... 4-3
Upper Level Adjustment ... 4-3
Size Adjustment ... 4-3
Size Adjustment for Basement ... 4-5
Age Depreciation ... 4-5
The D60 Table ... 4-7
The D50 Table ... 4-9
The D40 Table ... 4-11
The D30 Table ... 4-12
The D20 Table ... 4-13
The D10 Table ... 4-13

Average Age 4-14
Composite Homes 4-14
Coding Conventions in the CAMA System 4-14
Quality of Construction 4-16
Residential Quality Grade Adjustments 4-17
AAA Grade 4-18
AA Grade 4-20
A Grade 4-22
B Grade 4-24
C Grade 4-26
D Grade 4-28
E Grade 4-30
Physical Adjustment 4-32
Functional Adjustment 4-33
Cost & Design Table 4-33
Economic Adjustment 4-33
Percentage of Completion 4-34
Component Adjustments 4-35
Bathrooms 4-36
Siding Material 4-37
Foundation Type 4-38
Heat System 4-39
Fireplace Table 4-39
Electrical System 4-39
Insulation 4-40
Area/Attachment Adjustments 4-40
Basements 4-40
Attics 4-40
Attachment 4-41
Manufactured Housing 4-41
"Manufactured Homes" versus "Mobile Homes" 4-42
A Brief History of Mobile Homes and Manufactured Housing 4-42
Quality and Functional Obsolescence Guidelines 4-42
Manufactured Home Classification Standards 4-44
Modular Homes 4-44
Panelized Homes 4-45
Townhomes / Condos 4-45
Duplex / Triplex 4-46
Dwelling Conversion 4-46
Residential Structures on Commercial Land 4-46
Unique Residential Properties 4-47
Neighborhood Refinements 4-48
Neighborhood Refinements – Market Ratio 4-48
Neighborhood Refinements – Determining the Adjustment 4-49
Special Adjustments – Townhouses & Multi-Units 4-49

Chapter 5: Residential & Agricultural – Other Buildings & Yard Items 5-1
Residential Other Buildings and Yard Items 5-2
Real vs. Personal 5-5
Garage Apartments 5-5
Indoor Pools 5-5
Agricultural Buildings: Residential vs. Commercial Schedule 5-6
Special Topic – "Do Pools Add Value?" 5-6
Residential Other Buildings and Yard Items Illustrations 5-8

Chapter 6: Present Use Value 6-1
Method 1 – Average Soils Assessment 6-1
Method 2 – Detailed Soils Assessment 6-1
The 2023 Use-Value Manual for Agricultural, Horticultural & Forest Land 6b

SECTION 3: COMMERCIAL & SPECIAL

Chapter 7: Commercial & Special – Land Valuation 7-1
Land Types and Descriptions 7-1
Land Influence Factors 7-2
Site Preparation/Improvement 7-3
Topography 7-3
Shape or Size 7-5
Restrictions 7-6
Economic Mis-Improvement 7-7
Corner and/or Alley Influence 7-8
View Influence 7-9
Base Rate Land Valuation Technique 7-10

Chapter 8: Commercial & Special – Main Improvements 8-1
Exempt/Institutional Buildings 8-1
Base Specifications 8-1
Schedule Application 8-1
Percent Good Guidelines 8-1
Exempt/Institutional Building Illustrations 8-2
Commercial/Industrial Schedules 8-4
Schedule Format – Base Prices 8-4
Base Price Components 8-5
Construction Types 8-5
Quality Grade Specifications 8-6
Quality Grade Factors 8-7
General Application 8-7
Special Application 8-8
Commercial/Industrial Building Illustrations 8-9
Commercial/Industrial Building Data 8-14
General Building Data 8-15
Structure Type Codes 8-15

Construction Type 8-16
Levels 8-16
Commercial Main Area Base Rates 8-17
Area Perimeter Ratio Table 8-22
Wall Height Adjustment 8-23
Exterior Wall Material 8-24
Use Type 8-25
Air Conditioning 8-26
Heating System 8-26
Plumbing 8-26
Sprinklers 8-26
Commercial Features – Attachments 8-27
Commercial Main Features 8-27
Commercial Basements 8-27
Clean Rooms 8-28
Multi-Family Apartments 8-28
- Valuation 8-28
- Base Prices – Garden Apartments 8-29
- Application 8-29
- Special Application 8-29
- Quality Factor 8-29
- Income Approach 8-30
- Percent Good Guidelines 8-30
- Multi-Family Illustrations 8-31

Franchise Food Restaurants 8-32
- Base Specifications 8-32
- Quality Grade Specifications 8-33
- Schedule Application 8-34
- Percent Good Guidelines 8-34
- Franchise Food Illustrations 8-35

Mobile Home / RV Parks 8-36
- Base Cost Components 8-37
- Base Cost Adjustments 8-37
- Percent Good Guidelines 8-38
- Mobile Home / RV Parks – Site Improvements 8-39
- Mobile Home / RV Parks – Land Valuation 8-39
- Operating Statement for Mobile Home Parks 8-40

Golf Courses 8-41
- Regulation Courses 8-41
- Base Price Components 8-42
- Other Courses 8-42
- General Application 8-43
- Golf Course Pricing Example 8-45
- Golf Course Pricing 8-46
- Income Approach to Golf Course 8-47
  - Golf Course Income Models 8-47

Golf Course Questionnaire 8-48
General Guidelines for Golf Course Depreciation........ 8-50
Cemeteries........ 8-51
Commercial/Industrial Percent Good Common Causes of Obsolescence...... 8-53
Common Causes of Functional Obsolescence........ 8-53
Common Causes of Economic Obsolescence........ 8-53
Commercial/Industrial Economic Life Guidelines 8-54
Commercial Depreciation Table........ 8-55

Chapter 9: Commercial & Special – Other Buildings & Yard Items 9-1
Other Building and Yard Items General Table........ 9-1
Other Building and Yard Items Size Tables 9-2
Other Building and Yard Items Depreciation Tables 9-2

Chapter 10: Commercial Income Models........ 10-1
Income Model Approach 10-1
Income Model Table........ 10-2

SECTION 4: SUPPORTING INFORMATION

Chapter 11: Standards 11-1
IAAO Standard on Mass Appraisal of Real Property........ 11-1
USPAP Standard 6: Mass Appraisal, Development and Reporting 11b

Chapter 12: Supplemental Information........ 12-1
Structural Components........ 12-1
Foundation 12-1
Exterior Walls........ 12-1
Roof........ 12-2
Floor Structure & Finish 12-2
Interior Finish........ 12-3
Plumbing........ 12-3
Electrical 12-3
Heating........ 12-4
Mechanical – Central Air Conditioning........ 12-5
Design 12-6
Alternative Methods........ 12-7
Terms and Definitions........ 12-8
Classification of Selected Items as Real or Personal........12a
Alamance County Townships........12b
Alamance County Watersheds........12c
Alamance County Elementary Schools 12d
Alamance County Middle Schools 12e
Alamance County High Schools........ 12f

STATUTORY REQUIREMENTS

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

(a) Octennial Plan. - 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 Six – 1977: ---Alamance

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.

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 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 105-309. What the abstract shall contain.

(c) Each tract, parcel, or lot of real property owned or controlled in the county shall be listed in accordance with the following instructions:

(1) Real property not divided into lots shall be described by giving:

a. The township in which located.
b. The total number of acres in the tract, or, if smaller than one acre, the dimensions of the parcel.
c. The tract name (if any), the names of at least two adjoining landowners, a reference to the tract’s designation on any map maintained in the office of the assessor or on file in the office of the register of deeds, or some other description sufficient to identify and locate the property by parol testimony.
d. If applicable, the number of acres of:
    1. Cleared land;
    2. Woods and timberland;
    3. Land containing mineral or quarry deposits;

4. Land susceptible of development for waterpower;
5. Wasteland.

e. The portion of the tract or parcel located within the boundaries of any municipality.

(2) Real property divided into lots shall be described by giving:

a. The township in which located.
b. The dimensions of the lot.
c. The location of the lot, including its street number (if any).
d. The lot's designation on any map maintained in the office of the assessor or on file in the office of the register of deeds, or some description sufficient to identify and locate the property by parol testimony.
e. The portion of the lot located within the boundaries of any municipality.

(3) In conjunction with the listing of any real property under subdivisions (c)(1) and (c)(2), above, there shall be given a short description of any buildings and other improvements thereon that belong to the owner of the land.

(4) Buildings and other improvements having a value in excess of one hundred dollars ($100.00) that have been acquired, begun, erected, damaged, or destroyed since the time of the last appraisal of property shall be described.

(5) If some person other than the owner of a tract, parcel, or lot shall own any building or other improvements thereon or separate rights (such as mineral, quarry, timber, waterpower, or other rights) therein, that fact shall be specified on the abstract on which the land is listed, together with the name and address of the owner of the buildings, other improvements, or rights.

a. Buildings, other improvements, and separate rights owned by a taxpayer with respect to the lands of another shall be listed separately and identified so as to indicate the name of the owner thereof and the tract, parcel, or lot on which the buildings or other improvements are situated or to which the separate rights appertain.
b. In accordance with the provisions of G.S. 105-302(c)(11), buildings or other improvements or separate rights owned by a taxpayer with respect to the lands of another may be listed either in the name of the owner of the buildings, other improvements, or rights, or in the name of the owner of the land.

G S 105-302. In whose name real property is to be listed.

(c)(11) When land is owned by one party and improvements thereon or special rights (such as mineral, timber, quarry, waterpower, or similar rights) therein are owned by another party, the parties shall list their interests separately unless, in accordance with contractual relations between them, both the land and the improvements and special rights are listed in the name of the owner of the land.

G S 105-296. Powers and duties of assessor.

(b) 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.

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

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.

THE BUNDLE OF RIGHTS

Real estate and real property are often used interchangeably. Generally speaking, real estate pertains to the land 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, give it away, or do none of the above, as he/she so chooses. The 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 "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. The descriptive term "market" indicates the activity of buyers and sellers. Market Value is the justifiable price, or that price which an informed and intelligent buyer, fully aware of the existence of competing properties, and not being compelled to act, would be justified in paying for a particular property.

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.

PRICE, COST AND VALUE

Another key distinction is the difference between price, cost and value. The price is simply what is being asked for by the seller. This price may be in line with market value, or it may be unrealistically high or low. Property is said to be overpriced or underpriced when price does not correspond to value.

Likewise, cost is simply what was paid for the property. Cost indicates that there was a buyer willing to pay what the seller was asking, but this is no guarantee of value. Perhaps the price was too high but the buyer was naïve and was willing to pay it, resulting in a cost that does not reflect value. Perhaps the price was too low because the seller was uninformed and the buyer gladly paid it, resulting in a cost that does not reflect value. Once again, we must not confuse cost with value.

This difference between cost and value has led to the axiom, "one sale does not make a market." A market is the whole universe of property offered for sale (prices), buyers offering to purchase (offers), and agreements to sell property (costs). Within this market, a trend immerges in prices, offers, and costs. These costs (individual sales), when taken as a whole, indicate true market value. Individual sales most commonly follow this market trend; however, outliers will exist that are both higher and lower than what is typical to the market. When reviewing a single sale, in isolation of the larger universe of properties that have sold, it is impossible to know if that sale is in line with the market trend or an outlier. Thus, all that a single sale tells us is cost, not value. Value arises when the many sales of the market are taken together to determine an average, typical and likely amount for which the property could be sold.

THE PRINCIPLE OF 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.

THE PRINCIPLE OF 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 legally permissible, physically possible, and financially feasible.

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 is to consider the present use and follow development rather than anticipate it.

THE PRINCIPLE OF CHANGE

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.

THE PRINCIPLE OF SUBSTITUTION

Value is created by the market place. 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.

THE PRINCIPLE OF ANTICIPATION

Value is not solely reflective of the present benefits of the property assessed, but also comprehends the future benefits expected to be derived from the property. As such, an income stream expected to continue for a number of years or an anticipated future change of highest-and-best use are considered when making a buying or selling decision in the present. The present worth of future benefits should be reflected in the valuation. Note that it is not the actual benefit that is eventually realized but the anticipation or expectation of that benefit that creates present value.

THE PRINCIPLE OF BALANCE

The principle of balance may be applied to an individual property, to a neighborhood, or to the larger community. This principle states that the maximum return (or value) is achieved when all value factors are in balance, proportional, and complementary to one another. This is related to the principle of increasing and decreasing returns.

Applied to an individual property, this would indicate that the greatest value will be achieved when the improvement is proportionate to the land, and the quality, size and type of improvement components are proportionate and complementary to one another. For example, a two-bedroom house with a three-car garage would be disproportionate and out of balance. A retail center with insufficient land to provide adequate parking for the improvements would be disproportionate and out of balance.

Applied to a neighborhood, this would indicate that the greatest value will be achieved when the various improvements throughout the neighborhood are proportionate and complementary. A large, well-maintained, high-quality home surrounded by small, poorly maintained, low-quality homes is out of balance and will not be as valuable as if surrounded by similar size and quality homes. A gas station/used tire center placed in the middle of a residential development is not complementary and will tend to reduce values.

Applied to a larger community, this would indicate that the greatest value will be achieved when the various uses of land are proportionate and complementary. For example, residential neighborhoods supported by grocery stores and other retail, gas stations, dining, employment centers, schools, medical services, connecting infrastructure, etc. Should any of these uses become disproportionate or be located in ways that are not complementary, value will be diminished.

THE PRINCIPLE OF COMPETITION

The existence of economic profit drives competition. When a certain endeavor proves to be more profitable than average, market participants are drawn to participate in it to secure these excess profits. This increase in supply decreases the unit price of the good or service and profits begin to fall. As profits continue to drop below equilibrium, there is an economic disincentive to continue production and market participants begin to exit the market for more profitable activities.

The principle of competition is related to the principle and supply and demand and states that an increase in market competition results in decreased prices while decreased market competition results in increased prices (all other factors held constant). Thus, when a certain type of property becomes oversaturated within a market, excess competition will result in a reduced value. Conversely, when a certain type of property becomes scarce within a market, value will tend to increase.

THE PRINCIPLE OF CONFORMITY

The principle of conformity is a special case of the principle of balance and related to the principles of progression and regression. It states that the value of property is influenced by its surroundings. Property which generally conforms to its surroundings (being of a similar type, age, quality, condition, etc.) will tend to be favored by the market while property which is out of conformity may be penalized.

THE PRINCIPLE OF CONSISTENT USE

The principle of consistent use states that the land and improvements must be valued according to the same use. Land valued according to one use with improvements valued according to another (inconsistent) use is a logical inconsistency which will result in an irrational value conclusion. For example, land valued according to current zoning with a commercial use which still supports a non-conforming residential structure must also value the structure according to the commercial use (which may call for the structure's demolition). Should the structure be valued according to its non-conforming residential use, the land must be valued according to this residential use as well. The use that yields the greater return is the highest and best use and reflects the true market value of the property.

THE PRINCIPLE OF CONTRIBUTION

The principle of contribution states that the value of a component of a property is determined by its contribution to the value of the whole property. Thus, an improvement may cost $10,000 but only increase the value of the property $7,000. Likewise, an improvement may cost $10,000 but increase the value of the property $15,000. It is the increase in the total value of the property and not the cost of the improvement that determines value.

THE PRINCIPLE OF INCREASING AND DECREASING RETURNS

The principle of increasing and decreasing returns states that increased investment to expand the scale of an improvement will result in increased return on investment, but only up to a point. Beyond that point, diminished marginal returns occur in which additional units of production result in falling return on investment.

For example, an investor purchases a property at foreclosure for $50,000, invests $5,000 to "freshen it up" and is now able to sell the property for $65,000 (18% profit). That same investor could have spent $15,000 on moderate renovations and sold for $80,000 (23% profit). The investor could also have spent $30,000 in extensive renovations and sold for $95,000 (19% profit). In this example, investing more results in an increasing return up to $15,000 of renovation. Beyond this point, additional investment results in a decreasing return.

THE PRINCIPLES OF PROGRESSION AND REGRESSION

The principle of progression states that a lower value improvement surrounded by higher value improvements will experience increased value by association. Thus, a home that would normally bring $120,000 located in a neighborhood of homes which typically sell for $180,000 might be able to bring $140,000.

The principle of regression states that a higher value improvement surrounded by lower value improvements will experience decreased value by association. Thus, a home that would normally bring $120,000 located in a neighborhood of homes which typically sell for $70,000 might only bring $105,000.

THE PRINCIPLE OF SURPLUS PRODUCTIVITY

The principle of surplus productivity states that the income produced from a given property, less the costs of labor, management and capital, equals the income attributed to the land. As a result, land value is heavily influenced by the cost of labor, management and capital.

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 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: The Cost Approach, the Sales Comparison Approach and the 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 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.

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 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.

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
=	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 component 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 SALES COMPARISON 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 “sales comparison approach” or “market 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.

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 “arms-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 assessment. 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 consider 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 sales comparison 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 market value of 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) and 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. This 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.

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 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 above-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 own guidelines for insurance. He 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 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 a zero-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 be 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-day 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 a 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.

	PORTION	RATE		WEIGHTED RATE
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 20-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:

.199108		70%		.0425	=	.0059
(%of loan paid in 10 yrs.)	x	(loan rate)	X	(sinking fund 18% for 10 yrs.)		
Resulting Net Rate					=	.1525

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 contributes 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 sales comparison 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:

Selling Price of Property
\- Estimated Depreciated Value of Buildings
= Indication of Land Value

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 or 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 or per lot value being commonly used for platted, uniform type residential lots, and square footage and acreage for larger, unplatted 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 tend 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. Increment and decrement 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 SOIL PRODUCTIVITY METHOD

This method involves the classification of agricultural tracts according to a productivity index, and establishing corresponding unit land values either by the analysis of comparable sales or the capitalization of income yields. The method requires a great deal of data and time, and its application, for ad valorem tax purposes, is generally limited to the appraisal of predominantly agricultural jurisdictions, in which soil productivity is either the primary influence to buyers and sellers, or in which soil productivity is the legal basis for the assessment of farm land.

There is a second condition which presupposes the use of the soil productivity method: the availability of current soil maps and related data. Soil productivity refers to the capacity of a soil to produce crops. Its productive capacity is basically dependent upon the properties and characteristics inherent in the soil; the prevailing environmental and climatic conditions; and the level of management input. Since the appraiser, for tax purposes, generally is neither provided with the time nor the resources to survey, analyze, and classify the varied numbers of soils, the use of the method is solely contingent upon the availability of reliable soil maps and data compiled from scientific soil surveys. Such surveys are generally conducted and reported under the auspices of the agricultural departments at the various state universities.

Providing then, that the value of the farm land as evidenced in the market place, or as mandated by law, is directly related to its capacity to produce, and that current soil maps and related data are available, it follows that soil productivity should be given prime consideration in the valuation of farm land.

The following is a suggested procedure for establishing unit land values based upon the relative productivity of the soil.

1. Obtain soil maps. Soil maps prepared by soil surveyors should provide an accurate inventory of the soil resources of an area. The soil mapping units delineated on the maps provide a basis for soil-use suggestions and for crop-yield and/or soil productivity estimates.

2. Obtain or develop soil productivity index ratings for each soil mapping unit. Soil productivity is generally expressed in terms of yield per acre. In developing a soil productivity approach to value, it is necessary to compare the productivity of different soils and different yields. A productivity index provides the statistical means of expressing the productivity of different soils in relative units of comparison.

   Table 1 shows the calculation of a productivity index for Muscatine silt loam at a high management level. The yield estimates are related to a base yield. The same base yield is used for all soils, but the crop-yield estimates and acreage ratio will vary with each soil. The acreage ratio is an expression of the percentage of the time that a particular crop is grown. Management level is held constant. Thus, the soil productivity index provides a measure of the soil contribution in crop production. Such ratings may be prepared for cropland, pasture, and timber.

TABLE 1. EXAMPLE CALCULATION OF SOIL.PROOUCTIVITY INDEX

CROP	(1) Average Yield (Per Acre)	(2) Base Yield (Index- 100)	(3) Relative Yield (1)/(2)	(4) Acreage Ratio	(5) Cost Contribution (3) x (4)
Corn	145 Bu	90 Bu	161%	.55	88
Soybeans	46 Bu	30 Bu	153%	.30	46
Wheat	56 Bu	30 Bu	186%	.08	15
Oats	86 Bu	60 Bu.	143%	.07	10

-

The Soil.Productivity Index (Sum of Crop Contribution) = 159
Rounded to the nearest multiple of 5 = 160

3. Determine appropriate soil-use categories. Separate soil-use categories may be established for each significant use. However, in many areas, it is often more practical to consider only cropland, and to establish the necessary guidelines for adjusting land in timber, brush, or pasture accordingly.

4. Compile data on the selling prices and/or income yields or agricultural land in representative soil areas.

5. Either obtain or measure and record the acreage of each soil-use mapping unit category for each tract of land in the sampling compiled in Step 4. If measured, a planimeter, grid, electric area calculator, aerial photography scale measurement or GPS device should be used.

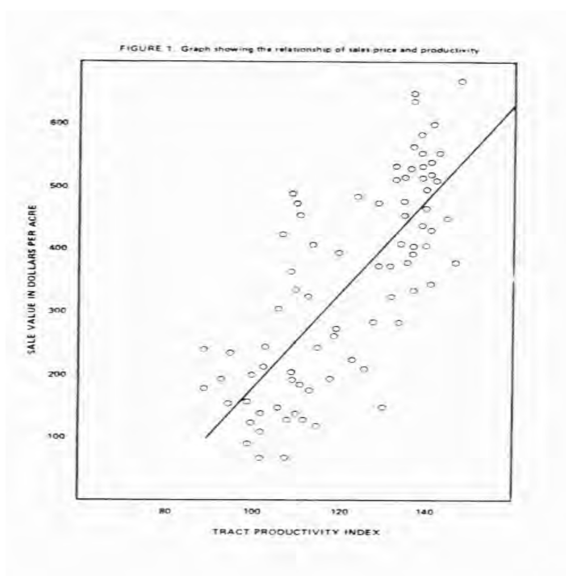
6. Calculate a tract-productivity index for each tract of land in the sampling. A tract-productivity index may be calculated by using the acreage and soil-productivity index for each soil-mapping unit in a tract. The acreage is multiplied by the soil-productivity index to obtain a soil contribution for each mapping unit. The soil contributions are added together, and the resulting sum is divided by the number of acres in the tract. The result is a weighted index of the soil productivity of the tract. Table 2 shows an example calculation.

TABLE 2 EXAMPLE CALCULATION OF TRACT PRODUCTIVITY INDEX

(1) Soil	(2) Mapping Unit (From Soil Map)	(3) Acreage	(4) Soil Productivity Index	(5) Soil Contribution (3) x (4)
Stable	**68 AO**	**14**	**150**	**2100**
Denny	**45 AO**	**2**	**110**	**220**
Muscatine	**41 AO**	**17**	**160**	**2720**
Tama	**36 C2**	**7**	**130**	**910**
Totals	**-**	**40**	**-**	**5950**

Tract Productivity Index = Sum of (5) / Sum of (3) = 5950/40 = 149

7. Determine the relationship of productivity and selling price and/or income yields per acre for each of the tracts included in the sampling. A curve (or graph) may be prepared by plotting the measure of dollar value along the vertical axis, and the productivity along the horizontal axis as shown in Figure 1.



8. Either obtain or measure and record the acreage of each soil-use mapping unit category for each tract of agricultural land to be appraised.

9. Calculate a tract productivity index for each tract of agricultural land to be appraised and determine an estimate of its value from the graph generated in Step 7. Once the productivity of the tract is known, the base value of the tract can be determined from such a graph, or if preferred, a table can be prepared from the graph showing the tract productivity in one column and the estimated corresponding base unit level values in an adjoining column.

> Note: the base unit land values obtained in Step 9 will often require adjustments to account for factors such as location, accessibility, special soil conditions, etc., which influence land value, but which cannot be measured by productivity.

In such cases where soil productivity is a prime factor in determining the value of the land (as indicated by the linear relationship between selling prices and soil productivity in Figure 1), the procedural steps outlined above should provide a sound basis for establishing equitable values.

It should be noted, however, that the procedure is not a formula for appraising farm land, but only a method of establishing unit values based upon a soil productivity index. Soil productivity is but one value-influencing factor to be considered, and depending upon the area in which the farm land is located, it may or may not have significant bearing upon the market value of the property.

In the final analysis, each farm appraisal must stand the test of comparison with competing properties. Intelligent buyers may be assumed to know of the existence of similar properties as well as the bidding prices or asking prices for such properties. It is also reasonable to assume that well informed buyers of competing properties have examined the characteristics of the property, in a practical, if not scientific way before establishing the value of the property to them as investors.

Similarly, the appraiser must rely heavily upon the comparison process in determining the relationship of a farm property of unknown value, but of known characteristics (subject farm); to comparable farms of known value as well as known characteristics (bench-mark farms). Each value-influencing factor must be analyzed in order to determine its individual contribution to the overall value. In the process, consideration must be given to such factors as the time and condition of the sale, the size of the property, the suitability and productivity of the soil, the value of the buildings, the location of the property in relation to market accessibility, and the location of the property in relation to its suitability for higher land uses.

Only after determining the contribution value of each of these factors can the appraiser determine the proper basis or criteria for establishing unit land values which will accurately reflect the action of the market.

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)		$30,000
Improved Lot Sales (range)		$130,000 to $150,000
Indicated Ratio	$\frac{\$30,000}{150,000}$ To $\frac{30,000}{130,000}$ X 100%	20% to 23%

Similar subdivision, but 100% developed

Typical Lot Sale Price (most lots equivalent)	Unavailable
Improved Lot Sales (range)	$170,000 to $210,000
Broadest Indicated Range of Lot Values (20% x $170,000 to 23% x $210,000)	$34,000 to $48,300
Narrowest Indicated Range of Lot Values (23% x $170,000 to 20% x $210,000)	$39,100 to $42,000

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 effect 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 value; if the operation becomes obsolete, the building likewise becomes obsolete. The upper limit of its value is its replacement cost new, and its present-day value is some measure of its present-day 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 effect 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 sales comparison 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 sales comparison 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 effected.

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, sales comparison 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.

In collecting cost data, the data collector should record the parcel identification number, property address, and date of completion, construction cost, builder name, 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. Additionally, cost services such as RS Means and Marshall & Swift may be consulted to determine estimates of current costs.

Sales data must be sufficient enough to provide a representative sampling of comparable sales needed to apply the sales comparison 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, deed, etc.), 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 (unassigned 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.

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. 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 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 effect the valuation of agricultural, residential, forestry, commercial, and industrial properties must be obtained and verified by personal observation and aerial photographs.

Field inspections must be conducted by qualified data collectors under the close supervision of the appraisal staff. During this phase of the operation, the data collectors 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 of the interior of the building (if vacant and open) 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 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 the 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 effect the highest degree of accuracy and equity possible.

REVALUATION PROCESS OVERVIEW

A county-wide revaluation can be a daunting task. It requires substantial planning and coordination of staff and resources in order to complete on time, within budget, and with maximum accuracy and consistency. This chapter details the plan of action implemented in the revaluation and protocols for the ongoing maintenance of the tax assessments.

INITIAL PLANNING AND PREPARATION

In advance of the 2023 revaluation, a significant change was made to our process of maintaining accurate and up-to-date real property records. This change, made after consultation with the North Carolina Department of Revenue, allowed us to divide the traditional revaluation tasks into one group that could be performed annually, and a second group that would be performed once-per-cycle. Data Collection and Data Processing are now performed on an annual basis, while Schedule Development, Neighborhood Review, and Application of New Values is performed once-per-cycle.

In addition to the division of some work into an annual basis and other work into a per-cycle basis, the 2023 revaluation presented a particular challenge due to unprecedented rates of market growth in the years leading up to the revaluation. While time adjustment has always been a part of the reappraisal process, the extreme degree of these adjustments prevented us from being able to use a long-window of time for neighborhood review. Instead, the process was segmented into components that were less market-level dependent which could be done first, and tasks which were highly market level dependent which would be performed in the final three months before the effective date.

A final, key difference from the 2017 revaluation, is that significant outside support was required. In 2017, the county was able to manage the process directly using a mixture of in-house staff and individually contracted personnel under the direction of the Tax Administrator. For 2023, changes in staff, workload and responsibilities made this infeasible. We would have to rely substantially on outside support if the revaluation was to be finished in a timely manner.

DATA COLLECTION AND PROCESSING

Rather than reviewing the data of all parcels every eight years, we now review the value of one-eighth of the parcels each year. This allows us to maintain a small, permanent staff rather than employing a larger temporary staff each cycle. The small, permanent staff are able to become familiar with our methods, records, and codes as well as with the properties in our community. This leads to more consistent performance.

Appraisal staff make an initial review by comparing tax records to high resolution oblique aerial photography flown every three years. These photos provide five views of each parcel (North, South, East, West and directly overhead). Multiple pictures are generally taken from each direction, allowing for multiple angles of visibility. When applicable, this is compared to in-house photos from past visits, photos from the road taken by Google Street View, and interior photos provided to online sources such as Zillow and Realtor.com. This photographic evidence is used to update our parcel data wherever possible.

Parcels with insufficient photographic data to perform a review remotely are marked for field visit. This visit involves front and rear photography, a brief interview with the homeowner if available, and measuring any improvement that is not listed in our property records.

This is in addition to other methods of tracking changes to properties, including reviewing all permits issued, reviewing deed splits and combinations, reviewing each property that is sold, and reviewing properties on citizen request.

As changes are noted, property records are corrected by the appraisal staff rather than employing a separate data entry team. This is facilitated by having a small, permanent staff whereas larger, temporary staffing requires temporary data entry personnel. Having only one “set of hands” on each parcel improves accountability.

By this method, property records are kept up-to-date such that all parcels are reviewed over the course of an eight-year period.

SELECTING A VENDOR

In order to complete the revaluation in a timely manner, we required outside support from an NCDOR approved vendor. Upon putting out a request for proposal, we reviewed our responses and selected Vincent Valuations LLC. Vincent was tasked with developing the schedule of values, consulting, and providing residential and commercial appraisal support. They would work alongside inhouse staff in all tasks.

SCHEDULE OF VALUES DEVELOPMENT

The development of a schedule of values, containing all of the codes, rates and methodologies used in valuing real property, was primarily performed by Vincent Valuations, LLC. General oversight and authorship of some portions were provided by the Tax Administrator, Jeremy Akins.

The schedule of values was developed using sales and construction data from within Alamance County. Data from outside the county was used when sales and construction data within the county were not available. New construction sales were analyzed to help obtain the base rates herein. These rates were also checked against new construction costs from local home builders. Commercial sales were analyzed in a similar way.

TIME ADJUSTMENTS

The value of property changes over time. You wouldn't expect to pay the same thing for groceries, a car, or gasoline today as you did a few years ago, and you certainly wouldn't expect to pay the same for a house in 2023 as you would have in 2017. In a perfect world we would only use extremely recent sales and time would not be a factor. However, when constructing market models, the need for sales data requires us to go back further than we might prefer.

For the 2023 revaluation, the study period was January 1, 2020 through December 31, 2022. Sales from 2022 were prioritized, but sales from 2021 and 2020 were used as needed. These sales had to be adjusted for time. Two methods were used to determine an appropriate time adjustment, while a third method was used as a check on the other two.

The first method was to extract all sales of average quality site-built houses and break these in to groups by the age of the structure. Within each group, sales were broken out month-by-month and the median sale-per-square-foot found for each month. These were then compared to each other to determine the amount of growth for each month.

The second method was to extract all sales of site-built houses and break these into groups by quality of construction. Within each group, sales were limited to homes within a certain percentage of the median square footage. They were further limited in age to favor newer homes (with less depreciation to confound the results). These sales were plotted on a graph of price-per-square-foot and date of sale. A trendline was then found showing the best fit to the data and the various quality of construction groups were reconciled to a single growth indicator.

A third method was used as an independent check on the first two. Rather than using internal tax data, publicly available statistical data from Zillow was used to determine the average value of residential property per month for each of eight market areas. The month-to-month percentage change was found and then weighted by parcel count to find an average percent change for the whole county.

These three methods were compared to find that Method 1 predicted 58% growth in market level from January 1, 2020 to August 31, 2022, which agreed with Method 3 which also found 58% growth, and was similar to Method 2 which found 54% growth. The findings of Method 2 were followed as this had the least influence from the depreciation of older homes, and the other two results were scaled to match at 54%. The median result of the three Methods was then taken for each month to create a composite time adjustment schedule.

The final task was to predict growth for September 2022 through December 2022. Many professional opinions were reviewed, and the broad consensus was that any downturn in the end of the year would be seasonal and not part of a larger market decline. Some sources predict an increasing market throughout 2023, other sources call for it to flatten, and yet others expect a decline. Few anticipate that 2023 will grow at the rate of the last two years, and equally few expect a crash.

Consideration of market factors reveal a definite slowing in market volume, lengthening of marketing time, and softening of market value with homes beginning to sell under asking (though approximately 2/3 of sales still close above asking). Much of this is being driven by an ongoing supply and demand imbalance, but with the FED increasing interest rates 0.75% as of September 22, 2022, it would be expected that demand would be blunted.

Given the seasonal nature of the market, signs of a slowdown, and the increased interest rate, we have chosen to predict normal growth through September 22, then slowing quickly to stall by year end. This results in a prediction of total growth from January 1, 2020 through December 31, 2022 of 55.75%.

This model was then applied and tested against sales data on a neighborhood basis. Application of this time adjustment resulted in improved accuracy of our assessment model, confirming the validity of our findings.

NEIGHBORHOOD REVIEWS

Alamance County has been divided into hundreds of neighborhood groupings. Each neighborhood represents an area of relatively uniform market forces. Each neighborhood must be reviewed individually to determine appropriate land rates and adjustments for market influence factors. Statistical analysis is then performed on a neighborhood-by-neighborhood basis in order to determine the accuracy and equity of the assessment.

Land values within a neighborhood are best determined by sales of vacant land, but often these are in limited supply. When a neighborhood lacks sufficient land sales to determine value, similar neighborhoods may be identified which possess such sales. These comparable neighborhoods may be used to set the land value of the subject neighborhood. Additionally, the ratio of land value to total value may be determined for neighborhoods with adequate improved and unimproved sales. This ratio may then be applied to improved sales to predict the value of the land when land sales are not available. Finally, an estimate of the replacement cost of structures may be subtracted from improved sales prices to find an indication of land value. One or more of these approaches may be used in any given neighborhood to establish land value.

Market influence factors must also be determined. The same home may sell for more in certain locations or less in others. Market influence may be determined by comparing the base value parcels (improvement plus land) to the actual selling price of the parcels. The median variance between base value and sale price is often an indicator of the general market level within a given neighborhood. An adjustment is then applied to the improved value of all parcels in the neighborhood to compensate for this difference.

Performance within each neighborhood is determined by a number of statistical measures, with the most important ones being the Median Sales Ratio, Coefficient of Dispersion, and Price-Related Differential. The Median Sales Ratio provides an indication of the general level of assessment, ensuring that values are neither generally too high or too low. The Coefficient of

Dispersion provides an indication of the consistency of assessment, ensuring that values are not haphazard but correlated with sales prices. The Price-Related Differential provides an indication of the equity of assessment, ensuring that assessments are consistent across both high-value and low-value properties.

In neighborhoods with few or no sales, comparable neighborhoods are found and compared to determine appropriate land values and market influence factors. Multiple points of comparison such as location, type of home, typical square-footage, story height, number of bedrooms, number of bathrooms, foundation type, exterior wall type, car storage, median lot size, quality of construction and CDU (condition, desirability and utility) assessment may be used to match the subject with up to three comparables. Land rates and market influence factors from the comparable properties can then be used to determine an appropriate land rate and market influence factor for the subject neighborhood.

PROPER METHOD OF MAKING CORRECTIONS AND DISQUALIFYING SALES

Consistency is of vital importance. When the appraiser notes that our assessed value does not agree with the actual sale amount, there is pressure to make a correction. First, the appraiser may attempt to disqualify the sale. This must be done very carefully. It is <u>not</u> acceptable to disqualify a sale simply to "clean up" the neighborhood report. It is also not acceptable to disqualify a sale because the appraiser has a "feeling" that it may not be a market transaction but no ability to prove that it's a bad sale. Sales may only be disqualified for documented reasons in which they clearly do not reflect market.

If the sale is considered valid and the discrepancy between assessment and sale persists, then the appraiser may consider changing the assessment of the property to agree with the sale. Like disqualifying a sale, this must be done very carefully. It is <u>not</u> acceptable to make changes just to "hit the sale." Changes may be one of two types: (1) across the board changes that recognize a problem with the entire neighborhood's assessment, (2) specific-to-the-property changes based upon verifiable and documented errors of assessment.

In the event that both the assessment and the sale are not subject to being changed, the sale is considered an "outlier." A small percentage of outliers are to be expected and are not a cause for concern. Should the number of sales labeled "outliers" become a significant portion of the sales data, it is likely that these are not outliers, but indications of a flaw in the assessment model.

USE OF TWO REVIEW PHASES

Due to the rapid growth in market level leading up to the 2023 revaluation, it was difficult to complete neighborhood reviews in a single pass, as we had in 2017. This would require excessive speculation at the beginning of the project that could result in invalid property values by the end. For example, a neighborhood valued per market data available in March of 2022 may prove inaccurate by the effective date of January 1, 2023.

To address this, the project was broken into a six-month initial review phase and a three-month final review phase with a month between the two phases to recalibrate and finalize our approach and assumptions. During the initial phase, sales were reviewed, data was corrected and a working model of each neighborhood was constructed. In the final phase, only sales occurring since the initial phase required review and the model generally needed only an adjustment up or down without more detailed calibration. This enables a review of all neighborhoods within three months of the effective date.

APPEALS AND ADJUSTMENTS

An important part of the revaluation process that cannot be overlooked is the appeals and adjustments phase. No matter how careful the tax department staff is in collecting, entering, reviewing, and valuing properties, there is no way that our appraisal staff can know each and every property as well as the property owner. For this reason, feedback from property owners is sought and listened to carefully.

Once all neighborhoods have been reviewed, notices will be mailed to property owners advising them of their new assessment. Property owners will have the option to informally appeal these assessments via an online appeal option through the Alamance County website. They may also request a paper appeal form if they prefer not to use the online option. A log will be prepared of all appeals received and will reflect when and how each appeal was resolved.

Tax department staff will review the information received upon appeal and analyze the data to determine if the concerns are related to specific properties or indicate an underlying problem within certain neighborhoods, property types, or assessment scenarios. These large-scale problems will be addressed first. Once this has been factored out, the smaller, individual concerns will be addressed. Once these informal appeals have been heard, all owners of appealed property, or property changed per the appeal of another, will be sent a notice of their post-appeal valuation. Property owners who are unsatisfied with the results of the informal appeal will have the opportunity to continue the appeal to the Board of Equalization and Review.

It is important not to attempt to make "on the spot" changes to problems that could be systemic in nature. While correcting property specific data concerns may be done immediately, any concern which could have larger application must be noted and reserved for a later, more detailed and expansive review. It is our goal to be careful and consistent in our work so that we "get it right" and treat everyone fairly. Your patience is appreciated.

EFFECTIVE DATE OF THE REAPPRAISAL

This reappraisal will be effective as of January 1, 2023. All values, sales data, building ages, depreciation, etc. is to be measured from January 1, 2023.

MAINTAINING THE ASSESSMENTS BETWEEN REVALUATIONS

Between revaluations, tax department staff will be called upon to assess all new real property development in accordance with the most recent revaluation. This is necessary to maintain equity between properties so that one is not assessed using a different methodology than another. This Schedule of Values will be in force and utilized until the next revaluation. Likewise, those values which have already been established may be used as comparables for any new property assessment.

Diligent care will be made to track all permits issued to determine when changes to real property are occurring (structural, electrical, plumbing, mechanical, insulation, etc). The deed record and recorded plats will also be closely observed to detect changes to real property (such as subdivision and combination of land, among others). In addition, owner reported changes and those changes observed by staff will also be noted. All of these changes will be assessed in accordance with the 2023 Revaluation and Schedule of Values.

Changes made to existing property assessment must be limited to actual physical/legal changes to the property, correction of property data or correction of a misapplication of the schedule.

DATA INVENTORY

The remainder of this chapter details the form and specifications of the following:

- Property Record Card
- Neighborhood Form
- New Construction Form
- Operating Statement Questionnaire

Property Record Card

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ALAMANCE COUNTY, NC 2023    REQUESTED BY JAKINS           RUN  2/16/23   TIME 13:49:57  Tax Map:   17-17-17        PAGE  1
HAPPY HILLS PHSE 3 SECT 2   Jan 1 Owner: 42652            Current Owner: 42652          PARCEL:    999999          IMP   1
Plat Bk/Pg      9999 9999   SMITH JOHN                    SMITH JOHN                    GPIN:      9999999999      LT 7
VISIT  JKA  1/24/2023       123 APPLE ST                  123 APPLE ST                  ADDRESS:   123 APPLE ST
MAINT  JKA  1/24/2023       BURLINGTON NC 27215           BURLINGTON NC 27215           BLDG:      123 APPLE ST
                                                                                                          |APPR        BILL
Finished Area:    4,138     Yr Blt  2018   Bed    4       USE CODE: 010 SINGLE FAMILY   LAND VALUE        145,370     145,370
Main Ground Sf:   2,434     Avg Yr  2018   Bath   4.1     DISTRICT: 12  BURLINGTON      IMPR VALUE        806,607     806,607
                                                                                        TOTAL VALUE       951,977     951,977
Structure ASV/SF   0.00     Asv/SF  230.1  Sale/SF 223.5  NBHD: 14001 HAPPY HILLS       PRIOR YEAR        514,582     514,582

CODE       DESCRIPTION                   UNITS    RATE    STHT   STR%     SIZ%    HGT%   PER%   CDS%        VALUE  %CMPL
MA SB      SINGLE FAMILY UNIT             2434   160.00   1.70            81.00                            315,446
MA SB      (UPPER FLOORS)                 1704   160.00   1.70   85.00    81.00                            187,713
- AT FN    FINISHED ATTIC                  562    32.00                                                     17,984
- BS UN    UNFINISHED BASEMENT            2434    29.00                                                     70,586
- BA 4.1   4.1 BATHS                         5  3500.00                                                     17,500
AC OP      OPEN PORCH                       10    25.00                  200.00                                500
AC OP      OPEN PORCH                      173    25.00                  100.00                              4,325
AC BG      BRICK GARAGE                    702    33.80                   86.00                             20,406
AC RPAT    RAISED PATIO                    684    13.00                   54.00                              4,802
                                                                                                       -----------
                                                                                PTC COMPLETE    100    639,261
                                                                                QUALITY    B+   135    863,003
                                                                                AGE DEP    6A    93    802,593


NEW HSE COMP F/2019                    UNKNOWN NOTE GOES HERE                   BOOK  PAGE   QC  DATE        SALES PRICE
ZONING: RA 15                          BAD DOG                                  9999  9999       9/15/2022       925,000
DWLG & PAVING, COMP F/91               MORE NOTES                               9999  9999       2/12/2022       150,000
SPLIT F/18, SIBLING 155652             MORE NOTES                               9999  9999       7/16/2008        78,000

BLDG  CODE  DESCRIPTION          LENGTH  WIDTH  UNITS  OGCD  EYB   DT   PCT    PHYS   FUNC   ECON   COMP   VALUE    EXCD
 70    FS   FRAME STORAGE BLDG     12     20     240    B    2018  2A   18.00   100    100    100           4,015


TOTAL ACRES:      12.750
SGMT   CODE     UNITS      ACRES     BASE RATE   ACC   FPL   TOP   SHP   EAS   LOC   OTH   ADJ RATE    VALUE     EXMPT
 1     AC B     1.000      1.000      65,000     100   100   100   100   100   100   100    65,000     65,000
 2     AC R    11.750     11.750       9,500     100   100    90    80   100   100   100     6,840     80,370
```

Description of Fields (Property Record Card)

Following is a list of the fields of the property record card with short descriptions of the field contents. Fields are listed left to right and top to bottom broken into the natural sections and breaks shown on the card.

Title – This field always displays the text "Alamance County, NC"
Tax Year – This field displays the tax levy year that the property data refers to. For example, fiscal year 2023-2024 is tax levy year 2023.
Subdivision – This field displays the subdivision name, phase and section information (when such information is available).
Plat Book/Page – This field displays the plat book and page in which the subject parcel may be found (when such information is available).
Last Visit – This field displays the initials of the person who last visited the parcel and the date on which this visit occurred.
Last Maintained – This field displays the initials of the person who last edited the parcel in the computer system and the date on which this edit occurred.

Requested By – This field records the username of the person who printed the document.
January 1st Owner Name – This field records the name of the person who owned the property as of January 1st of the record's Tax Year.
January 1st Owner Address (line 1) – This field records part of the mailing address of the January 1st Owner (see above). This includes the street number, directional, street name, street type, and unit number, or alternatively, the PO Box number.
January 1st Owner Address (line 2) – This field records part of the mailing address of the January 1st Owner (see above). This includes the city, state and zip code.
January 1st Owner ID – This field records the owner identification number issued by the Alamance County Tax Department for the January 1st Owner (see above).

Run Date – This field records the date on which the document was printed.
Run Time – This field records the time at which the document was printed.
Current Owner Name – This field records the name of the person who is currently in ownership of the parcel.
Current Owner Address (line 1) – This field records part of the mailing address of the Current Owner (see above). This includes the street number, directional, street name, street type, and unit number, or alternatively, the PO Box number.
Current Owner Address (line 2) – This field records part of the mailing address of the Current Owner (see above). This includes the city, state and zip code.
Current Owner ID - This field records the owner identification number issued by the Alamance County Tax Department for the Current Owner (see above).

Tax Map – This field records the tax map-block-lot number identifying the parcel. Tax map numbers are based on the old system of dividing parcels into maps by township, blocks by geographic area, and lots by sequential numbering within the map and block.
Page Number – This field indicates the page number of the document.

Parcel Number – This field records the tax parcel identification number. Parcel numbers are issued sequentially based on the creation date of the parcel within the tax department's computer system.
Improvement Number – This field indicates which main improvement is being displayed.
GPIN – This field records the GPIN number. GPIN numbers are issued using a coordinate system within a standard state-wide XY grid system.
Lot Number – This field records the subdivision lot number (when this is available).
Physical Address – This field records the physical situs address of the parcel of land.
Building Address – This field records the physical situs address of the main improvement being displayed.

Finished Area – This field records the total heated living area of the main improvement shown.
Main Ground SF – This field records the first level heated living area of the main improvement shown.
Structure ASV/SF – This field records the main improvement's assessed value per square foot of heated living area

Year Built – This field records the year of the main improvement's original construction. This is provided for informational purposes only.
Effective Age – This field records the effective age of the main improvement. The effective age is used for depreciation purposes and considers any renovations that may have occurred since the improvement was constructed.
ASV/SF – This field records the assessed value per square foot including all main areas and land value.

Bedroom Count – This field records the number of bedrooms in the main improvement shown. In modern homes both a window and a closet must be present for a room to be counted as a bedroom. In very old "historic" homes, however, many bedrooms utilized wardrobes instead of closet so this requirement is waived.
Bathroom Count – This field records the number of full baths and half baths separated by a decimal. The number before the decimal is the total number of full baths. The number after the decimal is the total number of half baths. A full bath is considered to have at least a toilet, sink and shower (or tub). A half bath is considered to have only a toilet and sink.
Sale/SF – This field records the most recent sales price of the property per square foot including all main areas and land value.

Use Code – This field records the parcel's land use code and displays both the numeric code and the short description.
District – This field records the district in which the parcel is located and displays both the numeric code and the short description.
Neighborhood – This field records the neighborhood in which the parcel is located and displays both the numeric code and the short description.

Land Value – This field records the appraised and assessed value of the land. Two numbers are shown: The number on the left is the appraisal at full market. The number on the right is the assessment considering any reductions due to partial exemption/exclusion or deferment.

Improvement Value – This field records the appraised and assessed value of the improvements to the land. Two numbers are shown: The number on the left is the appraisal at full market. The number on the right is the assessment considering any reductions due to partial exemption/exclusion or deferment.
Total Value – This field records the total appraised and assessed value of the parcel (land plus improvements). Two numbers are shown: The number on the left is the appraisal at full market. The number on the right is the assessment considering any reductions due to partial exemption/exclusion or deferment.
Prior Year Value – This field records the total appraised and assessed value (land plus improvements) from the previous tax year. Two numbers are shown: The number on the left is the appraisal at full market. The number on the right is the assessment considering any reductions due to partial exemption/exclusion or deferment.

Main Area Codes – This series of fields records the code for each improvement category listed. Main areas may be set out twice: once for the first level and again for any upper levels. Details applicable to main areas may be "folded" under the main area (indicated by a leading dash). Attachments to main areas may be set out multiple times if multiple attachments of the same type exist.
Main Area Descriptions – This series of fields records the short description for each improvement category listed.
Main Area Units – This series of fields records the number of units for each improvement category listed. The units may vary by type. Common units include square feet and number of items.
Main Area Rates – This series of fields records the value assigned per unit for each improvement category listed.
Main Area Story Height – This series of fields records the story height for each improvement category listed. If the field is blank it is assumed to be 1.00 story.
Main Area Story Height Adjustment – This series of fields records the story height adjustments for each improvement category listed. Values given are percentages. If the field is blank it is assumed to be 100%.
Main Area Size Adjustments – This series of fields records the size adjustment for each improvement category listed. Values given are percentages. If the field is blank it is assumed to be 100%.
Main Area Physical Adjustments – This series of fields records the physical depreciation attributable to each improvement category listed. If the field is blank it is assumed to be 100%.
Main Area Functional Adjustments – This series of fields records the functional depreciation attributable to each improvement category listed. If the field is blank it is assumed to be 100%.
Main Area Percentage Complete Adjustments – This series of fields records the percentage of completion attributable to each improvement category listed. If the field is blank it is assumed to be 100%.
Main Area Preliminary Value – This series of fields records the preliminary value of each improvement category listed. This value is found by following the formula: UNITS x RATE x STHT x STR% x SIZ% x PHYS x FUNC x COMP = VALUE.
Main Area Exemption/Exclusion Codes – This series of fields records any exemption/exclusion code that may be applicable to each improvement category listed.

Notes – This multi-line field records any additional notes that cannot be captured by the standard field categories.

Book – This series of fields records the deed book references pertinent to the parcel.
Page – This series of fields records the deed page references pertinent to the parcel.
Qualification Code – This series of fields records any qualification certifying that a sale is believed to be a true market transaction, or disqualifications indicating that a sale may not be a true market transaction.
Date – This series of fields records the dates of recorded deeds pertinent to the parcel.
Sales Price – This series of fields records the sales amounts (per deed stamps) pertinent to the subject parcel.

Percent Complete – This field records the percentage of completion of the main improvement. Two fields are set out: a percentage of completion and an indicated value found by summing all of the individual preliminary values and multiplying by the percentage of completion.
Quality of Construction – This field records the relative quality of construction of the main improvement. Three fields are set out: a letter quality grade, a percentage associated with that letter, and a value found by multiplying the preliminary value above by the specified quality percentage.
Age Depreciation – This field records the amount of depreciation given due to the effective age. Three fields are set out: a text field indicating the depreciation table used, a percentage field for value retained, and a value found by multiplying the preliminary value above by the specified age depreciation percentage.
Physical Depreciation - This field records the amount of depreciation given due to outstanding repairs needed and deferred maintenance. Three fields are set out: a text field indicating the class of depreciation, a percentage field for value retained, and a value found by multiplying the preliminary value above by the specified physical depreciation percentage.
Functional Depreciation – This field records the amount of depreciation given due to functional problems arising from the improvement itself. Three fields are set out: a text field indicating the class of depreciation, a percentage field for value retained, and a value found by multiplying the preliminary value above by the specified functional depreciation percentage.
Economic Depreciation – This field records the amount of depreciation given due to economic or locational problems arising from outside of the subject improvement. Three fields are set out: a text field indicating the class of depreciation, a percentage field for value retained, and a value found by multiplying the preliminary value above by the specified economic depreciation percentage. This final value is the final assessed value of the subject main area improvement.

Accessory Building Number – This series of fields records the line numbers of any accessory buildings.
Accessory Building Code – This series of fields records the accessory building type codes for each accessory building.
Accessory Building Description – This series of fields records the accessory building type short descriptions for each accessory building.
Accessory Building Length – This series of fields records the length of each accessory building.
Accessory Building Width – This series of fields records the width of each accessory building.

Accessory Building Units – This series of fields records the number of units of each accessory building. The units may vary by type. Common units include square feet and number of items.
Accessory Building Quality – This series of fields records the quality grade of each accessory building.
Accessory Building Effective Year Built – This series of fields records the effective year built of each accessory building.
Accessory Building Depreciation Table – This series of fields records the depreciation table used for each accessory building.
Accessory Building Depreciation Percentage – This series of fields records the depreciation percentage indicated by the cross referencing of the effective age and depreciation table.
Accessory Building Physical Depreciation – This series of fields records the amount of depreciation given due to outstanding repairs needed and deferred maintenance. This value is a percentage.
Accessory Building Functional Depreciation – This series of fields records the amount of depreciation given due to functional problems arising from the improvement itself. This value is a percentage.
Accessory Building Economic Depreciation - This series of fields records the amount of depreciation given due to economic or locational problems arising from outside of the subject improvement.
Accessory Building Percent Complete – This series of fields records the percentage of completion of the accessory building.
Accessory Building Value – This series of fields records the assessed value of the accessory building. This value is found by following the formula: UNITS x RATE x PCT x PHYS x FUNC x ECON x COMP = VALUE. Rate is not shown and varies by type.
Accessory Building Exemption/Exclusion Code – This series of fields records any exemption/exclusion code that may be applicable to the accessory building listed.

Total Acres – This field records the total assessed acreage of the parcel.
Land Segment Number – This series of fields records the line numbers of any land segments.
Land Segment Code – This series of fields records the land segment type codes for each land segment.
Land Segment Units – This series of fields records the number of units of each land segment. The units may vary by type. Common units include acreage, number of lots and square footage.
Land Segment Acres – This series of fields records the number of acres attributable to each land segment.
Land Segment Base Rate – This series of fields records the base per-unit rate for each land segment.
Access Adjustment – This series of fields records any adjustment made for access to the property. This field is given in percent.
Floodplain Adjustment – This series of fields records any adjustment made for floodplain on the property. This field is given in percent.
Topography Adjustment – This series of fields records any adjustment made for topography problems on the property. This field is given in percent.
Size Adjustment – This series of fields records any adjustment made for the size of the lot. This field is given in percent and is only used when assessing on lot basis.

Shape Adjustment – This series of fields records any adjustment made for the shape of the parcel. This field is given in percent.
Easement Adjustment – This series of fields records any adjustment made for easements affecting the parcel. This field is given in percent.
Location Adjustment – This series of fields records any adjustment made for the positive or negative influence of surrounding property. This field is given in percent.
Other Adjustments – This series of fields records any adjustments which do not fall into the categories above. This field is given in percent.
Adjusted Rate – This series of fields records the adjusted rate per unit. This value is found by following the formula: BASE RATE x ACC x FPL x TOP x SIZ x SHP x EAS x LOC x OTH = ADJ RATE.
Land Segment Value – This series of fields records the final value of each land segment. This value is found by following the formula: UNITS x ADJ RATE = VALUE.
Land Segment Exemption/Exclusion Code – This series of fields records any exemption/exclusion code that may be applicable to each land segment.

New Construction Form

New Construction Form

F14	PIN#	123456	ADDRESS	123 Apple St.
	OLD TAX	12-34-567	APPR JKA	VISITED 11/15/21, 1/6/22, 2/5/22

	Plat Lot	14	LUC	010
	Location	off of glenview drive		
F15	Homesite	LT B 1.000	Adj	125%
	Resid AC	LT R 0.225	Adj	~
	Other	water view		

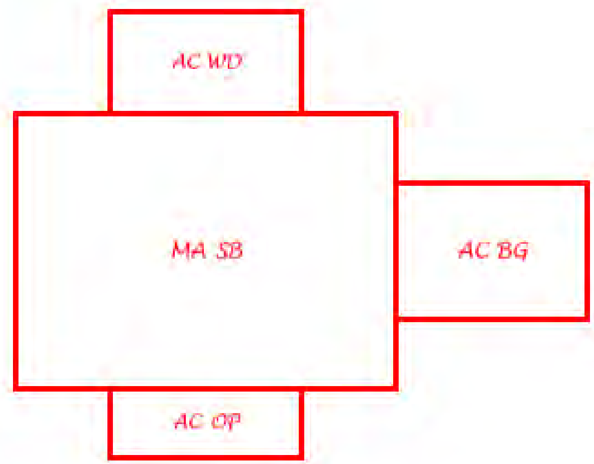
F16	Grade	A-	Beds	//// 4	Phys	~
	Year	2022	Baths	/// 3	Func	~
	Depr	6A	1/2 Baths	/ 1	Econ	~
F17	MA	SB	PCTC	100%	Story	1.25
	BA	3.1	SI	BV	FN	CS
	HC	HC	FPM /	FPP //		

	OTHER			
	Attic?	AT FN 200	Bsmt?	BS FN 500
	Attic?	AT SF 150	Bsmt?	BS SF 250
	Attic?	AT UN 250	Bsmt?	BS UN 300

	CODE	SIZE	GRADE	YEAR	DEPR	PCTC
F16	MS SHPB	18 x 25	B	2022		

F20 HSE comp F/2023

SKETCH



Description of Fields (New Construction Form)
Following is a list of the fields of the new construction form with short descriptions of the field contents. Fields are listed top to bottom and left to right broken into the natural sections and breaks shown on the card.
**NOTE: This form is only utilized for residential property assessment.*

PIN# - This field lists the six-digit parcel identification number for the property described.
Old Tax – This field lists the "old" tax map-block-lot number system for the property described.
Address – This field lists the physical site address for the property described.
Appraiser – This field lists the initials for the appraiser completing the form.
Visited – This field lists the date(s) of site inspection.
Plat Lot – This field lists the plat lot number of the property described.
LUC – This field lists the Land Use Code of the property described.
Location – This area is provided for a brief note about locating the property.

Homesite Code – This field lists the homeside code used for the property described.
Homeside Adjustment – This field lists any adjustment indicated for the homesite of the property described.
Residual Acreage – This field lists the residual acreage for the property described.
Residual Adjustment – This field lists any adjustment indicated for the residual acreages of the property described.
Other – This field records any other site notes that may be needed.

Grade – This field lists the quality grade indicated for the property described.
Year – This field lists the year-built of the property described.
Depreciation – This field lists the depreciation table for the property described.

Beds – This field lists the number of bedrooms for the property described.
Baths – This field lists the number of bathrooms for the property described.
½ Baths – This field lists the number of half-baths for the property described.

PHYS – This field lists the Physical Depreciation for the property described.
FUNC – This field lists the Functional Depreciation for the property described.
ECON – This field lists the Economic Depreciation for the property described.

MA – This field lists the Main Area code for the property described.
PCTC – This field lists the Percentage Complete for the property described.
Story – This field lists the Story Height Factor for the property described.
BA – This field lists the Bathroom code for the property described.
SI – This field lists the Siding code for the property described.
FN – This field lists the Foundation code for the property described.
HC – This field lists the Heating System code for the property described.
FPM / FPP – This field lists the fireplace (masonry) and fireplace (prefab) count.
Attic? – This field lists the attic code and squarefootage, if applicable to the property described. It is set out three times, allowing for multiple types of attic to be recorded within the same improvement.

BSMT? – This field lists the basement code and squarefootage, if applicable to the property described. It is set out three times, allowing for multiple types of basement to be recorded within the same improvement.

MISCELLANEOUS STRUCTURES
Code – This field lists the Other Building code for the miscellaneous improvement described.
Size – This field lists the length and width of the subject improvement.
Grade – This field lists the quality grade of the subject improvement.
Year – This field lists the year-built of the subject improvement.
Depreciation – This field lists the depreciation table for the subject improvement.
PCTC – This field lists the percentage complete for the subject improvement.

Notes – This section is provided to allow the appraiser to make any needed notations not covered in the other sections.

Sketch – This section is provided to allow space for the appraiser to sketch the primary improvement. Many appraisers will opt to use the back of this form (which is blank) for particularly large or complex houses, using the front sketch area to record information on interior measurements.

It should be noted that use of this specific form is not required and changes may be made as needed. However, this form is the standard or default form to be used in the residential appraisal of new construction.

ASSUMPTIONS, LIMITING CONDITIONS, AND ASSIGNMENT CONDITIONS:

- The properties were assumed to be free of any and all liens and encumbrances. Each property has also been appraised as though under responsible ownership and competent management.
- Surveys of the assessed properties have not been provided. We have relied upon tax maps and other materials in the course of estimating physical dimensions and the acreage associated with assessed properties.
- We assume the utilization of the land and any improvements are located within the boundaries of the property described. It is assumed that there are no adverse easements or encroachments for any parcel that have not already been addressed in the mass appraisal.
- In the preparation of the mass appraisal, interior inspections have not been made of the parcels of property included in this report. All inspections are made from the exterior only. It is assumed that the condition of the interior of each property is similar to its exterior condition, unless the assessor has received additional information from qualified sources giving more specific detail about the interior condition.
- Property inspection dates will have ranged in time from both before and after the appraisal date. It is assumed that there has been no material change in condition from the latest property inspection, unless otherwise noted on individual property records retained in the assessor's office.
- We assume that there are no hidden or unapparent conditions associated with the properties, subsoil, or structures that would render the properties (land, improvements, or both) more or less valuable.
- It is assumed that the properties, the landowners, or both are in full compliance with all applicable federal, state, and local environmental regulations and laws.
- It is assumed that all applicable zoning and use regulations have been complied with.
- It is assumed that all required licenses, certificates of occupancy, consents, or other instruments of legislative or administrative authority from any private, local, state, or national government entity have been obtained for any use on which the value opinions contained within this report are based.
- We have not been provided a hazardous conditions report, nor are we qualified to detect hazardous materials. Therefore, evidence of hazardous materials, which may or may not be present on a property, was not observed. As a result, the final opinion of value is predicated upon the assumption that there is no such material on any of the properties that might result in a loss or change in value.
- Information, estimates, and opinions furnished to the appraisers and incorporated into the analysis and final report were obtained from sources assumed to be reliable, and a reasonable effort has been made to verify such information. However, no warranty is given for the reliability of this information.
- The Americans with Disabilities Act (ADA) became effective January 26, 1992. We have not made compliance surveys nor conducted a specific analysis of any property to determine if it conforms to the various detailed requirements identified in the ADA. It is possible that such a survey might identify nonconformity with one or more ADA requirements, which could lead to a negative impact on the value of the property(s). Because such a survey has not been requested and is beyond the scope of this appraisal assignment, we did not take into consideration adherence or non-adherence to ADA in the valuation of the properties addressed in this report.

RESIDENTIAL AND AGRICULTURAL LAND VALUATION

All land should be valued according to its “highest and best use.” This is a basic appraisal concept that says that if the land is more valuable for one use than for another, a well-informed and normally motivated seller will not accept an offer based on the less valuable use and will instead “hold out” for an offer based on the more valuable use. Therefore, land is most likely to sell according to its most valuable use, not a lesser value use.

When determining the highest and best use of land, several factors must be considered.

- What uses are legally permissible?
- What uses are physically possible?
- What uses are financially feasible?
- What uses are maximally productive?

You wouldn’t be able to build a strip mall in the middle of a residential neighborhood if the zoning prohibited it. You probably wouldn’t build an apartment complex on marsh land, even if it were legally permissible. You probably wouldn’t build a skyscraper in the middle of a rural farm district, even if the law allowed it and the land would support it. It may be that any of these three commercial structures would bring more money for the land, but if the law doesn’t allow it, the land wouldn’t support it, or it just doesn’t make good financial sense to build it, you simply will not do it.

The most common control on whether to appraise land as residential or agricultural is zoning. If a parcel carries a residential or agricultural zoning, then the only legally permitted use is as residential or agricultural land. If a parcel carries commercial, industrial or some other zoning, then this zoning will control.

When there is no zoning we must default to that use which is physically possible, financially feasible and maximally productive. Topography, size, shape, road access/frontage and location will play a large part in determining the proper type of assessment. Land which would most reasonably be developed commercially will be appraised based on the commercial schedules (see Chapter 7), while land which would most reasonably be used for residential and/or agricultural purposes will be appraised based on the schedules provided in this chapter.

LOT BASIS VS. ACRE BASIS

One of the first questions that must be asked once it has been determined that a parcel should be assessed based on the residential/agricultural schedule is: "Would this land reasonably be sold on a lot basis or an acre basis?"

Smaller tracts of land located in residential neighborhoods where lots are typically of a very similar size and serve to situate a single home and accessory buildings should probably be valued by the lot. A purchaser will not typically adjust the offer to purchase based on the exact size of the lot and will tend to consider one lot as the equivalent of any other lot (excepting where a lot defect or outside influence changes this value – issues which are addressed later). This means that minor variations of acreage are not meaningful and the lots within the neighborhood will typically carry the same value regardless of exact size.

Large tracts and tracts not located within relatively homogenous residential neighborhoods, however, are not suitably valued by the lot. Rather, the typical purchaser evaluates each parcel separately based upon its merits and will likely take into consideration variation in the size of the parcel. In these cases, the land should be valued by the acre (or fraction thereof). Two tracts having differing acreages will likely also have differing values in the market.

Within the residential/agricultural schedule, land may be designated as Lot Basis or Acre Basis using the following code prefixes:

AC – Acre Basis
LT – Lot Basis

Each code prefix may be combined with a code suffix (discussed below) to create a complete land code. It is important to note that land appraised on a lot basis applies a value formula of "units x rate" based on the number of lots as units, rather than the acreage of the parcel. Likewise, a parcel appraised on an acre basis applies "units x rate" based on the number of acres as units, rather than the number of lots.

BUILDABLE & RESIDUAL LAND

Within the acre basis, there is the concept of a diminishing return as acreage grows depending on the intended use of the parcel.

> For example:
> A buyer is looking for a parcel to build a home on in a rural part of the county. She locates a one-acre tract and a two-acre tract. The one-acre tract provides her with a good location for a home and she would be willing to pay $30,000 for it. The two-acre tract provides her with the same ability to place a home on the first acre but also gives her an extra acre for a garden, storage shed, and a place for the kids to run and play. This second acre isn't as important as the first acre (which she must have), but it would be very nice. She is willing to pay an extra $5,100 for the extra acre. This comes to $35,100 for two acres (or only $17,550 per acre).

As you can see in the example above, there is a difference of desirability between the basic acreage needed to construct an improvement and additional acreage which would enhance the use of the improvement but is not necessary. We use code suffixes to differentiate these types:

B – Buildable
R – Residual

COMBINING THE TYPES

There are four basic residential/agricultural land types:

AC B	Acre-basis Buildable	LT B	Lot-basis Buildable
AC R	Acre-basis Residual	LT R	Lot-basis Residual

Most residential/agricultural land will be valued according to these four types. Additional types will be covered later in this chapter.

ASSESSING THE TYPES – LOT BASIS

The primary method of pricing lots is to analyze recent vacant lot sales to determine an average selling price. These recently sold lots should be comparable to the subject lots, that is, they should be in the same or a similar neighborhood, of similar size, shape and topography, and should have a similar specific highest & best use (not just "single family residential" but specifically "two-story good quality 2,400 sq. ft. single family residential"). With sufficient comparable sales, a lot value can be easily assessed.

In developed neighborhoods in which there are insufficient vacant lot sales to establish value, the land residual method may be substituted. In this method, available improved sales are studied. The assessed value of the improvements is subtracted from the sale price to estimate the value contributed by the lot. These land residual values are then compared to one another to determine a typical value of the land.

A secondary method that can also be helpful is to apply a ratio of land value to total property value based upon the sale of similar homes where the lot value is known. The appraiser must be careful to make an apples-to-apples comparison as different neighborhoods and construction types may have different typical ratios. The classic "rule of thumb" would set the value of the land at 20% of the total value, but this may vary substantially depending on the specifics of the property and in recent years this has trended significantly lower, often in the 12-15% range.

Lots determined to be unbuildable may be valued as LT R or AC R, depending on the situation. For consistently sized lots (typically the same size as the buildable lots), it is usually best to establish an LT R and apply this consistently. For unbuildable parcels that vary significantly in size, it may be more appropriate to value them as AC R.

ASSESSING THE TYPES – MULTIPLE NEIGHBORHOOD RATE ZONES

When determining the proper value under the lot basis, sometimes multiple zones of value are discovered. This is most commonly found in lake or golf course communities, although this also may occur when a section of a neighborhood borders a high-traffic road, heavy commercial/industrial site, or some other generally undesirable neighboring property. In these cases, multiple zones of value should be used. (This multiple zone approach may also be used under the acre basis.)

The neighborhood is divided into zones within which value is relatively homogenous but between which value is relatively heterogeneous. Separate rate schedules are developed for each zone with an appended number to indicate which zone the rates apply to (such as LT B1, LT B2, LT B3, etc.) and are applied consistently within each zone. As needed this may be supplemented with location adjustments to account for "hotspots" and "gradients", but this is generally avoided unless a strong substantiation for the existence, degrees and delineation of these locational influences is available.

ASSESSING THE TYPES – ACRE BASIS

The same basic principles that apply to lot basis assessments also apply to acre basis assessment, however, there are some unique challenges. First, acreage tracts tend to be less homogenous, which means that comparables are more likely to need adjustment before comparison. Second, the variability of acreage tracts makes the ratio method difficult to apply. Third, the variability of each subject means that sales comparison would likely need to be performed for each individual tract rather than a single analysis serving an entire neighborhood (as is the case with lot basis).

Given these challenges, the preferred method of acre basis assessment for mass appraisal is to construct a valuation model. This model will take all available sales within the study area as inputs, adjust for known defects and unusual market conditions (or eliminate if these cannot be reasonably adjusted for), and produce a chart of prices-per-acre as outputs. These individual data points may then be connected by a "best fit" trend line. A mathematical model may then be produced to approximate the trend line and should accurately value individual acreage parcels.

Model construction involves setting a base acreage, base rate, increment rate and decrement rate for both AC B and AC R. These are tested to ensure compliance with the known trend line and are then applied to subject parcels.

ASSESSING THE TYPES – SPECIAL LAND TYPES

In addition to the basic three type/basis combinations, there are special land types covered later in this chapter. Each special land type may have its own preferred method of valuation. The method of valuing each type will be covered in its own section.

SCALING THE LAND – ACRE BASIS

The default scaling of land under a residential/agricultural valuation assumes that the first acre of land will be the building (primary) site. The additional acreage will be residual (secondary).

<u>Example: A 10-acre rural tract of land.</u>

		Base Acre	Inc/Dec		Value
AC B	1.000	$25,000 x 1	+ $0	=	$25,000
AC R	9.000	$7,500 x 9	+ $0	=	$67,500
				Total:	$92,500
				AVG:	$9,250 per acre

Additional scaling models exist for less common types of land and will be covered later in this chapter.

SCALING THE LAND – MINIMUM LOT SIZE

One acre is the preferred minimum size for residentially buildable land when a well and septic system will be required. This allows plenty of room for the placement of these systems along with repair areas should these be needed. However, it is possible to place a home on a rural lot as small as 0.700 acres.

When rural lots (not served by public water/sewer) drop below 0.700 acres they are generally listed as AC R rather than AC B. Exceptions will be made when existing homes with "grandfathered" status have been placed on these small lots. So long as the home remains, the land will be assessed as AC B. Should the home be removed the land will revert to AC R.

Personal property mobile homes will be an exception to this exception as they are not assumed to transfer with the land. A potential buyer, then, would not necessarily be able to take advantage of the "grandfathered" status and the land will be assessed at AC R, even though the personal property mobile home is currently placed there.

SCALING THE LAND – "BACK LOTS"

Vacant parcels having no road frontage (commonly called "back lots") will be assessed at AC R rather than AC B. Upon issuance of a permit for a dwelling, the parcel will revert to the base AC B acre model. Improved "back lots" are always assessed with a base AC B acre.

SCALING THE LAND –MULTIPLE MAIN IMPROVEMENTS

Even though multiple main improvements may be present on an acreage tract, only <u>one</u> acre of AC B should be assessed.

SCALING THE LAND – LOT BASIS

When a residential lot is significantly larger or smaller than is typical within a neighborhood, the variance in size needs to be accounted for. This is done by assessing the lot according to acre-basis. Properly configured, this will provide the same value as the lot basis for an average sized lot, but allow for the increase and decrease of lot value according to its actual acreage.

Acre basis values for use within predominantly lot basis neighborhoods are best established based on sales in the specific neighborhood (or a comparable neighborhood). When no such sales are available, a "rule of thumb" is that a lot 50% the base size will be 75% the base value while a lot 200% the base size will be 150% the base value. One-acre AC R should be 25% as valuable as one-acre AC B while AC R at the average lot size will be 25% the value of AC B at the same size. This allows for diminishing marginal returns.

Should the lot contain acreage that appears to be "excess" and evidences some defect which prevents it from being usable for the highest and best use of supporting a residential dwelling, it is acceptable to assess the excess land as AC R while assessing the primary site as LT B or AC B as appropriate. The decision to allow AC R for this land, the acreage to be included at AC R, and the basis for assessing the primary site are at the discretion of the appraiser.

APPLYING THE RATE SCHEDULE
Each land basis/type combination will have four numbers to describe it: base acre/lot, base rate, increment rate and decrement rate. An example of each is provided below.

Land Type	Base Acre/Lot	Base Rate	Increment	Decrement
AC B	1.000 acre	$40,000	$20,000	$20,000
AC R	9.000 acre	$10,000	$5,000	$10,000
LT B	1.000 lot	$40,000	$40,000	$40,000
LT R	1.000 lot	$10,000	$10,000	$10,000

The formula to apply this rate schedule is as follows:

If the subject is larger than the base:

(Subject Acre/Lot – Base Acre/Lot) * Increment + (Base Rate * Base Acres) = Value
If the subject is smaller than the base:

(Subject Acre/Lot – Base Acre/Lot) * Decrement + (Base Rate * Base Acres) = Value

If the subject is at the base size:

Base Rate x Base Acres = Value

Example: A 0.900 acre homesite (AC B).

Subject Acre (0.900) – Base Acre (1.000) = Difference (-0.100)
Difference (-0.100) * Decrement ($20,000) = Adjustment (-$2, 000)
Adjustment (-$2,000) + Base Rate*Base Acres ($40,000 x 1) = Value ($38,000)

Example: Fifteen acres of residual land (AC R)

Subject Acre (15.000) – Base Acre (9.000) = Difference (6.000)
Difference (6.000) * Increment ($5,000) = Adjustment ($30,000)
Adjustment ($30,000) + Base Rate*Base Acres ($10,000 x 9) = Value ($120,000)

Example: A 0.250 acre building lot (LT B)

Base Rate*Base Acres ($40,000 x 1) = Value ($40,000)

Example: A 0.250 acre non-buildable lot (LT R)

Base Rate*Base Acres ($10,000 x 1) = Value ($10,000)

Note: In the final example the acreage of the lot is irrelevant. Under lot basis, this counts as one lot (not as 0.250 acres).

NEIGHBORHOOD DELINEATION

Neighborhoods are geographic areas of high homogeneity. They are delineated based on geographic factors (such as ponds and rivers), access factors (such as roads), political factors (such as school or fire districts), man-made boundaries (such as subdivision phases), and housing factors (such as quality, size, age, style, and condition). The Alamance County Tax Department has conducted a review of neighborhoods within the county, and described each one with a Neighborhood Code.

NEIGHBORHOOD CODES

The **Neighborhood Code** is unique to each neighborhood. It defines which parcels are being grouped together. All parcels within the same neighborhood code will be given the same land rate schedule. Residential neighborhood codes are five-digits long where the first two digits represent the township in which the neighborhood (or the majority thereof) is located. The final three digits are issued sequentially beginning with 001.

Example: NBHD Code 06023 can be thought of as the twenty third (023) neighborhood schedule developed in township 06 (Graham).

"How are Neighborhood Codes used in assessing my property?"

Mass appraisal looks at the "forest" as much as it looks at the "trees." Our appraisal staff are not only called upon to appraise your specific property, but also to appraise entire neighborhoods. Within a designated neighborhood there should be a high degree of consistency. Everyone should be on the same land rate schedule and homes should be assessed in very similar ways. Between neighborhoods, there may be completely different land rates and some variation in the assessment approach based upon factors unique to each neighborhood.

LAND ADJUSTMENTS (general)

Base land rates assume typical conditions. When the subject property does not conform to this typical model, adjustments must be made. Multiplicative percentage adjustments will be made based upon the appraiser's best judgment and basically conforming to the guidelines which follow.

LAND VALUE ADJUSTMENT – ACCESS (ACC)

ACCESS ADJUSTMENT TABLE		
%	DESCRIPTION	CODE
BASE	Paved Public	LA 04
BASE	Highway	LA 05
90	Paved Private Road	LA 06
90	Gravel Public	LA 03
80	Gravel Private Row	LA 07
75	Private Access	LA 02
50	No Access/Land Locked	LA 01

Residential/Agricultural land should be adjusted for any limitation of access. This includes, gravel roads, private roads, right-of-way only access, and land-locked parcels.

LAND VALUE ADJUSTMENT – FLOODPLAIN (FPL)

FLOODPLAIN ADJUSTMENT TABLE	
%	DESCRIPTION
90	500-year Floodplain. Only applies to actual effected acreage
75	100-year Floodplain. Only applies to actual effected acreage.
50	Floodway. Only applies to actual effected acreage.

Applied to actual acreage in floodplain or floodway on lots assessed as AC B or LT B. In practice, a weighted adjustment to total acreage will typically be used. Vacant lots entirely covered in the 100-year floodplain or floodway as not assumed to be buildable and should not be assessed as AC B or LT B. This does not apply to improved lots.

The location of the floodplain on the land will impact the adjustment. The closer to the front and to the center, the higher the impact – especially if there is no unaffected area to use for improvement. The closer to the back and sides, the lower the impact. The default percentage adjustments above should be modified accordingly. Adjustments are presumed to be inclusive of the type of floodplain, the location of the floodplain, and the number of acres in floodplain.

LAND VALUE ADJUSTMENT – NO PERC (NPC)

FLOODPLAIN ADJUSTMENT TABLE	
%	**DESCRIPTION**
75	No Perc. Only applies to actual effected acreage.

Applied to actual acreage demonstrated not to perc. Additionally, any land that does not perc cannot be coded as AC B or LT B. In practice, a weighted adjustment to total acreage will typically be used.

This does not apply to parcels with available sewer service.

LAND VALUE ADJUSTMENT – TOPOGRAPHY (TOP)

TOPOGRAPHY ADJUSTMENTS	
%	**DESCRIPTION**
95	Slight.
90	Mild.
85	Moderate.
80	Severe.
75	Very Severe.
70 or less	Extreme.

Land should be adjusted for any topography problems. This is generally an excessively low or steep lot.

Acreage in AC B should be considered and adjusted independently of acreage in AC R based upon the conditions at the most likely AC B location.

Examples of Topography Adjustments are shown on 3-21.

LAND VALUE ADJUSTMENT – SHAPE (SHP)

SHAPE ADJUSTMENTS	
%	**DESCRIPTION**
95	Slight.
90	Mild.
85	Moderate.
80	Severe.
75	Very Severe.
70 or less	Extreme.

Land should be adjusted for any irregular shape. If the homesite (AC B) could be "cut out" into a configuration which would cure the shape problem, only AC R acreage should be adjusted. If the homesite is affected by the irregular shape, the AC B will also receive the adjustment.

Examples of Shape Adjustments are shown on 3-22.

LAND VALUE ADJUSTMENT – EASEMENT (EAS)

EASEMENT ADJUSTMENTS	
%	DESCRIPTION
95	Slight.
90	Mild.
85	Moderate.
80	Severe.
75	Very Severe.
70 or less	Extreme.

Land should be adjusted for any easements that encumber it.

Tracts of one-acre or less are generally assessed according to the illustrations found on 3-23.

Tracts of more than one-acre are generally adjusted for actual acreage in easement, typically at a rate of 50% for effected acres, although this may be modified by the location and type of easement.

Easements which serve the subject parcel (water lines, gas lines, power lines, etc. coming into the home) do not require adjustment as they are an improvement to the land. Easements that serve other parcels (water/sewer mains, gas mains, high-tension power-lines, etc.) are adjusted for.

LAND VALUE ADJUSTMENT – LOCATION (LOC)

LOCATION ADJUSTMENTS	
%	DESCRIPTION
130 or more	Far Superior.
120	Superior.
110	Somewhat Superior.
95	Slight. (inferior)
90	Mild. (inferior)
85	Moderate. (inferior)
80	Severe. (inferior)
75	Very Severe. (inferior)
70 or less	Extreme. (inferior)

This can be used to create "hotspot" and "gradient" adjustments which are outside of the scope of even the most detailed multiple neighborhood rate zones. This must be used with great care, however, as it can easily disrupt the equity and consistency of land valuation.

The exact amount, how gradually or steeply the adjustments scale and which parcels receive adjustment are determined according to the appraiser's best judgment.

This may be used to account for the view of or access to a feature such as a lake or golf course (among other uses).

LAND VALUE ADJUSTMENT – OTHER (OTH)

The adjustments above are by far the most common within the county. Each of the adjustments in question are clearly labeled on the property record card. However, a catch-all "other" adjustment category is provided for those less common but very needful adjustments. See the Other Adjustments Table for more details.

OTHER LAND ADJUSTMENT TABLE		
CODE	**%**	**DESCRIPTION**
ASP	VAR	**Associated Parcels.** Two separate legal parcels are joined by some recorded agreement such that the sale of one requires the sale of the other. In this case, the homesite acreage may be attributed to one of the parcels and omitted from the others, or may be divided among multiple parcels. An adjustment may also be made to apply a lower rate indicated by the combined acres in lieu of a higher rate indicated by the specific parcel's acreage. A comment should be placed in the notes section to explain the reason for adjustment.
CVE	VAR	**Conservation Easement.** The land is encumbered by a conservation easement. The property owner must submit the easement documentation including the appraisal of the lost property rights. The percentage loss (not the dollar amount) is then used as the CVE adjustment.
CON	VAR	**Contamination.** The land is contaminated. The property owner must submit documentation to prove the contamination and the estimated effect on value (either in the form of a cost-to-cure for curable items, or an appraisal of the loss of value for non-curable items). This will then form the basis for the CON adjustment.
MIS	VAR	**Mis-Improvement.** The improvements to the land exert a negative value influence due to their condition, type, location on the lot, etc. This is curable only if the improvements are removed/changed.
OTH	VAR	**Other.** The land adjustment falls outside of the normal adjustment categories. This always requires a note to explain the reason for the adjustment.
RST	VAR	**Restrictions.** The land suffers from some restrictive agreement or special legal restriction that limits the use of the property. If this is a conservation easement, use CVE instead. If this is some sort of right-of-way restriction, use EAS instead. If this is a zoning restriction or restrictive covenants governing the type of construction allowed in a neighborhood, no adjustment should be made (this is already accounted for in base land rates).
SMR	VAR	**Severed Mineral Rights.** When base land rates in a neighborhood include a portion for mineral rights and such rights are contractually severed and sold to or retained by another party, the rights may be assessed separately (see the commercial schedule) and the value attributable to those rights subtracted from the base land price for the subject parcel. This does not apply when base land rates within a neighborhood are only comprehensive of surface rights (lot values = lot sales, even though the lots are sold without mineral rights).

SPECIAL LAND TYPE: SECONDARY SITES (AC S and LT S)

In certain locations, vacant lots which were originally platted at a buildable size are now below the size or setback requirement to build. In these cases, the purchase of two or more lots may allow a home to be constructed, but a single lot will not. Where these lots adjoin, it is reasonable to believe that the buyer would purchase multiple lots to obtain a building site and the value of a building site may be spread across the component lots. In these cases, an AC S (for acre-basis) or an LT S (for lot-basis) may be used. This is a special form of the Associated Parcels adjustment.

The calculation is to first determine the value of the parcels as assembled, subtract the cost of combining, and divide the result by the number of parcels (for LT S) or number of acres (for AC S).

This scenario also occurs in other situations (perhaps most notably land that has difficulty with percolation). In any event, the purpose of a secondary site AC S / LT S is to provide for middle-ground acreages/lots that are more valuable than AC R/LT R would allow with their assumption the land will not be built, and less valuable than AC B/LT B would dictate with its assumption of a buildable lot.

SPECIAL LAND TYPE: NON-PERC ACRES (AC NP)

For rural acres, when land fails a percolation test and is not suitable for development, it may be assessed using the AC NP land type. The assumption is that the highest and best use for such land will not be for any form of development. The value of land of this type should be determined by comparison to the sale of other non-perc land within the county.

AC NP may be applied in open rural settings as well as in neighborhood developments which rely on septic systems. AC NP is not appropriate for land which receives sewer service, or could receive such a service by connecting to public utilities adjacent to the property.

Only the actual acres demonstrated not to perc will be placed in AC NP. All remaining acreage will be assessed according to standard procedures, beginning with one acre of AC B with the balance as AC R.

Note: This is an alternate approach for rural acres. The standard approach of applying the NPC percentage adjustment may be used instead, and should be the only approach used for non-rural land.

SPECIAL LAND TYPE: FLOODPLAIN ACRES (AC FP)

For rural acres, when land lies within the 100-year floodplain or the floodway, as defined by the most current FEMA map, it may be assessed using the AC FP land type. The assumption is that the highest and best use for such land will not be for any form of development. The value of land of this type should be determined by comparison to the sale of other floodplain land within the county.

AC FP may be applied to open acreage within the county, but is not appropriate when the land has been divided into lots which are held for sale as buildable or currently situate a dwelling. Land held as buildable or currently supporting a dwelling will be assessed at AC B or LT B and with a percentage floodplain adjustment (as described in the adjustment section earlier in this chapter). Such land is presumed to have residential development as its highest and best use and must be assessed accordingly.

Only the actual acres demonstrated to be in the 100-year floodplain or the floodway will be placed in AC FP. All remaining acreage will be assessed according to standard procedures, beginning with one acre of AC B with the balance as AC R.

Note: This is an alternate approach for rural acres. The standard approach of applying the FPL percentage adjustment may be used instead, and should be the only approach used for non-rural land.

ASSESSMENT OF RESIDENTIAL DEVELOPMENTS (SINGLE ZONE)

Residential subdivisions represent a unique use of the land which generates much higher than average land values. There are two primary methods of determining the value of yet undivided land within a residential subdivision.

One common method is the discounted cash flow analysis (income approach). In this approach, the final gross income from the sale of all lots is estimated, the costs of developing and marketing the subdivision are subtracted and the resulting net income is capitalized to determine the present value of the land. Income and expense are estimated annually based on the expected market absorption of available lots and are factored into the analysis.

Unfortunately, there are certain drawbacks to using this approach. The appraiser must make a large number of assumptions and the resulting value is only as valid as the assumptions made. While certain things may be easily estimated, others are much more difficult to determine. Chief among these is the capitalization rate. While an individual investor may determine their own capitalization rate, determining a market rate requires a sufficient number of sales for which complete income and expense data is available. Such information is hard to come by and "educated guesses" can lead to radically divergent values. This approach should be favored only when sufficient sales are not available while income and expense data is plentiful.

The second method is the sales comparison approach. In this method all available sales of property for the purpose of developing a residential subdivision are studied and compared based on location, size of the parcel, relevant features of the land and date of sale. These sales are then used to develop a model which reflects the observed market activity.

The advantage of the second approach is that complete income and expense data is not needed. Only the sale price and date, acreage, land features and location must be known (and these are all readily available in the public record). This takes the "guesswork" out of the appraisal process and should be favored when sufficient sales are available, but income and expense data is inadequate.

The land to be used for development into residential property is coded AC D (Development). Unlike AC B which is normally applied at only one acre, AC D will have as many acres as are designated for residential development. As the neighborhood goes through its development cycle, lots will be "cut" out of the AC D acreage and assessed at LT B while common area will be "cut" out and assessed at AC R. Eventually the entire neighborhood will be converted to LT B and AC R and no AC D will remain.

Example: The sales comparison approach indicates the following values:

	Base Units	Base Rate	Increment	Decrement
AC D	20.000	$20,000	$20,000	$10,000
AC R	9.000	$7,500	$3,750	$7,500
LT B	1.000	$30,000	$15,000	$15,000

A 100-acre tract of land on the edge of town has been platted out with 80-acres of planned development and 20-acres planned for common area. No lots have yet been "cut" or common areas "split off."

		Base Acre	Inc/Dec	Value
AC D	100.000	$20,000 x 20	+ $20,000 x 80 =	$2,000,000
			AVG:	$20,000 per acre

The next year 10 acres has been developed into 30 lots and 2 acres have been designated common area (but is still held by the developer) leaving 88 undeveloped acres.

		Base Acre	Inc/Dec	Value
AC D	88.000	$20,000 x20	+ $20,000 x 68 =	$1,760,000
AC R	2.000	$7,500 x 9	- $7,500 x 7	= $15,000
LT B	30.000	$30,000 x 30 (assessed separately)		= $900,000
				$2,675,000 or $26,750/acre

Two years later, 20 acres have been divided and sold as lots while 5 acres total have been transferred to the homeowner's association as common area. The development now consists of 75 acres, 15 acres divided into 45 lots, 3 acres of common area (held by the developer), and 57 acres of future development.

		Base Acre	Inc/Dec	Value
AC D	57.000	$20,000 x 20	+ $20,000 x 37 =	$1,140,000
AC R	3.000	$7,500 x 9	- $7,500 x 6	= $12,500
LT B	45.000	$30,000 x 45 (assessed separately)		= $1,350,000
				$2,502,500 or $33,367/acre

Three years later, another 30 acres have been divided and sold while another 5 acres has been transferred to the homeowner's association as common area. The development now consists of 40 acres, 15 acres divided into 45 lots, 4 acres of common area (held by the developer), and 21 acres of future development.

		Base Acre	Inc/Dec	Value	
AC D	21.000	$20,000 x 20	+ $20,000 x 1	=	$420,000
AC R	4.000	$7,500 x 9	- $7,500 x 5	=	$30,000
LT B	45.000	$30,000 x 45 (assessed separately)		=	$1,350,000
					$1,800,000 or $45,000/acre

Three years later, all of the acreage has been subdivided and sold. This came to a total of 17 acres common area (now owned by the HOA) and 83 acres developed into 260 lots (now owned by the purchasers). The total value in the subdivision is now:

		Base Acre	Inc/Dec	Value	
AC R	17.000	$7,500 x 9	+ $3,750 x 8	=	$97,500
LT B	260.000	$30,000 x 260 (assessed separately)		=	$7,800,000
					$7,897,500 or $78,975/acre

As you can see, this project began with 100 acres in AC D assessed to the developer and ended with 100 acres in AC R and LT B assessed to the property owners and the HOA.

ASSESSMENT OF RESIDENTIAL DEVELOPMENTS (MULTIPLE ZONES)

Certain developments are intended to have very different finished phases: some apartments/elevated condominiums, some townhomes/row condominiums, some smaller one-level homes, some larger two-story homes, some “basic” housing, some “luxury” housing, etc. This may necessitate dividing the lots into separate neighborhoods for proper valuation which will affect LT B and AC R assessments. This will not, however, effect the AC D valuation.

ADDITIONAL LAND USAGE TYPES

The following codes have been provided for the assessment of special property types.

LU AGRI Used to value agricultural land in the PUV program.
LU HORT Used to value horticultural land in the PUV program
LU WOOD Used to value forestry land in the PUV program.
LU WASTE Used to value wasteland in the PUV program.
LU WILD Used to value land in the wildlife conservation program.
MK 00000 Used to value certain non-qualifying land removed from the PUV program, where the numeric portion is the value-per-acre

CONDO/TOWNHOME LAND VALUES

Condominiums offer ownership of airspace rather than land. This means that there is no “land” value attributable to condominiums, however, there is a value to the airspace which is occupied and the percentage share of common area which belongs to each unit. Thus, condominiums will receive the following code:

LT CAI **Common Area Interest.** This is the value attributed to the percentage share of common area elements and air-space rights which accompany a condominium.

This value is <u>not</u> an assessment of the land under the condominium unit except for the proportionate share of that land which is owned by the unit owner.

Townhomes generally confer ownership of the “footprint” of the home along with a percentage ownership of all common areas. In this situation the following code is used:

LT TLC **Townhome Land & Common Area.** This is the value attributed to the “footprint” under the home and the percentage share of common area elements which accompany a townhome.

It should be noted that common area is <u>not</u> an exempt class of property in North Carolina. The law allows for the allocation of value from the HOA owned common area to the individually owned units but does not allow for exemption of the common area.

Also note that the increment and decrement rates for valuation should be equal to the base unit rate as this represents an allocation of value from the common area.

TRANSITIONAL LOTS

Occasionally, as a neighborhood is being developed, both prepared sites and “raw” lots will be platted off into separate parcels. In this case, the prepared sites will be assessed as B1 codes while the “raw” lots will be assessed as B2 codes with the difference in value being the value of site preparation. When the “raw” lots are eventually converted into prepared sites they will be reclassified as B1.

LAND USE CODES

Land Use Codes (LUC's) are assigned to parcels of land based upon their use. There is no specific value factor associated with the land use code (an incorrect code will not result in an incorrect value). Land use codes are strictly descriptive in nature and aid the tax department in analyzing property by use category.

The list below provides the current land use codes and classifications. This list may be expanded upon on an as needed basis as it does not directly influence value.

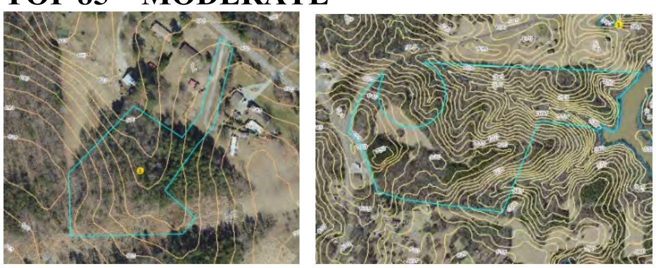
CODE	DESCRIPTION
010	SINGLE FAMILY
011	RES WITH COMMERCIAL
015	MULTIPLE SFR
020	TWO FAMILY
030	THREE FAMILY
040	FOUR FAMILY
050	CONDOMINIUM
051	BUILDERS CONDO LOT
054	COMMON SEPTIC SYSTEM LOT
055	COMMON AREA
056	LOT FOR SEPTIC TANK ONLY
057	CONDO GARAGE UNITS
058	WELL LOT
059	SEPTIC LOT
060	TOWNHOUSE
061	BUILDERS TOWNHOUSE LOT
070	ROWHOUSE
080	SINGLE WIDE MH
081	MOBILE HOME L/I
082	MOBILE HOME REAL
083	MOBILE HOME PERSONAL
084	MANUFACTURED HOME REAL
090	DOUBLE WIDE MH
096	MINOR FIRE DAMAGE
097	TOTAL/MAJOR FIRE DAMAGE
098	CONDEMNED/BOARDED-UP
099	RES AUX BUILDING (NO HOUS
100	VACANT MISC
101	GENERAL FARM - PRESENT US
102	WILDLIFE CONS AGREEMENT
103	DAIRY FARM
104	POULTRY FARM
105	FRUIT & NUT FARM
106	VEGETABLE FARM
107	TOBACCO FARM
108	NURSERY
109	GREENHOUSES, VEG & FLORAC
110	>10 ACRES VACANT
111	BUILDERS LOT
112	LIVESTOCK O/T D & P-CAUV
113	DAIRY FARM - CAUV
114	POULTRY FARM - CAUV
115	FRUIT & NUT FARM - CAUV
116	VEGETABLE FARM - CAUV
400	VACANT COMMERCIAL LAND
401	APART: LO
402	APART: HI
403	APART:40+ UNITS
404	RETAIL
405	RETL/OFF OVER
406	RETL/STOR OVER
407	HANGARS
410	HOTEL/MOTEL LO
411	HOTELS/MOTELS HI
412	NURSING HOME/PRIVATE HOS
413	INDEPENDENT LIVING (SENIO
415	MOBILE HOMES/TRAILER PKS
416	CAMPGROUNDS
417	FORESTRY W/BUILDING
418	DAYCARE/PRIVATE SCHOOL
419	OTHER COMMERCIAL HOUSING
420	SMALL DETACHED RET(UNDER
421	SUPERMARKETS
422	DISCOUNT STORE
424	DEPARTMENT STORE
425	NEIGH SHOP CENTER
426	COMMUNITY SHOPPING CENTER
427	REGIONAL SHOPPING CENTER
428	DRUG STORE
429	OTHER RETAIL STRUCTURES
430	RESTAURANT, CAFET AND/OR
431	OFFICE/APARTMENTS OVER
432	OFFICE/RETAIL OVER
433	OFFICE/STORAGE OVER
434	BARS
435	DRIVE IN REST OR FOOD SER
437	FAST FOOD/DRIVE THRU WIND
439	OTHER FOOD SERVICE
440	DRY CLEANING PLANTS/LAUND
441	FUNERAL HOMES
442	MEDICAL CLINICS/OFFICES
444	BANK
445	SAVINGS AND LOANS
447	OFFICE - 3-4 STORIES
448	OFFICE 1-2 STORIES
449	OFFICE-ELEVATOR -4 + STOR
450	CONDOMINIUM OFFICE BUILDI
451	COMMERCIAL CONDOMINIUMS
452	AUTO SERV STATION
493	CONVENIENCE STORE GAS/REP
494	CELL/COMMUNICATION TOWER
496	MARINA
497	COMMERCIAL FORESTRY
498	STRUCTURE ONLY
499	OTHER STRUCTURES
501	VACANT LAND 0-9 ACRES
502	VACANT LAND 10-19 ACRES
503	VACANT LAND 20-29 ACRES
504	VACANT LAND 30-39 ACRES
505	VACANT LAND 40+ ACRES
506	NON ACRES
507	FORESTRY
508	STREET
509	VACANT
510	OPEN SPACE RESIDENTIAL
512	ACCESSORY LOT/BLDG
517	FORESTRY W/BUILDINGS
557	COMM APRTM CONDOS 5-19 UN
558	COMM APRTM CONDOS 20-39 U
559	COMM APRTM CONDOS 40+ UNI
560	MOBILE HOME PERSONAL
600	EXEMPT
601	EXEMPT
602	HOSPITAL
603	RELIGIOUS
604	AUDITORIUM
605	PARENT OF IN/OUT
606	PARTIALLY EXEMPT
607	HOA
608	PARENT OF EXEMPT/TAXABLE
609	PARENT OF IN/OUT & TAX/XMPT
610	OWNED BY STATE
611	OWNED BY FRATERNAL ORG
612	NB USED TO GEO-REFERENCE
620	OWNED BY COUNTY
625	OWNED BY FIRE DEPARTMENT
630	OWNED BY TOWNSHIP
640	OWNED BY MUNICIPALITY
645	OWNED BY METRO HOUSING AU
650	OWNED BY BOARD OF EDUCATI
655	COMM COMMON AREA
656	OWNED BY HOA
657	COMMON AREA
660	OWNED BY PARK DISTRICT

117	TOBACCO FARM - CAUV
118	CONSERVATION EASEMENT
120	TIMBER OR FOREST LAND
121	TIMBER OR FOREST LAND - C
190	OTHER
199	OTHER AGRICULTURAL - CAUV
300	VACANT INDUSTRIAL LAND
307	FORESTRY
310	FOOD & DRINK PROCESSING
317	FORESTRY WITH BUILDING
318	SOLAR FARM
320	MANUFACTURING
330	RESEARTCH/DEVEL
340	STORAGE
350	WAREHOUSE
351	TELEPHONE SERVICE
352	MINI WAREHOUSE
360	INDUSTRIAL TRUCK TERM
370	RADIO/TV TRANSMITTER BLD
372	COMM MULTI-USE
380	MINES AND QUARRIES
389	INDUSTRIAL/UTILITY
390	GRAIN ELEVATORS
399	OTHER
453	CAR WASH
454	AUTO SALES & SERVICE
455	COMMERCIAL GARAGE
456	PARKING GARAGE/LOTS
460	THEATER
461	COUNTRY CLUBS
462	DRIVING RANGE/MINI GOLF
463	GOLF COURSES (PUBLIC)
464	BOWLING ALLEYS/REC FACILI
465	LODGE HALL/AMUSEMENT PARK
470	DWG USED AS OFFICE
471	DWG USED AS RETAIL
472	DWG APT CONVERSION
473	GROUP HOME
479	PUMP STATION
480	OFFICE/WAREHOUSE
481	OTHER COMMERCIAL
482	COMMERCIAL TRUCK TERMINAL
483	WINERY
488	RAIL/BUS/AIR TERMINAL
489	COMMERCIAL/UTILITY
490	MARINE SERV FACILITY
491	CONVENIENCE STORE
492	CONVENIENCE STORE/GAS
670	OWNED BY COLLEGE/UNIV/ACA
680	CHARITABLE EXEMPTION/HOS/
685	CHURCHES, PUBLIC WORSHIP
690	CEMETERY/MONUMENTS
699	MISC
700	COMMUNITY URBAN RENEWAL
710	COMMUNITY REINVESTMENT
720	MUNICIPAL IMPROVEMENT
730	MUNICIPAL URBAN RENEWAL
740	OTHER
777	INCOME PRODUCING PARKING
800	AGR LAND
820	INDUSTRIAL LAND
830	COMMERCIAL LAND
900	R - HISTORIC PROPERTY
905	C - HISTORIC PROPERTY
910	R - HABITAT PROPERTY
950	NEW CONST - COMM
951	NEW CONST - RES
996	MINOR FIRE DAMAGE - COMM
997	TOTAL/MAJOR FIRE DAMAGE -
998	TOTAL/MAJOR FIRE DAMAGE -

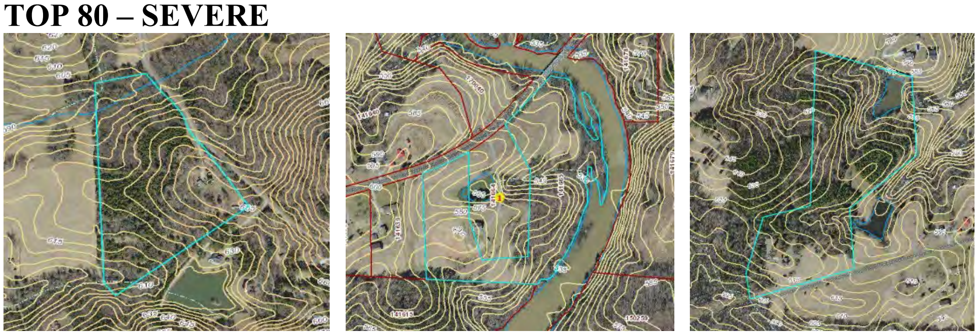
TOP 95 - SLIGHT

TOP 90 - MILD

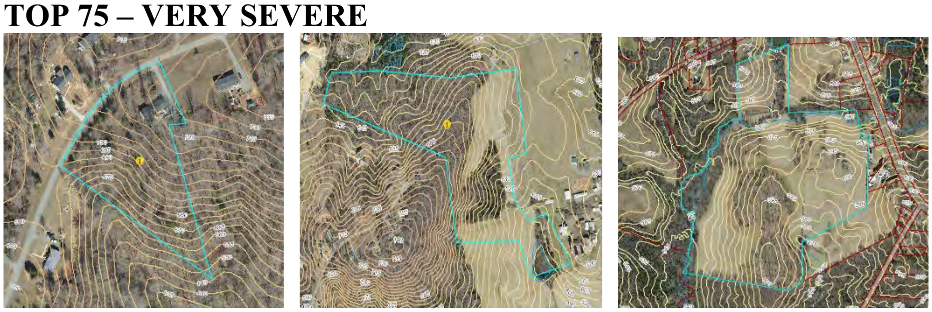
TOP 85 – MODERATE



TOP 80 – SEVERE



TOP 75 – VERY SEVERE



SHP 95 - SLIGHT

SHP 90 - MILD




SHP 85 - MODERATE



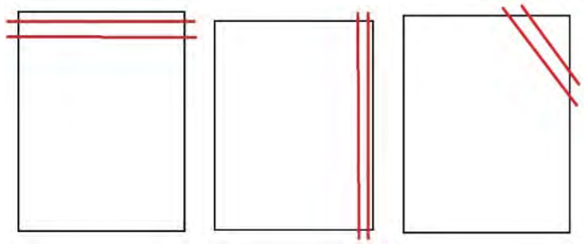
SHP 80 - SEVERE



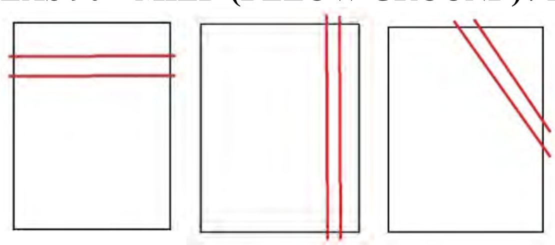

SHP 75 – VERY SEVERE


The illustrations below depict "homesite" lots, presumably of 1 acre or less. Larger acreage tracts are assessed according to actual acreage in the easement (along with consideration to the type and location of easement). Differentiation is made between easements that are at- or below-ground (gas lines, water lines, driveways, etc.), and easements with an above ground presence (power lines, sewage w/raised manhole, etc.). Easements which actually serve the subject parcel do not require adjustment as they are an improvement to the land. Easements that serve other parcels are adjusted for.

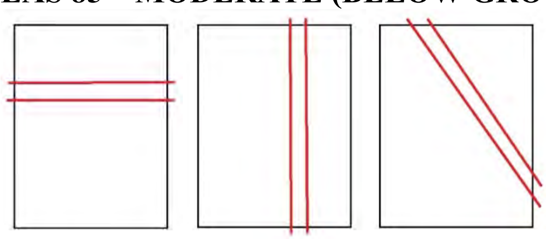
EAS 95 – SLIGHT (BELOW GROUND) / EAS 90 – MILD (ABOVE GROUND)



EAS 90 – MILD (BELOW GROUND) / EAS 85 – MODERATE (ABOVE GROUND)

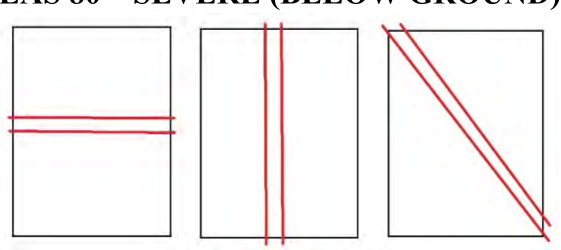


EAS 85 – MODERATE (BELOW GROUND) / EAS 80 – SEVERE (ABOVE GROUND)



Will be assessed with a homesite unless evidence is provided that the lot is unbuildable (such as documentation from inspections that a home cannot be built).

EAS 80 – SEVERE (BELOW GROUND) / EAS 75 – VERY SEVERE (ABOVE GROUND)



Will **not** be assessed with a homesite unless house is present or until permit is issued. If no homesite assessed, apply EAS reduction to residual.

RESIDENTIAL & AGRICULTURAL MAIN IMPROVEMENTS

The mass appraisal of residential property for tax purposes is best accomplished using a modified cost approach to value. The cost approach values the replacement cost new of any structures, depreciates them for age and condition, and adds the land value (determined by the sales comparison approach, land residual technique or ratio method) to the depreciated cost.

Our modification of this approach is to focus on the value in contribution rather than simply the cost of construction. For example, a storage building may cost $2,000 to construct but only improve the sale of the property by $1,000. While a pure cost approach would base its value on the $2,000 historical cost, the modified cost approach bases its value on the $1,000 increase in resale price.

As with any derivative of the cost approach, great care must be taken in the adjustment and valuation of older structures. To this end, a careful application of effective age, quality grade, physical depreciation and functional depreciation must be made. Reference to the sales comparison approach and the income approach (as many older homes find second lives as refurbished rental properties) is used to calibrate the model to accurately value older homes.

The sales comparison approach has been used in calibrating our modified cost approach. Its validity and use for tax assessment is locating inaccuracies in the basic cost approach and serving as the basis for adjustment. It is not used as a stand-alone approach for tax valuation.

The income approach may be a valid alternative method for valuing property whose highest-and-best use is determined to be income producing in nature. Like the sales comparison approach, the income approach is not used in a stand-alone manner for residential properties but is instead used as the basis for adjustment in the cost approach.

THE BASE MODEL

The values provided in this schedule are comprehensive and inclusive of the following “base model” features:

- Adequate Roof, Trim, Electrical & Insulation
- Average Siding
- Crawlspace
- Central Heat & Cool
- Two Bathrooms
- Size/Age adjustments determined by the Residential Structure Type

Porches, Decks, Garages, Patios, Basements, Attics, etc. are not included in the base model and must be adjusted for. Likewise, the base model assumes no Quality, Effective Age (other than actual age), Physical, Functional or Economic adjustments. These must be provided as needed.

RESIDENTIAL STRUCTURE TYPE

The type of residential structure determines the base rate for heated square footage, the upper-level adjustment, size adjustment, and depreciation table.

RESIDENTIAL STRUCTURE TYPE TABLE					
TYPE OF RESIDENTIAL STRUCTURE	**CODE**	**RATE**	**UL**	**SIZE**	**DEPR**
Single Family, **S**ite **B**uilt	MA SB	160.00	0.85	S1	D60
Single Family, **T**ownhouse/**R**owhouse	MA TR	145.00	0.85	S1	D60
Single Family, **M**ultiple **U**nit	MA MU	119.00	0.85	S1	D60
Single Family, **Of**f-Frame Modular	MA OF	160.00	0.85	S1	D60
Single Family, **On**-Frame Modular	MA ON	136.00	0.85	S1	D50
Multi Family, **D**uplex/**T**riplex	MA DT	119.00	0.85	S1	D50
Single Family, **D**ouble/Multi-**w**ide	MA DW	130.90	0.85	S1	D30
Single Family, **S**ingle-**w**ide	MA SW	80.00	0.85	S2	D20

SQUARE FOOTAGE

The square footage of the home is the primary driver of value calculation and must be clearly and consistently defined. For the purposes of tax listing and assessment, the square footage is defined as follows:

1) **Heated.** Only heated area may be included in the square footage of the home.
2) **Finished.** Walls, floors and ceilings are of generally accepted materials for interior residential construction.
3) **Exterior Dimensions.** Measurements are not based upon the interior dimensions. Measurements are made from the exterior framing from corner stud to corner stud, ignoring any siding material.
4) **Rounding.** Measurements are rounded to the nearest foot. Homes with complex architecture on one side and simpler architecture on the other may result in situations in which multiple rounding causes the home not to “square.” In these cases, the appraiser must use best judgment to determine which measure to modify to “close” the sketch of the home (typically favoring the measurements from the less complex side).
5) **Minimum Ceiling Height.** A room must have a minimum ceiling height of seven feet to be included in the square footage. Ceiling heights as low as five feet are acceptable if at least 50% of the ceiling is at a height of at least seven feet.
6) **Contiguous.** Living space must be contiguous to be counted in the living area. If heated area cannot be accessed from the main heated area of the home, it cannot be counted. The most common example is a heated “bonus room” over the garage that can only be accessed through the unheated garage.
7) **Method of Access.** Heated square footage contiguous to the main heated living area may be connected by doorways, hallways, and fixed stairs. In the event that a heated upper level is connected to the main living area via a pull-down stair it may not be included in the heated living area (instead being counted as attic area).

8) **Stairs.** Stairs are considered to be part of the upper level they connect to. If stairs were considered to be part of the lower floor, then we would have to subtract the square footage of any stairway from the upper level of two-story homes. We do not omit the stairs from the square footage of traditional two-story homes, therefore, it must be part of the upper level it connects to.

THE BASIC VALUE FORMULA

The basic formula to determine the value of a residential structure is to multiply the heated square footage by the base rate for its residential structure type.

Example: A site-built single-family residence is measured at 1,500 sq. ft.

SQFT x Base Rate = Value
1,500 x $160.00 = $240,000

This basic value formula will need to be adjusted for three broad categories of value factors:

- **General Adjustments** – upper-level adjustment, size adjustment, effective age/age depreciation, quality adjustment, physical depreciation, functional depreciation, economic depreciation, percentage of completion, etc.
- **Component Adjustments** – number of bathrooms, siding material, type of foundation, heating system, and other less common components such as elevators and indoor pools.
- **Area/Attachment Adjustments** – basement area, attic area, porches, decks, patios, stoops, garages, carports, utility rooms, etc.

Each of these value factors must be considered and adjusted as needed in order to arrive at an accurate value for the main improvement. Each adjustment will be addressed in turn below.

GENERAL ADJUSTMENTS

UPPER-LEVEL ADJUSTMENT

Second (and higher) stories are reflected in our model by defining the first-floor square footage and then applying a story height factor of .85 by codes ST 1.5, ST 2, or ST 99 if over 2 stories. Story heights are expressed as a decimal rounded to the nearest hundredth. For example, a one-story home would be recorded as 1.00 stories.

Upper-level square footage is adjusted by a factor specified by the residential structure type. This accounts for both the reduced construction cost of “building up” instead of “building out” and the reduced utility due to having to walk up and down stairs.

SIZE ADJUSTMENT

The base rate assumes an average sized home. Homes that are significantly larger will benefit from increasing economies of scale and suffer from decreased per-unit value return. Homes that are significantly smaller will suffer from decreased economies of scale and will benefit from increased per-unit value return.

The Size Adjustment Table below details the conceptual base square footage, actual square footage range, and percentage multiplier for each size class. The size class is controlled by the Residential Structure Type (most homes are in the S1 column).

RESIDENTIAL/AGRICULTURAL SIZE ADJUSTMENT TABLE											
CLASS	RANGE	S1	S2	S3	S4	S5	S6	S7	S8	S9	S0
25	0-37	140	150	160	165	180	**200**	**200**	165	130	**100**
50	38-74	140	150	160	165	**180**	165	150	130	**100**	75
100	75-124	140	150	160	**165**	150	130	120	**100**	75	60
150	125-174	140	150	**160**	145	130	110	**100**	85	65	**50**
200	175-224	140	**150**	143	130	117	**100**	90	75	60	50
250	225-274	140	142	133	120	108	93	82	68	55	50
300	275-324	**140**	136	125	112	**100**	87	75	65	**50**	50
350	325-374	135	130	118	106	93	80	69	62	50	50
400	375-424	130	124	113	**100**	89	75	65	60	50	50
450	425-474	125	120	108	94	84	69	60	56	50	50
500	475-549	121	115	104	91	81	65	58	53	50	50
600	550-649	118	110	**100**	87	79	60	56	**50**	50	50
700	650-749	115	107	96	86	78	58	54	50	50	50
800	750-849	112	105	94	84	77	56	52	50	50	50
900	850-949	110	102	92	83	76	55	**50**	50	50	50
1000	950-1049	108	**100**	91	82	75	53	50	50	50	50
1100	1050-1149	106	98	89	81	74	52	50	50	50	50
1200	1150-1249	105	96	88	80	73	**50**	50	50	50	50
1300	1250-1349	103	95	87	79	71	50	50	50	50	50
1400	1350-1449	102	93	86	77	69	50	50	50	50	50
1500	**1450-1549**	**100**	92	85	75	67	50	50	50	50	50
1600	1550-1649	99	91	84	73	66	50	50	50	50	50
1700	1650-1749	98	90	82	71	62	50	50	50	50	50
1800	1750-1849	96	89	79	70	**55**	50	50	50	50	50
1900	1850-1949	95	88	77	66	55	50	50	50	50	50
2000	1950-2049	94	87	76	**60**	55	50	50	50	50	50
2100	2050-2149	93	85	74	60	55	50	50	50	50	50
2200	2150-2249	92	83	71	60	55	50	50	50	50	50
2300	2250-2349	91	82	**65**	60	55	50	50	50	50	50
2400	2350-2449	90	80	65	60	55	50	50	50	50	50
2500	2450-2599	89	79	65	60	55	50	50	50	50	50
2700	2600-2799	88	76	65	60	55	50	50	50	50	50
2900	2800-2999	87	73	65	60	55	50	50	50	50	50
3100	3000-3199	86	**70**	65	60	55	50	50	50	50	50
3300	3200-3399	85	70	65	60	55	50	50	50	50	50
3500	3400-3699	84	70	65	60	55	50	50	50	50	50
3900	3700-4099	83	70	65	60	55	50	50	50	50	50
4300	4100-4499	81	70	65	60	55	50	50	50	50	50
4700	4500-4899	79	70	65	60	55	50	50	50	50	50
5100	4900-5299	78	70	65	60	55	50	50	50	50	50
5500	5300-5749	76	70	65	60	55	50	50	50	50	50
6000	5750-6249	74	70	65	60	55	50	50	50	50	50
6500	6250-6749	72	70	65	60	55	50	50	50	50	50
7000+	6750+	**70**	70	65	60	55	50	50	50	50	50

SIZE ADJUSTMENT FOR BASEMENT

The above size adjustment table is applied based on the upper floor living area only. Finished basement area is not considered for moving up or down the size adjustment table.

AGE DEPRECIATION

As a home ages it begins to lose value or depreciate. Homes suffer age depreciation from a variety of causes, but most may be summarized into physical deterioration ("wear-and-tear") and functional obsolescence (becoming "outdated").

In regard to physical deterioration, core components such as the foundation, floor joists, rafters and structural framing have very long lives unless they suffer damage (fire, termites, water, weather, etc.). Finish, fixtures and systems tend to have shorter lives and are expected to require routine maintenance and eventual replacement. For example, most roofs use 20 to 30-year materials, heating systems will last for 15 to 20 years, water heaters will need to be replaced every 8 to 12 years, while carpet is due for replacement every 5 to 10 years. The longer that the components are in place the more "deferred maintenance" they accrue.

The other major factor is functional obsolescence. As tastes and technology change over time, certain items that may be in good working order and not require replacement due to being "worn out" will still be replaced because they appear "dated" or the owner wishes to upgrade to current standards. This functional obsolescence is counted alongside physical wear-and-tear in determining the total accumulated age depreciation.

Homes are not depreciated according to their chronological age (the actual number of years since the home was originally constructed), but according to their effective age (the age indicated by the condition, desirability and utility of the structure). The use of effective age can be easily understood when one takes into consideration that most homes that have been around any length of time are not "all original" construction. The "bones" of a house may be 50 years old, but the roof may be 25 years old, the heat pump may be 10 years old, the water heater and carpets may be 5 years old, and most of the kitchen may be new due to a remodel last year. The chronological age of the home may be 50 years, but the effective age of the home may be 25 years.

Activity affecting the effective age of homes within the county is primarily tracked via issued permits, data collection during revaluation, and owner self-reporting. Secondary methods of tracking these changes involve appraiser observation when passing a structure and noticing that work is underway (or that damage has occurred), as well as taking note of news reports detailing damage or renovations.

The preferred method of determining effective age is to estimate total accumulated depreciation and express it as a percentage of the replacement cost new. When assessing a home without a complete record of work performed, it is necessary to estimate the effective age based upon all observable factors. The appraiser will compare the apparent condition, desirability and utility of the improvements with other improvements they have observed and assign an estimated depreciation.

To aid in this, a depreciation table has been constructed which reflects a modified age/life method that allows for mid-life acceleration, extended life expectancy, and a value-in-use residual. In brief, it reflects that homes depreciate more slowly during the first portion of their expected life, begin to depreciate faster as they enter mid-life and their maintenance cost increases while they become notably "outdated", and then depreciate more slowly near the end of their expected life as further deterioration does not dramatically affect their basic utility. It reflects that life expectancy increases as an improvement approaches the end of its expected life. It also reflects that even a badly depreciated improvement will retain some value in use so long as it is still habitable.

To this table is assigned a set of condition codes which describe the condition of an improvement relative to its chronological age. Essential to the proper application of condition-based age depreciation is a clear and easy to standardize condition scale. The adopted condition scale is as follows:

EX	"Fully, Freshly Renovated" appearance. The home has been recently and extensively renovated. Typically 0-5 years following full renovation.
VG	"Partially Renovated" appearance. The home has either been partially renovated recently or fully renovated but is now beginning to show routine wear. Typically 5-10 years following full renovation.
GD	"Sharp and clean," "up-to-date", "well maintained" appearance. The home has seen periodic remodeling over the years but also has some dated or lightly worn features. Typically 10-15 years following full renovation.
AV	"Lived-in" or "dated" appearance. The home has been repaired and major components replaced as needed, but there have been no recent updates. Typically 15-20 years following full renovation.
FR	"Worn" appearance. Multiple items of deferred maintenance are present and home would benefit from renovation. Major systems still functioning and habitability is not impacted.
PR	"Run down" appearance. Only repairs necessary to maintain habitability have been made. Other items have been allowed to deteriorate. Needs extensive renovation.
VP	"Dilapidated" appearance. The home has been poorly maintained and shows advanced signs of wear-and-tear beyond its actual age. This may be the result of failure to remedy problems (such as the leaky roof) until they had spread out of control to other components of the home. While still habitable, the home may experience some problems which impact habitability (unresolved electrical or mechanical problems, leaky roof, sagging floors, etc.)
UN	The home is unsafe, unsound and uninhabitable. This is incurable. For curable, see Physical Depreciation. This condition code applies 100% depreciation to the property.

The Age Depreciation Tables which follow (pages 4-7 to 4-13) calculate depreciation based upon the actual age of the property on the date of revaluation compared to its condition. The table used depends upon the Residential Structure Type (a total of six age-life tables have been created). All percentage amounts are percentage retained or "percent good."

D60 Depreciation Table								
YEAR	AGE	EX(6E)	VG(6V)	GD(6G)	AV(6A)	FR(6F)	PR(6P)	VP(6X)
2023 & newer	0	99	99	99	99	99	99	95
2022	1	98	98	98	98	98	97	93
2021	2	97	97	97	96	96	96	91
2020	3	96	96	96	95	95	94	89
2019	4	96	95	95	94	93	92	87
2018	5	95	95	94	93	92	91	85
2017	6	95	94	93	92	91	90	83
2016	7	94	94	92	91	90	88	81
2015	8	94	93	91	90	89	87	79
2014	9	93	93	91	89	88	86	77
2013	10	93	92	90	88	87	84	75
2012	11	93	92	90	87	86	83	74
2011	12	92	91	89	86	85	82	73
2010	13	92	91	88	85	84	81	72
2009	14	92	91	88	84	83	79	71
2008	15	91	90	87	83	82	78	70
2007	16	91	90	87	82	81	77	69
2006	17	91	90	86	82	80	76	67
2005	18	91	89	86	81	79	75	66
2004	19	90	89	85	80	78	74	64
2003	20	90	89	85	79	77	73	63
2002	21	90	88	84	78	76	71	61
2001	22	90	88	84	78	75	70	60
2000	23	89	88	83	77	74	69	58
1999	24	89	87	83	76	73	68	57
1998	25	89	87	82	75	72	67	55
1997	26	89	87	82	75	72	66	53
1996	27	89	87	81	74	71	65	51
1995	28	88	86	81	73	70	64	49
1994	29	88	86	80	73	69	63	47
1993	30	88	86	80	72	68	62	45
1992	31	88	85	79	71	67	61	43
1991	32	88	85	79	70	67	60	42
1990	33	87	85	79	70	66	59	41
1989	34	87	85	78	69	65	58	40
1988	35	87	84	78	68	64	57	39
1987	36	87	84	77	68	63	56	38
1986	37	87	84	77	67	63	55	37
1985	38	86	84	77	66	62	54	36
1984	39	86	83	76	66	61	53	35
1983	40	86	83	76	65	60	52	35

D60 Depreciation Table Continued...								
YEAR	AGE	EX(6E)	VG(6V)	GD(6G)	AV(6A)	FR(6F)	PR(6P)	VP(6X)
1982	41	86	83	75	64	59	51	34
1981	42	86	83	75	64	59	50	34
1980	43	86	83	75	63	58	49	33
1979	44	85	82	74	62	57	48	33
1978	45	85	82	74	62	56	47	32
1977	46	85	82	74	61	56	47	32
1976	47	85	82	73	61	55	46	31
1975	48	85	82	73	60	54	45	31
1974	49	85	81	72	59	53	44	30
1973	50	85	81	72	59	53	43	30
1972	51	84	81	72	58	52	42	29
1971	52	84	81	71	57	51	41	29
1970	53	84	80	71	57	50	40	28
1969	54	84	80	71	56	50	39	28
1968	55	84	80	70	56	49	38	27
1967	56	84	80	70	55	48	37	27
1966	57	83	80	70	54	47	37	26
1965	58	83	79	69	54	47	36	26
1964	59	83	79	69	53	46	35	25
1963	60	83	79	69	53	45	34	25
1962	61	83	79	69	53	45	34	24
1961	62	83	79	69	53	45	34	24
1960	63	83	79	69	53	45	34	23
1959	64	83	79	69	53	45	34	23
1958	65	83	79	69	53	45	34	22
1957	66	83	79	69	53	45	34	22
1956	67	83	79	69	53	45	34	21
1955	68	83	79	69	53	45	34	21
1954	69	83	79	69	53	45	34	20
1953 & older	70	83	79	69	53	45	34	20

D50 Depreciation Table								
YEAR	AGE	EX(5E)	VG(5V)	GD(5G)	AV(5A)	FR(5F)	PR(5P)	VP(5X)
2023 & newer	0	99	99	99	99	99	98	95
2022	1	97	97	97	97	97	97	92
2021	2	96	96	96	96	96	95	89
2020	3	96	95	95	94	94	93	86
2019	4	95	95	94	93	93	92	83
2018	5	94	94	93	92	91	90	81
2017	6	94	93	92	90	90	88	79
2016	7	93	93	91	89	88	87	77
2015	8	92	92	90	88	87	85	75
2014	9	92	92	90	87	86	84	73
2013	10	92	91	89	86	85	83	71
2012	11	92	91	88	85	84	81	69
2011	12	91	90	87	84	82	80	67
2010	13	91	90	87	83	81	79	66
2009	14	91	89	86	82	80	77	65
2008	15	90	89	85	81	79	76	64
2007	16	90	89	85	80	78	75	63
2006	17	90	88	84	79	77	73	60
2005	18	89	88	84	78	76	72	57
2004	19	89	87	83	77	75	71	55
2003	20	89	87	82	76	74	70	53
2002	21	89	87	82	75	73	69	51
2001	22	88	86	81	75	72	67	49
2000	23	88	86	81	74	71	66	47
1999	24	88	86	80	73	70	65	45
1998	25	87	85	80	72	69	64	43
1997	26	87	85	79	71	68	63	41
1996	27	87	85	79	70	67	62	40
1995	28	87	84	78	70	66	60	39
1994	29	87	84	78	69	65	59	38
1993	30	86	84	77	68	64	58	37
1992	31	86	83	77	67	63	57	36
1991	32	86	83	76	66	62	56	35
1990	33	86	83	76	66	61	55	34
1989	34	85	83	75	65	60	54	33
1988	35	85	82	75	64	59	53	33
1987	36	85	82	74	63	58	52	32
1986	37	85	82	74	62	57	51	32
1985	38	85	82	73	62	57	50	31
1984	39	84	81	73	61	56	48	31
1983	40	84	81	73	60	55	47	30

D50 Depreciation Table Continued...								
YEAR	AGE	EX(5E)	VG(5V)	GD(5G)	AV(5A)	FR(5F)	PR(5P)	VP(5X)
1982	41	84	81	72	59	54	46	29
1981	42	84	80	72	59	53	45	28
1980	43	84	80	71	58	52	44	28
1979	44	83	80	71	57	51	43	27
1978	45	83	80	70	57	50	42	27
1977	46	83	79	70	56	50	41	26
1976	47	83	79	69	55	49	40	26
1975	48	83	79	69	54	48	39	25
1974	49	82	79	69	54	47	38	24
1973	50	82	79	68	53	46	37	23
1972	51	82	78	68	52	45	36	22
1971	52	82	78	67	52	45	35	22
1970	53	82	78	67	51	44	34	21
1969	54	82	78	67	50	43	33	21
1968 & older	55	81	77	66	50	42	32	20

D40 Depreciation Table								
YEAR	AGE	EX(4E)	VG(4V)	GD(4G)	AV(4A)	FR(4F)	PR(4P)	VP(4X)
2023 & newer	0	100	100	100	100	99	98	95
2022	1	99	99	99	98	96	95	91
2021	2	99	99	98	96	93	92	87
2020	3	99	98	97	94	91	89	84
2019	4	98	98	96	92	89	86	81
2018	5	98	97	95	91	87	83	78
2017	6	98	97	95	90	85	80	75
2016	7	97	95	93	88	83	78	73
2015	8	97	94	92	86	81	76	71
2014	9	97	93	89	84	79	74	69
2013	10	96	92	87	82	77	72	67
2012	11	96	91	86	81	76	71	65
2011	12	95	90	85	80	75	70	63
2010	13	95	89	84	79	75	67	60
2009	14	94	88	83	79	74	64	57
2008	15	93	87	82	78	73	61	54
2007	16	92	86	81	77	72	59	51
2006	17	91	85	81	76	71	57	48
2005	18	90	85	80	75	70	55	45
2004	19	90	85	79	74	67	53	43
2003	20	89	84	78	73	64	51	41
2002	21	89	84	77	72	61	49	39
2001	22	88	83	77	71	59	47	37
2000	23	88	83	76	70	57	45	36
1999	24	88	82	76	70	55	44	35
1998	25	88	82	75	69	55	43	34
1997	26	88	82	75	68	54	42	33
1996	27	87	81	74	67	53	41	32
1995	28	87	81	74	66	52	40	31
1994	29	87	80	73	65	51	39	30
1993	30	87	80	73	65	50	38	30
1992	31	86	79	72	64	49	37	29
1991	32	86	79	72	63	48	36	28
1990	33	86	78	71	62	47	35	27
1989	34	86	78	71	61	46	34	26
1988	35	86	77	70	60	45	33	25
1987	36	85	77	69	59	44	32	24
1986	37	85	76	68	58	43	32	23
1985	38	85	76	67	57	42	31	22
1984	39	85	75	66	56	41	31	21
1983 & older	40	85	75	65	55	40	30	20

D30 Depreciation Table								
YEAR	AGE	EX(3E)	VG(3V)	GD(3G)	AV(3A)	FR(3F)	PR(3P)	VP(3X)
2023 & newer	0	98	98	98	98	97	97	85
2022	1	96	96	96	96	95	95	82
2021	2	95	94	94	93	92	91	78
2020	3	94	93	92	91	89	88	75
2019	4	92	91	90	89	87	85	71
2018	5	92	90	89	87	84	82	68
2017	6	91	89	87	85	82	79	64
2016	7	90	88	86	83	79	76	61
2015	8	89	87	85	81	77	74	57
2014	9	89	87	83	79	75	71	54
2013	10	88	86	82	78	73	68	50
2012	11	88	85	81	76	70	66	48
2011	12	87	84	80	74	68	63	46
2010	13	86	84	79	73	66	61	44
2009	14	86	83	78	71	64	59	42
2008	15	85	82	77	70	62	56	40
2007	16	85	82	76	68	60	54	38
2006	17	85	81	75	67	58	52	36
2005	18	84	80	74	65	56	50	34
2004	19	84	80	73	64	55	47	32
2003	20	83	79	72	62	53	45	30
2002	21	83	79	71	61	51	43	29
2001	22	82	78	70	59	49	41	28
2000	23	82	78	69	58	47	39	27
1999	24	82	77	68	57	45	36	26
1998	25	81	77	68	55	44	34	25
1997	26	81	76	67	54	42	32	24
1996	27	81	75	66	53	40	30	23
1995	28	80	75	65	51	38	28	22
1994	29	80	75	64	50	37	26	21
1993 & older	30	79	74	64	49	35	24	20

D20 Depreciation Table								
YEAR	AGE	EX(2E)	VG(2V)	GD(2G)	AV(2A)	FR(2F)	PR(2P)	VP(2V)
2023 & newer	0	97	97	97	97	96	96	85
2022	1	95	94	94	94	93	93	81
2021	2	94	92	91	91	89	88	77
2020	3	92	90	89	87	85	84	73
2019	4	91	88	86	84	81	80	69
2018	5	90	87	84	82	77	75	65
2017	6	89	85	82	79	73	71	61
2016	7	88	84	81	76	70	68	57
2015	8	87	83	79	74	67	64	53
2014	9	86	82	77	71	64	60	49
2013	10	86	80	75	69	60	57	45
2012	11	85	79	74	67	57	53	42
2011	12	84	78	72	65	54	50	40
2010	13	84	77	71	62	51	46	37
2009	14	83	77	69	60	48	43	35
2008	15	83	76	68	58	46	39	32
2007	16	82	75	67	56	43	36	30
2006	17	81	74	65	54	40	33	27
2005	18	81	73	64	52	37	29	25
2004	19	80	72	63	50	34	26	22
2003 & older	20	80	71	61	48	32	23	20

D10 Depreciation Table								
YEAR	AGE	EX(1E)	VG(1V)	GD(1G)	AV(1A)	FR(1F)	PR(1P)	VP(1X)
2023 & newer	0	100	100	100	100	95	90	85
2022	1	98	97	96	95	89	84	78
2021	2	96	94	92	90	84	78	72
2020	3	94	91	88	85	78	72	65
2019	4	92	88	84	80	73	66	59
2018	5	90	85	80	75	67	60	52
2017	6	88	82	76	70	62	54	46
2016	7	86	79	72	65	56	48	39
2015	8	84	76	68	60	51	42	33
2014	9	82	73	64	55	45	36	26
2013 & older	10	80	70	60	50	40	30	20

As the revaluation is a “snap-shot” as of January 1, 2023, homes built in 2023 or later have zero chronological age and generally will not receive any age depreciation (unless unfavorable condition is applied). This lack of age depreciation is not a failure to consider the age of the improvement, but a condition of the appraisal assignment in which we must assess according to a specific date and may not allow for depreciation which occurs between revaluations.

A residual value is reached at the end of the expected life as given in the tables above. For this reason, all homes older than provided for in the table are assumed to be at residual and equal in depreciation to the final row of each table.

AVERAGE AGE

When additional heated living area is added to the "footprint" of the home (such as with a typical room addition), a weighted average age may be used according to the following formula: ((Year 1 x SQFT 1) + (Year 2 x SQFT 2)) / (SQFT 1 + SQFT 2). This may be expanded for as many added sections as exist. The average year built will supersede the original year built when utilizing the depreciation tables. This does not apply to "finishing" existing areas of the home (which would not change the footprint).

COMPOSITE HOMES

When significant site-built additions are added to a manufactured home (including mobile homes and modular homes), the depreciation schedule (expected useful life) may need to be changed. When this is done and to what degree it is done is left to the discretion of the appraiser who should consider the square footage of each housing type as well as the impression created by interior and exterior work that may conceal the home's original nature.

CODING CONVENTIONS IN THE CAMA SYSTEM

The six above illustrated two-variable tables are the official age depreciation tables for residential property for the 2023 revaluation. Due to a coding limitation in the current CAMA system (ONE Tax), only single-variable tables may be used with a maximum three-character limit. This will require our codes to be condensed on the property record card and in-system coding.

The table will be indicated as follows:

D60	6
D50	5
D40	4
D30	3
D20	2
D10	1

The basic condition will be indicated as follows:

EX	E
VG	V
GD	G
AV	A
FR	F
PR	P
VP	X
UN	UN

This system will be used for coding purposes.

NOTE: Similar coding limitations can be found elsewhere in this schedule, such as the need to divide positive and negative functional and economic influences into separate adjustment types, and the need to use a more compact representative code for high quality grade half steps. In all such instances, only the appearance or aesthetic is truly changed. The valuation methodology as given in this schedule is always preserved.

QUALITY OF CONSTRUCTION

The quality grade of materials and workmanship is one of the most significant variables 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 workmanship throughout can be more than twice that of one built from the same floor plan but with inferior materials and poor workmanship prevailing.

The following schedule has been developed to distinguish between variations in quality. This schedule represents the full range of conventional dwelling construction.

The basic grade represents cost of construction using average quality materials, with average workmanship. The majority of dwellings erected fall within one class above (grade B) and one class below (grade D) the base grade of C. The complete scale of basic grades is shown below:

"AAA"	Superior Quality	300%
"AA"	Exceptional Quality	200%
"A"	Very Good Quality	155%
"B"	Good Quality	125%
"C"	Average Quality	100% (base)
"D"	Fair Quality	80%
"E"	Poor Quality	55%

Each basic grade may be fine-tuned with "step" adjustments (indicated by a "+" or a "–") For example, the "C" grade has the following grade refinements:

C+	108%	Step Up
C	100%	Base Grade
C-	93%	Step Down

The quality grade represents a composite of overall quality. Generally, the quality of materials and workmanship is fairly consistent throughout the construction of a specific building; however, this is not always the case. It may be necessary to weigh the quality of each major component and take into consideration the quality of original construction compared to later additions and renovations to arrive at the proper overall quality grade.

The appraiser must use 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 as if the home is in good condition, and any deferred maintenance accounted for with effective age and/or physical depreciation.

RESIDENTIAL QUALITY GRADE ADJUSTMENTS			
	GRADE	FACTOR	DESCRIPTION
AAA	AAA+	350	
	AAA	300	Superior Quality
	AAA-	265	
AA	AA+	230	
	AA	200	Exceptional Quality
	AA-	185	
A	A+	170	
	A	155	Very Good Quality
	A-	145	
B	B+	135	
	B	125	Good Quality
	B-	116	
C	C+	108	
	C	100	Average Quality
	C-	93	
D	D+	86	
	D	80	Fair Quality
	D-	74	
E	E+	65	
	E	55	Poor Quality
	E-	45	

Quality Grade "AAA"	Superior Quality	Range: 265 to 350

"AAA" grade homes are of the finest possible quality. These homes are typically described as mansions. Dwellings with this quality rating are always unique structures that are individually designed by a master architect. Such residences are constructed with careful attention to detail by master craftsmen. Only the best possible materials are used. These homes are generally rare enough to be known on at least a regional basis.

TYPICAL SPECIFICATIONS	
DESIGN	Highly complex with numerous “cuts," details and/or off-angle sections. Exterior walls will have numerous openings (windows & doors).
FOUND	High crawlspace (brick or reinforced concrete foundation walls, footings with interior piers) or basement.
EX WALL	Any top-quality siding materials may be used. All exterior coverings will be of maximum quality and constructed with much attention to detail by master craftsmen.
ROOF	Any top-quality roofing materials may be used. Roof architecture, design, materials and workmanship will be of the best possible quality.
FLOOR	Any top-quality flooring materials may be used. Installed with careful attention to detail by master craftsmen.
CEILING	Exceptionally high and architecturally complex ceilings are commonly used throughout the house.
KITCHEN	Countertops, cabinets, fixtures and amenities are of maximum quality installed with great attention to detail by master craftsmen.
BATH	Numerous bathrooms of excellent quality.
TRIM	Interior trim borders on art due to its exquisite detail and excellent quality materials. Custom created by master craftsmen.
ELEC	Best possible and often approaching industrial scale capacity.
MECH	Best possible and often approaching industrial scale capacity.
PLMB	Best possible and often approaching industrial scale capacity.
INSL	Excellent.
ATTACH	Attached areas are vast, detailed and numerous, designed by master architects and constructed by master craftsmen.
CAR	Varies depending on the age of the home and the interests of its possessor. Some examples may house a fleet of vehicles, while others only a few.

"AAA" Grade Homes






Quality Grade "AA"	Exceptional Quality	Range: 185 to 230

"AA" grade homes are of the finest quality. These homes are typically described as mansions. All possible quality features are maximized. Dwellings with this quality rating are usually unique structures that are individually designed by an architect for a specified user. Such residences typically are constructed from detailed architectural plans and specifications and feature an exceptionally high level of workmanship and exceptionally high-grade materials throughout the interior and exterior of the structure. The design features exceptionally high-quality exterior refinements and ornamentation, and exceptionally high-quality interior refinements. The workmanship, materials, and finishes throughout the dwelling are of exceptionally high quality.

TYPICAL SPECIFICATIONS	
DESIGN	Complex with multiple “cuts," and off-angle sections. Exterior walls will have numerous openings (windows & doors).
FOUND	High crawlspace (brick or reinforced concrete foundation walls, footings with interior piers) or basement.
EX WALL	Brick, Stone or Hardi Plank standard. Cedar shake, stucco, and frame siding sometimes used (especially in older homes). All exterior coverings will be of high quality and constructed with much attention to detail by experienced craftsmen.
ROOF	Architectural shingles, slate, tile, or cedar shake on good quality sheathing. Well braced rafters. Excellent quality gutters and downspouts.
FLOOR	Best quality hardwood floors are extensively used with sparing use of top-quality carpet and top-quality tile (or heated tile) flooring in the bathrooms.
CEILING	9-foot to 12-foot ceilings (or higher in rare cases) on main level. 9-foot to 10-foot ceilings on upper levels. Trey, vaulted and cathedral ceilings are extensively used.
KITCHEN	Granite (or marble) countertops (or other superior material). Best quality custom cabinets. Fixtures are of the highest quality.
BATH	Bathrooms typically include double sinks and both shower and garden tubs. Custom multi-head showers and granite counters are common.
TRIM	Interior trim is elaborate and finely detailed. Best quality solid interior doors. Best quality built-in cabinets/shelves. Multiple walk-in closets of good size.
ELEC	Exceptional. Abundant outlets and light fixtures. Extensive use of recessed/suspended/spot/vanity lights. Multiple ceiling fans and chandeliers.
MECH	FHA w/AC with ample capacity and insulated duct-work. Multiple fireplaces.
PLMB	Exceptional. Copper or plastic piping. May have tankless water heaters.
INSL	Exceptional. Windows have energy saving (low-e) features (with the exception of decorative windows, such as stained glass or other non-typical windows).
ATTACH	Extensive terraced or ground-level patios, trex-board or wood decks, and columned porches/gazebos.
CAR	Three or more-car garage predominates. Rarely limited to carport. Never without attached car storage.

“AA” Grade Homes

Quality Grade "A"	Very Good Quality	Range: 145 to 170

"A" grade homes are typically designed by an architect and custom built by contractors who specialize in good quality construction. More rarely "A" grade homes are found in high-quality tract developments featuring residences constructed from individual plans or from highly modified or upgraded plans. "A" grade homes will generally be found in affluent residential neighborhoods or on private lots outside of residential neighborhoods. The design features detailed, high-quality exterior ornamentation, high-quality interior refinements, and detail. The workmanship, materials, and finishes throughout the dwelling are generally of high or very high quality. "A" grade homes far exceed code.

TYPICAL SPECIFICATIONS	
DESIGN	Complex with multiple “cuts." Off-angle sections are not uncommon. Exterior walls will have numerous openings (windows & doors).
FOUND	Crawlspace (brick or reinforced concrete foundation walls, footings with interior piers) or basement. High-crawlspace common.
EX WALL	Brick or Hardi plank is standard, although cedar shake shingles, stucco, or frame siding may be in use (especially among older homes). Dentils, quoin-corners, patterned brick, arched windows and doors are extensively used.
ROOF	Roof pitch is steep with good overhang and roof design is complex. Roof coverings are of the best quality. Slate, tile asbestos, cedar shake shingles, or heavy asphalt singles on good quality sheathing and well braced rafters. Very good quality gutters and downspouts.
FLOOR	High quality hardwood floors are extensively used with sparing use of top-quality carpet and good quality tile flooring in the bathrooms.
CEILING	9-foot to 10-foot ceilings (or higher in rare cases) on main level. 9-foot ceilings on upper levels. Trey, vaulted and cathedral ceilings are extensively used.
KITCHEN	Countertops are universally granite, corian, marble or similar superior material, while cabinetry is of excellent quality. Fixtures are name brand of the highest quality.
BATH	Bathrooms typically include double sinks and both shower and garden tubs. In addition, custom multi-head showers are not uncommon.
TRIM	Interior trim is elaborate with thick crown molding throughout. Best quality hollow or good quality solid interior doors. Good quality built-in cabinets/shelves. Multiple walk-in closets of good size are the norm.
ELEC	Far exceeds code. Abundant outlets and light fixtures. Extensive use of recessed/suspended/spot/vanity lights. Multiple ceiling fans and chandeliers.
MECH	FHA w/AC with ample capacity and insulated duct-work. At least one fireplace, although multiple fireplaces are common.
PLMB	Far exceeds code. Typically, copper or plastic piping. Newer homes may have tankless water heaters.
INSL	Far exceeds code. Windows typically have energy saving (low-e) features.
ATTACH	Terraced patios, trex-board decks, and two-story columned porches are common.
CAR	Two to three-car garage predominates. Occasionally one to four-car garage, or carport. Never without attached car storage.

“A” Grade Homes






Quality Grade "B"	Good Quality	Range: 116 to 135

"B" grade homes are typically custom or better built "spec" homes. They generally utilize readily available designer plans (with or without modification), although they are sometimes based on custom plans. "B" grade homes are typically found in good/very good quality residential tract developments or on private lots outside of residential neighborhoods. They include significant interior and exterior trim/finish. Materials and workmanship exceed building codes and the home features many upgrades from "stock" or "builder grade."

TYPICAL SPECIFICATIONS	
DESIGN	More complex and less boxy than "C" grade, may incorporate multiple “cuts” and may use angles other than 90 degrees. Exterior walls will have ample openings (windows & doors).
FOUND	Typically, crawlspace (brick or reinforced concrete foundation walls, concrete footings w/interior piers). Some slab homes are "B" grade.
EX WALL	Brick or Hardi plank siding is common on newer homes, although vinyl, Masonite, wood frame, stucco and other sidings are in use. All exterior walls will be of above average quality and constructed with attention to detail by experienced craftsmen. Dentils, quoin-corners, patterned brick, arched windows and doors are common.
ROOF	Roof pitch is high with good overhang. Complex roof designs are common. Roof coverings are generally of good quality (architectural shingles, cedar shake, or similar on wood sheathing). Rafters or truss system. Gutters and downspouts are of good quality.
FLOOR	Moderate-to-extensive hardwood floors, good quality carpet, and basic tile flooring in bathrooms.
CEILING	9-foot ceilings on all floors. Trey, vaulted and cathedral ceilings are common and used moderately.
KITCHEN	Countertops are frequently granite or corian with good quality cabinets. Fixtures are name brand in the middle to upper range.
BATH	Bathrooms typically include double sinks and both shower and garden tub.
TRIM	At least one walk in closet of good size is typical while secondary bedrooms may feature large closets or small walk-ins. Interior trim is more pronounced with wainscoting in the dining area and crown molding in most “public” rooms (but not necessarily bed and bath). Good grade hollow-core doors, some built-ins.
ELEC	Exceeds code. Ample outlets and light fixtures. Moderate use of recessed/suspended/spot/vanity lights. Ceiling fans and chandeliers common.
MECH	FHA w/AC with adequate capacity and insulation duct-work (older home may have radiant, baseboard, or forced hot air w/o AC). One fireplace is standard, but some homes will have multiple fireplaces while others will have no fireplace.
PLMB	Exceeds code. Typically, copper or plastic pipe. New homes may have tankless W/H.
INSL	Exceeds code. Windows frequently have energy saving (low-e) features.
ATTACH	Terraced or ground-level patios, trex-board or wood decks, and columned porches are common.
CAR	Two-car garage predominates. Occasionally one to three-car garage, or carport. Rarely without attached car storage.

"B" Grade Homes

Quality Grade "C"	Average Quality	Range: 93 to 108

"C" grade homes typically utilize standard or modified standard building plans (most new "spec" homes are "C" grade). They are often mass produced and marketed to middle income families. Attention to detail on both interior and exterior finish work is adequate. Materials used are typically "stock" or "builder grade" although some features may be upgraded. "C" grade homes meet or exceed building codes.

TYPICAL SPECIFICATIONS

DESIGN	Basic and generally more “box-like” than higher grades. Walls will have adequate openings (windows & doors).
FOUND	New homes may be slab or crawlspace (brick or concrete foundation walls, concrete footings w/interior piers). Most older homes are crawlspace.
EX WALL	Vinyl siding predominates, but brick veneer, stucco, Masonite, aluminum, and frame siding are not uncommon. Dentils, quoin-corners, patterned brick, arched windows or doors may exist but are not typical.
ROOF	Roof pitches are moderate with adequate overhang and gable roofs predominate. Roof coverings are usually of low-to-mid quality (average quality asphalt shingles on grade plywood sheathing), although some will use architectural shingles. Rafters or truss systems. Galvanized gutters and downspouts are common.
FLOOR	Hardwood floors, if present, are of basic quality and typically only exist on the first floor, while vinyl and carpet floors predominate. Older homes may have "small" tile baths. Better homes may have "large" tile baths.
CEILING	8-foot to 9-foot ceilings on main level. 8-foot ceilings on upper levels. Sparse use of trey, vaulted or cathedral ceilings is not uncommon in new homes (but not required). Older homes typically lack trey/vaulted/cathedral ceilings.
KITCHEN	Countertops are basic but may be upgraded (such as solid surface counters) while cabinets are usually "stock". Fixtures are usually "builder grade" but may be upgraded to name brands.
BATH	Double sinks and/or both shower and garden tub may exist in master bathrooms, but other bathrooms typically do not have extra fixtures.
TRIM	Interior trim is basic, sometimes including crown molding or wainscoting. A small to medium sized walk-in closet is not uncommon, but is also not required. Secondary bedrooms have medium-sized closets. Medium grade or stock hollow-core doors. Stock cabinets and hardware, few if any built-ins, and some attention to detail paid to finish work.
ELEC	Location/number of outlets and light fixtures meet or exceed code. May have recessed/suspended/spot/vanity lights. Ceiling fans common.
MECH	FHA w/AC with adequate capacity and insulated duct-work is standard. Older homes may utilize baseboard, radiant, or forced hot air without AC. Fireplaces are common upgrades, but not required.
PLMB	"Stock" or "Builder grade" fixtures. Galvanized, copper or plastic piping.
INSL	Meets or exceeds code. Windows may have energy saving (low-e) features.
ATTACH	Ground-level cement patios, wood decks, and covered porches are common but not required.
CAR	One or two-car garage or carport common (but not required).

"C" Grade Homes

Quality Grade "D"	Fair Quality	Range: 74 to 86

"D" grade homes feature low-cost materials and expense saving construction methods. Economy of construction and basic functionality are the main considerations. They have a plain design and typically use readily available or basic floor plans featuring minimal fenestration and basic finishes with minimal exterior ornamentation and limited interior detail. They are constructed with inexpensive, stock materials with limited refinements and upgrades. Workmanship, finish work, and materials are below average quality. These dwellings meet minimum building codes.

TYPICAL SPECIFICATIONS	
DESIGN	Rectangular "box" (ranch, cape cod, or colonial style). Walls have adequate openings (windows & doors).
FOUND	Slab foundation is the norm for new homes, while older homes may have crawlspace (frequently low w/brick or concrete foundation walls & concrete footings with interior or perimeter piers)
EX WALL	Vinyl siding is the norm for newer homes, while older homes may be asbestos, composite roll, brick veneer, stucco, wood frame, or concrete block. Dentils, quoin-corners, patterned brick, arched windows or doors are virtually non-existent.
ROOF	Roof pitches are low-to-moderate with little overhang and gable roofs predominate (though some examples of flat roofs may be seen). Roof coverings are of low-to-middle quality (light weight asphalt shingles on exterior plywood). Rafters or pre-fab truss system. May have galvanized gutters and downspouts.
FLOOR	Older homes may feature hardwood floors, but new homes are typically low-to-mid quality carpet and vinyl (some parquet flooring may exist). Older homes may have low-cost tile in baths.
CEILING	8-foot on main level. 7-foot to 8-foot on upper levels. No tray, vaulted or cathedral ceilings.
KITCHEN	Countertops and cabinets are basic and sometimes inadequate. Fixtures are "builder grade."
BATH	Typically, does not have double sinks or both shower and garden tubs.
TRIM	Interior trim is almost non-existent (base board molding being the only typical example). Low cost hollow-core or flat panel doors. Few cabinets and hardware, little-to-no built-ins, and little attention to detail paid to finish work. Closets are medium-sized and walk-in closets are very rare.
ELEC	Adequate number/location of outlets and light fixtures.
MECH	Adequate. Floor furnace, baseboard, radiant, or forced hot air with minimum capacity and duct-work. May or may not have wood or gas fireplace.
PLMB	Adequate. Low-to-mid cost fixtures. Galvanized or plastic piping.
INSL	Adequate. Conforming to minimum code. Windows are the cheapest available.
ATTACH	Cement patios, wood decks and covered porches are sparse and small, but frequently exist.
CAR	Typically, without attached car storage, but may have a one or two-car garage or carport.

"D" Grade Homes






Quality Grade "E"	Poor Quality	Range: 45 to 65

"E" grade is the lowest quality of housing (often from the 1950s and earlier). Some dwellings of this quality may not be suitable for year-round occupancy. Such dwellings are often built with simple plans or without plans, often utilizing the lowest quality building materials. Such dwellings are often built or expanded by persons who are professionally unskilled or possess only minimal construction skills. Older dwellings may feature one or more substandard and non-conforming additions to the original structure. Current code prevents new "E" grade homes from being constructed.

TYPICAL SPECIFICATIONS	
DESIGN	Basic "box" shape. Walls will have minimum openings (windows & doors).
FOUND	Slab or crawl (typically low w/concrete block foundation walls w/minimum concrete footings and piers).
EX WALL	Frame, vinyl, asbestos, composite roll, or concrete block. All walls will be of low-quality materials. Exterior trim lacking.
ROOF	Pitch is very low or flat with little or no overhang. Roof covering is on the lowest quality (light weight asphalt shingles, roll or metal on exterior grade plywood). Usually rafters or pre-fab truss system.
FLOOR	Wood sub-floor with low cost covering (vinyl, carpet, etc.) Rarely hardwood. Sometimes dirt floor.
CEILING	7-foot to 8-foot on main level. Upper levels typically 7-foot. No trey, vaulted, or cathedral ceilings.
KITCHEN	Countertops and cabinets are minimal and inadequate. Fixtures are the cheapest available.
BATH	Low cost tile floors and walls (or vinyl/drywall). Typically, inadequate and cramped.
TRIM	Little-to-no interior trim. Closets are small (or may be missing). Lowest cost hollow-core or flat panel doors. Few cabinets and hardware, no built-ins.
ELEC	Minimal (or non-existent). Inadequate number/location of outlets and light fixtures.
MECH	Minimal (or non-existent). Unit, baseboard, radiant, or forced hot air with minimum capacity and duct-work. Sometimes includes fireplace.
PLMB	Minimal (or non-existent). Low-cost fixtures. Galvanized, plastic, or black piping.
INSL	Minimal (or non-existent). Windows are of poor quality.
ATTACH	Cement patios, wood decks and covered porches are minimal if they exist at all.
CAR	Most "E" grade homes do not have any form of attached car shelter, although carports are not unknown, garages are exceptionally rare.

"E" Grade Homes






PHYSICAL ADJUSTMENT

Physical adjustments are made to consider unrepaired damage to the property (in excess of depreciation already granted by the indicated condition on the proper age deprecation table). Most homes will be in relatively good physical condition and have no physical depreciation adjustment (routine wear-and-tear is included in the home's Age Depreciation). Homes that do require adjustment, are adjusted based on a percentage reduced or percent off (not a percent good or percent retained).

PHYSICAL TABLE	
ADJ%	**DESCRIPTION**
10	**Minor Physical Problems.** The home has repair needs beyond those common to a home of its effective age. The repairs are estimated to cost roughly 10% of the total structure value.
20	**Moderate Physical Problems.** The home has repair needs beyond those common to a home of its effective age. The repairs are estimated to cost roughly 20% of the total structure value.
30	**Major Physical Problems.** The home has repair needs beyond those common to a home of its effective age. The repairs are estimated to cost roughly 30% of the total structure value.
50	**Uninhabitable.** The home is uninhabitable. The repairs are estimated to cost roughly 50% of the total structure value.
75	**Unsound.** The home is unsafe. The repairs are estimated to cost roughly 75% of the total structure value. This is curable. For incurable see Condition Code UN.

FUNCTIONAL ADJUSTMENT

Functional adjustments are made for concerns regarding the home that are not physical in nature. This can be the lack of a bedroom on the first level, poor layout and/or flow, low-ceiling height (7'), or other similar concern. Likewise, upward functional adjustments ("Cost & Design" adjustments) are made for "green" homes (highly energy efficient), "smart" homes (highly integrated technology), and the like.

FUNCTIONAL TABLE	
ADJ%	DESCRIPTION
10	**Minor Functional Problems.** Inadequate Insulation, Electrical System insufficient for energy needs, poor flow/floorplan design, unattractive/undesirable appearance, etc.
20	**Moderate Functional Problems.** Undesirable features and inadequacies reducing the structure's value by 20%
30	**Major Functional Problems.** Undesirable features and inadequacies reducing the structure's value by 30%.
COST & DESIGN ADJUSTMENT	
ADJ%	DESCRIPTION
130	**Superior Functionality.** "Smart" house.
120	**Exceptional Functionality.** Superior "green" (energy efficient) house.
110	**Very Good Functionality.** Basic "green" (energy efficient) house.

ECONOMIC ADJUSTMENT

Economic adjustments are made for concerns not based on the property itself, but on the impact of the immediate area. Influence factors which are neighborhood-wide should be addressed using a Market Ratio adjustment (covered later in this chapter). Factors which only affect certain properties within a neighborhood are addressed with economic obsolescence adjustments.

ECONOMIC TABLE	
ADJ%	DESCRIPTION
10	**Minor Economic Problems.** Negative external factors reduce the value of the structure by 10%.
20	**Moderate Economic Problems.** Negative external factors reduce the value of the structure by 20%.
30	**Major Economic Problems.** Negative external factors reduce the value of the structure by 30%.

PERCENTAGE OF COMPLETION

The vast majority of homes are fully complete. However, those homes that are under construction (or undergoing extensive remodeling) are adjusted based on their percentage of completion.

PERCENT COMPLETE TABLE	
%	**DESCRIPTION**
100	All work is finished.
90	Trim work complete. Tile floors in place. Carpets may or may not be in place.
80	Painted. Vinyl and hardwood floors in place. Tile floors may be underway. Fixtures installed.
70	"mudded" sheet rock, interior fixtures mostly in place, cabinets mostly in place. Superior siding homes will have siding in place.
60	Sheet rock (or other interior wall covering). Vinyl sided homes should have siding in place by this point. Brick, Hardi plank or other superior siding home may or may not have any siding up.
50	Plumb, Wire and Duct roughed in. May or may not have siding.
40	Exterior Sheathing. No Siding.
30	Roof framed up.
20	Walls framed up.
10	Foundation only.

COMPONENT ADJUSTMENTS

BATHROOMS

The Bathroom Adjustment alters the value based on the number of bathrooms. The base model assumes a 2.0-bathroom home. If the home has more or fewer bathrooms, they must be adjusted for.

Alamance County follows the current convention in recording half baths as 0.1 rather than 0.5. This makes it possible to record multiple half-baths without confusion. For example, a large home might have 5 full baths and 2 half baths and would be listed as 5.2 baths.

The approach taken by Alamance County is based on the standard appraisal convention of adjusting for differences between the subject and comparable (in this case the subject and a 2.0 bath home) rather than attempting to capture the actual cost of construction attributed to a bathroom. The base model includes the cost of constructing 2 baths. More or fewer baths will probably experience a disparity between cost of construction and value in contribution. As this is a modified cost approach, the value in contribution is more important than the cost of construction.

Each half-bath above or below base necessitates warrants an adjustment while each full bath above or below base will require an adjustment. As this table is not comprehensive of every possible full/half bath combination, additional codes following the rule set forth above may be added as-needed.

Bathroom table on next page.

BATHROOM TABLE

DESCRIPTION	CODE	VALUE	EXPANDED DESCRIPTION
39.0 Baths	BA 39.0	259,000	
9.5 Bath	BA 9.5	66,500	
9.3 Bath	BA 9.3	59,500	
9.0 Bath	BA 9.0	49,000	
8.0 Bath	BA 8.0	42,000	
7.2 Bath	BA 7.2	42,000	
7.1 Bath	BA 7.1	38,500	
7.0 Bath	BA 7.0	35,000	
6.4 Bath	BA 6.4	42,000	
6.3 Bath	BA 6.3	38,500	
6.2 Bath	BA 6.2	35,000	
6.1 Bath	BA 6.1	31,500	
6.0 Bath	BA 6.0	28,000	
5.4 Bath	BA 5.4	35,000	
5.3 Bath	BA 5.3	31,500	
5.2 Bath	BA 5.2	28,000	
5.1 Bath	BA 5.1	24,500	
5.0 Bath	BA 5.0	21,000	
4.4 Bath	BA 4.4	28,000	
4.3 Bath	BA 4.3	24,500	
4.2 Bath	BA 4.2	21,000	
4.1 Bath	BA 4.1	17,500	
4.0 Bath	BA 4.0	14,000	
3.3 Bath	BA 3.3	17,500	
3.2 Bath	BA 3.2	14,000	
3.1 Bath	BA 3.1	10,500	
3.0 Bath	BA 3.0	7,000	
2.3 Bath	BA 2.3	10,500	
2.2 Bath	BA 2.2	7,000	
2.1 Bath	BA 2.1	3,500	
2.0 Bath	BA 2.0	BASE	**The Base Model Assumes 2 full baths.**
1.2 Bath	BA 1.2	BASE	Equivalent of base model.
1.1 Bath	BA 1.1	-2,800	
1.0 Bath	BA 1.0	-5,500	
0.2 Bath	BA 0.2	-5,500	
0.1 Bath	BA 0.1	-8,000	
0.0 Bath	BA 0.0	-12,000	
No Plumbing	BA NO	-18,000	

SIDING MATERIAL

The Siding Adjustment considers the cost of various types of siding. The base model assumes an "average" siding material. Adjustments may be made for specific materials as shown below.

SIDING TABLE			
DESCRIPTION	**CODE**	**$/SF**	**DETAILS**
Aluminum	SI AL	BASE	1 - 100%
Asbestos	SI AS	-3.00	1 - 100%
Brick - imitation/panel	SI BI	3.00	1 - 100%, also called faux brick or brick panels
Brick - veneer	SI BV	6.00	1 - 100%, width (half or full) goes to grade
Brick - solid/structural	SI BS	8.50	1 - 100%, also called double-brick or structural brick
Cedar Shake	SI CS	BASE	1 - 100%
Ceramic Tile	SI CT	BASE	1 – 100%
Composition Roll	SI CR	-3.00	1 - 100%
Concrete Block	SI CB	BASE	1 - 100%
Frame	SI FR	BASE	1 - 100%
Frame & Glass	SI FG	3.00	1 - 100%
Galvanized Tin	SI GT	-3.00	1 - 100%
Glass & Frame	SI GF	3.00	1 - 100%
Glass & Metal	SI GM	3.00	1 - 100%
Granite	SI GR	10.00	1 - 100%
Hardi Plank	SI HP	4.00	1 - 100%, also called fiber cement siding
Log - solid	SI LS	8.50	1 - 100%
Log - veneer	SI LV	6.00	1 - 100%
Porcelain Enamel	SI PE	4.00	1 - 100%
Pressboard	SI PB	BASE	1 - 100%, also called hardboard or Masonite
Marble	SI MA	14.00	1 - 100%
Metal & Glass	SI MG	3.00	1 - 100%
Poured Concrete	SI PC	8.00	1 - 100%
Stone - imitation/faux	SI SI	3.00	1 - 100%, also called faux stone (panels)
Stone - veneer	SI ST	6.00	1 - 100%, natural/manufactured, width/quality to grade
Stone - solid/structural	SI SS	8.50	1 - 100%, also called structural stone
Stucco	SI SC	BASE	1 – 100%
Stucco - on block	SI SB	BASE	1 - 100%
Stucco - on frame	SI SF	BASE	1 - 100%
Synthetic Plaster (EIFS)	SI SP	4.00	1 - 100%
Tile	SI TI	BASE	1 - 100%
Vinyl	SI VN	BASE	1 - 100%
Wood Shingle	SI WS	2.00	1 - 100%, examples include Cedar Shake
No Siding	SI NO	-11.00	1 - 100%

FOUNDATION TYPE

The Foundation Type Adjustment considers the cost and desirability of various types of foundations. The base model assumes a crawlspace or basement foundation.

FOUNDATION TABLE			
DESCRIPTION	CODE	$/SF	EXPANDED DESCRIPTION
Crawlspace	FN CS	BASE	
Basement	FN BS	BASE	
Crawlspace / Basement	FN CB	BASE	
Slab / Basement	FN SB	BASE	
High Crawlspace	FN HC	1.75	Average Height: 4-ft or more
Low Crawlspace	FN LC	-1.75	Average Height: 2-ft or less
Slab	FN SL	-4.00	
Slab, Superior Quality	FN SLS	BASE	Thick slab/gravel, deep joints/footers, compacted/graded soil
Pier/Post, Open	FN PO	-6.00	
Pier/Post, Vinyl Skirting	FN PV	-5.00	Include Metal Skirting
Pier/Post, Brick Skirting	FN PB	-3.00	
Sealed Crawlspace	FN SC	3.00	
Vinyl/Metal Skirting	FN 05	-2.00	
No Foundation	FN NO	-7.00	The home sits directly on the ground with no foundation.

HEAT SYSTEM

The Heat System Adjustment considers the cost, desirability and utility associated with various heating systems. The base model assumes central heating and cooling (usually a heat pump or gas pack), Mixed Central Heat w/ Unit Cool and Mixed Central Cool w/ Unit Heat. Any other type of heat should be adjusted for.

HEAT SYSTEM TABLE			
DESCRIPTION	**CODE**	**$/SF**	**EXPANDED DESCRIPTION**
Central Heat & Cool	HC HC	BASE	Gas Pack / Heat Pump or equivalent
Central Heat Only	HC CH	-4.00	FHA or systemic BB/hydronic
Central Cool Only	HC CC	-3.00	
Unit Heat & Cool	HC UN	-3.75	
Unit Heat Only	HC UH	-5.50	Standalone BB, woodstove, gas, elec, floor/wall furnace, etc.
Unit Cool Only	HC UC	-5.50	
Mixed Central Heat w/Unit Cool	HC MH	BASE	
Mixed Central Cool w/Unit Heat	HC MC	BASE	
No Heat System	HC NO	-6.50	Functional depreciation indicated

FIREPLACE TABLE			
DESCRIPTION	**CODE**	**$/SF**	**EXPANDED DESCRIPTION**
Fireplace - masonry	FP FPM	5,000	Flat amount per opening.
Fireplace - pre-fab	FP FPP	2,500	Flat amount per opening.

ELECTRICAL SYSTEM

The electrical system is part of the base model and is assumed to function properly and be at a level of quality consistent with the general quality of the home. Certain features, however, do require adjustment.

ELECTRICAL SYSTEM				
DESCRIPTION	**CODE**	**RATE**	**$/UNIT**	**EXPANDED DESCRIPTION**
Generator	E1 GN	~	~	permanent attach/natural gas or fuel tank
No Electrical System	E2 NO	-6.00	~	Functional depreciation indicated

INSULATION

Insulation is part of the base model and is assumed to be of a rating and coverage consistent with the general quality of the home. Certain features, however, do require adjustment.

INSULATION				
DESCRIPTION	CODE	RATE	$/UNIT	EXPANDED DESCRIPTION
Superior **In**sulation	IN SUP	3.00	~	
No **In**sulation	IN NO	-6.00	~	Functional depreciation indicated

AREA/ATTACHMENT ADJUSTMENTS

BASEMENTS

The Basement Area Adjustment considers any lower-level square footage. Finished basements contribute to the living area ("square footage") of the home while part finished and unfinished basements and cellars do not. This is expressed as square footage entered into the "units" field.

BASEMENT AREA TABLE				
DESCRIPTION	CODE	$/SF	SIZE	EXPANDED DESCRIPTION
Finished	BS FN	58.00	*	Modern finished basement. Finish comparable to first floor.
Semi-**F**inished	BS SF	43.50	*	Traditional finished basement. Finish inferior to first floor but may be easily used as living space.
Unfinished	BS UN	29.00	*	Unheated and unfinished, this area is useful for storage or perhaps basic recreation functions, but not much else.
Cellar **O**nly	BS CO	9.00	*	Must be accessed from the exterior of the house. "C" grade and higher will be concrete floor, but "D" grade and lower may include dirt floor.

*See basement size adjustment note on page 4-5

ATTICS

The Attic Area Adjustment considers any upper level square footage that cannot be counted in the heated living area. This is expressed as a square footage entered into the "units" field.

ATTIC AREA TABLE				
DESCRIPTION	CODE	$/SF	SIZE	EXPANDED DESCRIPTION
Finished	AT FN	32.00	MAIN	Attic area is heated and has floor/ceiling/wall coverings, but cannot be counted as heated living area for some reason (ceiling height less than 7 ft., non-contiguous, etc.)
Semi-**F**inished	AT SF	25.00	MAIN	Attic area is unheated but has floor/ceiling/wall coverings.
Unfinished	AT UN	15.00	MAIN	Attic area is unfinished and useful primarily for storage, but it does have a fixed stair.

ATTACHMENTS

The Attachment Area Adjustment considers any non-heated area attached to the heated living area. Attachments are added to the improvement sketch and valued based on area.

ATTACHMENT TABLE				
DESCRIPTION	**CODE**	**$/SF**	**SIZE**	**EXPANDED DESCRIPTION**
Open **P**orch	AC OP	25.00	S7	
Screen **P**orch	AC SP	31.25	S7	
Enclosed **P**orch, **F**rame	AC EPF	50.00	S7	
Enclosed **P**orch, **M**asonry	AC EPM	55.00	S7	
Level **Pat**io	AC LPAT	5.00	S8	
Raised **Pat**io	AC RPAT	13.00	S7	terraced patio
Wood **D**eck	AC WD	20.00	S8	
La**nd**ing	AC LND	8.00	S0	ground level
Stoop	AC ST	21.00	S0	raised landing
Wood **S**toop	AC WS	25.00	S0	raised wood landing
Frame **G**arage	AC FG	28.25	S4	Finish controlled by quality grade
Brick **G**arage	AC BG	33.80	S4	Finish controlled by quality grade
Combo **G**arage	AC CG	30.00	S4	1/3 Brick, 2/3 Frame
Car**p**ort	AC CP	15.75	S4	
Ca**n**opy	AC CN	14.00	S7	
Frame **S**hop	AC FS	28.25	S4	
Masonry **S**hop	AC MS	38.00	S4	
Utility Room**, F**rame	AC UF	45.00	S8	
Utility Room, **M**asonry	AC UM	55.00	S8	
Green**h**ouse	AC GH	55.00	S8	

MANUFACTURED HOUSING

While site-built homes are constructed according to local building codes to ensure proper design and safety, manufactured homes are constructed in accordance with the Federal Manufactured Home Construction and Safety Standards, in effect since June 15, 1976. This building code, administered by the United States Department of Housing and Urban Development (HUD) and known as the HUD Code, regulates manufactured home design and construction, strength and durability, fire resistance, and energy efficiency. In 1994 this building code was revised to enhance energy efficiency and ventilation standards and to improve the wind resistance of manufactured homes in areas prone to winds of hurricane force. Every manufactured home has a red and silver label certifying that it was built and inspected in compliance with the HUD Code. No manufactured home may be shipped from the factory unless it complies with the HUD Code and receives the certification label from an independent, third-party inspection agency.

"MANUFACTURED HOMES" VERSUS "MOBILE HOMES"

The terms "manufactured home" and "mobile home" are often used interchangeably, but there are differences. A "mobile home" was produced prior to June 15, 1976 and does not have to conform to the HUD Code. A "manufactured home" was produced after June 15, 1976 and must conform to the HUD Code. This means that "mobile homes" are generally of lower quality than "manufactured homes."

A BRIEF HISTORY OF MOBILE HOMES AND MANUFACTURED HOUSING

The term "mobile home" was born in 1956 with the introduction of the first 10'-wide mobile homes. Prior to this time, 8'-wide "house trailers" were the norm and were intended to be highly-mobile as they could be pulled behind a car or truck. In contrast the 10'-wide "mobile home" was intended for long-term or permanent placement on a lot.

The 1960's saw these homes grow to larger sizes (including the new 12'-wide) and feature more amenities. Mobile homes began to expand from being a secondary "vacation" home to a cost-effective primary residence.

In 1976 the HUD code went into effect establishing standards of quality in construction and distinguishing "manufactured homes" (post-1976 HUD compliant) from "mobile homes" (pre-1976 non-HUD compliant).

Minor revisions to the HUD code and industry standards occurred in the 1980's. Manufactured homes began to look more like their "stick-built" cousins featuring vinyl siding and shingle roofs.

In 1994 the HUD code underwent major revision to upgrade wind-resistance and energy efficiency. This had been prompted by the damage done by Hurricane Andrew two years earlier.

QUALITY AND FUNCTIONAL OBSOLESCENCE GUIDELINES

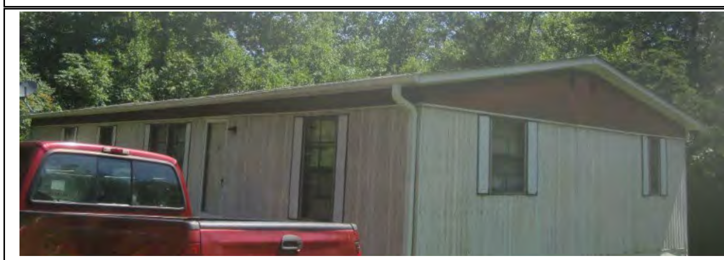
While changes in building codes and acceptable methods and materials have also occurred for traditional site-built homes during this period, the change among mobile and manufactured homes is much more pronounced. While an average quality site-built home from 1956 may be the equivalent of a C- minus today, an average quality "10'-wide" mobile home from 1956 would be a D- today. Also, any mobile home produced prior to the 1976 HUD code should be reduced for functional obsolescence.

The guidelines below are intended to aid appraisers in properly selecting grade and functional obsolescence adjustments. These are not "hard-and-fast" rules.

		Base Grade	Functional Obsolescence
1995 – Present	"modern"	C	0%
Mid-80's – 1994	"vinyl/shingle"	C-	0% - 10%
1977 – Mid-80's	"aluminum"	D+	5% - 15%
Mid-60's – 1976	"12'-wide+"	D	10% - 25%
1956 – Mid-60's	"10'-wide"	D-	15% - 40%

1995 – Present “modern” Base Grade C Functional Dep 0%

Mid-80’s – 1994 “vinyl/shingle” Base Grade C- Functional Dep 0% - 10%



1977 – Mid-80’s “aluminum” Base Grade D+ Functional Dep 5% - 15%

Mid-60’s – 1976 “12’-wide+” Base Grade D Functional Dep 10% - 25%

1956 – Mid-60’s “10’-wide” Base Grade D- Functional Dep 15% - 40%

MANUFACTURED HOME CLASSIFICATION STANDARDS

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 (which may be as simple as concrete block piers).

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 moving apparatus (towing hitch and axle assembly) has not been removed or if the home is not on a permanent foundation, 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.

MODULAR HOMES

Modular homes are differentiated from other manufactured homes in that they are constructed in multiple pieces (rather than the one- or two-piece construction of singlewides and doublewides) and are intended to be placed once and never moved. There are two basic categories of modular homes: on-frame modular homes and off-frame modular homes.

On-frame modular homes are very similar to doublewide manufactured homes and could easily be mistaken for a doublewide. Common differentiating factors include:

- Identifying tags (often included under kitchen cabinets, in power boxes, in master bedroom closets, in mechanical space, under the home near the crawlspace access, or, in the case of doublewides, on the front of the home)
- Roof pitch (the additional pieces used in modular construction allow for a normal pitch rather than the shallow pitch of doublewide construction)
- Method of transport (modular homes are brought in on truck beds while manufactured homes are towed on their own wheels)

Off-frame modular homes are very similar to site-built homes and could easily be mistaken for on-site construction. They are shipped in more pieces and exhibit a greater degree of variety of construction. The key differentiating factor between on-frame and off-frame modulars is that the metal undercarriage (the “frame” being referred to) is generally removed when an off-frame modular is placed on site while it cannot be removed from an on-frame modular as it is a structural component.

The market tends to treat on-frame modular homes more like doublewides and off-frame modular homes more like site-built homes. Appropriately, each category has its own valuation schedule.

All modular homes are considered to be real property.

PANELIZED HOMES

Panelized housing is an alternative to modular housing in which many smaller pieces of the home are prefabricated rather than a few large segments. Once a less common construction option, many national tract builders now use a form of panelized construction to reduce both the time and expense of building houses. There are many variations of the basic panelized concept, some more similar to on-site construction and some more similar to modular construction. For the most part, the market fails to differentiate between a fully or party panelized house and a site-built house. Appropriately, this schedule assesses party or fully panelized construction in the same manner as site-built construction.

TOWNHOMES / CONDOS

Townhomes and condominiums are not construction styles (although they may be associated with certain styles of construction), but are actually types of ownership interest.

In a townhouse form of ownership, the owner purchases the structure itself and the land immediately under the structure, but does not purchase the surrounding grounds. Instead, the townhome owner purchases an interest (or a share) in a home owners association (HOA) which retains ownership of any land not immediately beneath the town home. The association will charge dues and will provide for the upkeep of the common property (and may provide other amenities).

In a condominium form of ownership, the owner purchases the interior walls and airspace, but not the exterior walls or land under the home. Instead, the condominium owner purchases an interest (or a share) in a home owners association (HOA) which retains ownership of any land and the exterior of the improvement. The association will charge dues and will provide for the upkeep of the common property (and may provide other amenities).

In either event, the interest in the home owner's association not being severable from the ownership interest in the townhome / condominium, it is appropriate to assess the owner of the townhouse / condominium for the value of their interest in the HOA. Both the positive influence of HOA benefits and the negative influence of HOA dues and restrictions are captured in the selling price of the individual units. Thus, matching a townhouse / condominium with its market value will automatically include its share of the common area interest.

In order to accurately capture the market impact of the townhouse/condominium form of ownership, a separate Residential Structure Type has been created for dwellings owned in this fashion.

DUPLEX/TRIPLEX

Duplexes and Triplexes are most commonly developed and held as income producing properties. While they have much in common with single-family residences, their highest and best use will almost always be for the production of rental income. Thus, their value to the investor will exceed their value to the prospective owner-occupant.

Ideally, all such properties would be valued by the income approach. Unfortunately, very few rental incomes are disclosed to the tax department during the course of the revaluation study period and such limited data is not sufficient for valuing all such property in the county.

The cost approach is applied by default and a separate Residential Structure Type has been developed to take an income producing highest-and-best use into account. In the event that adequate income information is provided, it would also be appropriate to value such properties according to the Income Approach.

DWELLING CONVERSION

Structures which were once occupied homes but have been converted for the operation of a business and are no longer residential in nature are listed and assessed under the commercial schedule (see chapter 8).

RESIDENTIAL STRUCTURES ON COMMERICAL LAND

In transitional areas that were once residential but are now largely commercial, it is common to find residential structures on commercially zoned land. The highest-and-best use of the land as if vacant will certainly be commercial as this is the only legal use. However, the highest-and-best use of the land as improved may or may not be commercial. The existing non-conforming use may, in fact, provide a greater return should the property be sold. The question is: What is the most likely amount that the property will sell for?

If we view the property as commercial, we have to discount the value of the residential structure as this will almost certainly be demolished. Therefore, the value of the property commercially is simply the value of the land under commercial zoning.

If we view the property as residential, we have to discount the commercial assessment of the land. A buyer who is purchasing for the residential use will not give additional consideration for the land under a commercial use.

It would be a mistake to assess the land commercially and the structure residentially at full value. These two uses are incompatible with each other and will provide an inflated property value. However, for the purpose of equalization, it is preferable to acknowledge the zoning change and adjust the value of the land. This means that we must also make an adjustment to the structure in order to accurately assess the property.

The proper approach is to consider the value of the land both as commercial and as residential. Subtract the residential value from the commercial value to find the difference and then subtract that amount from the value of the structure using a functional adjustment (the structure is considered a mis-improvement). The result of this calculation will always provide the highest-and-best use value of the property, whether this is residential or commercial, while allowing consistency in land assessments in a neighborhood.

Example: A residential structure valued at $100,000 sits on a site that would be valued at $25,000 residentially, but has been rezoned and could now be sold for $50,000 commercially.

Value as Residential	Value as Commercial	Tax Assessment
100,000	0	75,000
25,000	50,000	50,000
125,000	50,000	**125,000**

In this example we see that the highest-and-best use as improved is residential with a value of $125,000, but we wish to acknowledge the commercial zoning of the land to maintain consistency of assessments. We value the land as commercial and subtract the difference (50,000 – 25,000 = 25,000) from the residential improvement (100,000 – 25,000 = 75,000). A functional adjustment of 25% should be made to the improvement (25,000 / 100,000 = 25%).
Example: A residential structure valued at $60,000 sits on a site that would be valued at $20,000 residentially, but has been rezoned and could now be sold for $100,000 commercially.

Value as Residential	Value as Commercial	Tax Assessment
60,000	0	0
20,000	100,000	100,000
80,000	**100,000**	**100,000**

In this example we see that the highest-and-best use as improved is commercial with a value of $100,000. We find the difference of the land as commercial and the land as residential (100,000 - 20,000 = 80,000), and subtract this amount from the value of the residential structure (60,000 - 80,000 = -20,000). We do not apply the negative number, but simply remove all value from the improvement with a functional adjustment of 100%.

UNIQUE RESIDENTIAL PROPERITES

In any significant population of homes, there will be a certain number of homes that are not easily classified and compared with the majority of homes on the market. These properties have unique features which make it difficult to employ a "one size fits all" valuation schedule. Such homes may include "smart" homes, "green" homes, "tiny/micro" homes, "sod/earthen" homes, "geometric" homes (octagons, pyramids, domes, etc.), "stylized" homes (having the appearance of stone castles, domed palaces, Chinese temples, etc.), and others of unusual design and/or function.

When encountered, the standard schedule will be used as a default, but additional adjustments may be needed and will be applied on a case-by-case basis due to the heterogeneous nature of the appraisal assignment.

NEIGHBORHOOD REFINEMENTS

The basic schedule outlined in the preceding pages attempts to capture the value of a main improvement independent of the neighborhood in which it is located. However, in the real world, homes are located within neighborhoods and are subject to a variety of positive and negative influences. The quality, style, age, size, level of upkeep, access to nearby amenities, amount of traffic, unique neighborhood features, proximity to negative offsite influences, and even factors such as the presence of an active community organization within the neighborhood will influence buyers and make certain neighborhoods more desirable than others. Also, the level of conformity within a given neighborhood influences the degree to which divergent superior and inferior improvements are penalized or favored by the market.

Homes do not exist “in a vacuum” and it is vital to recognize the influence of the neighborhood upon each of its members. This is accomplished with two types of adjustment: Market Ratio and Central Tendency.

NEIGHBORHOOD REFINEMENTS – MARKET RATIO

Market Ratio adjustments are made when a neighborhood is more or less desirable than average, positively or negatively influencing the value of all homes within the neighborhood. A home may otherwise be worth $250,000, but be able to sell for $280,000 if located in a highly desirable neighborhood. Likewise, a home may ordinarily have a value of $150,000, but struggle to sell for $120,000 in a particularly undesirable neighborhood.

The Market Ratio adjustment is made as a percentage and applied to all main improvements within a subject neighborhood. Adjustments lower than 100% will reduce the valuation of the main improvements while adjustments greater than 100% will increase the valuation of the main improvements. Main improvements located in market areas which are of average desirability will not require Market Ratio adjustments.

The effect of the adjustment is calculated by multiplying the percentage by the improvement valuation.

For example: A home valued at $250,000 for the house and $40,000 for the land is located in a neighborhood deemed to be 120% as desirable as average.

$250,000	Starting Value of the House
x 120%	Market Ratio
$300,000	Adjusted Value of the House
+$40,000	Value of the Lot
$340,000	Total Property Value

NEIGHBORHOOD REFINEMENTS – DETERMINING THE ADJUSTMENT

The proper Market Ratio Adjustment is determined by comparing the base model to actual neighborhood sales performance. When the appraiser is confident that the model has been properly applied and land values properly assessed, yet there is still a difference between the level of assessment and the market level, an adjustment is called for. This adjustment is applied equally to all improvements within a neighborhood.

A unique condition of the 2023 revaluation as compared to the 2017 revaluation is that Market Ratio adjustments are a core part of the valuation process. Due to the rapid change in market value and uncertainty about the future, it was decided to develop an approximate value and work on being as consistent and balanced as possible, providing low coefficients of dispersion and price-related differentials. Specific market level would not be a major concern as it could not be predicted early in the process. Instead, Market Ratios would be would be used to make adjustments to the model during the final review of each neighborhood. Thus, while most neighborhoods did not have a market adjustment during the 2017 revaluation, most neighborhoods do have a market adjustment for 2023.

SPECIAL ADJUSTMENTS – TOWNHOUSES & MULTI-UNITS

A common problem occurs in the assessment of townhouses/rowhouses and multiple unit construction (“condo buildings”). In certain markets, there is no adjustment needed for interior townhouse units, in other markets only two-story interior units require adjustment, while in yet other markets all interior units require adjustment.

Likewise, in certain markets there is no adjustment for second and third level units in a multi-unit (“condo”) building. In other markets there is a graduated adjustment such that the second-level units must be reduced and the third-level units reduced even further. In still other markets, both second and third level units receive the same reduction. (NOTE: Reduction is generally not needed when an elevator is provided, but only in “walk-up” buildings).

Setting a rule regarding the adjustment of interior units or upper level units would result in some properties being accurately assessed while others may be over or under assessed. The appraiser must carefully review the neighborhood and determine the type and amount of adjustment (if any) and the situations in which an adjustment would apply. This need not be consistent between neighborhoods as each neighborhood may represent a separate market, but they must be consistent within a single neighborhood and should be recorded within the neighborhood’s notes section.

Note: Special financing and included personal property are common in this type of property and must be factored out when determining market value.

RESIDENTIAL & AGRICULTURAL
OTHER BUILDINGS AND YARD ITEMS

This section covers the valuation of additional structures typically associated with residential or agricultural property. Base values and adjustments are provided for a variety of items.

The table below includes the type of out-building or yard item, the code used in the Computer Assisted Mass Appraisal (CAMA) software, the base value or base rate, the size adjustment table to be used, the depreciation table to be used, and a short description. Value is calculated by multiplying the number of units by the base value or base rate, and then multiplying the product by the factor indicated on the proper size and depreciation tables. Additional adjustments may be made to this value as appropriate to the situation per the judgment of the appraiser.

While out-buildings and yard items contribute to the value of the property, valuation of detached structures rarely achieves the full cost of those improvements. This schedule is intended to capture the effect detached structures have on the value of the total parcel rather than simply reflecting what they cost to construct.

RESIDENTIAL & LIGHT AGRICULTURAL OTHER BUILDINGS AND YARD ITEMS TABLE						
TYPE	CODE	$/SF	$/Unit	SIZE	DEP	DESCRIPTION
Frame Garage	MS FG	28.25	~	S4	D30	Finish & Utilities go to grade. Func 75% if main improvement has adequate vehicle storage.
Frame Garage, Attic	MS FGA	40.00	~	S4	D30	
Frame Garage, Half-Story	MS FGH	44.00	~	S4	D30	
Frame Garage, Full-Story	MS FGF	60.00	~	S4	D30	
Brick Garage	MS BG	33.80	~	S4	D30	
Brick Garage, Attic	MS BGA	40.00	~	S4	D30	
Brick Garage, Half-Story	MS BGH	48.00	~	S4	D30	
Brick Garage, Full-Story	MS BGF	65.00	~	S4	D30	
Mas/Frame Garage	MS MFG	30.00	~	S4	D30	
Mas/Frame Garage, Attic	MS MFGA	35.00	~	S4	D30	
Mas/Frame Garage, Half-Story	MS MFGH	45.00	~	S4	D30	
Mas/Frame Garage, Full-Story	MS MFGF	60.00	~	S4	D30	
Conc Block Garage	MS CBG	24.00	~	S4	D30	
Conc Block Garage, Attic	MS CBGA	30.00	~	S4	D30	
Conc Block Garage, Half-Story	MS CBGH	38.00	~	S4	D30	
Conc Block Garage, Full-Story	MS CBGF	55.00	~	S4	D30	
Metal Garage	MS MG	21.50	~	S4	D20	
Metal Garage, Attic	MS MGA	30.00	~	S4	D20	
Metal Garage, Half-Story	MS MGH	38.00	~	S4	D20	
Metal Garage, Full-Story	MS MGF	55.00	~	S4	D20	
Frame Carport	MS FC	15.80	~	S4	D30	Finish, flooring, enclosure and utilities go to grade
Frame Carport, Attic	MS FCA	20.00	~	S4	D30	
Frame Carport, Storage Rm	MS FCS	17.00	~	S4	D30	
Frame Carport, Attic & Stor Rm	MS FCAS	24.00	~	S4	D30	
Brick Carport	MS BC	20.00	~	S4	D30	
Brick Carport, Attic	MS BCA	25.00	~	S4	D30	
Brick Carport, Storage Rm	MS BCS	24.00	~	S4	D30	
Brick Carport, Attic & Stor Rm	MS BCAS	30.00	~	S4	D30	
Metal Carport	MS MC	9.00	~	S4	D20	
Metal Carport, Attic	MS MCA	18.00	~	S4	D20	
Metal Carport, Storage Rm	MS MCS	12.00	~	S4	D20	
Metal Carport, Attic & Stor Rm	MS MCAS	18.00	~	S4	D20	
Frame Storage Building	MS FS	27.00	~	S8	D20	Finish & Utilities go to grade
Brick Storage Building	MS BS	32.00	~	S8	D30	
Conc Block Storage Building	MS CS	30.00	~	S8	D30	
Metal Storage Building	MS MS	15.00	~	S8	D20	
Quonset Building	MS QB	20.00	~	S4	D30	
Cabin	MS CAB	10.00	~	S8	D20	

RESIDENTIAL & LIGHT AGRICULTURAL OTHER BUILDINGS AND YARD ITEMS TABLE (Continued)						
TYPE	CODE	$/SF	$/Unit	SIZE	DEP	DESCRIPTION
Wood **F**ence	MS WF	~	0	~	D10	Residential Only
Wood **F**ence, **L**imited	MS WFL	~	0	~	D10	
Wood **F**ence, **E**xtensive	MS WFE	~	0	~	D10	
Chainlink **F**ence	MS CF	~	0	~	D20	
Chainlink **F**ence, **L**imited	MS CFL	~	0	~	D20	
Chainlink **F**ence, **E**xtensive	MS CFE	~	0	~	D20	
Masonry **F**ence	MS MF	~	0	~	D30	
Masonry **F**ence, **L**imited	MS MFL	~	1,500	~	D30	
Masonry **F**ence, **E**xtensive	MS MFE	~	0	~	D30	
Vinyl **F**ence	MS VF	~	0	~	D20	Residential Only
Vinyl **F**ence, **L**imited	MS VFL	~	0	~	D20	
Vinyl **F**ence, **E**xtensive	MS VFE	~	0	~	D10	
Metal **F**ence	MS MTLF	~	0	~	D20	
Metal **F**ence, **L**imited	MS MTLFL	~	0	~	D20	
Metal **F**ence, **E**xtensive	MS MTLFE	~	0	~	D20	
Asphalt **D**rive	MS AD	~	0	~	D20	Residential Only
Asphalt **D**rive, **L**imited	MS ADL	~	0	~	D20	
Asphalt **D**rive, **E**xtensive	MS ADE	~	0	~	D20	
Concrete **D**rive	MS CD	~	0	~	D30	
Concrete **D**rive, **L**imited	MS CDL	~	0	~	D30	
Concrete **D**rive, **E**xtensive	MS CDE	~	0	~	D30	
Shared **D**rive, **i**ncurable	MS SDI	~	-3,800	~	~	
Shared **D**rive, curable **a**sphalt	MS SDA	~	-1,500	~	~	
Shared **D**rive, curable **c**oncrete	MS SDC	~	-2,500	~	~	
Shared **D**rive, curable **g**ravel	MS SDG	~	-500	~	~	
Swimming **P**ool	MS SP	30.00	~	S3	D20	Indoor/outdoor. Material, shape, features, deck-width go to grade. List cover separately.
Swimming **P**ool (**h**eated)	MS HP	33.00	~	S3	D20	
Hot **T**ub	MS HT	~	4,500	~	D10	In-ground
Bath **H**ouse , **f**rame	MS BHF	55.00	~	S7	D30	Functional 75% if no pool.
Bath **H**ouse, **b**rick veneer	MS BHB	60.00	~	S7	D30	
Bath **H**ouse, **c**onc block	MS BHC	57.50	~	S7	D30	

RESIDENTIAL & LIGHT AGRICULTURAL OTHER BUILDINGS AND YARD ITEMS TABLE (Continued)						
TYPE	**CODE**	**$/SF**	**$/Unit**	**SIZE**	**DEP**	**DESCRIPTION**
Boat Dock	MS BDK	30.00	~	S4	D10	Residential Only
Boat Slipway (boat ramp)	MS BSL	~	3,000	~	D30	
Boat Shelter (covered dock)	MS BSH	40.00	~	S4	D20	
Boat House (boat garage)	MS BH	60.00	~	S4	D30	
Residential Pier	MS RP	35.00	~	S4	D10	<-- railed/no boat access
Residential Pier, covered	MS RPC	43.00	~	S4	D20	<-- no boat under shelter
Mobile Home Space	MS MH	~	4,500	~	~	Not in mobile home park
Mobile Home Space, Shared Well	MS MHS	~	4,000	~	~	
Lean-To	MS LT	6.00	~	S9	D20	Attached to other structure
Lean-To (over concrete)	MS LTC	8.00	~	S9	D20	
Shelter (pole)	MS SH	10.00	~	S8	D20	Free-standing structures. Reduce grade one-step when substituting asphalt for concrete
Shelter (over concrete)	MS SHC	13.00	~	S8	D20	
Shed (3-sides enclosed)	MS SH3	14.00	~	S8	D20	
Shed (3-sides / over concrete)	MS SH3C	16.00	~	S8	D20	
Shed (2-sides enclosed)	MS SH2	12.50	~	S8	D20	
Shed (2-sides / over concrete)	MS SH2C	14.00	~	S8	D20	
Shed (1-side enclosed)	MS SH1	12.00	~	S8	D20	
Shed (1-side / over concrete)	MS SH1C	13.00	~	S8	D20	
Outdoor Porch (incl Gazebo)	MS OP	18.00	~	S7	D20	Detached
Outdoor Porch (screened)	MS OPS	20.00	~	S7	D20	
Level Patio	MS LPAT	5.00	~	S8	D20	
Raised Patio	MS RPAT	10.00	~	S8	D20	
Wood Deck	MS WD	18.00	~	S8	D20	
Shop/Studio, frame	MS SHPF	28.00	~	S4	D30	Secondary structure. List main improvements separately
Shop/Studio, brick veneer	MS SHPB	32.00	~	S4	D30	
Shop/Studio, mas/frame	MS SHPMF	29.00	~	S4	D30	
Shop/Studio, conc block	MS SHPC	30.00	~	S4	D30	
Shop/Studio, metal	MS SHPM	18.00	~	S4	D30	
Shop/Studio, metal (HSF)	MS SHPMH	26.00	~	S2	D30	Heavy Steel Frame ("commercial style")
Tennis Court	MS TC	~	25,000	~	D20	Per court. Grade up for lighting, benches, fences, and other features.

RESIDENTIAL & LIGHT AGRICULTURAL OTHER BUILDINGS AND YARD ITEMS TABLE (Continued)						
TYPE	CODE	$/SF	$/Unit	SIZE	DEP	DESCRIPTION
Fireplace, freestanding	MS FP	~	1,000	~	D20	Permanent, not portable
Outdoor Kitchen	MS OK	~	2,500	~	D20	One unit each: fireplace, plumb, elec, gas line, shelves/counters. Add porch/patio separately.
Residential Greenhouse	MS GH	25.00	~	S6	D20	Mas/Fr/Mtl/Glass/Fiberglass
Stock Barn	MS SB	14.00	~	S1	D30	
Stock Barn w/Loft	MS SBL	18.00	~	S1	D30	
Stock Barn w/Loft & Lean-To	MS SBLL	13.00	~	S1	D30	
Light Stable	MS ST	24.00	~	S3	D30	
Poultry House	MS PH	11.00	~	S1	D20	Shell Only 15,000 SQFT
Hog House	MS HH	18.00	~	S4	D30	
Milking Parlor	MS MP	25.00	~	S3	D30	Shell Only
Insulated Cold Storage	MS ICS	3.00	~	~	~	Add to other OBY for ICS SQFT

REAL VS. PERSONAL

Care must be taken to differentiate Real Property from Personal Property when it relates to outbuildings, especially prefab storage buildings and metal carports. To qualify as Real Property, the improvement must be permanently affixed to the land. If the improvement is merely "sitting" on the land but still moveable it is considered Personal Property. Non-business personal property (other than vehicles) is excluded from the tax base and should not be listed.

GARAGE APARTMENTS

Garage Apartments are dwellings and are listed in the main improvement section. See the “Scaling the Land – Multiple Main Improvements” section in Chapter 3 for details of assessing land.

INDOOR POOLS

When listing an indoor pool, use the code from the table above and list in the other buildings and yard items section. If the enclosure is attached to the main improvement, list the enclosure in the main improvement section under the appropriate type (enclosed porch, basement, etc.). If the enclosure is a detached structure, list the enclosure separately as the appropriate type of “other building” structure. Add a comment in the notes section to clarify the indoor pool listing.

AGRICULTURAL BUILDINGS: RESIDENTIAL VS. COMMERCIAL SCHEDULE

The agricultural buildings contained in this chapter reflect the traditional small-farm operations common to Alamance County. The values given reflect a limited marketability as the county has been moving away from small "family" farms. Structures associated with large commercial farming operations will be assessed as industrial buildings according to the commercial/industrial schedule.

SPECIAL TOPIC - "DO POOLS ADD VALUE?"

Many people believe that swimming pools do not add value to a home. In fact, they believe that swimming pools may even subtract value from a home. While there is some truth to these statements, there are also many situations in which a swimming pool will add value to a home (but probably only a fraction of their cost to install).

The problem arises in that many buyers do not want a pool due to safety or maintenance/cost concerns. These buyers may not consider purchasing a home with a pool, or may lower their offer to purchase to allow for the cost of removing the pool. Other buyers are either neutral about having a pool or desire a pool but are not willing/able to pay more for it.

On the other hand, some buyers will desire a pool and gladly pay more for it. In fact, if they were to purchase a home without a pool they would add one themselves. To these buyers, paying $15,000 more for a pool at the time of purchase to avoid paying $40,000 to install one themselves is a deal. To attract these buyers, however, several conditions need to be met:

(1) The pool must be relatively new and in relatively good condition. An old, run down, poorly maintained pool will not add value to any sale. In fact, a non-functioning pool that needs repair or replacement will subtract from the value of a home.

(2) The pool must be well balanced to the house, lot, and neighborhood. A pool of similar quality and style to the home, on a lot sufficiently large to allow gardening and "play" space, in a neighborhood of similar homes in which pools are fairly common will generally contribute value. If the pool is disproportionately sized compared to the house or lot, is of a notably different quality or style from the home, or in an area or market in which pools are uncommon, its value contribution will be diminished.

(3) The subject market must be "pool friendly" rather than "pool adverse." A house best described as a "starter family home" will not be as likely to benefit from a pool as a house best described as "lots of space to entertain." A family with small children may be concerned that the pool is a safety hazard, while the home owner who loves to entertain will enjoy having friends over to their pool. A house best described as "economy housing" will not be as likely to benefit from a pool as a house best described as "luxury living." The buyer of an economy home may not be able to afford the maintenance costs of the pool (and the lender may not wish to loan money on the pool), while the buyer of the luxury home can easily afford the pool expense and will either not need the lender to cover the pool cost or will be able to get the pool value covered because it is a low percentage of the overall value.

When these three conditions are met, we estimate that a new pool may contribute roughly 50% of its cost to the value of the home (so a pool that cost $40,000 would increase the resale of the home by $20,000). If the pool is well maintained, we estimate that it will lose value due to age over the course of 20 years until reaching 25% of its cost new. Any deferred maintenance or greater than usual wear-and-tear will reduce this value further. At some point in the life cycle of a swimming pool, it will either be removed, replaced, or will cease to add value due to age and condition. If it continues past this point it will begin to detract from the value of the home.

When valuing swimming pools which do not meet the three criteria of value above, functional obsolesce and/or physical depreciation adjustments may be used to reduce or eliminate the value contribution of the pool. As needed, a negative value influence may be applied. However, the majority of residential swimming pools will have <u>some</u> contribution to value (but not nearly what they cost).

RESIDENTIAL & AGRICULTURAL OTHER BUILDINGS AND YARD ITEMS ILLUSTRATIONS

FRAME GARAGE (MS FG)

FRAME GARAGE, ATTIC (MS FGA)

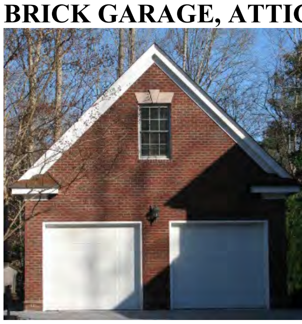
FRAME GARAGE, HALF-STORY (MS FGH)

FRAME GARAGE, FULL-STORY (MS FGF)

BRICK GARAGE (MS BG)



BRICK GARAGE, ATTIC (MS BGA)



BRICK GARAGE, HALF-STORY (MS BGH)



BRICK GARAGE, FULL-STORY (MS BGF)



MAS/FRAME GARAGE (MS MFG)



MAS/FRAME GARAGE, ATTIC (MS MFGA)



MAS/FRAME GARAGE, HALF-STORY (MS MFGH)


MAS/FRAME GARAGE, FULL-STORY (MS MFGF)

CONC BLOCK GARAGE (MS CBG)



CONC BLOCK GARAGE, ATTIC (MS CBGA)

CONC BLOCK GARAGE, HALF-STORY (MS CBGH)

CONC BLOCK GARAGE, FULL-STORY (MS CBGF)

METAL GARAGE (MS MG)



METAL GARAGE, ATTIC (MS MGA)

METAL GARAGE, HALF-STORY (MS MGH)

METAL GARAGE, FULL-STORY (MS MGF)

FRAME CARPORT (MS FC)

FRAME CARPORT, ATTIC (MS FCA)


FRAME CARPORT, STORAGE ROOM (MS FCS)



FRAME CARPORT, ATTIC & STORAGE ROOM (MS FCAS)



BRICK CARPORT (MS BC)


BRICK CARPORT, STORAGE ROOM (MS BCS)

BRICK CARPORT, ATTIC & STORAGE ROOM (MS BCAS)

METAL CARPORT (MS MC)

METAL CARPORT, ATTIC (MS MCA)

METAL CARPORT, STORAGE ROOM (MS MCS)

METAL CARPORT, ATTIC & STORAGE ROOM (MS MCAS)

FRAME STORAGE BUILDING (MS FS)




BRICK STORAGE BUILDING (MS BS)



CONC BLOCK STORAGE BUILDING (MS CS)



METAL STORAGE BUILDING (MS MS)




QUONSET BUILDING (MS QB)



CABIN (MS CAB)



WOOD FENCE (MS WF) (MS WFL) (MS WFE)



CHAINLINK FENCE (MS CF) (MS CFL) (MS CLE)



MASONRY FENCE (MS MF) (MS MFL) (MS MLE)



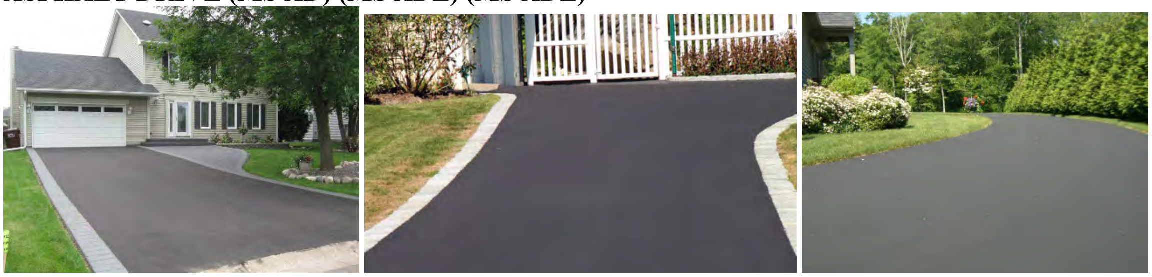
VINYL FENCE (MS VF) (MS VFL) (MS VFE)



METAL FENCE (MS MTLF) (MS MTLFL) (MS MTLFE)

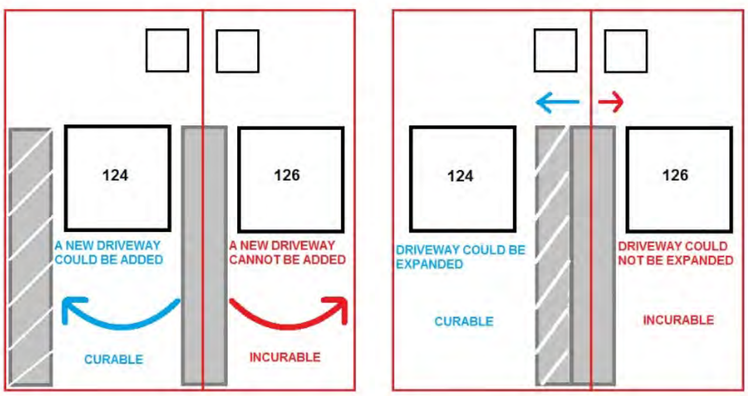


ASPHALT DRIVE (MS AD) (MS ADL) (MS ADE)



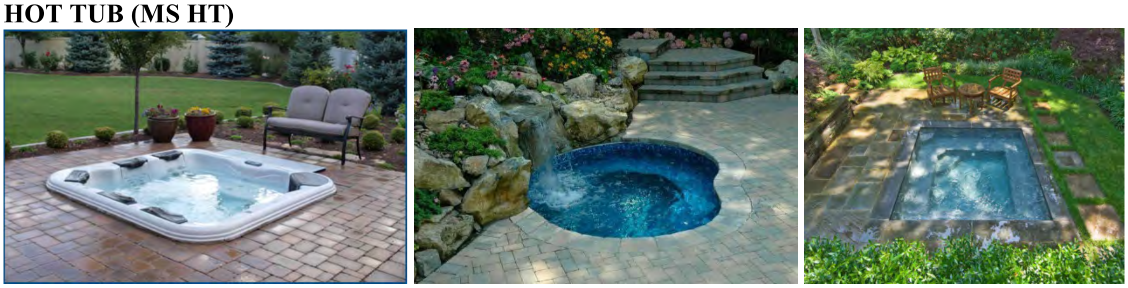
CONCRETE DRIVE (MS CD) (MS CDL) (MS CDE)

SHARED DRIVE, CURABLE (MS SDA) (MS SDC) (MS SDG) INCURABLE (MS SDI)



SWIMMING POOL (MS SP) / HEATED SWIMMING POOL (MS HP)

HOT TUB (MS HT)



BATH HOUSE, FRAME (MS BHF)

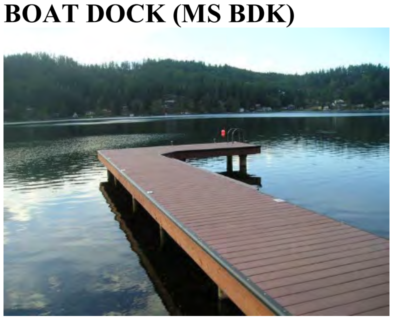


BATH HOUSE, BRICK VENEER (MS BHB)



BATH HOUSE, CONC BLOCK (MS BHC)

BOAT DOCK (MS BDK)



BOAT SLIPWAY (BOAT RAMP) (MS BSL)



BOAT SHELTER (COVERED DOCK) (MS BSH)



BOAT HOUSE (BOAT GARAGE) (MS BH)



RESIDENTIAL PIER (MS RP)


RESIDENTIAL PIER, COVERED (MS RPC) (with section of MS RP)

MOBILE HOME SPACE (MS MH) / MOBILE HOME SPACE, SHARED WELL (MS MHS)

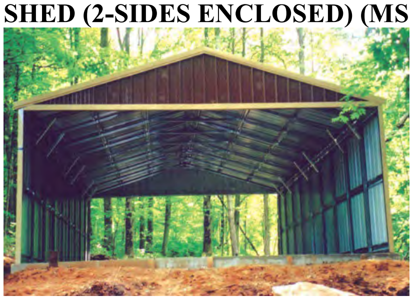
LEAN-TO (MS LT) / LEAN-TO (OVER CONCRETE) (MS LTC)

SHELTER (POLE) (MS SH) / SHELTER (OVER CONCRETE) (MS SHC)

SHED (3-SIDES ENCLOSED) (MS SH3) / SHED (3-SIDES / OVER CONCRETE) (MS SH3C)



SHED (2-SIDES ENCLOSED) (MS SH2) / SHED (2-SIDES / OVER CONCRETE) (MS SH2C)



SHED (1-SIDE ENCLOSED) (MS SH1) / SHED (1 SIDE / OVER CONCRETE) (MS SH1C)


OUTDOOR PORCH (INCLUDING GAZEBO) (MS OP)



OUTDOOR PORCH (SCREENED) (MS OPS)



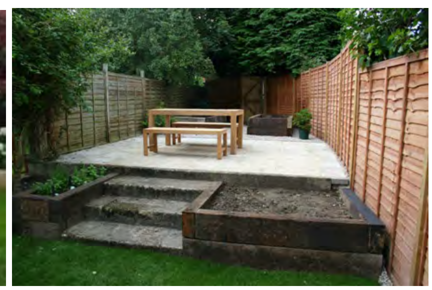
MS OPS w/MS WD

LEVEL PATIO (MS LP)



RAISED PATIO (MS RP)





WOOD DECK (MS WD)



SHOP/STUDIO, FRAME (MS SHPF)



SHOP/STUDIO, BRICK VENEER (MS SHPB)



SHOP/STUDIO, MAS/FRAME (MS SHPMF)

SHOP/STUDIO, CONC BLOCK (MS SHPC)

SHOP/STUDIO, METAL (MS SHPM)



SHOP/STUDIO, METAL (HSF) (MS SHPMH) **Heavy Steel Frame**
("Commercial Style")



TENNIS COURT (MS TC)



FIRE PLACE, FREESTANDING (MS FP)



OUTDOOR KITCHEN (MS OK)



RESIDENTIAL GREENHOUSE (MS GH)




Greenhouse w/Frame Storage Bldg

STOCK BARN (MS SB)



STOCK BARN W/LOFT (MS SBL)




STOCK BARN W/LOFT & LEAN-TO (MS SBLL)




LIGHT STABLE (MS ST)



POULTRY HOUSE (MS PH)



HOG HOUSE (MS HH)



MILKING PARLOR (MS MP)


INSULATED COLD STORAGE (MS ICS)
This code accounts for insulated square footage within other structures. This is commonly used for cold storage buildings on farm tracts, but may be used for any insulated structure which would not typically have insulation.

To apply this code, first list the structure under its normal coding, then add MS ICS for the square footage that has been insulated.

Cooling equipment is considered <u>personal</u> property and should be listed if used in connection with a business.

PRESENT USE VALUE

In order to comply with the procedures of North Carolina General Statutes 105-317 and 105-277.6, Alamance 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 the Alamance County Tax Department has recommended adoption of the rate schedule recommended in the 2023 Use Value Manual for Agricultural, Horticultural and Forest Land prepared by the North Carolina Use Advisory Board. This manual is included herein as supporting documentation.

METHOD 1 – AVERAGE SOILS ASSESSMENT

In lieu of detailed soil maps, one rate per class will be applied countywide as follows:

PRESENT USE CLASS RATE SCHEDULE

AGRICULTURE	$645 / acre
HORTICULTURE	$890 / acre
FORESTRY	$250 / acre

Method 1 will be used to calculate initial present use values.

METHOD 2 – DETAILED SOILS ASSESSMENT

At the request of the taxpayer and upon being provided with a detailed soil map identifying each soil type and the amount of acreage within each classification, the following rates will be applied to determine present use valuations.

Agricultural values are based upon the average cash rents for the Piedmont Major Land Resource Area.

AGRICULTURAL LAND RATE SCHEDULE			
Class I	Class II	Class III	Class IV
$950 / acre	$645 / acre	$420 / acre	$40 / acre

Horticultural values are based upon the average cash rents for the Piedmont Major Land Resource Area.

HORTICULTURAL LAND RATE SCHEDULE			
Class I	Class II	Class III	Class IV
$1,370 / acre	$890 / acre	$615 / acre	$40 / acre

Forestland values are based on the net present values for the Piedmont Major Land Resources Area.

FORESTLAND LAND RATE SCHEDULE					
Class 1	Class II	Class III	Class IV	Class V	Class VI
$410 / acre	$280 / acre	$250 / acre	$180 / acre	$135 / acre	$40 / acre

Combining method 1 method 2 to determine present use value will not be allowed within a farm unit.

2023 USE-VALUE MANUAL
FOR AGRICULTURAL, HORTICULTURAL
AND
FOREST LAND

April 2022

North Carolina Use-Value Advisory Board
North Carolina Department of Revenue
Raleigh, North Carolina

Table of Contents

Foreword..1

Use-Value Advisory Board Members...3

Use-Value Advisory Board Subcommittee Members..4

Use-Value Advisory Board Manual...5

North Carolina Major Land Resource Areas (MLRA Map)..................................9

Agricultural Schedule...10

Horticultural Schedule..11

Forestry Schedule..12

Cash Rents Survey...13

Christmas Tree Guidelines..20

Procedure for Forestry Schedules...23

Forestry Net Present Values Table..28

MLRA 130 Soil Survey..30

MLRA 133A Soil Survey..40

MLRA 136 Soil Survey..45

MLRA 137 Soil Survey..64

MLRA 153A Soil Survey..66

MLRA 153B Soil Survey..70

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.

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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

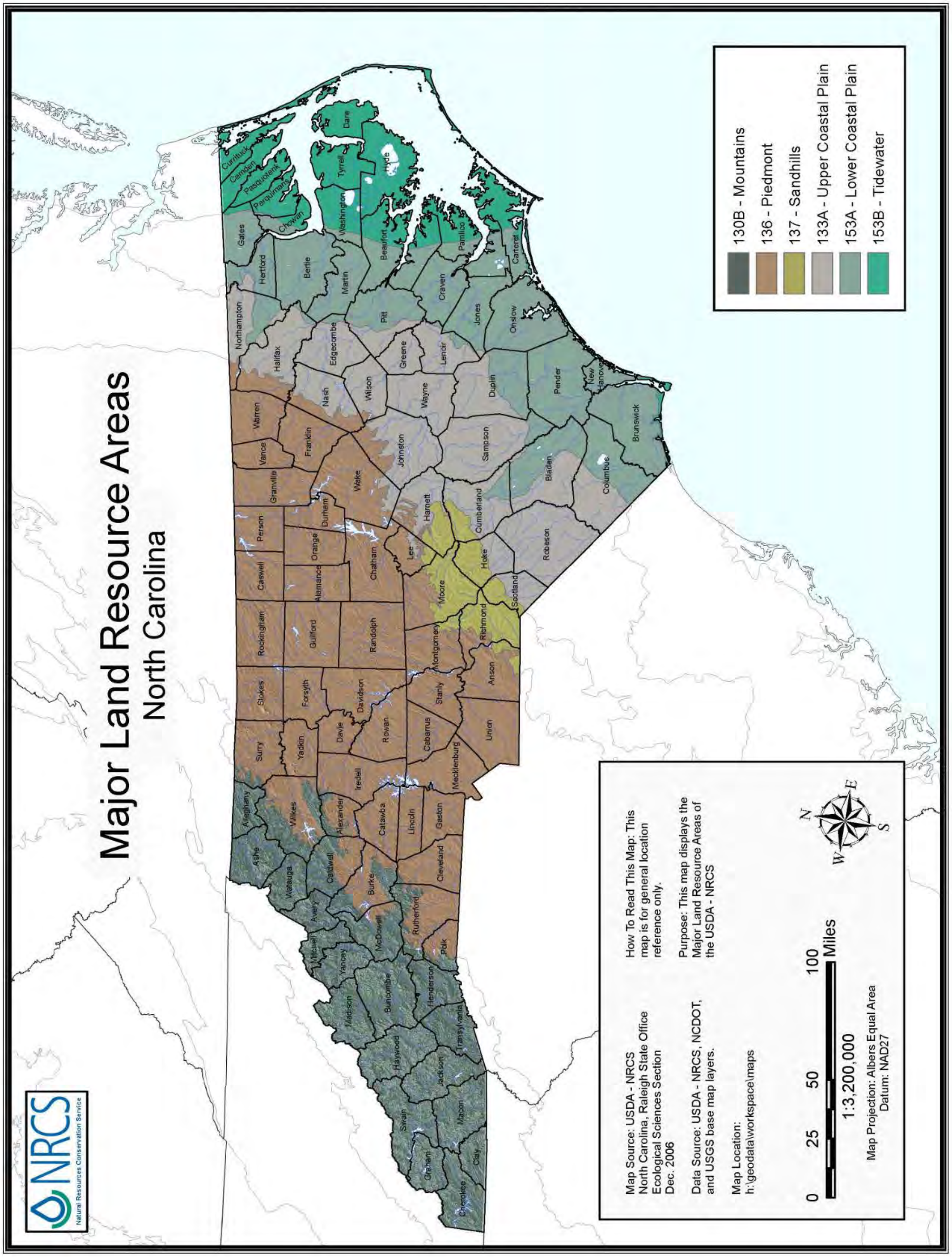
The capitalization rate mandated by the 1985 legislation for all types of present-use value land was 9%. The 1998 study by NCSU strongly indicated that a lower capitalization rate for agricultural and horticultural land was more in line with current sales and rental information. The 2002 legislation 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.


Major Land Resource Areas
North Carolina
NRCS
Natural Resources Conservation Service
130B - Mountains
136 - Piedmont
137 - Sandhills
133A - Upper Coastal Plain
153A - Lower Coastal Plain
153B - Tidewater
Map Source: USDA - NRCS North Carolina, Raleigh State Office Ecological Sciences Section Dec. 2006
Data Source: USDA - NRCS, NCDOT, and USGS base map layers.
Map Location: h:\geodata\workspace\maps
How To Read This Map: This map is for general location reference only.
Purpose: This map displays the Major Land Resource Areas of the USDA - NRCS
0 25 50 100 Miles
1:3,200,000
Map Projection: Albers Equal Area Datum: NAD27
N
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PRESENT-USE VALUE SCHEDULES

AGRICULTURAL RENTS

MLRA	BEST	AVERAGE	FAIR
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

MLRA	CLASS I	CLASS II	CLASS III
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.
--In 2019 cash rents were increased by 10%, then 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

MLRA	BEST	AVERAGE	FAIR
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

MLRA	CLASS I	CLASS II	CLASS III
130	$2,485	$1,705	$1,120
133A	$1,520	$1,050	$800
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.

--Cash rents were capitalized at a rate of 6.5% to produce the Horticultural Schedule.

FORESTLAND NET PRESENT VALUES

MLRA	Class I	Class II	Class III	Class IV	Class V
130	$34.49	$21.53	$8.48	$4.38	$4.25
133A	$33.20	$21.59	$21.56	$8.37	$5.70
136	$37.08	$25.22	$22.36	$16.08	$11.87
137	$40.22	$26.56	$22.36	$8.74	$3.48
153A	$33.20	$21.59	$21.56	$8.37	$5.70
153B	$27.90	$21.59	$16.90	$8.37	$5.70

FORESTLAND SCHEDULE

MLRA	Class I	Class II	Class III	Class IV	Class V
130	$380	$240	$95	$50	$50
133A	$365	$240	$240	$95	$65
136	$410	$280	$250	$180	$135
137	$445	$295	$250	$95	$40
153A	$365	$240	$240	$95	$65
153B	$310	$240	$190	$95	$65

--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

	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	
County	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	19	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											11	181.36				
WATAUGA	27	79.10	18	49.70	14	32.50												
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 No. of reports	Agricultural High Productivity Average	Agricultural Medium Productivity No. of reports	Agricultural Medium Productivity Average	Agricultural Low Productivity No. of reports	Agricultural Low Productivity Average	Horticultural High Productivity No. of reports	Horticultural High Productivity Average	Horticultural Medium Productivity No. of reports	Horticultural Medium Productivity Average	Horticultural Low Productivity No. of reports	Horticultural Low Productivity Average	Christmas Trees High Productivity No. of reports	Christmas Trees High Productivity Average	Christmas Trees Medium Productivity No. of reports	Christmas Trees Medium Productivity Average	Christmas Trees Low Productivity No. of reports	Christmas Trees Low Productivity 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	48.80	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	15	23.30	18	19.30												
SCOTLAND	10	44.50																
AREA TOTAL	**168**	**61.40**	**139**	**43.00**	**115**	**29.30**	*	**76.70**	*	**51.70**	*	**34.30**						

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	
County	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												
BERTIE	41	75.00	23	60.10	21	44.50												
BLADEN	36	63.10	32	49.20	25	33.80												
BRUNSWICK	23	44.40	15	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																		
ONSLOW	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.

<u>Soil Productivity/Indicator Species Selection (Col. 1).</u> 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:

Species/Stand Type	SI Range (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:

Species/Stand Type	SI Range (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 five 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 College of Natural 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 Forest Service). For timber, stumpage prices (prices paid for standing timber to landowners) are derived over the same 5-year period from regional timber price data obtained from Timber Mart-South, Inc, or similar 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 Value

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	(6) Yield	(7) Price /mbf	(8) Price /cd	(9) Present Value of Harvest	(10) Annualized NPV
MLRAs 153A and 133A									
UP LCP	($)	($)	(yrs)	(MBF)	(cds)	($)	($)	($)	($)
Mixed hardwoods	0.00	0	50.00	11.50	44.0	231.8	14.24	463.25	21.56
Loblolly pine (86-104)	367.40	51.8761	30.00	12.00	14.4	228.2	33.58	993.29	33.20
Loblolly pine (66-85)	258.40	34.58407	30.00	7.00	16.8	228.2	33.58	666.38	21.59
Loblolly pine (60-65)	131.40	19.79277	40.00	4.80	12.7	228.2	33.58	316.95	8.37
Pond pine (50-55)	48.00	10.74109	50.00	2.70	20.0	228.2	33.58	181.19	5.70
Longleaf pine	48.00	10.74109	50.00	3.20	8.0	228.2	33.58	140.54	4.75
MLRA 153B									
TIDEWATER									
Mixed hardwoods	0.00	0	50.00	8.43	44.0	231.8	14.24	363.12	16.90
Loblolly pine (86-104)	458.90	51.8761	30.00	12.00	14.4	228.2	33.58	993.29	27.90
Loblolly pine (66-85)	258.40	34.58407	30.00	7.00	16.8	228.2	33.58	666.38	21.59
Loblolly pine (60-65)	131.40	19.79277	40.00	4.80	12.7	228.2	33.58	316.95	8.37
Pond pine	48.00	10.74109	50.00	2.70	20.0	228.2	33.58	181.19	5.70

Forestry Net Present Value

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	(6) Yield	(7) Price /mbf	(8) Price /cd	(9) Present Value of Harvest	(10) Annualized NPV
MLRA 137	($)	($)	(yrs)	(MBF)	(cds)	($)	($)	($)	($)
SANDHILLS									
Mixed hardwoods	0.00	0	50.00	11.90	46.0	231.8	14.24	480.30	22.36
Loblolly pine (86-104)	258.40	51.88	30.00	12.00	15.6	228.2	33.58	1005.71	40.22
Loblolly pine (66-85)	131.40	34.58	30.00	6.40	16.9	228.2	33.58	625.21	26.56
Loblolly pine (60-65)	55.00	21.48	50.00	7.20	7.0	228.2	33.58	264.25	8.74
Longleaf pine (50-55)	55.00	10.74	50.00	3.20	8.0	228.2	33.58	140.54	3.48
MLRA 136									
PIED									
Mixed hardwoods	0.00	0	50.00	11.90	46.0	231.8	14.24	480.30	22.36
Loblolly pine (86-104)	277.50	51.88	30.00	11.50	15.6	228.2	33.58	970.54	37.08
Loblolly pine (66-85)	154.50	34.58	30.00	6.40	16.9	228.2	33.58	625.21	25.22
Loblolly pine (60-65)	55.00	9.896	40.00	4.10	15.0	228.2	33.58	299.77	11.87
Upland hardwoods	0.00	0	50.00	6.05	32.0	228.2	33.58	345.44	16.08
MLRA 130									
WESTERN									
Mixed hardwoods	0.00	0	50.00	10.95	0.0	300.1	16.59	462.42	21.53
White pine (70-89)	281.00	34.58	30.00	17.80	0.0	166.2	21.16	912.06	34.49
White pine (55-69)	181.00	18.66	35.00	8.50	0.0	166.2	21.16	357.98	8.48
Shortleaf/mixed hwd.	0.00	0	60.00	6.00	0.0	168.6	21.16	96.15	4.25
Upland oak ridge (40-68)	0.00	0	70.00	5.32	0.0	300.1	16.59	102.53	4.38

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

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

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
Cliffield-Cowee complex, 15 to 30 percent slopes, very stony	IV	V	IV
Cliffield-Fairview complex, 15 to 25 percent slopes	IV	V	IV
Cliffield-Pigeonroost complex, very stony, ALL	IV	V	IV
Cliffield-Rhodhiss complex, 25 to 60 percent slopes, very stony	IV	V	IV
Cliffield-Rock outcrop complex, 50 to 95 percent slopes	IV	VI	IV
Cliffield-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	IIII
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

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

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

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
Huntdale clay loam, 8 to 15 percent slopes, stony	III	I	II
Huntdale clay loam, 15 to 30 percent slopes, stony	IV	I	II
Huntdale clay loam, 30 to 50 percent slopes, stony	IV	I	III
Huntdale silty clay loam, 15 to 30 percent slopes, stony	IV	I	II
Huntdale silty clay loam, 30 to 50 percent slopes, very stony	IV	I	III
Huntdale 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

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

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

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

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

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

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

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
McColl 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

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

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
Vaucluse loamy sand, 10 to 15 percent slopes	IV	II	IV
Vaucluse loamy sand, 10 to 15 percent slopes, eroded	IV	II	IV
Vaucluse loamy sand, 2 to 6 percent slopes	III	II	III
Vaucluse loamy sand, 2 to 6 percent slopes, eroded	III	II	III
Vaucluse loamy sand, 6 to 10 percent slopes	III	II	III
Vaucluse 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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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
Vaucluse gravelly loamy sand, 2 to 8 percent slopes	III	II	III
Vaucluse gravelly loamy sand, 8 to 15 percent slopes	IV	II	IV
Vaucluse gravelly loamy sand, 15 to 25 percent slopes	IV	II	IV
Vaucluse gravelly sandy loam, ALL	III	II	III
Vaucluse gravelly sandy loam, 8 to 15 percent slopes	III	II	III
Vaucluse gravelly sandy loam, 15 to 25 percent slopes	III	II	III
Vaucluse loamy sand, 2 to 8 percent slopes	II	II	II
Vaucluse loamy sand, 8 to 15 percent slopes	III	II	III
Vaucluse loamy sand, 15 to 25 percent slopes	IV	II	IV
Vaucluse very gravelly loamy sand, ALL	IV	II	IV

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

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

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

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

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

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

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

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

LAND TYPES AND DESCRIPTIONS

Commercial/industrial and special use land is valued according to the following land codes.

COMMERCIAL LAND TYPES		
CODE	**DESCRIPTION**	**BASIS**
AP	**Apartment Building Site.** Base value is raw land only. This will be increased for site preparation, landscaping and water/sewer access as appropriate.	Unit
CT	**Communication Tower.** Base value is raw land only. This will be increased for site preparation as appropriate.	Acre
CB	**Commercial Building Site (primary).** Base value is raw land only. This will be increased for site preparation, landscaping and water/sewer access as appropriate.	Acre/SQFT
CS	**Commercial Building Site (secondary).** Base value is raw land only. This will be increased for site preparation, landscaping and water/sewer access as appropriate.	Acre/SQFT
CU	**Commercial Undeveloped.** Land which is suitable in size, zoning and location for commercial development.	Acre/SQFT
CR	**Commercial Residual.** Nominal value, typically land which only has value relative to its contribution to the overall parcel value.	Acre/SQFT
IB	**Industrial Building Site (primary).** Base value is raw land only. This will be increased for site preparation, landscaping and water/sewer access as appropriate.	Acre/SQFT
IS	**Industrial Building Site (secondary)**. Base value is raw land only. This will be increased for site preparation, landscaping and water/sewer access as appropriate.	Acre/SQFT
IU	**Industrial Undeveloped.** Land which is suitable in size, zoning and location for industrial development.	Acre/SQFT
IR	**Industrial Residual.** Nominal value, typically land which only has value relative to its contribution to the overall parcel value.	Acre/SQFT
EB	**Exempt Building Site (primary).** Base value is raw land only. This will be increased for site preparation, landscaping and water/sewer access as appropriate.	Acre
ES	**Exempt Building Site (secondary).** Base value is raw land only. This will be increased for site preparation, landscaping and water/sewer access as appropriate.	Acre
EU	**Exempt Undeveloped.** Land which is suitable in size, zoning and location for exempt or governmental development.	Acre
ER	**Exempt Residual.** Nominal value, typically land which only has value relative to its contribution to the overall parcel value.	Acre

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:

Square Foot
Acreage
Unit

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 Revaluation 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

Site Preparation/Improvement

Land assessed in accordance with this chapter is assumed to be “raw” and unimproved. Prior to construction the builder/developer will likely invest significant resources to prepare the site for its intended use. These site preparations or site improvements may add significant value to the subject parcel and must be adjusted for. The exact adjustment will vary depending upon the base rates used (the value of the “raw” land) and the degree of preparation/improvement conducted.

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

	Condition	Factor
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%
Severe	Problem is significant but correctable in that it prevents the development of the lot until the topography problem is corrected	25%-75%
Un-Buildable	The topography problem is so severe it is not economically feasible to develop the lot. *An example would be a lot that cannot pass health and safety perk tests*	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 preludes the full utilization of the parcel	10%-25%
Major	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 economic 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%
Major	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. *Example would be power lines bi-secting 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. *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. This adjustment can also include high traffic areas.

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 the 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 1555 NORTHMOUNT

Land Type	Base Size (Acreage)	Base Rate (Per Acre)	Decrement Rate	Increment Rate
AC B	1.00	10000	5000	10000
AC L	20.00	2500	2500	1250
AC FP	20.00	1250	1250	625

Subject parcel consists of 50 acres, including: and improved one (1) acre building site, nine (9) acres of flood plain and forty (40) acres of undeveloped land. The base rate valuation technique will value the parcel in the following manner:

1 acre Building Site @ $10000 per acre	$10,000
9 acres Flood Plain @ $1250 per acre	$11,250
40 acres Rural Land @ $1875 per acre (average) (20 acres @ $2500 per acre - 20 acres @ $1250 per acre)	$75,000
TOTAL APPRAISED VALUE OF LAND	$96,250

EXAMPLE 2:

Neighborhood 1777 WESTRIDGE PLANTATION

Land Type	Base Size (Acreage)	Base Rate (Per Acre)	Decrement Rate	Increment Rate
AC B 1	1.00	200000	100000	200000

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) ($100000/acre) ($35000)

Base Rate (-) Residual Value = Appraised Value
($200000/acre) ($35000) ($165000)

TOTAL APPRAISED VALUE OF LAND $165,000

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.

EXEMPT/INSTITUTIONAL BUILDING ILLUSTRATIONS

ARMORY (MA 696)

CHURCH (MA 620)

CLASSROOM (MA 612)

GYMNASIUM (MA 610)

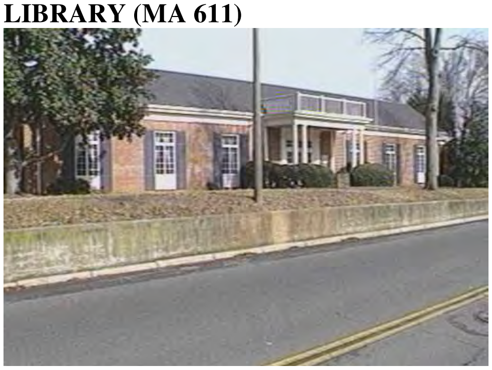
FIRE / POLICE STATION (MA 660)

HOSPITAL (MA 640)

GOVERNMENT BUILDING (MA 697)

POST OFFICE (MA 353)

LIBRARY (MA 611)



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. The Hotel/Motel/Apartment Schedule is to be used to compute the replacement cost of commercial living accommodations and associated support structures. The Industrial Schedule is to be used for computing the replacement cost of 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.

Pricing adjustments for variations in both wall height and construction type, (i.e., wood joist or reinforced concrete), together with prices for the various exterior walls are included. This makes it possible to select the proper base price which is representative of the actual, floor-to-floor heights of the subject buildings for wood joist, fire resistant, fire proof, or light steel construction.

The base prices are determined by selecting the appropriate square foot price for fire resistant steel frame construction by exterior wall type and use, adjusting it for variations in wall height, and making the proper deduction or addition for wood joist or fire proof construction, if necessary.

The base prices for each floor level use type include the exterior walls with normal openings, interior finish, mechanical features, and other features for that particular floor. In addition to these, each respective floor level includes the following features:

- **First Floor** - site preparation and normal 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.

- **Basement** - 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.

- **Upper Floors** - structural floor construction consisting of sub-floor and framing for each respective floor.

Normal partitions, plumbing, and lighting are included for each floor level based on use type. Adjustments may be made by 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.

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

BASE PRICE COMPONENTS

This table is provided to identify the cost associated with the various horizontal components included in the base price components for variations in the construction features of the floor level. The adjustments are listed for variations most frequently encountered in the particular type buildings included with the schedule. Adjustments for other variations should be made by using the Special Application Tables, Unit-in-Place Cost Tables, or other appropriate schedules.

Note: In making adjustments for variations, it is important to consider only those items which are significant to value. The replacement cost of a building represents the cost of replacing it with a building of equal utility.

CONSTRUCTION TYPES

Wood joist construction refers to non-fire proof structural floor and roof components consisting of wood sub flooring and decking on wood joists, rafters, or purlins, and supported by either load bearing walls, timber, or steel framing.

Fire resistant construction refers to fire resistive structural floor and roof components consisting of formed concrete on steel framing; or light concrete, metal deck, flexicore, gypsum, and similar materials on steel joists and steel framing.

Fire proof construction refers to fire proof structural floor and roof components consisting of either formed or precast reinforced concrete on either reinforced concrete, or fire proof structural steel framing. In a fire proof structural steel building, the fire proofing may be masonry, poured concrete, plaster, sprayed asbestos, or any similar material which yields a high fire-resistant rating.

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.

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, 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+	170%	C+	108%	E+	65%
AAA	300%	A	155%	C	100%	E	55%
AAA-	265%	A-	145%	C-	93%	E-	45%
AA+	230%	B+	135%	D+	86%		
AA	200%	B	125%	D	80%		
AA-	185%	B-	116%	D-	74%		

GENERAL APPLICATION

The schedules can be effectively applied to either a total building or a portion of the building (i.e., floor section) as long as the size, construction, and quality are consistent.

It is not uncommon for the first floor of a commercial building to be of a higher quality construction than the upper floors. This situation is especially likely to occur in older buildings where it is often not economically feasible to renovate and modernize the upper floors comparable to the first floor. It is also common for the first floor or lower floor to be larger in area than the upper floors. In either case, it may be advisable to compute the replacement cost of individual floors or groups of floors separately. The individual replacement cost can then be totaled to arrive at a single replacement cost or treated separately; depending upon which procedure would best facilitate the application of depreciation.

The general pricing procedure is as follows:

1. Determine the use type by floor level.
2. Determine the perimeter-area ratio (Perimeter -, Area x 100).
3. Select the proper base price for each floor level (adjusted for wall height and/or construction type variations).
4. Sub-total the selected base prices.
5. Make necessary square foot adjustments for variations (air conditioning, plumbing, special use, etc.) to the base prices.
6. Sub-total the square foot price and multiply by the square foot area.
7. Add the cost of "special features" and additions to arrive at the total "C" Grade Replacement Cost.
   Note: The addition for "special features" and exterior features or additions of the building, which are not included in the base square foot area or price, should be added in total. Additions can be priced utilizing the same schedule.
8. Apply the proper Quality Grade Factor to arrive at the Replacement Cost.
9. Add in total any "flat items" grade factor

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.

COMMERCIAL/INDUSTRIAL BUILDING ILLUSTRATIONS

AUTO DEALERSHIP (MA 331)

BANK (MA 351)

BEAUTY BARBER SHOP (MA 373)

CAR WASH (AUTO) (MA 337)

CONVERSION (MA 301)

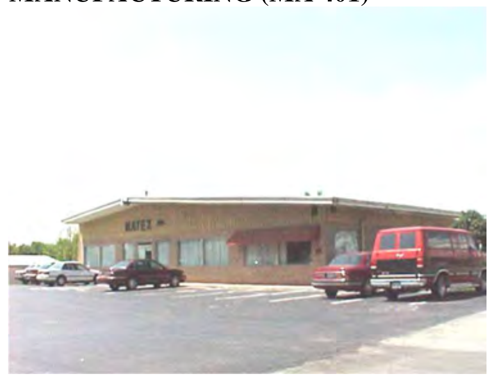
COUNTRY CLUB (MA 387)

DEPARTMENT STORE (MA 346)

DISCOUNT STORE (MA 345)

MANUFACTURING (MA 401)

MANUFACTURING (MA 401)



LAUNDRY / CLEANERS (MA 373)

NURSING / RETIREMENT HOME (MA 316)

MOTEL (MA 315)

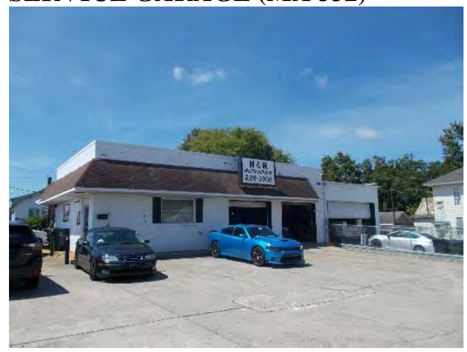
OFFICE (MA 353)

RESTAURANT (MA 321)

RETAIL (MA 373)

RETAIL (MA 371)

SERVICE GARAGE (MA 332)



SERVICE STATION (MA 333)

SUPER-MARKET (MA 347)

THEATRE (MA 365)

WAREHOUSE (MA 398)

CONVENIENCE STORE (MA 348)

VETERINARY CLINIC (MA 362)

BOWLING ALLEY (MA 381)

FUNERAL HOME (MA 361)

RADIO / TV STATION (MA 720)

MEDICAL OFFICE (MA 349)

AUTO CENTER (MA 332)

MINI-LUBE (MA 339)

SERVICE SHOP (MA 332)

NEIGHBORHOOD SHOPS (MA 343)

SKATING RINK (MA 382)

DRIVE-THRU BANK (MA 351)

CARWASH SELF-SERVE (MA 336)

DAY CARE (MA 369)

COMMERCIAL INDUSTRIAL BUILDING DATA

There are four distinct divisions of the form to be completed:

1. General Building Data
2. Interior/Exterior Data
3. Building Other Features — Attached Improvements
4. Yard Improvements- Secondary Buildings

A building is broken down into sections. Building sections are separate due to differing story height, or due to major differences in type and quality of construction. A section can share a common wall or part of a common wall with another section or several sections, but otherwise could stand alone as a separate building.

Building sections are broken down into interior/exterior lines. An interior/exterior line is defined as that portion of a building section having all identical characteristics (except From — To) found in the interior/exterior data category of the data collection form. In other words, an interior/exterior section line consists of those stories in a building section having the following identical characteristics:

1. Dimensions (width x length or square feet)
2. Perimeter
3. Use Type Code
4. Wall Height
5. Exterior Wall Material
6. Construction Type
7. Interior Finish Percent
8. Partitions
9. Heating System Type
10. Air Conditioning Type
11. Plumbing
12. Physical Condition
13. Functional Utility
14. % Rent Area

GENERAL BUILDING DATA

Main Area component codes for commercial/industrial properties are five-character codes structured as follows:

Character Positions 1-3	Structure Type
Character Position 4	Construction Type
Character Position 5	Level

STRUCTURE TYPE CODES are three-digit numeric codes that denote the purpose of construction. When a building section has been constructed for multiple purposes of use, the predominant structure type code should be chosen.

STRUCTURE TYPE	CODE	STRUCTURE TYPE	CODE
Apartment, Garden	211	Hangar	368
Apartment, High Rise	212	Day Care Center	369
Dwelling Converted	301	Greenhouse/Florist	370
Hotel/Motel, Hi Rise	314	Downtown, Row Type	371
Hotel/Motel, Lo Rise	315	Retail Single Occupancy	373
Nursing Home	316	Retail Multi Occupancy	374
Mixed Use, Residential/Commercial	319	Retail Drive-Up	375
Restaurant	321	Bowling Alley	381
Food Stand	323	Skating Rink	382
Franchise Food	325	Health Spa	383
Bar/Lounge	327	Swimming - Indoor Pool	384
Auto Dealer, Full Service	331	Tennis Club – Indoor	385
Auto Service Garage	332	Racquet Club – Indoor	386
Service Station – Full	333	Country Club	387
Truck Stop	335	Club House	388
Car Wash, Manual	336	Cold Storage	391
Car Wash, Automatic	337	Lumber Storage	392
Parking Garage/Deck	338	Truck Terminal	395
Kwik Lube	339	Mini Warehouse	396
Regional Shopping Mall	341	Office/Warehouse	397
Community Shopping Center	342	Warehouse	398
Neighborhood Shopping Center	343	Prefab Warehouse	399
Strip Shopping Center	344	Manufacturing/Processing	401
Discount Department Store	345	Research and Development	405
Department Store	346	Recreational/Health	610
Supermarket	347	Library	611
Convenience Food Market	348	School	612
Medical Office Building	349	Colleges & University	613
Franchise Drug Store	350	Religious	620
Bank	351	Auditorium	630
Savings Institution	352	Hospital	640
Office Building, Low Rise	353	Police/Fire Station	660
Office Building, High Rise	354	Correctional	670
Office Condominium	355	Cultural Facilities	680

Retail Condominium	356	Rail/Bus/Air Terminal	690
Funeral Home	361	National Guard Armory	696
Veterinary Clinic	362	Government Building	697
Cinema Theater	365	Telephone Equipment Building	710
Social/Fraternal Hall	367	Radio/TV Transmitter Building	720
		Auto Service Center	721

CONSTRUCTION TYPE a one-digit numeric character in the component's code position 4 denotes the type of construction.

- **Type 1: 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.
- **Type 2: 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.
- **Type 3: 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.
- **Type 4: Pre-Engineered Steel** to indicate buildings framed with prefabricated steel members. The structure will incorporate metal beams, girders columns and purlins, or light gauge steel joists manufactured from cold-formed shapes of sheet or strip steel. Multi-story buildings may have floors of wood, steel or concrete. Exterior walls will typically be pre-finished metal siding or sandwich panels.

LEVELS are used to identify various story heights of a multi-story improvement. Position 5 of a component code will contain this character.

- **B** identifies Basement Level
- **F** identifies First Floor Level
- **U** identifies Upper Floor Level

COMMERCIAL MAIN AREA BASE RATES											
CODE	Level	Type 1	Type 2	Type 3	Type 4	CODE	Level	Type 1	Type 2	Type 3	Type 4
211	B	33.14	40.43	40.43	N/A	323	B	35.90	39.40	39.40	34.50
211	F	36.00	45.57	67.00	N/A	323	F	28.80	41.40	52.60	30.50
211	U	32.71	41.43	60.86	32.71	323	U	26.20	37.60	47.70	27.70
212	B	50.29	53.71	53.71	N/A	325	B	35.90	39.40	39.40	35.50
212	F	39.86	53.71	73.00	N/A	325	F	28.80	41.40	52.60	30.50
212	U	36.14	48.86	66.14	N/A	325	U	26.20	37.60	47.70	27.70
301	B	14.25	16.50	0.00	N/A	327	B	32.64	35.82	35.82	32.27
301	F	31.50	36.38	0.00	N/A	327	F	26.18	37.64	47.82	27.73
301	U	28.63	33.25	0.00	N/A	327	U	23.82	34.18	43.36	25.18
314	B	35.20	37.60	37.60	N/A	331	B	29.30	31.40	31.40	25.50
314	F	27.90	37.60	51.10	N/A	331	F	26.70	29.30	38.80	23.80
314	U	25.30	34.20	46.30	N/A	331	U	24.10	26.70	35.00	21.50
315	B	23.20	28.30	28.30	N/A	332	B	29.30	31.40	31.40	25.50
315	F	25.20	31.90	28.50	N/A	332	F	26.70	29.30	38.30	23.80
315	U	22.90	29.00	42.60	N/A	332	U	24.10	26.70	35.00	21.50
316	B	21.09	25.73	25.73	28.30	333	B	35.90	39.40	39.40	35.50
316	F	22.91	29.00	42.64	46.90	333	F	28.80	41.40	52.60	30.50
316	U	20.82	26.36	38.73	42.60	333	U	26.20	37.60	47.70	27.70
319	B	22.44	24.63	24.63	22.19	335	B	29.30	31.40	31.40	25.50
319	F	18.00	25.88	32.88	19.06	335	F	26.70	29.30	38.80	23.80
319	U	16.38	23.50	29.81	17.31	335	U	24.10	26.70	35.00	21.50
321	B	27.62	30.31	30.31	27.31	336	B	18.93	20.33	20.33	16.40
321	F	22.15	31.85	40.46	23.46	336	F	17.27	18.93	25.07	15.27
321	U	20.15	28.92	36.69	21.31	336	U	15.60	17.27	22.80	14.00

COMMERCIAL MAIN AREA BASE RATES CONTINUED…											
CODE	**Level**	**Type 1**	**Type 2**	**Type 3**	**Type 4**	**CODE**	**Level**	**Type 1**	**Type 2**	**Type 3**	**Type 4**
337	B	19.53	20.93	20.93	17.00	346	B	23.93	26.27	26.27	23.67
337	F	17.80	19.53	25.87	15.87	346	F	19.20	27.60	35.07	20.33
337	U	16.07	17.80	23.33	14.33	346	U	17.47	25.07	31.80	18.47
338	B	48.83	52.33	52.33	42.50	347	B	23.93	26.27	26.27	23.67
338	F	44.50	48.83	64.67	39.67	347	F	19.20	27.60	35.07	20.33
338	U	40.17	44.50	58.33	35.83	347	U	17.47	25.07	31.80	18.47
339	B	29.30	31.40	31.40	25.50	348	B	29.92	32.83	32.83	29.58
339	F	26.70	29.30	38.30	23.80	348	F	24.00	34.50	43.83	25.42
339	U	24.10	26.70	35.00	21.50	348	U	21.83	31.33	39.75	23.08
341	B	23.93	26.27	26.27	23.67	349	B	31.31	34.08	34.08	37.48
341	F	19.20	27.60	35.07	20.33	349	F	28.77	42.46	54.38	59.81
341	U	17.47	25.07	31.80	18.47	349	U	26.08	38.54	49.46	54.40
342	B	23.93	26.27	26.27	23.67	350	B	0.00	0.00	0.00	0.00
342	F	19.20	27.60	35.07	20.33	350	U	0.00	0.00	0.00	0.00
342	U	17.47	25.07	31.80	18.47	350	F	20.00	28.75	36.52	21.18
343	B	23.93	26.27	26.27	23.67	351	B	29.30	40.50	40.50	32.50
343	F	19.20	27.60	35.07	20.33	351	F	35.30	49.00	62.20	33.80
343	U	17.47	25.07	31.80	18.47	351	U	32.10	44.50	56.60	30.70
344	B	23.93	26.27	26.27	23.67	352	B	29.30	40.50	40.50	32.50
344	F	19.20	27.60	35.07	20.33	352	F	35.30	49.00	62.20	33.80
344	U	17.47	25.07	31.80	18.47	352	U	32.10	44.50	56.60	30.70
345	B	23.93	26.27	26.27	23.67	353	B	22.54	31.15	31.15	25.00
345	F	19.20	27.60	35.07	20.33	353	F	27.15	37.69	47.85	26.00
345	U	17.47	25.07	31.80	18.47	353	U	24.69	34.23	43.54	23.62

COMMERCIAL MAIN AREA BASE RATES CONTINUED…											
CODE	Level	Type 1	Type 2	Type 3	Type 4	CODE	Level	Type 1	Type 2	Type 3	Type 4
354	B	31.31	34.08	34.08	37.48	370	B	29.30	31.40	31.40	25.30
354	F	28.77	42.46	54.38	59.81	370	F	26.70	29.30	38.80	23.80
354	U	26.08	38.54	49.46	54.60	370	U	24.10	26.70	35.00	21.50
355	B	17.24	23.82	23.82	19.12	371	B	39.89	43.78	43.78	39.44
355	F	20.76	28.82	36.59	19.88	371	F	32.00	46.00	58.44	33.89
355	U	18.88	26.18	33.29	18.06	371	U	29.11	41.78	53.00	30.78
356	B	41.86	57.86	57.86	46.43	373	B	35.90	39.40	39.40	35.50
356	F	50.43	70.00	88.86	48.29	373	F	28.80	41.40	52.60	30.50
356	U	45.86	63.57	80.86	43.86	373	U	26.20	37.60	47.70	27.70
361	B	24.17	29.48	29.48	N/A	374	B	35.90	39.40	39.40	35.50
361	F	26.25	33.23	48.85	N/A	374	F	28.80	41.40	52.60	30.50
361	U	23.85	30.21	44.38	N/A	374	U	26.20	37.60	47.70	27.70
362	B	51.29	56.29	56.29	50.71	375	B	35.90	39.40	39.40	35.50
362	F	41.14	59.14	75.14	43.57	375	F	28.80	41.40	52.60	30.50
362	U	37.43	53.71	68.14	39.57	375	U	26.20	37.60	47.70	27.70
365	B	35.00	41.50	41.50	33.60	381	B	19.53	20.93	20.93	17.00
365	F	34.50	52.40	68.40	34.20	381	F	17.80	19.53	25.87	15.87
365	U	31.40	47.60	62.20	31.10	381	U	16.07	17.80	23.33	14.33
367	B	35.90	39.40	39.40	35.50	382	B	19.53	20.93	20.93	17.00
367	F	28.80	41.40	52.60	30.50	382	F	17.80	19.53	25.87	15.87
367	U	26.20	37.60	47.70	27.70	382	U	16.07	17.80	23.33	14.33
368	B	29.30	31.40	31.40	25.50	383	B	19.55	26.99	26.99	21.69
368	F	26.70	29.30	38.80	23.80	383	F	23.53	32.67	41.48	22.55
368	U	24.10	26.70	35.00	21.50	383	U	21.40	29.67	37.72	20.47
369	B	23.93	26.27	26.27	23.67	384	B	19.53	20.93	20.93	17.00
369	F	19.20	27.60	35.07	20.33	384	F	17.80	19.53	25.87	15.87
369	U	17.47	25.07	31.80	18.47	384	U	16.07	17.80	23.33	14.33

COMMERCIAL MAIN AREA BASE RATES CONTINUED…											
CODE	Level	Type 1	Type 2	Type 3	Type 4	CODE	Level	Type 1	Type 2	Type 3	Type 4
385	B	19.53	20.93	20.93	17.00	397	B	24.42	26.17	26.17	21.25
385	F	17.80	19.53	25.87	15.87	397	F	22.25	24.42	32.33	19.83
385	U	16.07	17.80	23.33	14.33	397	U	20.08	22.25	29.17	17.92
386	B	23.93	26.27	26.27	23.67	398	B	24.42	26.17	26.17	21.25
386	F	19.20	27.60	35.07	20.33	398	F	22.25	24.42	32.33	19.83
386	U	17.47	25.07	31.80	18.47	398	U	20.08	22.25	29.17	17.92
387	B	19.53	27.00	27.00	21.67	399	B	23.67	25.42	25.42	20.50
387	F	23.53	32.67	41.47	22.53	399	F	21.58	23.67	31.33	19.08
387	U	21.40	29.67	37.73	20.47	399	U	19.50	21.58	28.50	17.50
388	B	32.64	35.82	35.82	32.27	401	B	29.30	31.40	31.40	25.50
388	F	26.18	37.64	47.82	27.73	401	F	26.70	29.30	38.80	23.80
388	U	23.82	34.18	43.36	25.18	401	U	24.10	26.70	35.00	21.50
391	B	17.24	18.47	18.47	15.00	405	B	24.42	33.75	33.75	27.08
391	F	15.71	17.24	22.82	14.00	405	F	29.42	40.83	51.83	28.17
391	U	14.18	15.71	20.59	12.65	405	U	26.75	37.08	47.17	25.58
392	B	18.93	20.33	20.33	16.40	610	B	19.53	27.00	27.00	21.67
392	F	17.27	18.93	25.07	15.27	610	F	23.53	32.67	41.47	22.53
392	U	15.60	17.27	22.80	14.00	610	U	21.40	29.67	37.73	20.47
395	B	19.53	20.93	20.93	17.00	611	B	19.53	27.00	27.00	21.67
395	F	17.80	19.53	25.87	15.87	611	F	23.53	32.67	41.47	22.53
395	U	16.07	17.80	23.33	14.33	611	U	21.40	29.67	37.73	20.47
396	B	24.42	26.17	26.17	21.25	612	B	29.30	40.50	40.50	26.50
396	F	22.25	24.42	32.33	19.83	612	F	35.30	49.00	62.20	33.80
396	U	20.08	22.25	29.17	17.92	612	U	32.10	44.50	56.60	30.70

COMMERCIAL MAIN AREA BASE RATES CONTINUED…											
CODE	Level	Type 1	Type 2	Type 3	Type 4	CODE	Level	Type 1	Type 2	Type 3	Type 4
613	B	19.53	27.00	27.00	21.67	696	B	70.00	83.00	83.00	67.20
613	F	23.53	32.67	41.47	22.53	696	F	69.00	104.80	136.80	68.40
613	U	21.40	29.67	37.73	20.47	696	U	62.80	95.20	124.40	62.20
620	B	24.42	33.75	33.75	27.08	697	B	48.83	67.50	73.83	54.17
620	F	29.42	40.83	51.83	28.17	697	F	58.83	81.67	103.67	56.33
620	U	26.75	37.08	47.17	25.58	697	U	53.50	74.17	94.33	51.17
630	B	29.17	34.58	34.58	28.00	710	B	29.30	31.40	31.40	25.50
630	F	28.75	43.67	57.00	28.50	710	F	26.70	29.30	38.80	23.80
630	U	26.17	39.67	51.83	25.92	710	U	24.10	26.70	35.00	21.50
640	B	32.56	45.00	45.00	36.11	720	B	29.30	31.40	31.40	25.50
640	F	39.22	54.44	69.11	37.56	720	F	26.70	29.30	38.80	23.80
640	U	35.67	49.44	62.89	34.11	720	U	24.10	26.70	35.00	21.50
660	B	29.30	40.50	40.50	32.50	721	B	30.50	38.90	46.30	33.70
660	F	35.30	49.00	62.20	33.80	721	F	27.70	35.30	42.10	30.60
660	U	32.10	44.50	56.60	30.70	721	U	31.70	31.70	38.00	27.60
670	B	29.30	40.50	40.50	32.50						
670	F	35.30	49.00	62.20	33.80						
670	U	32.10	44.50	56.60	30.70						
680	B	29.30	40.50	40.50	32.50						
680	F	35.30	49.00	62.20	33.80						
680	U	32.10	44.50	56.60	30.70						
690	B	29.30	40.50	40.50	32.50						
690	F	35.30	49.00	62.20	33.80						
690	U	30.70	44.50	56.60	30.70						

AREA PERIMETER RATIO TABLE

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%	---	---	---	---	---	---	---	---
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	---	---	---	---	---	---	---	---	88%	89%	90%	91%	92%	93%	94%	95%
75000	---	---	---	---	---	---	---	---	85%	86%	87%	88%	89%	90%	91%	92%
100000	---	---	---	---	---	---	---	---	---	84%	85%	86%	87%	88%	89%	90%
199999	---	---	---	---	---	---	---	---	---	---	---	85%	86%	87%	88%	89%

Note: Code P17 results in an adjustment of 100% regardless of perimeter measurements or square footage and is used for apartments, fast food restaurants, self-storage units, and hotel/motels.

WALL HEIGHT ADJUSTMENT

Code	Height	Adjust.	Code	Height	Adjust.	Code	Height	Adjust.
H1	**All**	**100%**	H2	8	88%	**H3**	**8**	**100%**
			H2	9	90%	H3	9	102%
			H2	10	92%	H3	10	104%
			H2	11	94%	H3	11	106%
			H2	12	96%	H3	12	108%
			H2	13	98%	H3	13	110%
			H2	**14**	**100%**	H3	14	112%
			H2	15	102%	H3	15	114%
			H2	16	104%	H3	16	116%
			H2	17	106%	H3	17	118%
			H2	18	108%	H3	18	120%
			H2	19	110%	H3	19	122%
			H2	20	112%	H3	20	124%
			H2	21	114%			
			H2	22	116%			
			H2	23	118%			
			H2	24	120%			
			H2	25	122%			
			H2	26	124%			
			H2	27	126%			
			H2	28	128%			
			H2	29	130%			
			H2	30	132%			
			H2	31	134%			
			H2	32	136%			
			H2	33	138%			
			H2	34	140%			
			H2	35	142%			
			H2	36	144%			
			H2	37	146%			
			H2	38	148%			
			H2	39	150%			
			H2	40	152%			
			H2	41	154%			
			H2	42	156%			
			H2	43	158%			
			H2	44	160%			
			H2	45	162%			
			H2	45-Over	164%			

	EXTERIOR WALL MATERIAL CODE	$/SF
00	**NONE** to indicate the absence of an exterior wall material.	0.00
01	**Brick or Stone** to indicate a brick or stone veneer.	23.50
02	**Frame** to indicate an exterior wall of wood, aluminum siding, composition siding, or shingles on sheathing.	16.19
03	**Concrete Block** to indicate a masonry wall consisting of concrete compressed into the shape of a block and allowed to harden.	18.31
04	**Brick/Concrete Block** to indicate that at least one-third of the exterior walls are of a brick or concrete block material, and the rest of the exterior walls are of the other material.	21.50
05	**Tile** to indicate a hard earthenware block which has been hard burned and molded, such as terra cotta.	28.44
06	**Masonry & Frame** to indicate that at least one-third of the exterior walls are of a frame or masonry (brick or stone) material and the rest of the exterior walls are of the other material.	19.81
07	**Metal, Light** to indicate walls constructed of metal panels on wood or steel frame.	5.94
08	**Metal, Sandwich** to indicate walls constructed of a core of insulation covered on both sides by metal panels.	25.19
09	**Concrete Load Bearing** to indicate a concrete wall which supports a part of the building, usually a floor or roof	22.88
10	**Concrete Non-Load Bearing** to indicate a concrete curtain wall, which does not support the roof or floor.	21.88
11	**Glass** to indicate walls of non-supporting glass panels set in metal frame.	33.31
12	**Glass & Masonry** to indicate walls of non-supporting glass set in brick or concrete backup.	31.25
13	**Enclosure** to indicate a wool stud or concrete block office or sales enclosure wall in the interior of a building.	4.81
14	**Concrete Tilt-Up** to indicate concrete wall sections that are cast horizontally and tilted or lifted into position.	21.94
15	**Solar Glass** to indicate a high-quality tinted heat absorbent glass set in metal frame.	54.31
16	**Asbestos Corrugated Rigid** to indicate a rigid corrugated asbestos sheet on wood or steel frame.	14.81
17	**Masonry/Metal** to indicate that at least one-third of the exterior walls are of a masonry (brick or stone) or metal and the rest of the exterior walls are of the other material.	19.88
18	**Native Stone** to indicate a locally quarried stone used as a load-bearing wall. The stone can be irregular-shaped rubble or cut blocks set in place with mortar.	23.38

CW0 code is used as a placeholder and has no monetary value

USE TYPE					
CODE	USE TYPE DESCRIPTION	$/SQFT	CODE	USE TYPE DESCRIPTION	$/SQFT
011	Apartment	86.57	054	Nursing Home	123.18
012	Hotel	125.00	055	School	126.80
021	Motel	103.20	056	Hospital	225.11
023	Dormitory	122.60	057	Library	126.80
025	Dwelling Conversion Commercial	87.80	058	Funeral Home	98.13
026	Dwelling Conversion Sales	68.40	060	Club House	52.27
030	Franchise Drug Store	210.00	061	Auditorium/Theater	122.70
031	Restaurant	91.54	062	Cinema	109.80
032	Mall Anchor Store	68.40	063	Religious Institution	94.17
033	Discount Store/Market	60.30	064	Social/Fraternal Hall	88.50
034	Retail Store	68.40	074	Car Wash Manual	7.00
035	Bar/Tavern	99.82	075	Car Wash Automatic	17.00
036	Bar Lounge	99.82	076	Kwik Lube	166.80
037	Cafeteria	106.40	084	Multi-Use Storage	22.50
038	Convenience Store	73.33	085	Enclosure	45.00
041	Mini Warehouse	6.42	086	Support Area	25.80
042	Hangar	26.50	087	Cold Storage	9.94
043	Manufacturing	21.50	088	Restroom/Locker Room Facility	25.80
044	Light Manufacturing	17.60	089	Day Care Center	55.20
045	Warehouse	5.58	090	Parking Garage	13.83
046	Auto Showroom/Office	91.40	092	Gymnasium	96.00
047	Auto Parts/Service	34.50	096	Auto Service Center	51.20
048	Tennis / Raquet Club	63.20	097	Police/Fire	79.50
050	Skating Rink (Ice or Roller)	66.60	098	Post Office	80.50
051	Bank/Savings Institution	181.50	099	Radio/TV Building	31.50
052	Medical Center	102.08	100	Food Franchise	300.00
053	Office Building	67.54			

AIR CONDITIONING

CODE	TYPE	Value per SQFT
CA 00	None	0.00
CA 01	Central Air	5.00
CA 03	Thru-Wall/Other	3.00
CA 04	Package AC	8.00

HEATING SYSTEM

CODE	TYPE	Value per SQFT
CH 00	None	0.00
CH 01	Hot Air, either forced or gravity	3.50
CH 02	Hot Water or Steam, both single and dual circulation types	4.50
CH 03	Unit Heaters, Space Heaters	2.40

PLUMBING

CODE	TYPE	Value per SQFT
CP 00	None	-5.00
CP 01	Below Normal	-2.00
CP 02	Normal	0.00
CP 03	Above Normal	3.00

Plumbing code CP 00 (None) only applies to improvements which typically have plumbing. Improvements which would not normally have plumbing have been valued with “no plumbing” built in and should not be reduced further.

SPRINKLERS

CODE	TYPE	Value per SQFT
SP 01	Wet System	3.50
SP 02	Dry System	4.50

COMMERCIAL FEATURES- ATTACHMENTS

There are numerous types of building other features and attached improvements that may be encountered on commercial and industrial properties.

CF CODE	FEATURE DESCRIPTION	RATE	CF CODE	FEATURE DESCRIPTION	RATE
BA1	Balcony	25.00	LP7	Patio, Brick	15.00
BC1	Bank Canopy - Drive In	40.00	MR2	High Bay Roof	4.00
CF1	Cooler - Chiller	15.00	PR1	Open Porch or Breezeway	30.00
CF2	Cooler - Freezer	20.00	PR2	Porch Enclosed	50.00
CP5	Canopy	14.00	PR3	Porch Open Upper	25.00
CP6	Canopy Roof/Slab	20.00	PR4	Porch, Enclosed Upper	50.00
CP7	Canopy RF - Economy	18.00	PR5	Porch Covered	25.00
CP8	Canopy RF - Average	20.00	PR6	Porch Screened	31.25
CP9	Canopy RF - Good	30.00	PR7	Porch Cov-Upper	25.00
EE1	Enclosed Entry	50.00	PR8	Porch Screened Upper	26.00
GH4	Greenhouse – Economy	36.00	RA2	Garage-Attached-Fin	35.00
GH5	Greenhouse - Average	42.00	RS1	Utility Room	30.00
GH6	Greenhouse - Good	52.00	RS2	Utility BLDG- Metal	30.00
LD1	Loading Dock, Steel or Concrete	18.00	RS3	Utility BLDG-Brk/Stn	32.00
LD2	Loading Dock, Wood	15.00	SC2	Indoor Pool	55.00
LD3	Loading Dock, Intr	38.00	SK1	Indoor Skating Rink	30.00
LD4	Truck & Train Wells	14.00	WD1	Wood Deck	18.00
LD6	Covered Loading Dock	25.00	100	Commercial Basement Utility	15.00
LP3	Patio or Stoop	15.00	96A	Cold Storage	74.82
LP4	Patio, Asphalt	12.00			
LP5	Patio	18.00			

COMMERCIAL MAIN BUILDING FEATURES

MF CODE	FEATURE DESCRIPTION	RATE	MF CODE	FEATURE DESCRIPTION	RATE
LD5	Dock Levelers	$8,000	FE	Freight Elevator	$50,000
ES	Escalator	$125,000	OD4	OHEAD Door Motorized STL	$2,000
XS	Extra Stop	$9,000	OD3	OHEAD Door Motorized WD	$1,500
FI1	Fireplace	$5,000	OD2	Overhead Door Steel	$1,750
FI2	Fireplace (2)	$7,000	OD1	Overhead Door Wood	$1,200
FI3	Fireplace (3)	$9,000	PE	Passenger Elevator	$85,000

COMMERCIAL BASEMENT

CB CODE	FEATURE DESCRIPTION	RATE
100	BSMT Utility/Storage	$15.00

CLEAN ROOMS:

Clean Rooms are rated by the maximum number of particles larger than 0.5 µm per cubic foot and are classified according to the ISO standard categories.

DESCRIPTION	CODE	RATE	MAX PARTICLES
Clean Room (ISO 8)	CF CR8	$200 / sqft	100,000
Clean Room (ISO 7)	CF CR7	$400 / sqft	10,000
Clean Room (ISO 6)	CF CR6	$500 / sqft	1,000
Clean Room (ISO 5)	CF CR5	$1,000 / sqft	100
Clean Room (ISO 4)	CF CR4	$4,000 / sqft	10

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 or garden 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 - GARDEN APARTMENTS

Base square foot prices have been developed for typical average "C" Grade quality construction 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, three, and four family residences should be priced by using the Residential Dwelling Schedule (included in the Residential section of the manual).

High-rise apartment buildings should be priced from the Commercial Schedules (found in the Commercial section of the manual) and adjusted as applicable for special features and variances.

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. Guidelines for normal life estimates are found in the Percent Good section of the manual. 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.

MULTIFAMILY ILLUSTRATIONS

APARTMENT (MA 211)



FRANCHISE FOOD RESTAURANTS

Franchise Food restaurants have become 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 has 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 decor! 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

AA and 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 — A 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 adjust 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-site 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.

FRANCHISE FOOD ILLUSTRATIONS

FAST FOOD (MA 325)

MOBILE HOME / RV 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. A mobile home / RV park generally has four-or-more mobile homes offered for rent. 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 Gravel/Paving** - Includes base preparation and gravel/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 or 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 components 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.

The effective age of the park may or may not be the same as the actual age (or average age if built in several phases) of the park. Generally, if a park is judged to be in average condition for its age, the effective age will be the same as the actual age. If a park is judged to be in poor condition or good condition for its age, the effective age will be somewhat more or somewhat less than the actual age. Similarly, parks judged very poor to unsound or very good to excellent will have effective ages considerably more to considerably less than their actual ages.

Operating mobile home parks will generally maintain and quickly repair any space that should become uninhabitable. Typical renters of such spaces do not differentiate between the effective age of the improvements so long as they are functioning properly. It is not logistically feasible to maintain tax records of the exact condition and effective ages of all site improvements. For these reasons, sites are given a “flat” pricing which assumes a value at mid-life, regardless of actual age. Manual depreciation may be applied in the event that deferred maintenance exists which demonstrably reduces the value without rendering the site uninhabitable. Any site which becomes uninhabitable will be removed from the tax listing and will not be valued.

MOBILE HOME / RV PARKS – SITE IMPROVEMENTS

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 on-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.

ASSESSED VALUE PER SITE:

MH/RV Park Space	**$3,500 @ "C" Grade**

MOBILE HOME / RV PARKS – LAND VALUATION

In addition to the value contributed by the improved sites and any other structures that may exist on the property (offices, utility buildings, club-houses, etc.), land must be valued according to its highest and best use. There is a presumption that this use is the current use as a mobile home or recreational vehicle park, however, this may not be the case. For example, in instances in which the highest and best use would appear to be conversion to single-family residential subdivision and construction the land should be valued using the AC D (development) codes and protocols. As another example, land which would have an apparent highest and best use as a large distribution center should be valued accordingly with commercial land rates.

In the vast majority of cases, however, the current use as a mobile home / RV park will prove to be the highest and best use. In these cases, the acreage being actively utilized for mobile home spaces and associated structures such as offices, utility buildings and club houses will be assessed as AC B. The residual unused acreage will be assessed as AC R.

OPERATING STATEMENT-MOBILE HOME PARKS

OPERATING PERIOD: YEAR ROUND ______ SEASONAL_____

AVAILABLE RENTAL SITES: MOBILE HOME _____ TRAVEL TRAILER ______

RENT SCHEDULE-PER MONTH BASIS

_____SITES @ $______ PER MONTH _____SITES@ $_____PER MONTH

_____SITES @ $______ PER MONTH _____SITES@ $_____PER MONTH

ANNUAL GROSS POTENTIAL INCOME @ 100%
OCCUPANCY DURING OPERATING PERIOD **$___________**

OPERATING STATEMENT FOR YEAR 20____

INCOME:

RENTAL REVENUE: $__________
OTHER REVENUE: $__________
(LAUNDRY/VENDING/ETC)

TOTAL REVENUE **$___________**

EXPENSES:

MANAGEMENT & PAYROLL $__________
REPAIRS & MAINTENANCE $__________
UTILITIES $__________
REAL ESTATE TAXES $__________
INSURANCE $__________
ADMINISTRATIVE $__________
(LEGAL/ETC)
OTHER $__________
(EXPLAIN)

TOTAL EXPENSES **$___________**

(DO NOT INCLUDE DEBT SERVICE, MORTGAGE INTEREST OR DEPRECIATION AS EXPENSE)

____ __________ __________________

SIGNATURE (OWNER/MANAGER/AGENT) DATE TELEPHONE #

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 trees 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 $35,000 per hole for a course with minimal improvements to $180,000 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. Note (on the property record card, along with the data recorded in Step # 1) any significant variations between the construction components of the subject property and the base specifications for the selected Grade.

5. Adjust the base cost to account for significant variations between the construction components of the subject property and the base specifications for the selected Grade, as considered in Step # 4.

   This step is only necessary if the adjustment is not adequately accounted for by "intermediate grading", as described in Step #3.

6. Multiply the average replacement cost per hole, as derived in Step #5, by the total number of holes to arrive at the total replacement cost of the course.

7. 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 #6, to arrive at the depreciated value of the course.

8. 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

Happy Farm 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 Good 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 Good Quality	$ 100,500
Quality Factor + 10%	+ 10,050
Replacement Cost Per Hole	$ 110,550
Number of Holes	X 18
Total Replacement Cost	$1,989,900
Less Depreciation -10%	- 198,990
Total Value of Course Improvements	$1,790,910
Land Value (150 acres @ $5000)	$ 750,000
Total Value	$2,540,910
Value Per Hole (Rounded)	$ 141,200

GOLF COURSE PRICING

MS 95 EXCELLENT - REPLACEMENT COST $180,00 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 $130,000 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 $110,000 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 $85,000 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 $70,000 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 $35,000 PER HOLE.

Non-regulation golf course, consisting of 9 to 18 holes, all holes are par three, terrain is rolling to flat, tees, greens and fairways range from fair quality to good quality, maintenance varies based on private or public play.

INCOME APPROACH TO GOLF COURSE

The Income Approach is typically the most accurate measure of value for golf courses. It reduces the differences between golf courses to the least common denominator, **Golf Income Revenue (GIR).** This revenue can be quantified from the market place and analyzed based on actual or anticipated number of rounds played and average daily rates per round.

Following is the formula for estimating the value of golf courses in Alamance County, based on the Income Approach.

Stabilized # Rounds (SNR) x Stabilized Daily Rate (SDR) = Golf Income Revenue (GIR) x Golf Income Multiplier (GIM) = Indicated Value

EXAMPLE

Logan Bryce Golf Club – an 18-hole, regulation size golf course, with a stabilized number of rounds of 30,000 per year and a stabilized daily rate of $50.

30,000 x $50 = $1,500,000 x 2.5 = $3,750,000 or $208,300 per hole.
(SNR) x (SDR) = (GIR) x (GIM) = Indicated Value

GOLF COURSE INCOME MODELS

Quality Grade	Stabilized Number Of Rounds	Rates/Seasonal Averages	Stabilized Daily Rate	GIM
MS 95	20,000-30,000	$150- $325	$135- $275	2.5-4.0
MS 60	20,000-30,000	$ 79- $200	$100- $150	2.5-4.0
MS 86	20,000-30,000	$ 50- $185	$ 70- $100	2.5-4.0
MS 87	20,000-30,000	$ 44- $100	$ 55- $ 85	2.5-4.0
MS 88	20,000-30,000	$ 25- $ 50	$ 25- $ 45	2.5-4.0
MS 89	20,000-30,000	$ 30- $ 59	$ 35- $ 70	2.5-4.0

Note: Stabilized Daily Rates include cart rental and green fees only. Values generated by this formula are for golf course improvements and the land necessary to support the golf holes. Values for excess land and other buildings will be added based on separate cost or income analysis as outlined within the body of the Schedule of Values. The above values are estimates, actual income from the course may be used if available.

ALAMANCE 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:____
____
____
____

ALAMANCE 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:____
Person Contacted:_____________________Telephone:___________________

GENERAL GUIDELINES FOR GOLF COURSE DEPRECIATION	
D3	
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%
51-Up	75%

NOTE: The effective age and condition of each golf course must be carefully determined by the appraiser to properly apply depreciation. A 50-year old golf course which has been well maintained and updated over the years may have less depreciation than a 5-year old golf course which has failed and not been maintained for a year. Depreciation for golf courses is always applied manually in accordance with the general guidelines above and in consideration of the appraiser's opinion of the effective age and condition of the course.

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 include entombment.
(1973, c. 695, s. 4: 1987, c. 724)

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 Alamance County;

Number of unsold lots, crypts, niches (x) average selling price (x) discount rate.
(# units) x (avg $ price) x (DR) = 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:

Property consists of: 21.584 acres totally dedicated for cemetery use, and 3,500 unsold gravesites. Gravesites sell at an average of $750 each and the absorption period is estimated at 50 to 75 years.

(3500 units) x ($750/unit) = $2,625,000 x (10% DR) = **$262,500 Indicated Value**

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.
- 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.
- 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.
- 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/INDUSTRIAL
ECONOMIC LIFE GUIDELINES

Economic life is an estimate of the normal life expectancy of a component. The following are some suggested guidelines for the average expected life of various commercial/industrial buildings and yard improvements.

BUILDINGS	WOOD JOISTS	FIRE RESISTANT	FIRE PROOF
Apartment	40	40	50
Apartment (High Rise)	--	40	50
Automobile Agency	33 1/3	40	40
Bowling Alley	30	40	40
Car Wash (Conventional)	30	40	40
Car Wash (Manual)	20	20	--
Fast Food Restaurants	30	30	30
Hotel	30	40	50
Industrial	33 1/3	40	50
Medical Center	40	50	50
Motel	30	33 1/3	40
Nursing Home	33 1/3	40	50
Office (Conventional)	40	40	60
Office {Institutional)	--	50	60
Pre-Engineered Build. (Heavy)	--	40	--
Pre-Engineered Build. (Med.)	--	35	--
Pre-Engineered Build. (Light)	30	30	--
Service Station	20	20	--
Shopping Center	33 1/3	40	50
Store	30	40	50
Theater	30	40	50
Truck Terminal	33 1/3	40	40
Warehouse	30	40	40

YARD IMPROVEMENTS

Asphalt Paving	12
Concrete Paving	20
Reinforced Concrete Platforms	35
Wood & Timber Platforms	25
Chain Link Fence	20
Masonry Fence	35
Wood Fence	15
Masonry Stacks	40
R R Siding	35
Steel Incinerators {Lined)	15
Concrete Reservoirs	30

COMMERCIAL DEPRECIATION TABLE

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:

Condition		Construction Type	
E	Excellent	W	Wood Frame
G	Good	M	Masonry
A	Average	C	Concrete
F	Fair	R	Rigid Steel Frame
P	Poor		
U	Unsound		

COMMERCIAL DEPRECIATION TABLE
Masonry Construction

Excellent

Age	Deprec.
01	1%
02	2%
03	3%
04	3%
05-06	5%
07-08	6%
09-10	8%
11-12	10%
13-14	11%
15-16	13%
17-18	14%
19-20	16%
21-22	18%
23-24	19%
25-26	21%
27-28	22%
29-30	24%
31-32	26%
33-36	29%
37-40	32%
41-45	35%
46-48	38%
49-55	40%
56-80	40%
81 Up	45%

Good

Age	Deprec.
01	2%
02	2%
03	4%
04	4%
05-06	5%
07-08	7%
09-10	9%
11-12	11%
13-14	13%
15-16	14%
17-18	16%
19-20	18%
21-22	20%
23-24	22%
25	23%
26-28	25%
29-30	27%
31-32	29%
33-36	32%
37-40	36%
41-45	40%
46-48	40%
49-55	45%
56-75	50%
76 Up	55%

Average

Age	Deprec.
01-02	2%
03	4%
04	4%
05-06	6%
07-08	8%
09-10	10%
11-12	12%
13-14	14%
15-16	16%
17-18	18%
19-20	20%
21-22	22%
23-24	24%
25-26	26%
27-28	28%
29-30	30%
31-32	32%
33-36	36%
37-40	40%
41-45	44%
46-48	48%
49-55	50%
56-60	55%
61-75	60%
76 Up	65%

Fair

Age	Deprec.
01-02	1%
03	2%
04	4%
05-06	6%
07-08	8%
09-10	10%
11-12	12%
13-14	14%
15-16	16%
17-18	18%
19-20	20%
21-22	22%
23-24	24%
25-26	26%
27-28	26%
29-30	30%
31-32	34%
33-36	37%
37-40	40%
41-45	55%
46-48	30%
49-55	34%
56-60	37%
61-75	40%
76 Up	55%

Poor

Age	Deprec.
01-02	3%
03-04	6%
05-06	8%
07-08	11%
09-10	14%
11-12	17%
13-14	20%
15-16	22%
17-18	25%
19-20	28%
21-22	31%
23-24	34%
25-26	36%
27-28	40%
29-30	42%
31-32	45%
33-38	50%
39-55	60%
56-60	65%
61 Up	75%

Unsound

Age	Deprec.
0-50	90%
50 Up	90%

COMMERCIAL DEPRECIATION TABLE (Continued)

COMMERCIAL DEPRECIATION TABLE
Wood Frame Construction

Excellent

Age	Deprec.
01	1%
02	2%
03	4%
04	4%
05-06	6%
07-08	8%
09-10	10%
11-12	12%
13-14	14%
15-16	16%
17-18	18%
19-20	20%
21-22	22%
23-25	24%
26	26%
27-28	28%
29-30	30%
31-34	32%
35-36	36%
37-40	40%
41-45	40%
46-48	40%
49-55	40%
56-75	40%
76Up	45%

Good

Age	Deprec.
01	2%
02	2%
03	4%
04	4%
05-06	6%
07-08	9%
09-10	11%
11-12	13%
13-14	15%
15-16	18%
17-18	20%
19-20	22%
21-22	24%
23-24	27%
25-26	29%
27-28	32%
29-30	33%
31-32	36%
33-34	36%
35-40	40%
41-45	45%
46-48	45%
49-60	45%
61-75	50%
76Up	55%

Average

Age	Deprec.
01-02	2%
03	5%
04	5%
05-06	7%
07-08	10%
09-10	12%
11-12	15%
13-14	17%
15-16	20%
17-18	22%
19-20	25%
21-22	27%
23-24	30%
25-26	32%
27-28	35%
29-30	37%
31-34	40%
35-36	45%
37-40	50%
41-45	50%
46-50	50%
51-55	55%
56-60	55%
61-75	60%
76 Up	65%

Fair

Age	Deprec.
01	2%
02	3%
03	5%
04	6%
05-06	8%
07-08	11%
09-10	13%
11-12	16%
13-14	18%
15-16	22%
17-18	24%
19-20	28%
21-22	30%
23-25	33%
26	35%
27-28	38%
29-30	40%
31-34	44%
35-38	50%
39-45	55%
46-50	55%
51-55	60%
56-60	60%
61-75	65%
76 Up	70%

Poor

Age	Deprec.
01-02	3%
03-04	7%
05-06	10%
07-08	14%
09-10	17%
11-12	21%
13-14	24%
15-16	28%
17-18	31%
19-20	35%
21-22	38%
23-25	42%
25	45%
27-28	50%
29-30	52%
31-34	55%
35-36	65%
37-45	70%
46-50	70%
51 Up	75%

Unsound

Age	Deprec.
0-50	90%
50 Up	90%

COMMERCIAL DEPRECIATION TABLE (Continued)

COMMERCIAL DEPRECIATION TABLE
Concrete Block Construction

Excellent		Good		Average		Fair		Poor	
Age	Deprec.	Age	Deprec.	Age	Deprec.	Age	Deprec.	Age	Deprec.
01	1%	01-02	2%	01-02	2%	01-02	2%	01-02	3%
02	2%	03	3%	03	3%	03-04	3%	03-04	4%
03	2%	04	3%	04	3%	05	5%	05-06	7%
04	2%	05-06	4%	05-06	5%	06	6%	07-08	10%
05-06	4%	07-08	6%	07-08	7%	07-08	8%	09-10	11%
07-08	6%	09-10	7%	09-10	8%	09-10	9%	11-12	14%
09-10	6%	11-12	9%	11-12	10%	11-12	11%	13-14	17%
11-12	8%	13-14	11%	13-14	12%	13-14	13%	15-16	18%
13-14	10%	15-16	12%	15-16	13%	15-16	14%	17-18	21%
15-16	10%	17-18	14%	17-18	15%	17-18	17%	19-20	24%
17-18	12%	19-20	15%	19-20	17%	19-20	19%	21-22	25%
19-20	14%	21-22	16%	21-22	18%	21-22	20%	23-24	28%
21-22	14%	23-24	18%	23-24	20%	23-24	22%	25-26	30%
23-24	16%	25-26	20%	25-26	22%	25-26	24%	27-28	32%
25-28	18%	27-28	21%	27-28	23%	27-28	25%	29-30	35%
29-30	20%	29-30	23%	29-30	25%	29-30	28%	31-32	38%
31-32	22%	31-32	24%	31-32	27%	31-32	30%	33-36	42%
33-36	24%	33-34	27%	33-36	30%	33-36	33%	37-40	46%
37-40	26%	35-36	28%	37-40	33%	37-40	36%	41-45	52%
41-45	30%	37-40	30%	41-45	37%	41-45	40%	46-48	56%
46-48	30%	41-45	33%	46-48	40%	46-48	44%	49-50	60%
49-50	34%	46-48	36%	49-50	42%	49-50	46%	51-55	65%
51-55	37%	49-50	38%	51-55	46%	51-60	50%	56-65	70%
56-80	40%	51-70	40%	56-65	50%	61-70	55%	66-70	75%
81 Up	45%	71 Up	45%	66 Up	55%	71 Up	60%	71 Up	75%

COMMERCIAL DEPRECIATION TABLE (Continued)

COMMERCIAL DEPRECIATION TABLE
Rigid Steel Frame Construction

Excellent		Good		Average		Fair		Poor	
Age	Deprec.	Age	Deprec.	Age	Deprec.	Age	Deprec.	Age	Deprec.
01	1%	01	2%	01	2%	01	2%	01	3%
02	2%	02	3%	02	3%	02	3%	02	4%
03	4%	03	5%	03	5%	03	5%	03	7%
04	6%	04	6%	04	7%	04	8%	04	10%
05-06	8%	05-06	9%	05-06	10%	05-06	11%	05-06	14%
07-08	10%	07-08	12%	07-08	13%	07-08	14%	07-08	18%
09-10	14%	09-10	15%	09-10	17%	09-10	19%	09-10	24%
11-12	16%	11-12	18%	11-12	20%	11-12	22%	11-12	28%
13-14	18%	13-14	21%	13-14	23%	13-14	25%	13-14	32%
15-16	22%	15-16	24%	15-16	27%	15-16	30%	15-16	38%
17-18	24%	17-18	27%	17-18	30%	17-18	33%	17-18	42%
19-20	26%	19-20	30%	19-20	33%	19-20	36%	19-20	46%
21-22	30%	21-22	33%	21-22	37%	21-22	40%	21-22	52%
23-24	32%	23-25	36%	23-24	40%	23-24	44%	23-24	56%
25-26	34%	26	38%	25-26	43%	25	45%	25	56%
27-28	37%	27-28	40%	27-28	46%	26	47%	26	60%
28-30	40%	29-30	45%	29-30	50%	27-28	50%	27-28	60%
31-36	40%	31-36	45%	31-36	50%	29-36	55%	29-34	65%
37-40	40%	37-40	45%	37-40	50%	37-40	55%	35-40	70%
41-45	45%	41-45	45%	41-45	55%	41-45	60%	41-45	75%
46-48	45%	46-48	50%	46-48	55%	46-48	60%	46-48	75%
49-50	45%	49-50	50%	49-50	55%	49-50	60%	49-50	75%
51-55	45%	51-60	50%	51-55	55%	51-55	60%	51-55	75%
56-80	45%	61-70	55%	56-70	60%	56-80	65%	56-80	75%
81 Up	50%	71 Up	55%	71 Up	60%	81 Up	75%	81 Up	75%

Unsound All Construction Types

Age	Deprec.
0-50	90%
50 Up	90%

COMMERCIAL OTHER BUILDINGS AND YARD ITEMS

TYPE	CODE	$/Unit	SIZE	DEP	DESCRIPTION
Asphalt Paving (Parking)	01	4.00	M11	D1	
Bleachers (Site Value)	66	SV	-	-	site value
Brick Garage	78	33.80	S4	D3	
Campsite (Elec Only)	CAMP	750.00	-	-	
Campsite (Water & Elec)	CAMP2	1,200.00	-	-	
Canopy	04	10.00	M21	D3	
Cemetery, Crypt	CRYPT	1,500.00	-	-	
Cemetery, Gravesite	GRAVE	1,000.00	-	-	
Cemetery, Niche	NICHE	1,100.00	-	-	
Concrete Paving (Parking)	06	4.50	M11	D1	
Deck	34	18.00	M21	D3	
Fence (Chain Link-Woven Wire)	09	11.00	M11	D1	
Field House	69	30.00	-	-	
Golf Course Average	87	85,000.00	-	D3	
Golf Course Excellent	95	180,000.00	-	D3	
Golf Course Fair	88	70,000.00	-	D3	
Golf Course Good	86	110,000.00	-	D3	
Golf Course Par 3	89	35,000.00	-	D3	
Golf Course Very Good	60	130,000.00	-	D3	
Greenhouse Glass	84	15.00	M14	D2	
Guard House	67	100.00	M11	D3	
Kiln	X34	95.00	-	-	
Lighting (Yard)	19	2,000.00	-	D1	
Loading Dock	07	13.00	M21	D2	
Lumber Shed 3 Side	18	10.00	M14	D2	
Lumber Shed RSF Open	52	10.00	M14	D2	
MH/RV Park Space	43	3,500.00	-	-	
Miniature Golf Course	89M	5,000.00	-	D3	
Mini Warehouse	73	20.00	-	D3	
Office Field	54	38.00	M11	D3	
Railroad Siding	22	73.00	-	D1	
Restroom Structure	90	32.00	M11	D3	
Self Service Booth	51	90.00	M11	D3	
Service Station Canopy	72	26.00	M11	D3	
Shop	24	25.00	M11	D3	
Swimming Pool (concrete)	30	35.00	M11	D1	
Swimming Pool (vinyl)	50	30.00	M11	D1	
Utility Building RSF	49	15.00	M11	D3	
Water Reservoir (Concrete)	65	0.35	-	D2	

OTHER BUILDING AND YARD ITEMS SIZE ADJUSTMENTS

M11		M12		M13		M14		M21 / M22	
AREA	ADJ.	AREA	ADJ.	AREA	ADJ.	AREA	ADJ.	AREA	ADJ.
001-150	110	001-050	110	001-150	110	001-040	100	001-020	110
151-200	108	051-100	105	151-200	105	041-080	98	021-040	106
201-250	106	101-150	102	201-250	102	081-150	96	041-060	104
251-300	104	151-400	100	251-400	100	151-300	94	061-080	102
301-350	102	401-550	98	401-600	98	301-UP	90	081-200	100
351-600	100	551-700	96	601-700	96			201-300	98
601-650	98	701-850	94	701-800	94			301-400	96
651-700	96	851-1000	92	801-900	92			401-500	94
701-750	94	1001-UP	90	901-UP	90			501-UP	90
751-800	92								
801-UP	90								

NS code has No Size Adjustment

OTHER BUILDING AND YARD ITEMS DEPRECIATION

D1		D2		D3		D4		D5	
AGE	DEPR.	AGE	DEPR.	AGE	DEPR.	AGE	DEPR.	AGE	DEPR.
00-01	10%	00-01	5%	00-03	5%	00-04	5%	00-05	5%
2	20%	2	10%	04-06	10%	05-08	10%	06-10	10%
3	25%	3	15%	07-09	15%	09-12	15%	11-15	15%
4	30%	4	20%	10-12	20%	13-16	20%	16-20	20%
5	35%	5	25%	13-15	25%	17-20	25%	21-25	25%
6	40%	6	30%	16-18	30%	21-24	30%	26-30	30%
7	45%	7	35%	19-21	35%	25-28	35%	31-35	35%
08-Up	50%	8	40%	22-24	40%	29-32	40%	36-40	40%
		9	45%	25-27	45%	33-36	45%	41-45	45%
		10	50%	28-30	50%	37-40	50%	46-50	50%
		11	55%	31-35	55%	41-44	55%	51-55	55%
		12	60%	36-40	60%	45-48	60%	56-60	60%
		13	65%	41-45	65%	49-52	65%	61-65	65%
		14	70%	46-50	70%	53-56	70%	66-70	70%
		15-Up	75%	51-Up	75%	57-Up	75%	71-Up	75%

NDA code has No Depreciation Adjustment

INCOME MODEL APPROACH

Income and Expense Models are developed for each property group to cover the range of properties located within Alamance 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.

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 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 a direct capitalization technique.

Income Models include associated capitalization parameters:

- Typical financing, percentage rates, and terms.
- 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 including an effective tax rate and applied to the Net Income to generate an indicated value.

The Income Model Approach includes the following models for the specified property groups:

	VACANCY	MANAGEMENT	EXPENSES	CAP RATE
Apartments	5-10%	3-10%	25-40%	4-9%
Hotels/Motels	25-50%	5-10%	25-50%	4-10%
General Retail/Shopping Center	5-10%	5-10%	10-40%	6-11%
General Office/Medical Office	5-10%	5-10%	10-35%	4-11%
Restaurants/Franchise Restaurants	5-10%	5-10%	10-35%	4-11%
Manufacturing/Warehouse	5-15%	5-10%	15-40%	5-11%
Mobile Home Parks	5-10%	5-10%	25-40%	6-11%
Self Storage	20-40%	5-10%	15-30%	5-11%
Service Shop/Garage	5-15%	5-10%	10-35%	5-11%

Note: Personal property is often captured in an income approach as it is part of the contribution to income and typically also included as an expense. It will be the practice of Alamance County to deduct the assessed value listed personal property from the value indicated by the income approach. Where no personal property has been listed, none will be deducted.

STANDARD ON

Mass Appraisal of Real Property

A criterion for measuring fairness, quality, equity and accuracy

(Approved July 2017)

IAAO

INTERNATIONAL ASSOCIATION of ASSESSING OFFICERS

Valuing the World

Standard on Mass Appraisal of Real Property

Approved July 2017

International Association of Assessing Officers

IAAO assessment standards represent a consensus in the assessing profession and have been adopted by the Board of Directors of the International Association of Assessing Officers (IAAO). The objective of the IAAO standards is to provide a systematic means for assessing officers to improve and standardize the operation of their offices. IAAO standards are advisory in nature and the use of, or compliance with, such standards is voluntary. If any portion of these standards is found to be in conflict with national, state, or provincial laws, such laws shall govern. Ethical and/or professional requirements within the jurisdiction[1] may also take precedence over technical standards. – February 2022

[1] For example, USPAP, CUSPAP, IVS, EVS.

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At the time of the 2018 rewrite of this standard, the Technical Standards Committee was comprised of Alan Dornfest, AAS (Chair), Albert Marchand, Josh Myers, Wayne Forde, August Dettbarn, Carol Neihardt, Pat O'Conner, and Larry Clark, IAAO Staff Liaison.

Revision notes

This standard replaces the April 2013 Standard on Mass Appraisal of Real Property and is a complete revision. The 2013 Standard on Mass Appraisal of Real Property was a partial revision that replaced the 2012 standard, which 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.

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Contents

1 Scope 1
2. Introduction 1
3. Collecting and Maintaining Property Data 1
3.1 Overview 1
3.2 Geographic Data 1
3.3 Property Characteristics Data 2
3.3.1 Selection of Property Characteristics Data 2
3.3.2 Data Collection 3
3.3.2.1 Initial Data Collection 3
3.3.2.2 Data Collection Format 3
3.3.2.3 Data Collection Manuals 3
3.3.2.4 Data Accuracy Standards 3
3.3.2.5 Data Collection Quality Control 4
3.3.3 Data Entry 4
3.3.4 Maintaining Property Characteristics Data 4
3.3.5 Alternative to Periodic On-Site Inspections 5
3.4 Sales Data 5
3.5 Income and Expense Data 5
3.6 Cost and Depreciation Data 5
4. Valuation 6
4.1 Valuation Models 6
4.2 The Cost Approach 6
4.3 The Sales Comparison Approach 7
4.4 The Income Approach 7
4.5 Land Valuation 8
4.6 Considerations by Property Type 8
4.6.1 Single-Family Residential Property 8
4.6.2 Manufactured Housing 8
4.6.3 Multifamily Residential Property 9
4.6.4 Commercial and Industrial Property 9
4.6.5 Nonagricultural Land 9
4.6.6 Agricultural Property 9
4.6.7 Special-Purpose Property 9
4.7 Value Reconciliation 9
4.8 Frequency of Reappraisals 9
5. Model Testing, Quality Assurance, and Value Defense 10
5.1 Model Diagnostics 10
5.2 Sales Ratio Analyses 10
5.2.1 Assessment Level 10
5.2.2 Assessment Uniformity 10
5.3 Holdout Samples 11
5.4 Documentation 12
5.5 Value Defense 12
6. Managerial and Space Considerations 12
6.1 Overview 12
6.2 Staffing and Space 12

6.2.1 Staffing 13
6.2.2 Space Considerations 13
6.3 Data Processing Support 13
6.3.1 Hardware 13
6.3.2 Software 13
6.3.2.1 Custom Software 14
6.3.2.2 Generic Software 14
6.4 Contracting for Appraisal Services 15
6.5 Benefit-Cost Considerations 15
6.5.1 Overview 15
6.5.2 Policy Issues 15
6.5.3 Administrative Issues 15
7. Reference Materials 15
7.1 Standards of Practice 15
7.2 Professional Library 15
References 16
Suggested Reading 16

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 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* (Gloudemans 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, 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* (Gloudemans 1999, chapter 2) or *Fundamentals of Mass Appraisal* (Gloudemans 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* (Gloudemans 1999, chapter 2) or *Fundamentals of Mass Appraisal* (Gloudemans 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* (Gloudemans 1999, chapter 4) or *Fundamentals of Mass Appraisal* (Gloudemans 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* [Gloudemans 1999, 118–120] or *Fundamentals of Mass Appraisal* [Gloudemans 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* (Gloudemans 1999, chapter 4) or *Fundamentals of Mass Appraisal* (Gloudemans 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* [Gloudemans 1999, chapters 3 and 4], *Fundamentals of Mass Appraisal* [Gloudemans and Almy 2011, chapters 4 and 6], and the *Standard on Automated Valuation Models (AVMs)* [IAAO 2018]). 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 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* (Gloudemans 1999, chapter 3) or *Fundamentals of Mass Appraisal* (Gloudemans 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* [Gloudemans 1999, chapter 3] or *Fundamentals of Mass Appraisal* [Gloudemans 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[a]	-	2	1
Special-purpose[b]	1	2,3	2,3

[a] Includes farm, ranch, and forest properties.
[b] 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 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 new 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.

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* [Gloudemans 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 S*tandard 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 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 S*tandard 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 clerical functions. Typical staffing sizes and patterns for jurisdictions of various sizes are illustrated in *Fundamentals of Mass Appraisal* (Gloudemans 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 2019].)

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 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 2019].)

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 2019].)

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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Standard on Assessment Appeal

Standard on Automated Valuation Models

Standard on Contracting for Assessment Services

Standard on Data Quality

Standard on Digital Cadastral Maps and Parcel Identifiers

Standard on Manual Cadastral Maps and Parcel Identifiers

Standard on Mass Appraisal of Real Property

Standard on Oversight Agency Responsibilities

Standard on Professional Development

Standard on Property Tax Policy

Standard on Public Relations

Standard on Ratio Studies

Standard on Valuation of Personal Property

Standard on Valuation of Property Affected by Environmental Contamination

Standard on Verification and Adjustment of Sales

To download the current approved version of any of the standards listed above, go to:

IAAO Technical Standards

STANDARD 5: MASS APPRAISAL, DEVELOPMENT

In developing a mass appraisal, an appraiser must identify the problem to be solved, determine the scope of work necessary to solve the problem, and correctly complete research and analyses necessary to produce a credible mass appraisal.

FAQ See also FAQ 127-264

Comment: STANDARD 5 applies to all mass appraisals of real or personal property regardless of the purpose or use of such appraisals.[56] 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, GENERAL DEVELOPMENT REQUIREMENTS

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

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.

56 See Advisory Opinion 32, *Ad Valorem Property Tax Appraisal and Mass Appraisal Assignments*.

STANDARDS RULE 5-2, PROBLEM IDENTIFICATION

In developing a mass appraisal, an appraiser must:

(a) identify the client and other intended users;[57]

Comment: 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 clients and other intended users (if any).

(b) identify the intended use of the appraisal;

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 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 to be based on non-market financing or financing with unusual conditions or incentives, identify the terms of such financing and any influences on value;

(d) identify the effective date of the appraisal;[58]

(e) identify, from sources the appraiser reasonably believes to be reliable, the characteristics of the properties that are relevant to the type and definition of value and intended use,[59] **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;

Comment: The properties must be identified in general terms, and each individual property in the universe must be identified, with the information on its identity 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 improvements.[60]

Ordinarily, 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 characteristics;

(iii) time frame of market activity; and

(iv) property interests reflected in the market;

57 See Advisory Opinion 36, *Identification and Disclosure of Client, Intended Use, and Intended Users.* Also applicable to Standards Rule 5-2(b).
58 See Advisory Opinion 34, *Retrospective and Prospective Value Opinions*.
59 See Advisory Opinion 23, *Identifying the Relevant Characteristics of the Subject Property of a Real Property Appraisal Assignment*, if applicable.
60 See Advisory Opinion 17, *Appraisals of Real Property with Proposed Improvements,* if applicable.

(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 intangible assets 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 intangible assets 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, or 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 the valuation, including market acceptability of the property and supply, demand, scarcity, or rarity;

(i) identify any extraordinary assumptions necessary in the assignment. An extraordinary assumption may be used in an assignment only if:

(i) the extraordinary assumption is required to properly develop credible opinions and conclusions;

(ii) the appraiser has a reasonable basis for the extraordinary assumption; and

(iii) use of the extraordinary assumption results in a credible analysis;

(j) identify any hypothetical conditions necessary in the assignment. A hypothetical condition may be used in an assignment only if:

(i) use of the hypothetical condition is clearly required for legal purposes, for purposes of reasonable analysis, or for purposes of comparison; and

(ii) use of the hypothetical condition results in a credible analysis; and

(k) determine the scope of work necessary to produce credible assignment results in accordance with the SCOPE OF WORK RULE.[61]

STANDARDS RULE 5-3, PROPERTY'S USE AND APPROPRIATE MARKET

When necessary for credible assignment results, an appraiser must:

(a) in appraising real property, identify and analyze the effect on use and value of the following factors:

(i) existing land use regulations;

(ii) reasonably probable modifications of such regulations;

(iii) economic supply and demand;

(iv) the physical adaptability of the real estate;

(v) neighborhood trends; and

(vi) highest and best use of the real estate; and

61 See Advisory Opinion 28, *Scope of Work Decision, Performance, and Disclosure,* and Advisory Opinion 29, *An Acceptable Scope of Work.*

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.

STANDARDS RULE 5-4, APPRAISAL METHODS

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 of 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, APPROACHES TO VALUE

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 the 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 Standards 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 mass appraisals.

(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;[62]

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.[63]

STANDARDS RULE 5-6, CALIBRATED MASS APPRAISAL MODEL APPLICATION

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 sales 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 not be developed by adding together the individual values of the various parcels, divided interests, or component parts; and

Comment: Although the value of the whole may be equal to the sum of the separate estates or parts, it also may be greater than or less than the sum of such estates or parts.

(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.

STANDARDS RULE 5-7, RECONCILIATION

In developing 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.

62 See Advisory Opinion 33, *Discounted Cash Flow Analysis.*

63 See Advisory Opinion 2, *Inspection of Subject Property*.

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 of 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 hold-out 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.

FAQ See also FAQ 265-334

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 substantive content of a report determines its compliance.

STANDARDS RULE 6-1, GENERAL REPORTING REQUIREMENTS

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 user(s) 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.

STANDARDS RULE 6-2, CONTENT OF A MASS APPRAISAL REPORT

The content of a mass appraisal report must be appropriate for the intended use of the appraisal and, at a minimum:

(a) state the identity of the client, or if the client has requested anonymity, state that the identity is withheld at the client's request but is retained in the appraiser's workfile; state the identity of any intended user(s) by name or type;[64]

Comment: Because the client is an intended user, they must be identified in the report as such. However, if the client has requested anonymity the appraiser must use care when identifying the client to avoid violations of the Confidentiality section of the ETHICS RULE.

(b) state the intended use of the appraisal;

(c) disclose any assumptions or limiting conditions that result in deviation from recognized methods and techniques or that affect analyses, opinions, and conclusions;

(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.[65]

(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.

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64 See Advisory Opinion 36, *Identification and Disclosure of Client, Intended Use, and Intended Users.* Also applicable to Standards Rules 6-2(b).

65 See Advisory Opinion 34, *Retrospective and Prospective Value Opinions.*

When reporting an opinion of value, state whether the opinion 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 value is based on non-market financing terms or financing with unusual conditions or incentives, summarize the terms of such financing and any influences on value.

(f) state the properties appraised including the property rights; and, when the property rights to be appraised are specified in a statute or court ruling, reference the law;

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.

(g) summarize the scope of work used to develop the appraisal,[66] and explain the exclusion of the sales comparison approach, cost approach, or income approach;

Comment: Summarizing the scope of work includes disclosure of research and analyses performed and might also include disclosure of research and analyses not performed.

(h) when any portion of the work involves significant mass appraisal assistance, summarize the extent of that assistance;[67]

(i) summarize and support the model specification(s) considered, data requirements, and the model(s) chosen; 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; and include a summary of the rationale for each model, the calibration techniques to be used, and the performance measures to be used;

Comment: In the case of mass appraisal for ad valorem taxation, stability and accuracy are important to the credibility of value opinions.

(j) summarize the procedure for collecting, validating, and reporting data; and summarize the sources of data and the data collection and validation processes;

Comment: Reference to detailed data collection manuals or electronic records must be made, as appropriate, including where they may be found for inspection.

(k) 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;

(l) when an opinion of highest and best use, or the appropriate market or market level was developed, summarize how that opinion was determined, and reference case law, statute, or public policy that describes highest and best use requirements;

Comment: When actual use is the requirement, the report must summarize 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.

(m) identify the appraisal performance tests used and the performance measures attained;

(n) summarize the reconciliation performed, in accordance with Standards Rule 5-7; and

(o) include a signed certification in accordance with Standards Rule 6-3.

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.*

STANDARDS RULE 6-3, CERTIFICATION

A signed certification is an integral part of the appraisal report.

(a) The wording of a certification does not have to match the following verbatim, but each of the elements must be addressed:

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 analyses, opinions, and conclusions are limited only by the reported assumptions and limiting conditions, and are my personal, impartial, and unbiased professional analyses, opinions, and conclusions.
— I have no (or the specified) present or prospective interest in the property that is the subject of this report, and 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 the agreement to perform this assignment.
— I have no bias with respect to the 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 this 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 this certification, the certification must clearly specify which individuals did and which individuals did not make a personal inspection of the appraised property.)[68]
— 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.)[69]

Comment: The above certification is not intended to disturb an elected or appointed assessor's work plans or oaths of office.

(b) An appraiser who signs any part of the appraisal report, including a letter of transmittal, must also sign a certification.

Comment: In an assignment that includes only assignment results developed by the real property appraiser, any appraiser 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 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.

68 See Advisory Opinion 2, *Inspection of Subject Property.*
69 See Advisory Opinion 31, *Assignments Involving More than One Appraiser*.

In an assignment that includes only assignment results developed by the personal property appraiser(s), any appraiser 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 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.

(c) When a signing appraiser 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.

(i) The signing appraiser is required to have a reasonable basis for believing that those individuals performing the work are competent; and

(ii) The signing appraiser must have no reason to doubt that the work of those individuals is credible.

Comment: Although a certification must contain the names of individuals providing significant mass appraisal assistance, it is not required that a summary of the extent of their assistance be located in a certification. This disclosure may be in any part(s) of the report.

SUPPLEMENTAL INFORMATION

STRUCTUAL COMPONENTS

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.

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) <u>The Basic Structure</u> – 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) <u>Exterior Finish</u> – 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) <u>Interior Facing & Finish</u> – 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) <u>Window & Door Openings</u> – the size and number of openings will have a significant influence on replacement cost.

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 underlament 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. 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 Minimum Property Standards, and generally denote lower quality construction.

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.

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 131/2'; and 2" X 10" floor joists on 16" centers if span is between 131/2' 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).

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.

PLUMBING

A standard complement of plumbing for a fair or average quality house consists of two 3-fixture baths 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.

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.

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 BTU.

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 - 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' x 1.5 = 12 x 12 x 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.

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.

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.

ALTERNATIVE METHODS

As it is impossible for this schedule to anticipate every possible property type which may enter our taxing jurisdiction between revaluations, in the event that a property type is encountered which is not addressed by our schedule we reserve the right to utilize alternative professionally accepted appraisal methods to perform an appraisal with the effective date of the last general reappraisal.

TERMS and DEFINITIONS

Apartment hotel - 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.
Apartment house - 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.
Attic - An unfinished or semi-finished portion of a building lying between the highest finished story and the roof and wholly within the roof framing.
Basement - a building story which is wholly or partly below the grade level.
Bay - (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.
Bay window - a window, or group of continuous windows, projecting from the main wall of a building.
Beam - 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.
Beam, spandrel - a wall beam supporting the wall, above, as well as the floor.
Building - any structure partially or wholly above ground which is designed to afford shelter to persons, animals, or goods. See also *construction.*
Building, fireproof - 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.
Building, loft - a building having three or more stories with few or no interior bearing walls and designed for storage, wholesaling, or light industrial purposes.
Building, single-purpose - a building designed for a specific purpose, which cannot be used for another purpose without substantial alterations; e.g., a theater or church.
Bungalow - a one-story dwelling unit which is somewhat more pretentious than a cottage.
Column - 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 *pier*.
Conduit - a tube, pipe, or small artificial tunnel used to enclose wires or pipes or to convey water or other fluids.
Construction, brick - a type of construction in which the exterior walls are bearing walls (q.v.) made of solid brick or brick and tile masonry.
Construction, brick veneer - a type of construction in which the exterior walls are one-layer brick curtain walls backed by a wood frame.
Construction, fireproof - *see fireproof building.*
Construction, mill - 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."
Construction, reinforced - a type of construction in which the principal structural members, such
Concrete - 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.
Construction, steel frame - 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.
Construction, wood frame - 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."
Coping a special capping at the top of a wall, serving principally as a watershed.
Cornice - a projecting element at the top of a wall, serving principally as a decoration or as part of the coping (q.v.).
Cottage - a one story to two story dwelling unit of small size and humble character.
Course - a uniform horizontal layer of brick, stone, terra cotta, shingles, or some other structural material extending continuously around a building or along a wall.
Court - 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.
Dormer - (1) a relatively small structure projecting from a sloping roof. (2) a window set upright in the face of such a structure.
Dwelling - any building or portion thereof designed or occupied in whole or in part as a place of residence.

Dwelling, attached - a multi-family dwelling in which the dwelling units are separated vertically by means of common or party walls. See *terrace.*
Dwelling, double - 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."
Dwelling, duplex - 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.
Dwelling, Multi-family - a building designed as a place of residence for more than two families or households; e.g., an apartment house or tenement.
Dwelling, row - 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 *terrace; dwelling, double.*
Dwelling unit - 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.
Eaves- the portion of a sloping roof which projects beyond the outside walls of a building.
Elevation - 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.
Façade - the face of a building.
Firewall - 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.
Flashing - small metal strips used to prevent leaking of roofs around chimneys, dormers, hips, and valleys.
Flat - (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 *dwelling, duplex.*
Footing a spreading base to a wall, column, or other supporting member, which serves to widen the ground area to which structural loads are transmitted.
Foundation - 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.
Gable - (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.
Girder - 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).
Header - (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 *stretcher.*
Hip - (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 *ridge; valley.*
Hotel - 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
Hotel, apartment - see *apartment hotel.*
Joist - 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.
Lintel - a beam over a wall opening, such as a door or windows, designed to carry the load of the wall over such opening.
Loft - a non-partitioned or relatively open upper story of a building, designed for storage, Wholesaling, or light manufacturing. See also *loft building.*
Louver (or louvre) - 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.
Marquee - 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.
Mezzanine - a low story formed by placing a floor between what would ordinarily be the floor and ceiling of a high story, *Note:* the mezzanine floor frequently has a smaller area than other floors and, if present at all, is usually between the first and second stories.
Millwork - 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.
Overhang - 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.

Overhead structure - similar to overhang above ground story, such as O.H. bridge or passage, O.H. walk, O.H. Addition.
Partition - see *wall, partition.*
Pier - (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.
Pilaster - 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.
Pile - a heavy timber, metallic, or masonry pillar forced into the earth to form a foundation member.
Pitch - the slope of any structural member, such as a roof or rafter, usually expressed as a simple fraction representing the rise per lateral foot.
Plan - 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.
Purlin - 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).
Rafter - 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.
Rafter, hip - 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.
Rafter, valley - 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.
Ramp - an inclined walk or passage connecting two different floor levels and used in lieu of steps.
Residence - see *dwelling.*
Ridge - a horizontal line along which the upper edges of two roof surfaces meet to form an external angle of more than 180 degrees. Compare *hip; valley.*
Rise - (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.
Roof - the top portion of a structure. Types of roofs include double pitch, flat, gable, gambrel, hip, lean-to, single pitch.
Roof, curb (or curbed) - a roof with a ridge at the center and a double slope on each if its two sides.
Roof, flat - a roof which is flat or sloped only enough to provide proper drainage.
Roof, gable -a double-sloped roof having a cross section similar in general to the shape of the inverted letter "V".

Roof, gambrel - a ridged roof with two slopes on each side, the lower having a steeper pitch.
Roof, hip (or hipped) - (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 *roof, pyramid.*
Roof, lean-to - (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 *roof, flat,*
Roof, mansard - 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.
Roof, monitor - 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.
Roof, pyramid - a hip roof having four sloping triangular sides, usually of equal pitch, meeting together at the peak.
Roof, ridged - a roof having one or more ridges (q.v.).
Roof, saw tooth - 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.
Roof, single pitch - any roof with a single slope, other than a lean-to roof.
Sash - the wooden or metal framework in which the glass of a door or window is set.
Sheathing - the covering, usually of rough lumber, placed immediately over studding or rafters.
Sill - (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.

Sleeper - a structural member laid horizontally on the ground or upon a masonry base as a support to a floor or other superstructures.
Specifications - a detailed description of the dimensions, materials, quantities, structural procedures, etc. applicable to a projected or completed piece of construction.
Story - that portion of a building enclosed by a floor, a ceiling, and the exterior walls.
Story, ground - the first story lying wholly above the ground level. Synonymous with "first story."
Story, half (or one-half) - (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.
Story, one - a building having no finished story above the ground story.
Stretcher - a brick or other piece of masonry which is laid lengthwise in a wall. contrast header.
Strut - any structural member, which holds apart two **or** more other members by counteracting a pressure, which tends to bring them together. Contrast tie.
Stud - 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)
Sub floor - the flooring laid directly on top of the floor joists, but beneath the finish floor.
Tenement - 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 *apartment house; flat; terrace.*
Terrace – (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 *dwelling, row; dwelling, double.*
Terra cotta - a hard-baked ceramic clay molded into decorative tiles, bricks, etc., and used particularly for facing and trim on buildings.
Tie - any structural member, which binds together two or more members by counteracting a stress which tends to draw them apart. Contrast *strut.*
Trim - (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.
Truss - 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 *girder.*
Valley - a sloping line along which two roof surfaces meets to form an external angle of less than 180 degrees. Compare *hip; ridge.*
Veneer - a thin ornamental or protective facing which does not add appreciably to the strength of the body to which it is attached.
Wainscot (or wainscoting) - (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.
Wall - a vertical structure serving to enclose, support, divide; such as one of the vertical enclosing sides of a building or room.
Wall, bearing - a wall designed primarily to withstand vertical pressure in addition to its own weight.
Wall, common - 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.
Wall, curtain - a non-bearing wall which is supported by columns, beams, or other structural members, and whose primary function is to enclose space.
Wall, fire - *see firewall*
Wall, partition - an interior bearing or non-bearing wall which separates portions of a story. Synonymous *with partition.*
Wall, party - 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.
Wall, retaining - a wall designed primarily to withstand lateral pressures of earth or other filling or backing deposited behind it after construction.
Window, bay - see *bay window.*
Window, dormer - see dormer.

Wing - 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

CAMA 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.

REAL ESTATE APPRAISAL TERMS

Accrued depreciation - *see depreciation.*
Actual age - the number of years elapsed since the original construction, as of the effective valuation date. Compare with *effective age.*
Aesthetic value - a value, intangible in nature, which is attributable to the pleasing appearance of a property.
Agricultural property - land and improvements devoted to or best adaptable for the production of crops, fruits, and timber, and the raising of livestock.
Air rights - the right to the use of a certain specified space within the boundaries of a parcel of land and above a specified elevation.
Alley influence - the enhancement to the value of a property rising out of the presence of an abutting alley; most generally applicable to commercial properties.
Amenities - in reference to property, the intangible benefits arising out of owner- ship; *amenity value* refers to the enhancement of value attributable to such amenities.
Appraisal - an estimate, usually in written form, of the value of a specifically described property as of a specified date; may be used synonymously with *valuation or appraised value.*
Appraisal schedules - any standardized schedules and tables used in conjunction with a revaluation program, such as replacement cost pricing schedules, depreciation tables, land depth tables, etc.
Appraised value - *see appraisal.*
Appraiser - one who estimates value. More specifically, one who possesses the expertise to execute or direct the execution of an appraisal.
Assessed value - *see assessment.*
Assessing - the act of valuing a property for the purpose of establishing a tax base.
Assessment -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 *assessed value, taxable value,* and *tax base.*
Base price - 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 appraisement.
Blighted area - a declining area characterized by marked structural deterioration and/or environmental deficiencies.
Building residual technique - 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.
Capitalization - a mathematical procedure for converting the net income which a property is capable of producing into an indication of its current value. See income *approach.*
Central business district - the center of a city - in which the primary commercial, governmental, and recreational activities are concentrated.
Component part-in-place method - the application of the unit-in-place method to unit groupings or construction components. See *unit-in-place method.*
Corner influence - the enhancement to the value of a property due to its corner location; most generally applicable to commercial properties.
Cost approach - 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.
Cost factor - 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.

Cubic content - the cubic volume of a building within the outer surface of the exterior walls and roof and the upper surface of the lowest floor.
Deed - a written instrument, which conveys an interest in real property. A *quitclaim deed* conveys the interest described therein without warranty of title. A *trust deed* conveys interest described therein to a trustee. A *warranty deed* conveys the interest described therein with the provisions that the freehold is guaranteed by the grantor, his heirs, or successors.
Depreciation - loss in value from all causes; may be further classified as *physical,* referring to the loss of value caused by physical deterioration; *functional,* 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.

- *accrued* depreciation refers to the actual depreciation existing in a particular property as of a specified date.
- *normal* depreciation refers to that amount of accrued depreciation one would normally expect to find in buildings of certain construction, design, quality, and age.

Depreciation allowance - a loss of value expressed in terms of a percentage of replacement or reproduction cost new.
Design factor - 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.
Deterioration - impairment of structural condition evidenced by the wear and tear caused by physical use and the action of the elements, also referred to as *physical depreciation.*
Economic depreciation - *See depreciation.*
Economic life - the life expectancy of a property during which it can be expected to be profitably utilized.
Economic obsolescence - obsolescence caused by factors extraneous to the property. Also referred to as *economic depreciation.*
Economic rent - the rent which a property can be expected to bring in the open market as opposed to *contract rent* or the rent the property is actually realizing at a given time.
Effective age - 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 *actual age.*
Effective gross income - the estimated gross income of a property less an appropriate allowance for vacancies and credit losses.
Effective valuation date - in reference to a revaluation program, the date as of which the value estimate is applicable.
Encroachment - the displacement of an existing use by another use.
Environmental deficiency - 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.
Equity - in reference to value, it is that value of the property remaining after deducting all liens and charges against it.
Excessive frontage - frontage, which because of the particular utility of the lot does not serve to add value to the lot.
Exempt property - see *tax exemption.*
Fee appraisal - see *mass appraisal.*
Field crew - the total professional staff assigned to a specific appraisal project, including listers, reviewers, staff appraisers, and clerical and administrative supporting personnel.
Functional depreciation - *see depreciation.*
Functional Obsolescence - obsolescence caused by factors inherent in the property itself. Also referred to as *functional depreciation.*
Functional utility - the composite effect of a property's usefulness and desirability upon its marketability.
Grade - the classification of an improvement based upon certain construction specifications, and quality of materials and workmanship.
Grade factor - a factor or multiplier applied to a base grade level for the purpose of interpolating between grades or establishing an intermediate grade.
Grantee - a person to whom property is transferred and property rights are granted by deed, trust instrument, or other similar documents. Compare with *grantor.*
Grantor - a person who transfers property or grants property rights by deed, trust instrument, or other similar documents. Compare with *grantee.*
Gross area - the total floor area of a building measured from the exterior of the walls.

Gross income - the scheduled annual income produced by the operation of a business or by the property itself.
Gross income Multiplier - a multiplier representing the relationship between the gross income of a property and its estimated value.
Gross sales - the total amount of invoiced sales before making any deductions for returns, allowances, etc.
Ground lease - a document entitling the lessee certain specified rights relating to the use of the land.
Ground rent - net rent from a ground lease; that portion of the total rent which is attributable to the land only.
Improved land - land developed for use by the erection of buildings and other improvements.
Income approach - 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.
Income property - a property primarily used to produce a monetary income.
Industrial park - a subdivision designed and developed to accommodate specific types of industry.
Industrial property - 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.
Influence factor - 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.
Institutional Property - 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.
Interest rate - the rate of return from an investment.
Land classification - the classification of land based upon its capabilities for use; and/or production.
Land contract - 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.
Land residual technique - 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).
Landscaping - 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.
Land use restrictions - legal restrictions regulating the use to which land may be put.
Leasehold - a property held under the terms of a lease.
Leasehold Improvements - additions, renovations, and similar improvements made to a leased property by the lessee.
Leasehold Value - the value of a leasehold, the difference between the contract rent and the currently established economic or market rent.
Legal description - a description of a parcel of land which serves to identify the parcel in a manner sanctioned by law.
Market data approach - 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.

Market value - The most probable price (in terms of money) which a property should bring in a competitive and open market under all conditions requisite to a fair sale, the buyer and seller each acting prudently and knowledgeably, and assuming the price is not affected by undue stimulus. Implicit in this definition is the consummation of a sale as of a specified date and the passing of title from seller to buyer under conditions whereby: The buyer and seller are typically motivated; Both parties are well informed or well advised, and acting in what they consider their best interests; A reasonable time is allowed for exposure in the open market; Payment is made in terms of cash in United States dollars or in terms of financial arrangements comparable thereto; The price represents the normal consideration for the property sold unaffected by special or creative financing or sales concessions granted by anyone associated with the sale.

Mass appraisal - 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 *fee appraisal* which is

generally used to refer to a rather extensive, detailed appraisal of a single property or singularly used properties for a specified purpose.
Mineral rights - the right to extract subterranean deposits such as oil, gas, coal, and minerals, as specified in the grant.
Minimum rental - that portion of the rent in a percentage lease which is fixed.
Model method - 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.
Modernization - the corrective action taken to update a property so that it may conform with current standards.
Neighborhood - a geographical area exhibiting a high degree of homogeneity in residential amenities, land use, economic and social trends, and housing characteristics.
Neighborhood trend - three stages in the life cycle of a neighborhood "the *improving stage* characterized by development and growth; the *static stage* characterized by a leveling off of values; and the *declining stage* characterized by infiltration and decay.
Net income - the income remaining from the effective gross income after deducting all operating expenses related to the cost of ownership.
Net lease - a lease wherein the lessee assumes to pay all applicable operating expenses related to the cost of ownership; also referred to as *net net,* or *net net net lease.*
Net sales - gross sales less returns and allowances.
Net sales area - the actual floor area used for merchandising, excluding storage rooms, utility and equipment rooms, etc.
Non-conforming use - 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.
Observed depreciation - 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.

Obsolescence - 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 *functional depreciation and economic depreciation.*
Operating expenses - 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.
Average income - rental received in addition to the minimum contract rental, based upon a specified percentage of a tenant's business receipts.
Overall rate - 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.
Over assessed - a condition wherein a property is assessed proportionately higher than comparable properties.
Percentage lease - a type of lease in which the rental is stipulated to be a percentage of the tenant's gross or net sales, whichever specified.
Personal property - property, which is not permanently affixed to and a part of the real estate, as specified by state statutes.
Physical depreciation - *see depreciation.*
Preferential assessment - 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.
Property class - 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 *classified property tax.*
Property inspection - a physical inspection of a property for the purpose of collecting and/or reviewing property data.
Property record card - 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.
Public utility property - properties devoted to the production of commodities or services for public consumption under the control of governmental agencies such as the Public Utility Commission.

Quantity survey method- 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.
Real estate - the physical land and appurtenances affixed thereto; often used synonymously with *real property.*
Real property - all the interests, benefits, and rights enjoyed by the ownership of the real estate.
Reassessment - the revaluation of all properties within a given jurisdiction for the purpose of establishing a new tax base.
Rent - the amount paid for the use of a capital good. See *economic rent.*
Replacement cost - 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 *reproduction cost.*
Reproduction cost - the current cost of reproducing a replica property. Compare with *replacement cost.*
Reserve for replacements - a reserve established to cover renewal and replacements of fixed assets.
Residential property - vacant or improved land devoted to or available for use primarily as a place to live.
Revaluation program - see *equalization program.*
Sales ratio study - 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.
Salvage value - the price one would be justified in paying for an item of property to be removed from the premises and used elsewhere.
Site development costs - all costs incurred in the preparation of a site for use.
Soil productivity - the capacity of a soil to produce crops.
Standard depth that lot depth selected as the norm against which other lots are to be compared; generally the most typical depth.
Sublease - see *lease;* the lessee in a prior lease simply becomes a lessor in a sublease.
Tax bill - 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.
Tax book - *see assessment roll.*
Tax district - a political subdivision over which a governmental unit has authority to levy a tax.
Tax duplicate - see *assessment roll.*
Tax exemption - 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.
Tax levy - in reference to property taxes, the total revenue, which is to be realized, by the tax.
Tax mapping - 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.
Tillable land - land suitable for growing annual crops.
Under assessed - a condition wherein a property is assessed proportionately lower than computable properties.
Uniformity - 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.
Unimproved land - vacant land; a parcel for which there is no improvement value.
Unit cost or price - the price or cost of one item of a quantity of similar items.
Unit-in-place method - 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.
Use density - the number of buildings in a particular use per unit of area, such as a density of so many apartment units per acre.
Use value - the actual value of a commodity to a specific owner, as opposed to its value in exchange or market value.
Vacancy - an un-rented unit of rental property.
Vacant land - unimproved land; a parcel for which there is no improvement value.
Valuation - *see appraisal.*
View - the scene as viewed from a property.
Water frontage - land abutting on a body of water.
Woodland - land which is fairly densely covered with trees.
Zoning regulations - governmental restrictions relating to the use of land.

CLASSIFICATION OF SELECTED ITEMS AS REAL OR PERSONAL

A General Guide

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.

Item	Real	Personal
Acoustical fire resistant drapes & curtains		XX
Asphalt plants - batch mix, etc., Moveable		XX
Air Conditioning - building air conditioning, including refrigeration equipment, for comfort of occupants, built-in	XX	
Air Conditioning - window units, package units, including, e.g., that used in data processing rooms and in manufacturing processing		XX
Airplanes		XX
ATM machines and shelters for the machines		XX
Auto exhaust systems - flexible tube type		XX
Auto exhaust systems - built-in floor or ceiling	XX	
Bar and bar equipment		XX
Boats and motors - all		XX
Bowling alley lanes		XX
Boiler - primarily for process		XX
Boiler - for service of building	XX	

Item	Real	Personal
Burglar alarms		XX
Car Wash - all equipment		XX
Concrete plant - electronic mixing, Conveyors, tanks, etc.		XX
Construction and grading equipment (non-licensed vehicles, etc.)		XX
Conveyor systems		XX
Coolers (walk-in) - prefab, portable		XX
Coolers (walk-in) - permanent - schedule of values should address these	XX	
Cold storage - built-in cold storage rooms	XX	
Cold storage - refrigeration equipment		XX
Cooling towers - primary use in manufacturing		XX
Cooling towers - primary use for building	XX	
Computers - all		XX
Cooking equipment (restaurant, etc.)		XX
Compressed air systems		XX
Control systems - electronic		XX
Chairs - all types		XX
Dairy processing plants - all process items		XX
Data processing equipment - all items		XX
Diagnostic center equipment (automotive)		XX

Item	Real	Personal
Dock levelers		XX
Drying systems (special heating in process system)		XX
Dumpsters		XX
Dust catchers, control systems, etc.		XX
Desks - all		XX
Electronic control systems (weighing, mixing, etc)		XX
Fire alarm systems		XX
Fans - freestanding		XX
Farm equipment - all		XX
Floors, computer room		XX
Foundations for machinery and equipment		XX
Furnaces - steel mill process, etc., foundry		XX
Furniture and fixtures		XX
Grain bins, not permanently attached to realty		XX
Greenhouses - if permanently affixed	XX	
Greenhouse benches, heating system, etc.		XX
Humidifiers, process		XX
Heating systems, process		XX
Hoppers - metal bin type		XX

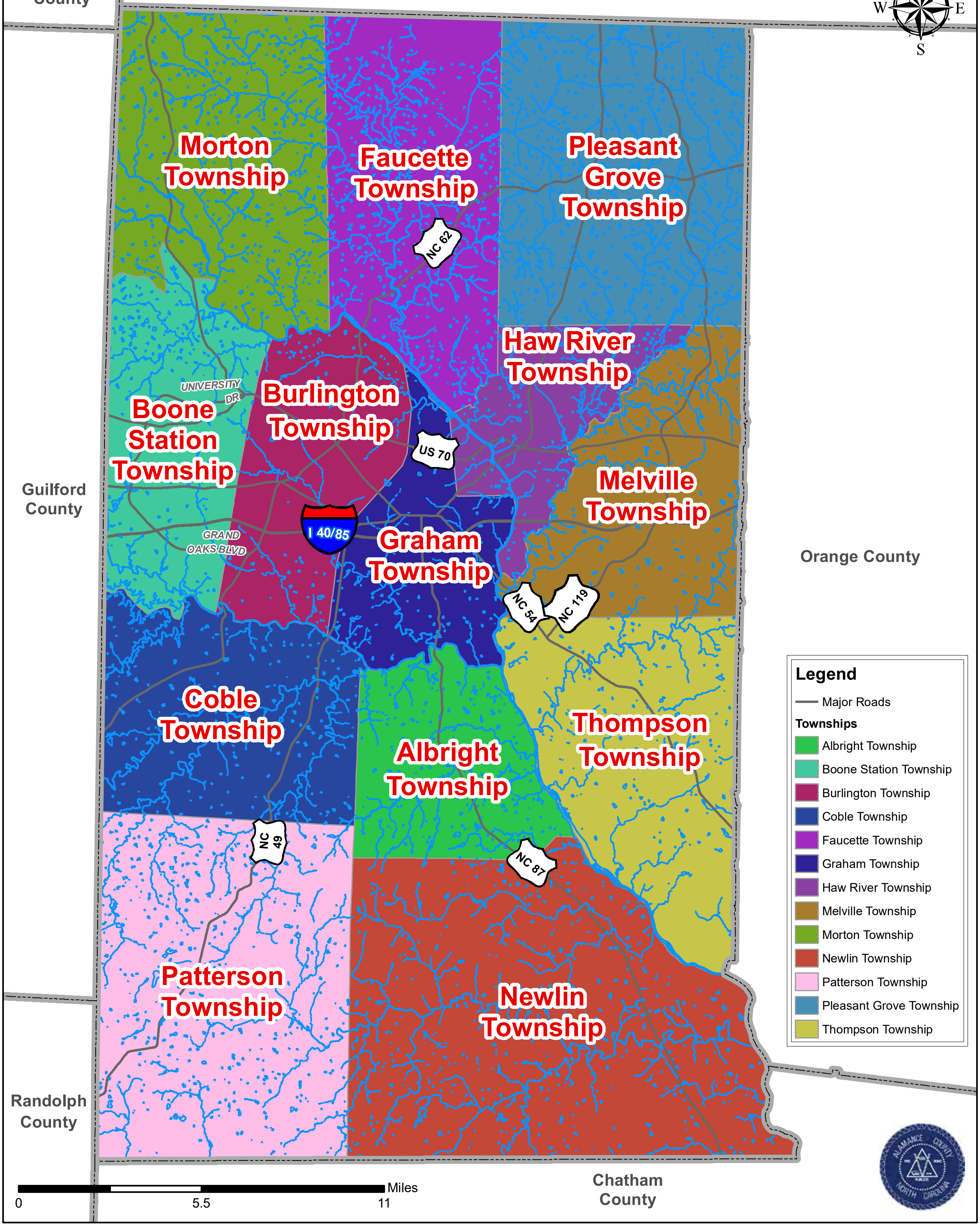
Item	Real	Personal
Hospital systems - oxygen, public address, emergency electric, closed T.V. call system, autoclave, etc.		XX
Inventories		XX
Incinerators - moveable, metal type		XX
Industrial piping, process		XX
Irrigation equipment		XX
Kilns - metal tunnel, moveable		XX
Kiln heating system		XX
Leased equipment - lessor or lessee possession		XX
Leasehold improvements		XX
Lighting - yard lighting		XX
Lifts - other than elevator		XX
Law Libraries		XX
Machinery and equipment		XX
Milk handling - milking, cooling, piping, storage		XX
Mineral rights	XX	
Mobile Home – does not meet definition of G.S. 105-273(13)		XX
Mobile Home – meets definition of G.S. 105-273(13)	XX	
Office equipment - all		XX
Ovens - food processing		XX

Item	Real	Personal
Office supplies		XX
Oil company equipment - pumps, supplies, etc.		XX
Power generator systems (auxiliary emergency, etc.)		XX
Portable buildings (greenhouse, construction, etc.)		XX
Package and labeling equipment		XX
Paint spray booths		XX
Piping systems - process piping		XX
Public address systems (intercom, music, etc.)		XX
Pneumatic tube systems		XX
Railroad sidings (other than railroad-owned)		XX
Refrigeration systems - compressors, etc.		XX
Rock crusher		XX
Scales		XX
Scale houses (unless portable)	XX	
Screens, movie-indoor		XX
Screens - drive-in outdoor theater	XX	
Signs (including billboards, etc.)		XX
Speakers- all types, unless addressed in real property schedule		XX
Spray booths (unless built-in)		XX
Seats - theater		XX
Sound projection equipment		XX

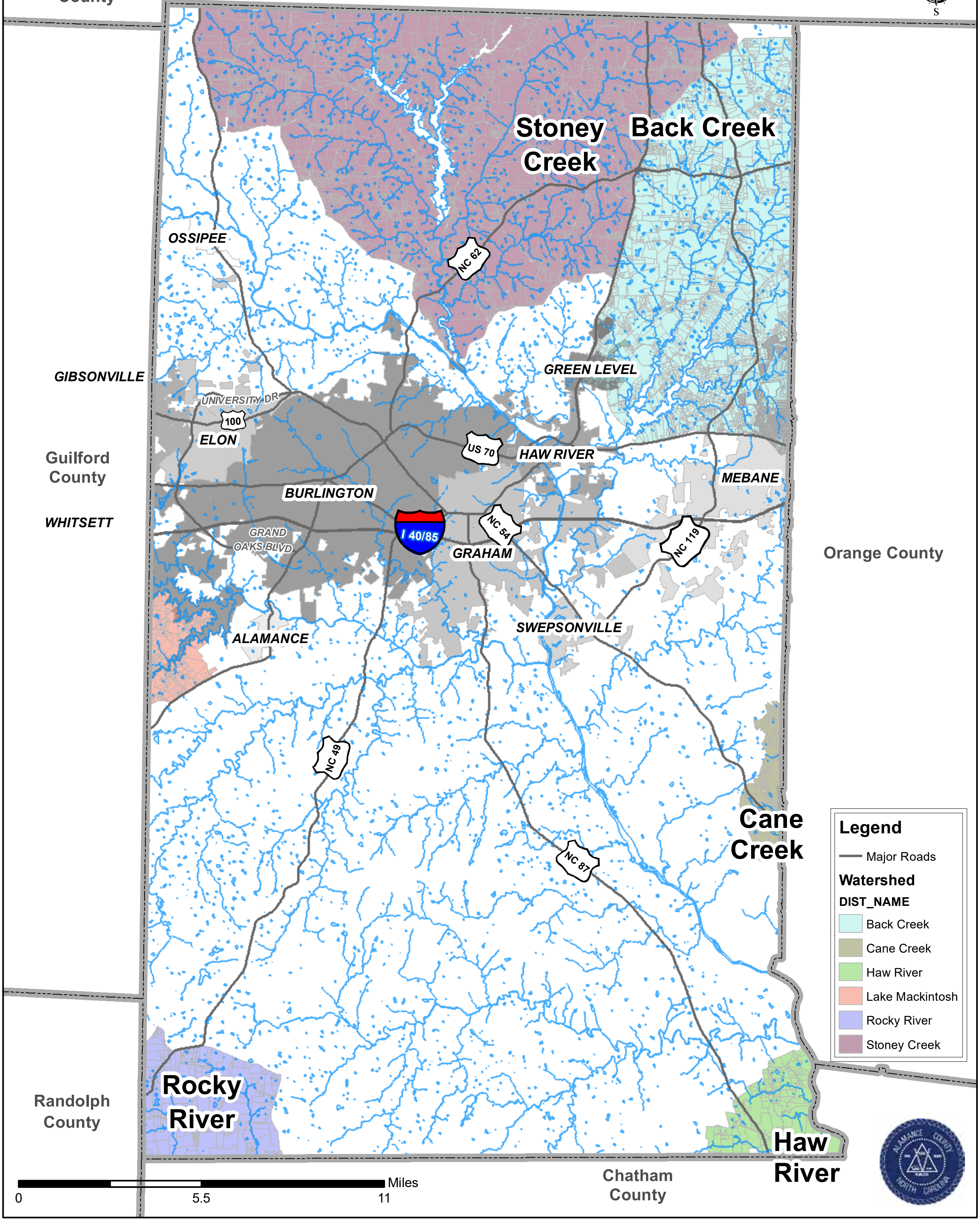
Item	Real	Personal
Sound systems		XX
Sprinkler system - fire protection	XX	
Switchboard (motel, etc., - when not owned by utility)		XX
Service station equipment - pumps, tanks, lifts		XX
Tanks - if permanently affixed structure, etc. (e.g., bulk plant)	XX	
Tanks - manufacturing, process, etc.		XX
Tanks - service station underground gasoline		XX
Tunnels - unless part of process system	XX	
Transformer banks		XX
Towers - TV, radio, CATV, cellular, two-way radio, etc.		XX
Towers - microwave and equipment and shelters for equipment	XX	
Telephone system - private		XX
Utility systems - (other than in state-assessed utilities, and other than central heating and cooling for buildings, etc. e.g., motel-owned telephone switchboard systems, private railroad sidings, private water systems, emergency power generating equipment, etc.)		XX
Utility systems - buildings for private systems	XX	
Vacuum system, process		XX
Ventilation systems - building improvement	XX	
Ventilation systems - manufacturing, process, etc.		XX

Item	Real	Personal
Vent fans - freestanding		XX
Water tanks, process equipment		XX
Water coolers - electric		XX
Wells - pumps, motors, equipment		XX
Wiring - power wiring for machinery and equipment		XX
Walls - partitions, portable		XX
Water lines - for process above or below ground		XX

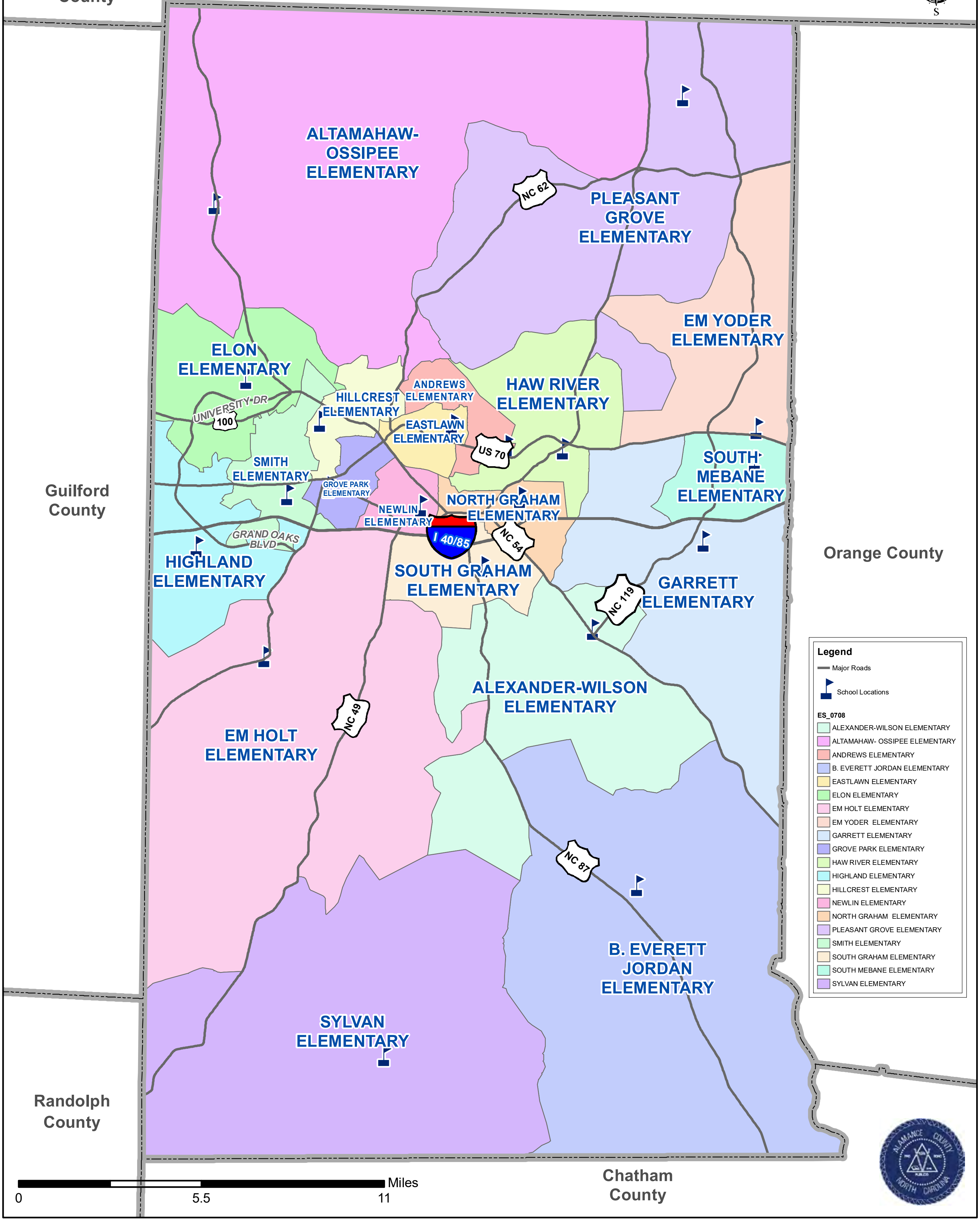
Alamance County Townships



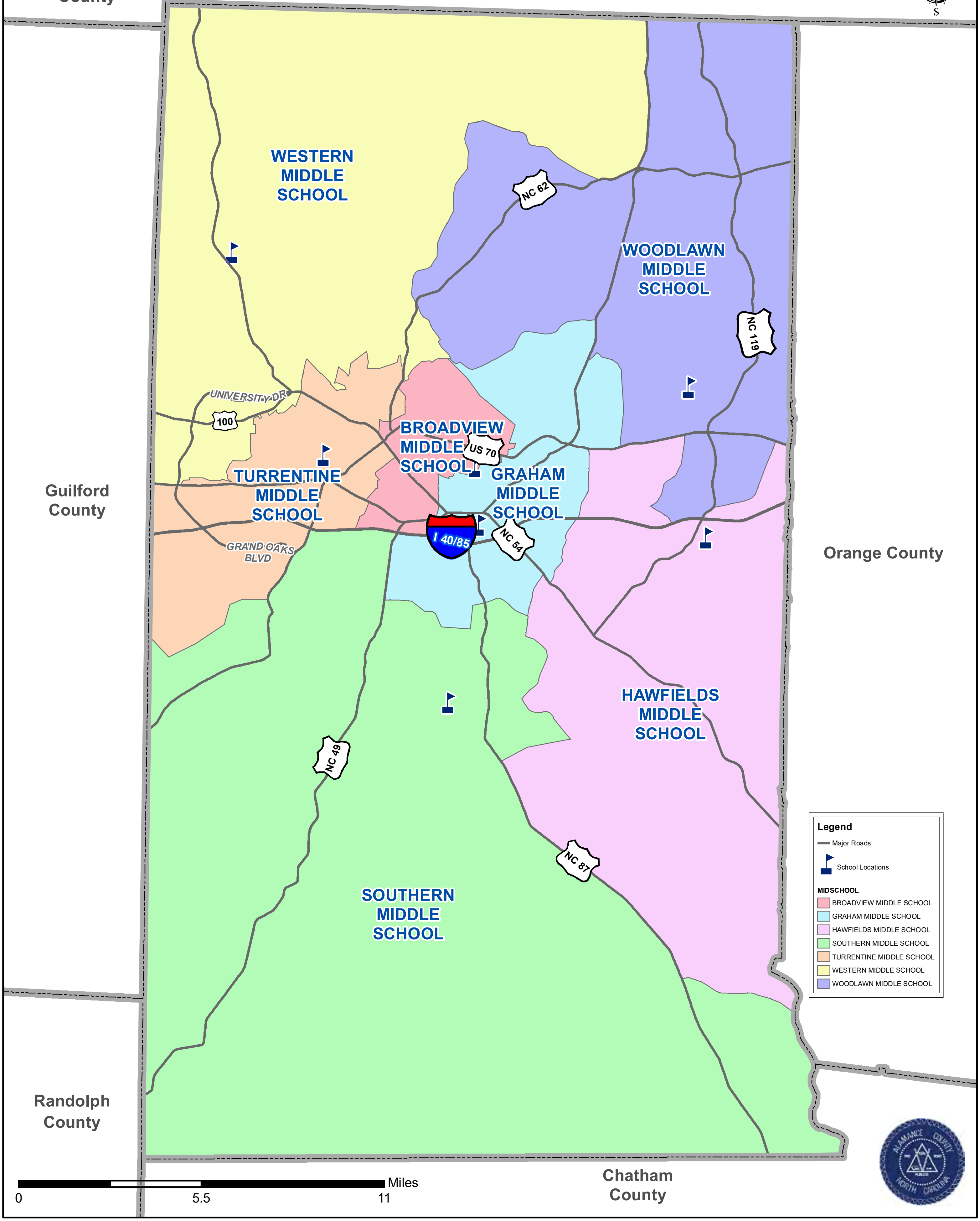
Alamance County Watersheds



Alamance County Elementary Schools



Alamance County Middle Schools



Alamance County High Schools