Cane Creek - A Planned Community

Edward D. Carter
Clemson University

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CANE CREEK - A planned community

Edward D. Carter

Spring 1981

A Terminal Project submitted to the faculty of the College of Architecture, Clemson University in partial fulfillment of the requirements for the degree of

Master of Architecture

Approved:

Committee Chairman

Committee Member

Committee Member

Committee Member

Head, Department of Architectural Studies

Dean, College of Architecture
This project has been undertaken with the intent of being a personal learning experience in a field slightly different from, but very much associated with architecture. That field is property development.

Property development involves many pre-design aspects of a project, such as site selection, planning, financing, feasibility, and market analyses. Decisions made in the development stages, typically by non-architects, ultimately affect the design program issued to the architect. The objective of this project is to show how the architect can successfully bridge the gap between architecture and development by being actively involved in decision making during the development stages, and consequently create his own program.

The analysis of this project will follow a systematic decision making process, outlining goals and objectives, methods by which these goals and objectives are met, and how the decision making process eventually leads to the design of some specific building. The decision making techniques used in the analysis will also be discussed.
I would like to dedicate this work to my parents, without whose continued moral and financial support, this moment would never have been possible.
Louie for being who she is

Corky Moss
Becky Williams
DeWane Marcey
Frank Wise
Appalachian Council of Governments for all their help

Professor Yuji Kishimoto
Professor Peter R. Lee
Professor Frederick G. Roth for their guidance

Special thanks to Professor Ralph E. Knowland for all the help and encouragement

The entire 6th year gang
The problem is essentially to plan and design a residential development, which will meet the needs of a specific market, and prove to be profitable to investors in the long run.
OUTLINE

1. Theories and concepts
   a. The community
   b. The housing unit

2. Problem analysis
   a. The site
   b. Decision making techniques
   c. Feasibility
   d. The need

3. The solution
   a. Graphic presentation
   b. Program
   c. Phasing
   d. Cash flow
one • theories & concepts
the community
Since the beginning of time, humans have characteristic­ally grouped themselves together in order to carry out the necessary functions of everyday life. Reasons for this "community" type living include, protection, consolidation of work force, and the need for human interaction.

Communities of today range in size and density, from agricultural communities, where houses may be miles apart, to inner-city communities, where five hundred families may be located in a single highrise apartment building. Between these two extremes there is an infinite number of individual community pattern possibilities.

The actual history of residential movement in America is a very colorful one. When settlers first came to America in the 1600s, they lived in colonies along the Atlantic coast. As increasing numbers of people came to America, pioneers began to spread westward. Land was plentiful and available for anyone to claim as their own. A man's home was his castle and he plopped it down in the middle of his 100 acres.¹ Land development proceeded in this way through the 1600-1700s.

In the nineteenth century Americans began to realize the potentials that city living had to offer. The newly
invented conveniences of living - electricity, telephones, etc. were offered only in the city areas and rural America wanted a taste of the excitement city living had to offer. In 1790, only one out of thirty Americans lived in towns and cities; by the end of the nineteenth century it was one in three.\(^2\)

The glamour of city living fastly deteriorated as the influx of vast numbers of people created slum areas and overcrowding. With the invention of the automobile in the early 1900s, Americans learned they could live in less crowded areas outside the cities and commute to their jobs inside the cities. Suburbia was born and the influx of people out of the cities and into suburban residential developments has been a growing trend ever since.\(^3\)

Three basic problems plague subdivision developments: (1) strict zoning and subdivision regulations that provide very little incentive for good community planning; (2) developers who are concerned mainly with meeting regulations and making quick profit rather than creating well planned communities, and (3) the subdivision development process itself, which leads to diversity instead of congruency.

Current zoning and subdivision regulations governing subdivision developments are too restrictive and leave developers very little incentive for creativity. Every community is different and this difference requires flexibility.
For the past sixty to seventy years, especially after WWII, subdivision development has dictated community patterns for the suburban dwellers.

The subdivision process is fairly straightforward. A piece of land is sectioned off, streets and utilities are inserted, and individual lots are sold to prospective home owners. The two tools controlling subdivision development are zoning and subdivision regulations.

This subdivision type development that has dictated community character for so many years, has unfortunately left the country with many poorly designed neighborhoods.

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Current zoning and subdivision regulations governing subdivision development are too restrictive and leave developers very little incentive for creativeness. Every community is different and this difference requires flexibility -
subdivision regulations lack flexibility.

The subdivision review process is no more than a check for comformance to regulations. Very little emphasis is given to community and individual needs. There is little discussion on planning and design considerations.

Developers are sometimes hesitant to design good communities because of the time and money involved in making appeals to get variations on the subdivision regulations. Many subdivision developers are simply content to plan every community meeting all regulations and stipulations and then selling the lots as quickly as possible.

The subdivision process itself presents another major obstacle for suburban community development. As one writer puts it, "A land speculator purchased land from a farmer, then sold it to a land subdivider who in turn sold single lots to individual purchasers who hired a home builder to construct a house." A typical subdivision designed by so many different architects, planners and engineers, lacks the coherence needed for proper community design.

The problems associated with subdivision community development include:

1. Less respect for quality residential design
2. Less respect for protection of natural amenities
3. Less relationship between planning and subdivision design
4. Less relationship between building and site
5. Less consideration for unique problems and situations encountered in individual communities
THE PLANNED UNIT DEVELOPMENT COMMUNITY

Consider for a moment a planned residential environment, designed as a unit, with the major emphasis shifted from meeting requirements to providing human comfort in an environment designed for pleasurable living.

Certain desirable qualities would probably emerge from this "ideal" living environment, such as:

1. Plenty of undeveloped space available for various types of impromptu and planned activities
2. Good community planning with consideration given to many aspects of community living
3. More design consideration toward the total man-made environment
4. A good relationship between the man-made and the natural environment.

A utopia community such as this is not entirely unrealistic. These desirable qualities of an ideal living environment can be produced through good community planning and design, and through a fairly new concept in community planning called planned unit development.

Planned unit development is a means of land regulation which promotes large scale, unified land development via midrange, realizable programs in pursuit of physically curable, social and economic deficiencies in peripheral land and cityscapes. Where appropriate this development control advocates: (1) A mixture of both land uses and dwelling
types, one or more of the nonresidential land uses being regional in nature, (2) The clustering of residential land uses providing public and common open space, the latter to be maintained for and by the residents of the development, (3) Increased administrative discretion to a local professional planning staff while setting aside preset land use regulations and rigid plat approval processes, and finally, (4) The enhancement of the bargaining process between developer and municipality thereby strengthening the municipality's site plan review function and control over tempo and sequence of development in return for potentially increased profits available to the developer as a result of land efficiency, the employment of multiple land uses, and increased residential densities. 5

The lack of flexibility is the major hindrance to subdivision development, whereas flexibility is the major asset to planned unit development. Streets can be routed to protect or express the site amenities and dimensions may be altered to meet site or design criteria. The departure from subdivision regulations such as setbacks, yard dimensions, and minimum lot sizes, becomes a major planning device. Lot sizes and shapes are variable and can relate to the contour of the land, instead of the arrangement of the street system, eliminating typical "cookie cutter" 6 lot designs, common to most subdivisions. Homes are typically
placed on smaller lots, which are designed for maximum privacy. Building placement is flexible so any desirable orientation is achievable. A building can be planned to face a particular site amenity, or perhaps face south for sun exposure in a solar oriented development.

Mixed density allows more freedom to provide a wider range of living situations, anywhere from high density urban to low density rural. The needs of individual families with their own distinguished tastes and preferences can be met. One family might prefer to own their own house and maintain their own yard, while another might prefer the higher densities of townhouse living without yard maintenance chores.

Mixed use also adds planning versatility to PUDs. Supportive facilities, such as stores, restaurants, gas stations, may be located within the development, making them more accessible to the residents. In some cases, PUDs may contain business functions, bringing businesses closer to residents of the community. All these ancillary functions reduce the driving time of residents, saving them money on fuel and giving them more free time.

The desirability of wide open undeveloped space in communities is one quality which must be handled with utmost care. Land is a finite resource and cannot be supplied freely on demand. Subdivisions typically supply little open space for use by residents, other than their own back yards.
Through mixed density, the PUD concept attempts to tackle the problem of open area. Mixed density allows for open area "tradeoffs," that is, open area may be created in one part of the development, by increasing density in another. The PUDs therefore can compete economically with subdivisions, and at the same time provide a feature uncommon to most subdivisions - commonly owned open space. The open space areas may take the form of, general purpose areas, green belts, hiking trails, walking and bike paths, and picnic areas. Common area may also take the form of recreation facilities. A large PUD might contain, tennis courts, horse stables, swimming pools, play fields, a golf course, and a club house.

"Unit" is the key word in planned unit development. When a community is planned as a unit, problems are confronted and solved simultaneously. Architectural themes can be implemented more easily through an entire development that is designed as a unit. Building character can relate to site; building designs can relate to each other; and building interiors can relate to exteriors. A common style for the actual building designs can be employed throughout the community, with variations for specific areas and situations.

PUDs tend to have a more innovative design program than typical subdivisions. Developers are willing to put more money into PUDs, to provide an improved environment, and ultimately larger profits. This extremely flexible PUD
program grants the planner or architect a much broader base for creativeness, giving him a more self-fulfilling role in the development-design process. He therefore designs a better development.

Every aspect which makes PUD a desirable community planning tool can also be incorrectly used to create inferior developments. Some developers see density and use flexibility as a means of increasing density on a site without actually allowing more open space. In some poorly written PUD ordinances, paved areas, such as parking lots, and drives, are considered open space and are calculated as such.

The flexibility of PUDs has been a continuous controversy since they came into being about twenty years ago. Quality planning and design professionals are essential for a PUD to be successful.
HOMEOWNERS ASSOCIATIONS

Any well organized community needs some form of binding organization among homeowners. This organization should take care of any common community activity or interest and provide any service needed by the community. An organization of this type, depending on its application, is typically called a condominium or homeowners association.

Homeowners associations are a necessity in any community where there is commonly owned land, such as in a condominium or planned unit development. The homeowners association concept can, however, be employed in any residential development situation. The responsibilities or services of an association vary from one community to another. Irvine, California, an extremely well organized community outlines these as responsibilities of a homeowners association:

1. maintenance of common area
2. architectural /design control
3. establishing, publicising, enforcing community rules governing use of common areas
4. planning and carrying out cultural, educational, recreational, and social activities
5. involving youth in planning for and participating in their own activities program
6. preparing and distributing newsletters
7. taking any other actions deemed in the best interest of the community

Operation and maintenance of commonly owned area is the single most important role of the homeowners association.
The versatility in control over activities and project development can be seen in the list of committees Irving suggests be set up by each homeowners association:

- Facilities and Greenbelt
- Legal and Finance
- Recreation and Social
- Community affairs
- Youth activities
- Architectural controls
- Membership controls
- Steering and Administrative

The success of an association is only as good as its initial foundation. Most homeowners are uneducated on the responsibilities of a homeowners association and in the initial stages of a development, the developer must take special care in organizing the structural framework of an association. In Irvine, at the formative stages of a development when only a few units have been occupied, a developer board is activated, typically composed of three Irvine members and two developer members. They develop the first board and the organizational framework of the homeowners association.

The most important responsibilities of the first board are:

- Adoption of bylaws
- Adoption of Articles of Incorporation
- Election of officers
- Selection of a management company to maintain commonly owned facilities

The power of the board is slowly transferred to residents
as the development fills up.

When properly executed, a homeowners association will be of great benefit to a community. The activities of an association are limited only by the imagination of its members.
A housing unit is defined as a form or group of spaces intended for occupancy as a separate living quarters for an individual or family who does not eat or live with any other persons within the structure.\textsuperscript{11} This housing unit may take many different forms for different people; from tents and adobe homes in a desert environment, to highrise luxury apartments overlooking a large city.

The housing units break down into two basic categories: detached, which is free standing and has open space on all sides; or attached, which is one of a group of units joined by one or more vertical walls.\textsuperscript{12} Detached units are commonly called single-family, and attached units are called multi-family.

A fairly new concept in single-family housing is the zero-lot-line or patio house. This new concept attempts to capitalize on the positive aspects of single-family living, yet eliminate the problems of cost and community planning. In the zero-lot-line concept, the lot size is reduced, and exclusive attention is directed to individual privacy and community living. The individual retains his area for private activity, yet enjoys the benefits of a close-knit, well-designed community.
The most common type of housing in America today is the single-family. The single-family scheme presents many advantages over multi-family, such as, plenty of natural sunlight, better cross ventilation, increased privacy, and a private yard for gardens, lawns and play areas.

Several strong disadvantages also go along with single-family housing, such as increased cost and inferior community planning. Increased cost of land, utilities, roads, and per square foot cost of housing, put single family living out of reach for many people. Comprehensive community planning also becomes more difficult because of the fragmentation of the community and the loss of control over land development by the developer.

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In zero-lot-line planning, the housing unit is located directly on one or two property lines, eliminating the side and sometimes front yard. The yard space, instead of being divided, is thus combined into one garden area. This type of zero-lot-line house is commonly referred to as a patio house. Because of the reduced lot size, patio homes are often used in planned unit developments.
MULTI-FAMILY

There are two major variations upon the multi-family scheme: the two-family attached house and the row house.\textsuperscript{14}

The two-family attached house, more commonly called a duplex, is arranged with the separate units joined at a common property line.\textsuperscript{15} This situation, similar to the zero-lot-line house, allows for maximum use of the site. Some design flexibility is given up, however, since the two units must be directly adjacent to each other.

The row-house is a string of three or more units and presents maximum density with maximum design flexibility. Natural light and ventilation can be utilized in the most effective way. Units can be shifted in and out to form private courts and patios. The disadvantages of this housing situation include, loss of some privacy, and loss of extensive private areas for personal use. Good planning and design is therefore necessary to provide maximum privacy for each individual living unit.

Townhouses and condominiums are two variations of the row house scheme. There is no formal definition for townhouse. Everyone has their own idea of what a townhouse is. Townhouse is generally defined as, an attached house, usually with two or three floors, with the living area on the main
Condominium has a more formal definition. A general misconception is that condominium refers to a type of housing unit. Condominium actually refers to the legal form of ownership, where a common area is owned and controlled by two or more owners. The owner of a condominium housing unit would own his own unit, plus a share of all the common area. Typically condominium units are very similar to townhouse units in appearance.
two • problem analysis
THE PROBLEM

SITUATION

- Assumed Professional Position: Architect / Developer
- Land Available for Development
- Purchase Price: $260,000

SITE

- 82 acre site
- 29 acre lake
- Woodsy atmosphere
- Moderately sloped terrain

PROBLEM STATEMENT

To plan and design a residential development, which will meet the needs of a specific market, and prove to be profitable to investors in the long run.
SITE ANALYSIS

EXISTING SITE

LOCATION

REGION:
- Approximately 100 miles to Atlanta
- Approximately 60 miles to Asheville
- Approximately 40 miles to Greenville

COUNTY:
Wolholla, Westminster, and Seneca form a triangle of major industry, commerce, and development in Oconee County.

TOWN:
The site lies approximately 15 miles from downtown Wolholla.
WEST SIDE - water and sewer lines to be provided free by city.

EAST SIDE - water and sewer lines to be provided free by city.

SLOPE ORIENTATIONS:
- South
- East
- West
- North

SLOPES:
- 0 - 10%
- 10 - 20%
- 20 - 30%
- 30% - up
GENERAL DESCRIPTION

The site for the proposed development is in a natural setting and reflects a woodsy outdoor atmosphere. A spacious lake divides the site into three major areas; the eastern side, the western side, and the flood plain. The entire site, including the lake, encompasses approximately 82 acres.

The eastern side is heavily wooded with predominately oak, maple, and hickory trees. The western side is sparcely wooded but contains grassy fields and two existing house structures. The flood plain area is located south of the dam and a smaller lake is located in this area. The southern property line of the site is measured by a meandering stream called Cane Creek. A historic bridge site is located on the site along the lower portion of Cane Creek.

Several roads are located throughout the site. A paved road stretches from the existing access to the dam; there it turns into a rough-cut unpaved road that follows the lake around the eastern bank.
LOCATION

REGION: The natural mountain atmosphere, clean air, and mild climate of the upstate area make it one of the most desirable spots in the state to live. A look at the South Carolina upstate area is incomplete without considering adjacent states of North Carolina and Georgia. Three major cities encompass this sector: Greenville, South Carolina, Asheville, North Carolina, and Atlanta, Georgia; all within easy driving distance of Walhalla, in Oconee County.

Oconee County therefore becomes a very versatile spot to live. A resident can easily go on an afternoon drive in the mountains, take in a broadway play in Atlanta, or catch an airplane in Greenville for a weekend trip.
COUNTY: Oconee County occupies the most northwestern spot of South Carolina. Oconee County borders North Carolina to the north, Georgia to the west, Anderson County to the south, and Pickens County to the east.

Oconee County lies in three physiographic areas - the Piedmont, the Foothills, and the Mountains. The Piedmont area accounts for 42% of the county, the Foothills - 35%, and the Mountains - 23%. Walhalla is located in the Foothills area.17

Walhalla, Westminster, and Seneca contain most of the industrial and commercial activity in the county. These three cities make up what is known as the "triangle" of manufacturing and commerce in the county.18 Walhalla, the smallest of the three, is the county seat and contains all county functions.
TOWN: The area commonly known as "Walhalla" actually includes the town of Walhalla and a small adjacent town on the east side called West Union. The main commercial "strip" of downtown Walhalla and West Union is located on S.C. 28, which connects Seneca and the southeastern part of the county with the mountain region. Most of the commercial, county, and business activity occurs along this "strip," with some minimal activity one block away on either side. S.C. 183 bisects S.C. 28 in downtown Walhalla and connects Westminster with Pickens County. Scenic Highway 11, a major traffic highway, runs through West Union, and carries traffic south through Westminster to Interstate 85, and north along the northern border of the state.

The site for the development is located north of Walhalla with present access off S.C. 183. A second access is possible over to Torrington Street, which indirectly connects S.C. 183 with S.C. 28. The site is presently inside the city limits.
COMMUNITY RELATIONSHIP

The site is in the midst of recent residential development in Walhalla, and lies within the region of proposed future development for the area. Downtown Walhalla, the main retail area for the community, lies within 5 minutes driving distance of the site.

Walhalla currently has two elementary schools - Pine Street Elementary and Walhalla Elementary, one middle school - Walhalla Junior High, and one high school - Walhalla High, the middle and high schools being located adjacent to S.C. 183, near the site.

Fire protection for Walhalla and the immediate vicinity is provided by the Walhalla Fire Department located on main street in downtown Walhalla.
EXISTING STRUCTURES

Two existing house structures exist on the western side of the site, one on the lake and one inland. The lake house encompasses approximately 3000 sq.ft., including an open porch on two sides and some rooms on a lower level; and the other house contains a total area of approximately 2500 sq.ft. Both buildings are currently in a state of disrepair, but both demolition and renovation of the buildings are possible alternatives. The lake house especially, could be turned into an attractive building, which could act as a club house or temporary sales office. Several dilapidated shacks are also located throughout the site, all of which could be removed at a minimal cost to the developer.
A unique agreement for utility installment runs with the title of this parcel of land. The town of Walhalla has agreed to provide water and sewer, without cost to the developer, on the east side of the lake upon development of the land. The official deed to right of way states:

"... All that certain piece, parcel or lot of land situate, lying and being in the State of South Carolina, County of Oconee, Town of Walhalla, joining Boozer, Neville, Torrington et al known as the Thompson Farm: 1. The permanent right of way shall not exceed 10 feet in width. 2. Ground to be restored to original condition. 3. Manhole covers at or below ground level. 4. Right reserved to build over sewer line. 5. On plat of Snead Schimacher, Aug. 2, '65, Town agrees at their expense, grading, from points A to E. 6. There shall be no charge for any sewer taps on the west side of and below the lake. 7. The town agrees to install both water and sewer lines when development is commenced, on east side of lake. 8. All timber removed shall be cut in merchantable lengths and delivered out to suitable place for owner. 9. Plat of Snead Schimacher above referred to, shall be attached to and become a part of this deed. 10. The sewer line on east side of lake shall adhere to plat above referred to..."}

An existing sewer line stretches across the western part of the site and runs along Cane Creek at the southern part. Existing water mains run along the eastern property line, currently supplying water to Torrington Industries.
SITE DATA

SITE AREAS: 22

<table>
<thead>
<tr>
<th>Description</th>
<th>Size</th>
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<tbody>
<tr>
<td>Total plat area</td>
<td>82.0177 acres</td>
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<tr>
<td>Total land area</td>
<td>53.2074</td>
</tr>
<tr>
<td>Total lake area</td>
<td>28.5417</td>
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<tr>
<td>Upper lake area (on site)</td>
<td>26.3605</td>
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<tr>
<td>Lower lake area</td>
<td>2.1812</td>
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<tr>
<td>Total stream area</td>
<td>0.2686</td>
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<tr>
<td>Total land area above flood plain</td>
<td>44.4872</td>
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<tr>
<td>Buildable area east side</td>
<td>35.8887</td>
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<tr>
<td>Buildable area west side</td>
<td>8.5985</td>
</tr>
<tr>
<td>Total area in flood plain (including lower lake and stream)</td>
<td>11.1700</td>
</tr>
</tbody>
</table>
decision making techniques
DECISION MAKING TECHNIQUES

DECISION MAKING TOOLS

I. Intuitive / Design
  1. Intuitive / Design
  2. Cash Flow
  3. Case Studies
  4. Land Value Method
  5. Market Analysis

II. Cash Flow

MANUAL METHOD

- Case Studies
- Cash Flow
- Market Analysis

COMPUTER METHOD

- Case Studies
- Market Analysis
- Intuitive / Design

OVERALL GOAL

- Profit

DESIGN A DESIRABLE LIVING ENVIRONMENT

I. INTUITIVE / DESIGN

- Design
- General Knowledge
- Undocumented Research

2. CASH FLOW

SCHEME A

- Revenue
- Expenses
- Profit

Most Profitable

TENTATIVE SOLUTION

SCHEME B

- Revenue
- Expenses
- Profit

TENTATIVE SOLUTION
## CASE STUDIES - KEOWEE KEY

**Location:** Off S.C. 183, 10 miles from Welaka

**Concept:** Integrate houses with environment Separation of housing by greenbelts

**Facilities:** Clubhouse, Marina, Swimming Pool, Golf Course, Beach Area, Saunas, Tennis Courts, and Parks

**Market Capture:**
- Age: 45-65 yrs (45-55 will soon retire and want to build)
- Salary: $50,000 up
- 60 - 70% retired

**Current Status:** 80% sold

**Economic Evaluation:**

<table>
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<tr>
<th>Category</th>
<th>Jan. 98</th>
<th>Mar. 98</th>
<th>Dec. 98</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interiors (average 1/2 acre)</td>
<td>$6,250</td>
<td>$5,750</td>
<td>$5,250</td>
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<tr>
<td>Golf</td>
<td>$22,000</td>
<td>$21,000</td>
<td>$20,000</td>
</tr>
<tr>
<td>Water</td>
<td>$25,000</td>
<td>$30,000</td>
<td>$35,000</td>
</tr>
<tr>
<td>Lots</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Condominiums (med-high)</td>
<td>$62,500</td>
<td>$60,750</td>
<td>$59,000</td>
</tr>
<tr>
<td>1200 sq ft</td>
<td>$54,000</td>
<td>$52,750</td>
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<td>Townhouses (med-high)</td>
<td>$96,000</td>
<td>$94,000</td>
<td>$92,000</td>
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<td>1450 sq ft</td>
<td>$76,000</td>
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<td>Single Family Homes (med)</td>
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<td>$82,000</td>
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<td>2000 sq ft</td>
<td>$90,000</td>
<td>$88,000</td>
<td>$86,000</td>
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## PEBBLE CREEK

**Location:** Outskirts of Greenville, South Carolina

**Facilities:** Clubhouse, Swimming Pool, Golf Course, Tennis Courts, and Green Spaces

**Current Status:** Approx 50% sold

**Economic Evaluation:**

<table>
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<th>Jan. 98</th>
<th>Mar. 98</th>
<th>Dec. 98</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interiors (average 1/2 acre)</td>
<td>$6,000</td>
<td>$7,323</td>
<td>$8,405</td>
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<tr>
<td>Lots (1/2 - 1/4 acre)</td>
<td>$22,000</td>
<td>$22,800</td>
<td>$24,000</td>
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<tr>
<td>Cottages (med-high)</td>
<td>$65,500</td>
<td>$71,049</td>
<td>$73,670</td>
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<td>1369 sq ft</td>
<td>$58,000</td>
<td>$63,800</td>
<td>$66,000</td>
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<tr>
<td>1320 sq ft</td>
<td>$61,000</td>
<td>$66,710</td>
<td>$68,500</td>
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<tr>
<td>1628 sq ft</td>
<td>$69,950</td>
<td>$75,876</td>
<td>$78,000</td>
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## CASE STUDIES - for construction costs

### Multi - Family

<table>
<thead>
<tr>
<th>Location</th>
<th>Project Date</th>
<th>Constr. Quality</th>
<th>Cost / sq ft</th>
<th>Multiplier</th>
<th>Constr. Cost</th>
<th>Dec. 98</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arcadia, Calif</td>
<td>6/73</td>
<td>Low</td>
<td>$12,522</td>
<td>1.74</td>
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<td>Napa, Calif</td>
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<td>High</td>
<td>$18,603</td>
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<td>Ventura, Calif</td>
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<td>$16,413</td>
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### Single Family

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<tr>
<th>Location</th>
<th>Project Date</th>
<th>Constr. Quality</th>
<th>Cost / sq ft</th>
<th>Multiplier</th>
<th>Constr. Cost</th>
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<td>Palos Verdes, Calif</td>
<td>3/73</td>
<td>Medium</td>
<td>$23,900</td>
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5. MARKET ANALYSIS

- Market Area
- Socio-Economic Status
- ANTICIPATED MARKET
- Planning and Design Implications
- Case Studies of Similar Project Markets
4. LAND VALUE METHOD

PROXIMITY TO LAKE - 380

TREE COVER - 95

SLOPE & DRAINAGE - 60

- 0 - 10% slope
- 10-20%
- 20-30%
- 30-40%, and drainage areas
LAND VALUE INFLUENCES

SITE INFLUENCES

<table>
<thead>
<tr>
<th>Influence</th>
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<tr>
<td>Proximity to lake</td>
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<tr>
<td>Tree cover</td>
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<td>Slope and drainage conditions</td>
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<td>Views</td>
<td>1.00</td>
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<td>Orientation</td>
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DESIGNER INFLUENCES

<table>
<thead>
<tr>
<th>Influence</th>
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</thead>
<tbody>
<tr>
<td>Accessibility of lake</td>
<td>2.25</td>
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<tr>
<td>Privacy</td>
<td>1.60</td>
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</tbody>
</table>

HOW TO USE LAND VALUE METHOD

1. ANALYSIS OF PLANNING FOR ENTIRE DEVELOPMENT

   - BASE CONTOUR MAP
   - ACCESSIBILITY OF LAKE CONTOUR MAP
   - PRIVACY CONTOUR MAP
   - FINAL CONTOUR MAP OF LAND VALUES

   DETERMINE:
   - Total point-acres = (each average LV) x (#acres)
   - Number of developable acres
   - Program for development

   CALCULATE:
   - Revenue/point-acre/unit x (#units) = Revenue/point-acre
   - x (#point-acres) = Total Revenue

   TOTAL EXPENSES
   - TOTAL PROFIT

2. ANALYSIS OF INDIVIDUAL AREAS

   - average on lake LV
     - on lake unit market price
     - on lake land market price
   - average off lake LV
     - off lake unit market price
     - off lake land market price

   - \[ \text{Sales Price} = \frac{L \cdot L + (\text{average on lake LV} \cdot LV) + M + 1 \cdot (\text{average off lake LV})}{\text{unit off lake market price}} \]

   \( L \) = average on lake LV
   \( M \) = average off lake LV

   CLEMSON UNIVERSITY LIBRARY
The process of property development essentially involves a decision making process that ultimately leads to a master plan and conceptual design solution.

Many methods can be employed in this decision making process, some more reliable than others, and the success of a project may hinge on the quality of decision making during development stages. Decision making techniques should be outlined and evaluated at the beginning of a project so that the process may follow a simple path throughout the project planning stages.

No decision made by one technique is absolute. It must also be evaluated with respect to the other techniques. All decisions must then be evaluated with respect to each other and a conceptual master plan can be formulated.
DECISION MAKING TECHNIQUES

INTUITIVE/DESIGN: includes all decisions made through common knowledge and educated experience. These decisions may or may not have concrete reasoning behind them.

Intuitive decisions are necessary in property development. They are usually the fastest and easiest to make. Experience is usually the key to successful intuitive decision making. Experienced developers who have successfully weathered similar problems in past projects, can usually make correct intuitive decisions.

It is incorrect to think that all decisions have to be intuitive. Many developers fall into the trap of making unfounded intuitive decisions that they later regret.

Design is a form of intuitive decision making that is generally accomplished by experienced professionals in that field.

CASH FLOW ANALYSIS: is one of the best decision making techniques for analysing development alternatives. Since profit is the reason behind property development, the analysis of revenue verses expenses is a most important one.
CASE STUDIES: provide much insight into concrete market and design data that would otherwise be intuitive. Information on building costs, development costs, and sales prices are easily obtainable from most development projects. Market information on family income and social characteristics can also be very helpful in planning a development.

LAND VALUE METHOD: is a technique I have personally developed to more accurately base decisions on development schemes, using quantatative data based on intuitive decisions. This method can most easily be used along with the cash flow analysis to accurately predict revenue of individual schemes which can then be compared to expenses. This method can also be used on an individual area basis to predict sales prices of different lots.

There are always certain factors that influence property value in any situation. Each factor has some value relative to the others. When a quantatative value can be put on these factors, the value of land at any given location on a site, or the value of an entire site, can be determined. This method can be used to investigate existing land values on a site, or to analyse the effect different schemes have on the total land value of a site.
MARKET ANALYSIS: is very important in any development project. Developments must be designed to meet the needs of a specific market in order to be successful. Case studies and published information are very helpful in determining what market exists in a specific area.
## Feasibility

### Financing

- **Limited Partner:** $25,000
- **Limited Partner:** $25,000
- **Limited Partner:** $25,000

### Planned Unit Development Concept

- Combined Single Family and Multi-Family
- Density Tradeoffs

### Cash Flow Studies

<table>
<thead>
<tr>
<th>Program</th>
<th>Scheme 1</th>
<th>Scheme 2</th>
<th>Scheme 3</th>
<th>Scheme 4</th>
<th>Scheme 5</th>
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<tr>
<td>Lots</td>
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<td>20 lots</td>
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<td>6 lots</td>
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<td>S/F units</td>
<td>0/100% on lake</td>
<td>100% on lake</td>
<td>50% on lake</td>
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<td>75% on lake</td>
<td>75% on lake</td>
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<td>Estimated sales period/project length</td>
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<td>7 yrs.</td>
<td>8 yrs.</td>
<td>9 yrs.</td>
<td>5 yrs.</td>
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<td>S/F units</td>
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<td>$3,287,952</td>
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<td>Expenses</td>
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<td>Arch./Dev fee &amp; 4% of $44,667 equity</td>
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<td>Profit</td>
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<td>Equity</td>
<td>$466,667</td>
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<td>$550,863</td>
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<td>Return on Investment/YR</td>
<td>24.8%</td>
<td>36.6%</td>
<td>22.6%</td>
<td>29.8%</td>
<td>26.2%</td>
<td>20.6%</td>
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### Planned Unit Development Schedule

### Development Costs

- **Single Family (1200 sq ft):**
  - Construction Cost: $40,000
  - Construction finance cost: $4,000
  - Total Cost: $44,000

- **Multi-Family (1500 sq ft):**
  - Construction Cost: $45,000
  - Construction finance cost: $5,000
  - Total Cost: $50,000

### Notes:

- 1. Calculated at 85 units on 100 lots, 25/5 acres on 50 lots, and 5% of total revenue.
- 2. Based upon the cost of material and labor used.
- 3. Property taxes are greater in later periods when development.
- 4. Debt service charges will be greater with higher sales prices.
- 5. Cost is calculated for 40% of total equity.
- 6. Cost is calculated after net cost of water or sewer if any.
The financial success of a residential development project depends largely on one key element - expense scheduling. Expense scheduling, is simply when and at what point expenses and costs are incurred in terms of the project.

In a residential development, expenses incurred in the beginning stages can be critical in determining the ultimate project financial success. Every effort should be made to reduce unnecessary front end costs. On the other hand, sufficient capital must be invested in the project in the beginning stages to make the development appealing to potential buyers. The eventual financial and marketing success of a project therefore relies on decisions made in the first phase of development. These decisions can make or break a development project.

The ultimate success of the proposed development depends on the successful preliminary planning, phasing, and expense scheduling.
SITE POTENTIAL

POSITIVE SITE ASPECTS
1. Location/Availability
2. Natural amenities
3. Free utilities on east side of lake
4. Existing rough-cut roads on site

NEGATIVE SITE ASPECTS
1. Land cost
2. Flood plain on site
3. Demolition or renovation of 2 structures
4. Condemnation proceedings for existing access
5. Redesign of emergency lake overflow area

The positive potential for development of the site significantly outweighs the negative. Development costs can be critical in the beginning stages of development, and the existing agreement with the town of Walhalla represents a significant portion of these development costs. Water lines and sewer facilities can be extremely costly, sewer lines running at approximately $10 per foot, and water at approximately $3 per foot.23 When these two very expensive items are eliminated from the budget, roads, common improvements, and professional fees are essentially all that remain as development costs.

The existing rough-cut roads on the site may also be used to lower front-end development costs. If development roads could be planned to fit into the tracks of already
cut roads, the costs of grading and clearing would be significantly reduced.

Several other costs will be incurred relative to this particular site. Condemnation proceedings will be necessary for redesign of the existing entrance. If it is determined that a new entrance is needed, there will be costs of acquiring land and building roads. Two existing structures on the site will have to be renovated or demolished. And the existing emergency overflow for the lake will have to be redesigned. Through proper phasing, many of these improvements can be funded by generated cash flow, instead of front-end capital.
The plan for project financing is as follows: 4 initial investors in a limited partnership, with the developer/architect as general partner, for managerial authority; each limited partner contributing $55,000, with the developer/architect investing all, or a portion of his fee as equity capital; each partner will own a percentage of the project equal to his equity investment. It is felt that the $220,000 front-end capital will be sufficient to cover initial development costs, fees, and land acquisition.
the need
THE MARKET

MARKET DRAW

SELLING POINTS

- NATURAL AMENITIES (views, lake, trees)
- LOCATION (near Heathlake)
- WELL PLANNED COMMUNITY
- RECREATION
- ENERGY EFFICIENT PLANNING AND DESIGN

FAMILY INCOME / SALES PRICES

TOTAL FAMILY INCOME

DEC. 1981

DEC. 1981 (average)

MAX PRICE

Single Family Lots

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<tr>
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<td>$73,473</td>
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<tr>
<td>$80,000</td>
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<td>$189,791</td>
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Multi-Family Units (500 sq ft Room) Single Family Units

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<tbody>
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<td>$79,550</td>
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<tr>
<td>$89,300</td>
<td>$105,572</td>
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<td>$126,973</td>
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</table>

Estimated Sales Price:

- On Lake: $79,550
- Off Lake: $66,500

Single Family Lots /acre

- On Lake: $73,600
- Off Lake: $25,600

ANTICIPATED MARKET

- EXECUTIVES
- RETIREES
- SECOND HOMES
- INVESTORS
- ENERGY BUFFS

MARKET DRAW

OUTFLUX OF PEOPLE FROM NORTH

SURROUNDING AREAS

- GEORGIA
- OHIO
- WEST VIRGINIA
- SOUTH CAROLINA
- NORTHERN CAROLINA
- MICHIGAN
- MINNESOTA
- CRUISE
- DAY TRIPS

MAIN CONSTRUCTION

- Wrapped, level, interior finish
- Off Lake $66,000
- Off Lake $89,300
- Off Lake $105,572
- Off Lake $125,563
- Off Lake $146,246
- Off Lake $167,936
- Off Lake $189,791

MARKET DRAWS

- NORTH CAROLINA
- GEORGIA
- OHIO
- WEST VIRGINIA
- SOUTH CAROLINA
- NORTHERN CAROLINA
- MICHIGAN
- MINNESOTA
- CRUISE
- DAY TRIPS

1 Estimated sales prices of first phase sales prices will be lower than average prices. Actual prices may vary depending on market conditions.
2 Estimated sales prices of second phase sales prices may vary depending on market conditions.
The market for the proposed development is expected to come primarily from two sources: (1) industrial executives around the county, currently commuting as far as 30 miles to their work, who if given the opportunity, would relocate in a community closer to their job, and (2) northerners (mostly retirees) who are moving south and locating in the mountain-piedmont region - Keowee Key has experienced this market for the past 6 or 7 years.

This "middle-upper income" market is generally well educated and enjoys an active lifestyle including many forms of recreation. They enjoy and can afford the benefits a planned community has to offer. Recreation in similar communities includes anything from golf to horseshoes.

Although a golf course, typically a major marketing magnet for these type communities, cannot be adapted to this particular site, many other features are capable of making this community particularly attractive:

- Natural Amenities (views, lake, trees)
- Location (near Walhalla)
- Well Planned Community
- Recreation
- Energy Efficient Planning and Design
The estimated family income required to purchase a home in the proposed development is $35,000 and up.

It is not expected that a large market will exist for second home or time shared units. An extensive recreation program including a golf course is generally required to attract this type market.
DEVELOPMENT CONCEPTS

BUILDABLE AREA PLAN

SITE DATA (acres)

- Total plot area: 82.0177
- Total land area: 53.2074
- Total lake area (on site): 28.5417
- Total stream area: 0.2696
- Upper lake area (on site): 26.3605
- Lower lake area: 2.1912
- Total area in flood plain (including lower lake and stream): 11.1700
- Total land area above flood plain: 44.4672
- Total buildable area above flood plain: 43.6400
- Land area above flood plain - east side: 35.3861
- Buildable area east side: 35.0644
- Land area above flood plain - west side: 8.5965
- Buildable area west side: 8.5755

ENERGY EFFICIENT POLICY

PEDESTRIAN AND VEHICULAR CIRCULATION
- Encourage walking and bike riding.
- Use trees to shade paved streets and reduce heat gain.

PASSIVE OR ACTIVE SOLAR - WHERE POSSIBLE
- Use solar energy for heating and cooling whenever possible.
- Don't compromise design quality for solar energy.

FIREPLACES
- Outside air may be drawn to fuel fire, rather than already heated inside air.
- Inside air may be used to circulate through the chimney structure, where it is heated and returned to the room.

ENERGY EFFICIENT CONSTRUCTION TECHNIQUES
- Thicker walls, wall insulation, floor and ceiling insulation.
- Proper caulking.
- Proper weatherstripping.
- Double-glass/storm doors and windows.
- Insulating pipes and ducts.
- Airlock entries.
- Controlled attic ventilation.
- Automatic temperature control.

13/19
**ACCESS TO PROPERTY**

Additional R/W must be bought along existing access, however, since it is only access, there will be no problem.

**BARRIERS TO ADJACENT PROPERTY**

- Possible future residential or industrial
- Barrier currently needed
- Possible future adjacent development

**DENSITY PLANNING**

**SEPARATION**
- Separation of high and low density is usually preferred - the barrier may be a road, body of water, land mass, or same natural feature.

**LOCATION**
- Higher density dwellers are typically more active than lower density.
BASIC CASH FLOW CONCEPTS

MINIMUM FRONT END EXPENSES

MAXIMUM FRONT END REVENUE

MAXIMUM TOTAL PROFIT / MINIMUM SALES PERIOD

USING THE LAND VALUE METHOD

MULTI - FAMILY

ON LAKE

OFF LAKE

Base Value 5.78 3.50
Privacy 1.14 1.14
Accessibility 2.25 5.00
Total LV 917 5.14

Land price $ 613 132.13
Unit price $ 82.97 $ 72.17
S F 100,000 $ 100,000

SINGLE - FAMILY

ON LAKE

OFF LAKE

Base Value 5.78 3.50
Privacy 1.14 1.14
Accessibility 2.25 5.00
Total LV 917 5.14

Land price $ 613 132.13
Unit price $ 82.97 $ 72.17
S F 100,000 $ 100,000

LOCATION OF SINGLE AND MULTI - FAMILY

MULTI - FAMILY

ON LAKE

OFF LAKE

Total LV 917 514
Sales price $ 89,000 $ 74,290
Construction cost 20,000 40,485
Development cost 24,729 84,16
Net profit/unit 4172 41
Net profit/acre 294,748 118,548

SINGLE - FAMILY

ON LAKE

OFF LAKE

Total LV 917 514
Sales price $ 89,000 $ 74,290
Construction cost 20,000 40,485
Development cost 24,729 84,16
Net profit/unit 4172 41
Net profit/acre 294,748 118,548

FIRST PHASE PLANNING

SCHEME A

LAND VALUE (AVER) $F. East Side
Base lv. 525
Privacy 195
Accessibility 190
Total LV 835

SCHEME B

LAND VALUE (AVER) $F. East Side
Base lv. 525
Privacy 195
Accessibility 190
Total LV 835

PHASE I

S F units sold/construct.
SF. constructions cost
SF. unit marketable price
Total income

EXPENSES

Units 103,000 80,500 20,000 10,000
Site development 20,000 50,000 0 0
Recreation 0 0 0 0
Demolition 0 0 0 0
Land cost 79,191 79,191 0 0
Taxes 0 0 0 0
Condemnation proceedings 0 0 0 0
Emergency overflow 15,000 0 0 0
Releases total (15-25% sales) 0 0 0 0

Total expenses $ 108,191 108,191 22,409 22,409

PHASE II

S F. units at $106,165

12 units at $36,165

Total inventory $2,698,640

Ending inventory 0 0 0 0

Total borrowed $2,450,000

Release fee 312,929

Total marketable inventory 2,698,640

Ending balance 312,929

Total teached 2,385,667

Net project worth 56,738

Concession MF is more profitable on lake MF than S F.

Concession MF is more profitable 0.7% more profitable than S F.
GENERAL STREET AND MASTER PLAN LAYOUT - EAST SIDE

SCHEME A: CENTER STREET - LOTS EACH SIDE

SCHEME B: MAJOR / MINOR STREETS - JOGGING TRAIL ON LAKE

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<thead>
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<td>Totals</td>
<td>34.79</td>
</tr>
<tr>
<td>Revenue / unit</td>
<td>$482</td>
</tr>
<tr>
<td>Total Revenue</td>
<td>$1,346,258</td>
</tr>
<tr>
<td>Development costs</td>
<td>$1,346,258</td>
</tr>
<tr>
<td>Common costs</td>
<td>$349,407</td>
</tr>
<tr>
<td>Unit costs</td>
<td>$0.00</td>
</tr>
<tr>
<td>Total Expenses</td>
<td>$0.00</td>
</tr>
<tr>
<td>Total Profit</td>
<td>$768,793</td>
</tr>
</tbody>
</table>
MASTER PLAN

Tentative Plan For Later Stages of Development

SALES VALUES

<table>
<thead>
<tr>
<th>Base Value</th>
<th>Accessibility of lake</th>
<th>Privacy</th>
<th>Total LV</th>
<th>Sales Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.60</td>
<td>1.35</td>
<td>1.22</td>
<td>7.37</td>
<td>$83,235</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Base Value</th>
<th>Accessibility of lake</th>
<th>Privacy</th>
<th>Total LV</th>
<th>Sales Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.60</td>
<td>2.00</td>
<td>1.37</td>
<td>8.97</td>
<td>$112,459</td>
</tr>
</tbody>
</table>

PROGRAM - PHASE 1

1. 18 Condominium units - #1-8 & 31-40
2. 21 Single Family units - #1-21
3. Begin renovation for club house
4. 2 tennis courts
5. Recreation facility - restrooms, lockers, covered picnic area
6. Swimming area
7. Landscape developed area
TENTATIVE PROGRAM

CLUB HOUSE/COMMUNITY BUILDING - renovate existing lake front house

RECREATION:
- Walking/Jogging trails
- Bike paths
- Swimming
- Sailing (small craft only)
- 4 tennis courts
- General recreation areas

COMMON/PLAY AREA - play, recreation and picnic areas

HOUSING UNITS:
Area 1. 42 M.F. units (aver. 10 units/acre) - aver. LV = 8.70
  near entrance (#1-18) - LV = 8.95
  near dam (#19-42) - LV = 8.45
  8 S.F. units (1/6 acre lots) - aver. LV = 6.20
Area 2. 39 S.F. units (1/6 acre lots) - aver. LV = 8.15
Area 3. 31 S.F. units (1/5 acre lots) - aver. LV = 8.15
Area 4. 18 S.F. units (1/5 acre lots) - aver. LV = 8.10
Area 5. 20 S.F. units (1/5 acre lots) - aver. LV = 5.48
Area 6. 13 S.F. lots (1/4 acre) - aver. LV = 4.33

Totals:
- 116 S.F. units
- 42 M.F. units
- 13 S.F. lots

Note: Number of units in each area is calculated by allowing 30% of total area for R/W and common area.
Area 1 - 8.5985 acres
Area 2 - 11.3286
Area 3 - 8.9658
Area 4 - 5.0004
Area 5 - 5.8562
Area 6 - 4.7939
TENTATIVE PHASING SCHEDULE

period 1. Effect condemnation proceedings
            Construct access road

PHASE 1. period 2. 10 S.F. (#1-10)
            6 M.F. (#1-6)
        Begin construction on club house
        Build first 2 tennis courts
        Furnish 2 sales models
        Landscaping as necessary

period 3. 11 S.F. (#11-21)
            5 M.F. (#36-40)
        Finish construction on club house
        Build boat slips / storage building
        Furnish 1 sales model

PHASE 2. period 4. 10 S.F. (#22-29 & #41-42)
            6 M.F. (#7-12)
        13 lots made available

period 5. 11 S.F. (in area 3)
            5 M.F. (#31-35)

PHASE 3. period 6. 10 S.F.
            6 M.F.

period 7. 10 S.F.
            6 M.F.
        Build other 2 tennis courts

PHASE 4. period 8. 10 S.F.
            6 M.F.

period 9. 12 S.F.
            4 M.F.

PHASE 5. period 10. 16 S.F.
            0 M.F.

period 11. 16 S.F.
            0 M.F.
### ANTICIPATED SALES SCHEDULE

<table>
<thead>
<tr>
<th>PHASE 1.</th>
<th>period 2.</th>
<th>no sales</th>
</tr>
</thead>
<tbody>
<tr>
<td>period 3.</td>
<td>6 S.F. - aver. LV = 8.15 - $115,874</td>
<td>4 M.F. (#1-6) LV = 8.95 - 83,200</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>PHASE 2.</th>
<th>period 4.</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>period 5.</td>
<td>7 S.F. - aver. LV = 8.15 - $123,986</td>
<td>5 M.F. (#36-40) LV = 8.45 - 85,252</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>PHASE 3.</th>
<th>period 6.</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>period 7.</td>
<td>9 S.F. - aver. LV = 7.35 - $147,748</td>
<td>6 M.F. - aver. LV = 8.70 - 106,567</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>PHASE 4.</th>
<th>period 8.</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>period 9.</td>
<td>10 S.F. - aver. LV = 7.35 - $158,090</td>
<td>6 M.F. - aver. LV = 8.70 - 114,027</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>PHASE 5.</th>
<th>period 10.</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>period 11.</td>
<td>12 S.F. - aver. LV = 7.35 - $180,997</td>
<td>4 M.F. - aver. LV = 8.70 - 130,550</td>
</tr>
</tbody>
</table>

| period 12. | 16 S.F. - aver. LV = 7.35 - $193,667 |
| period 13. | 16 S.F. - aver. LV = 7.35 - $207,224 |
| period 14. | 10 S.F. - aver. LV = 7.35 - $221,730 |
| period 15. | 4 S.F. - aver. LV = 7.35 - $237,251 |

Note: All figures are based on the theory that first phase sale prices will be lower than average, and thereafter inflate at a rate higher than the average housing inflation rate. First period prices reflect these lower values and are inflated at 6% per period.
<table>
<thead>
<tr>
<th></th>
<th>1986</th>
<th>1987</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Period 12</td>
<td>Period 13</td>
</tr>
<tr>
<td><strong>ASSETS</strong></td>
<td>Period 12</td>
<td>Period 13</td>
</tr>
<tr>
<td>Cash on Limited</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Debt fu. sales</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>3,315,584</td>
<td>2,217,300</td>
</tr>
</tbody>
</table>
|                  | -      | -      | 15,000
| **EXPENSES**     |          |          |          |
| Unit co.         | -      | -      | -      |
| Site de.         | -      | -      | -      |
|                  | -      | -      | -      |
|                  | -      | -      | -      |
| Recreat.         | -      | -      | -      |
|                  | -      | -      | -      |
| Fees:            | -      | -      | -      |
|                  | -      | -      | -      |
| Demolit.         | -      | -      | -      |
| Land co.         | -      | -      | -      |
| Propert.         | -      | -      | -      |
| Release          | 1,160,454 | 517,752 | -      |
| Miscell.         | 44,080  | 45,809  | 30,000 |
| Cash on          | -      | -      | -      |
| **1. NEG.**      |          |          |          |
| Profit           | 2,111,050 | 1,653,739 | 934,004 |
| Accumul.         | 2,120,221 | 3,773,960 | 4,707,964 |
| **2. INC.**      |          |          |          |
| Profit           | 2,111,050 | 1,653,739 | 934,004 |
| Taxable          | 1,834,707 | -      | 2,552,797 |
| (or)             | (733,883) | -      | (1,021,119) |
| Profit           | 1,377,167 | 1,566,624 | -      |
| Accumul.         | 2,151,219 | 3,717,843 | 3,717,843 |
| **DEBT SER.**    |          |          |          |
| Debt ba.         | 1,532,348 | 482,806  | -      |
| Debt fu. bal.    | 0      | 0      | -      |
| Debt fu. sales   | 1,160,454 | 517,752  | -      |
| Interest         | 110,912  | 34,946  | -      |
| Debt ba.         | 482,806  | 0      | -      |
SUMMARY

1. NEGLECT TAXES:

Total accumulated profit - 4,707,964
Discounted Return on Investment - 67.60 % per year

2. INCLUDE TAXES (assume a 40% tax bracket)

Total accumulated profit - 3,717,843
Discounted Return on Investment - 56.74 % per year
NOTES ON CASH FLOW

All costs inflated at 8% per year.
Anticipated inflation rate (general) 10% per year.
Limited partners' equity - 4 investors at $55,000 each.
Sales - all sales figures are adjusted so that they will be less than average in the first period and inflate at 6% per period. All sales prices are calculated using the land value method.

Unit construction cost - average S.F. (Dec. 1981) - $80,485
average M.F. (Dec. 1981) - 55,955
(see graphic presentation for explanation).

Site development - costs are determined using California data, adjusted for time and location.

<table>
<thead>
<tr>
<th></th>
<th>S.F.</th>
<th>M.F.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Streets</td>
<td>2,383</td>
<td>1,269</td>
</tr>
<tr>
<td>Grading</td>
<td>2,256</td>
<td>931</td>
</tr>
<tr>
<td>Landscape</td>
<td>1,128</td>
<td>1,692</td>
</tr>
<tr>
<td>Erosion Control</td>
<td>1,692</td>
<td>1,692</td>
</tr>
<tr>
<td>Fees</td>
<td>2,115</td>
<td>1,269</td>
</tr>
<tr>
<td>Misc.</td>
<td>338</td>
<td>254</td>
</tr>
<tr>
<td>Civil Engineering</td>
<td>776</td>
<td>635</td>
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<tr>
<td>Landscape Arch.</td>
<td>14</td>
<td>85</td>
</tr>
<tr>
<td>Misc. Engineering</td>
<td>1,015</td>
<td>1,029</td>
</tr>
</tbody>
</table>

(streets and grading are reduced by 20% where new roads are planned in existing road beds).

Recreation - club house - approx. $60,000 (Dec. 1981 - June 1982).
   - other - misc. recreation costs - $5,000 (Dec. 1981), incurred every year, inflated at 8% per year.

Land cost - assumed that land will be financed by owner, to be payed in 4 installments, at 14% interest.

Property taxes - guesstimated.

Release fee - calculated at 35% of sales per period.

Miscellaneous - 1. Cost of sales office and staff - $30,000 per period (Dec. 1981), inflated at 8% per yr.
   2. Cost of furnishing 3 sales units:
      period 2. 2 units - $20,000
      period 3. 1 unit - 10,000

Debt service - interest is calculated at 14% per year.

Footnotes:

a Construction of new access road

b First period developer/ architect's fee = $112,100 minus $55,000 as equity capital = $57,100.
Misc. fees for legal, financing, etc.

dTotal cost for areas 1 and 2 - $135,575 (Dec. 1981) - assume 56% of that incurred in period 2, 4% in period 3, and 8% per period in periods 4-8.

eTotal cost for areas 1 and 2 - $119,266 (Dec. 1981) - same schedule as in footnote d.

fTotal cost for areas 1 and 2 - $115,056 (Dec. 1981) - assume 30% in periods 2-3, and 8% in periods 4-8.

gTotal cost for areas 1 and 2 - $137,052 (Dec. 1981) - assume 60% in period 2, and 8% in periods 4-8.

hTotal cost for areas 1 and 2 - $54,270 (Dec. 1981) - assume 20% in periods 2-3, 10% in periods 4-7, and 5% in periods 8-11.

iPartial construction of club house

jTotal cost for areas 1 and 2 - $56,934 (Dec. 1981) - assume 60% in period 2, and 20% in periods 4 and 6.

kTotal cost for areas 1 and 2 - $82,803 (Dec. 1981) - assume same schedule as in footnote j.

lTotal cost for areas 1 and 2 - $4,116 (Dec. 1981) - assume total cost incurred in period 2.

mTotal cost for areas 1 and 2 - $135,783 (Dec. 1981) - assume 40% in period 2, 20% in period 3, and 8% in periods 4-8.

nTotal cost for areas 3-6 - $231,210 (Dec. 1982) - assume 30% in period 4, 8% in period 5, 22% in period 6, and 8% in periods 7-11, plus costs as noted in footnote d.

oTotal cost for areas 3-6 - $218,880 (Dec. 1982) - assume same schedule as in footnote n, plus costs as noted in footnote e.

pTotal cost for areas 3-6 - $109,440 (Dec. 1982) - assume 20% in periods 4-6 and 8% in periods 7-11, plus costs as noted in footnote f.

qTotal cost for areas 3-6 - $164,160 (Dec. 1981) - assume same schedule as in footnote n, plus costs as noted in footnote g.
Total cost for areas 3-6 - $75,240 (Dec. 1982) - assume 30% in periods 4 and 6, 25% in period 8, and 15% in period 10, plus costs as noted in footnote j.

Total cost for areas 3-6 - $98,460 (Dec. 1982) - assume same schedule as in footnote r, plus costs as noted in footnote k.

Total cost for areas 3-6 - $1,350 (Dec. 1982) - assume 40% in periods 4 and 6, and 10% in periods 8 and 11.

Total cost for areas 3-6 - $32,850 (Dec. 1982) - assume 20% in period 4, 10% in period 5, 20% in period 6, and 10% in periods 7-11, plus costs as noted in footnote m.

Includes $11,635 for a recreation building near the tennis courts.

Salvage value of furniture.


3 ibid., p. 15.


8 ibid., p. 65.

9 ibid., p. 64.

10 ibid., p. 64.


12 ibid., p. 9.


15 ibid., p. 10.

17 Oconee County, South Carolina - Land Use and Thoroughfare Plan (South Carolina Appalachian Council of Governments, June 1972).

18 ibid.

19 ibid.

20 Community Facilities Plan, Oconee County, South Carolina (South Carolina Appalachian Council of Governments, June 1975).

21 Deed To Right of Way, Oconee County, South Carolina.

22 Personal measurements.

23 Corky Moss, Lowrie Property, Description and Analysis.

24 Professor Ralph E. Knowland, personal interview, 1980.


Community Facilities Plan, Oconee County, South Carolina. South Carolina Appalachian Council of Governments, June 1975.


Knowland, Professor Ralph E. Personal interviews. 1980-1981.


Moss, Corky. Lowrie Property, Description and Analysis.


Oconee County - Countywide Consolidated Services Study. Oconee County Planning Commission, June 1979.


Pebble Creek. "Villas on the Green, Phase II." 1981.


