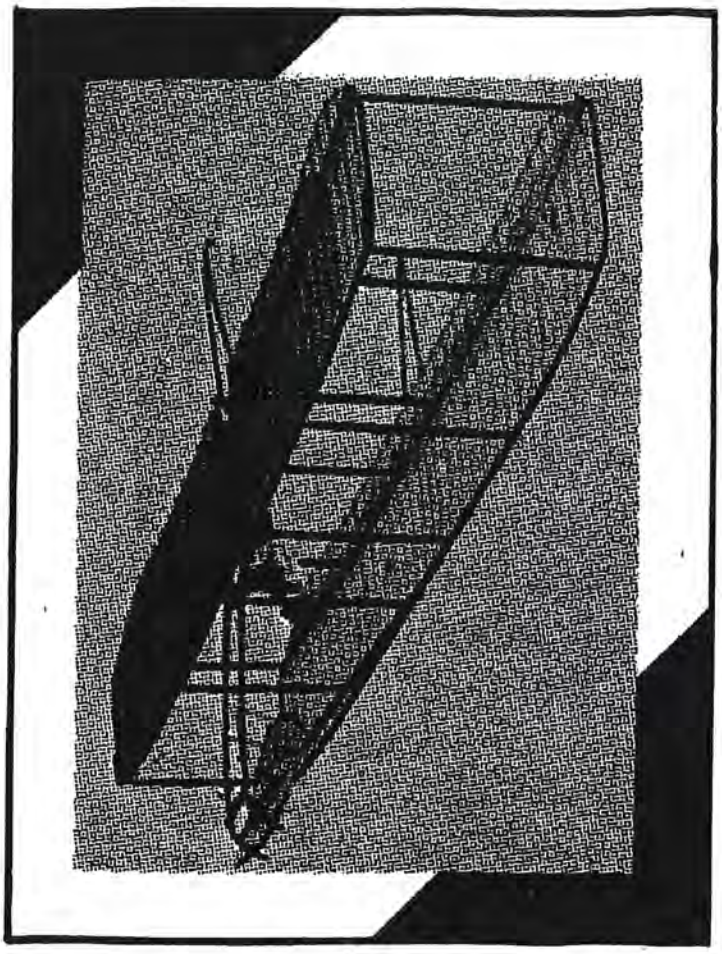
KILL DEVIL HILLS

The Baum St. Clair Land Development



CDG would like to thank the town of Kill Devil Hills for making this project possible through their generous support and attendance at the workshops.

TABLE OF CONTENTS

Acknowledgements 1

Foreword 3

Introduction 7

Site Analysis 15

Land Use Workshop 31

Alternatives Site Schemes Workshop 43

Two Design Proposals for the Baum Tract 63

Suggestions 69

Resources 77

ACKNOWLEDGEMENTS

This project was carried out under the direction of Professor Henry Sanoff, the Director of the Community Development Group (CDG) at North Carolina State University - School of Design. The work was done by a team of four graduate architecture students who are a part of CDG. The graduate students responsible for the project were:

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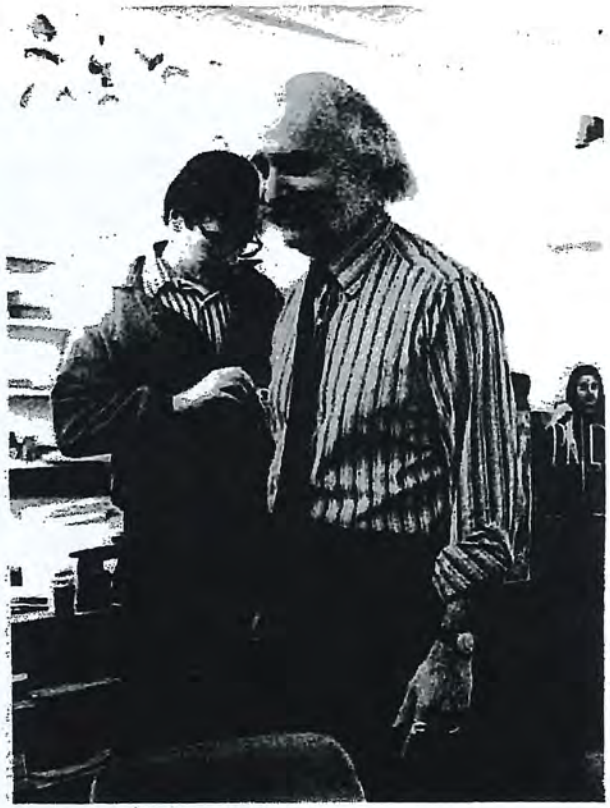


The NCSU graduate students pictured from left to right are: James Utley, Brendan Ndukwu, Lisa MacCartney, and Emmanuel Abban.

FOREWORD

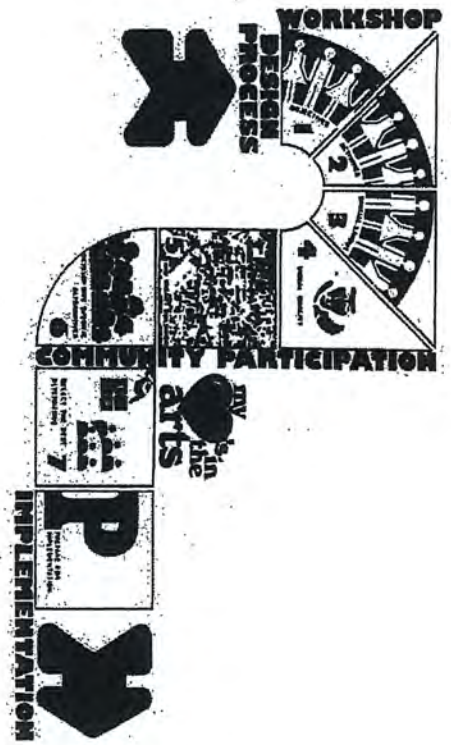
FOREWORD

The Community Development Group (CDG) directed by Henry Sanoff, has been a part of the School of Design at North Carolina State University for sixteen years. One of the primary roles of CDG is to provide architectural assistance and training to public interest organizations throughout the state of North Carolina (NC). CDG operates as a graduate architectural design studio but it is a unique studio within the School of Design because it deals with actual community projects which enable students to work directly with members of various NC communities. The kinds of projects CDG undertakes varys from community to community, but usually they are projects such as downtown revitalizations, community art centers or senior citizens centers.

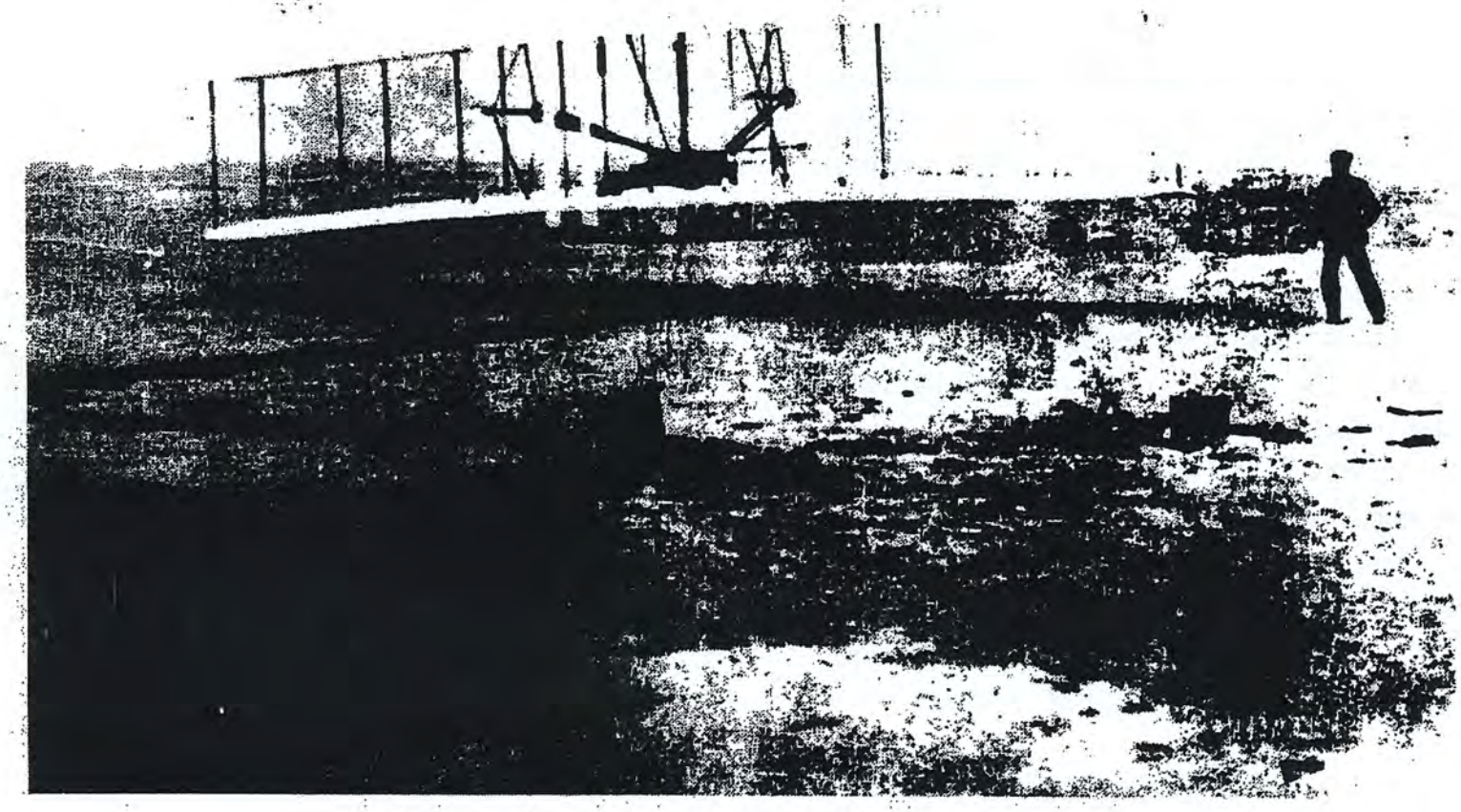
CDG's primary concern is to involve all members of a particular community in the planning and designing process for that community's proposed project. The successful outcome of a community's project and the satisfaction of the community members hinges on their willingness to take an active role in the planning and decision making process.

CDG uses a series of games (called workshops) to involve the community members in the planning and designing process. Most of these games have been developed by CDG and have been used successfully in communities across the state. Each workshop is tailored specifically for a community's project and is conducted in such a way to welcome and encourage the community's participation. The workshops serve as a way to familiarize the community members with the design process and to further outline the necessary steps they will need to follow in order to proceed with their community's project.

This approach proves rewarding for both the communities and the students. The communities benefit from the students' design expertises, as well as, from the opportunity to plan together as a community in an interesting and enjoyable way. Students, on the other hand, gain valuable experience by having the chance to interact directly with actual clients on real life projects.



INTRODUCTION



INTRODUCTION

The Outer Banks is a string of barrier reef islands that stretch a distance of 175 miles from the Virginia line south to Cape Lookout where they then curve back into the mainland. The sandy reef of the Banks is pierced by several inlets; Oregon, Hatterars, Ocracoke and Beaufort, which provide access to the great inland sounds of Currituck, Albemarle, Pamlico, Core and Bogue. These barrier reef islands have open beaches on the oceanside and woods and marshlands on the soundside, and they vary in width from a few hundred feet to a mile or more.

The Outer Banks has long been noted for its beautiful expanse of white sandy beaches and regarded as a true fishermen's paradise with numerous kinds of sport fishing available, both salt and fresh water. The great inland sounds of Currituck, Albemarle, Pamlico, Core and Bogue vary from fresh to brackish to salt water and support fish populations suited to each type of water. From the seashores of the Outer Banks world famed surf fishing can be done for channel bass, gaint bluefish and striped bass. Pier fishing is also quite popular from the numerous piers that reach out more than 1000 feet from the beaches.

The Outer Banks also offers the perfect mix of education and pleasure for the young and old alike. One can learn about man's first successful powered flight at the Wright Brothers' National Park or learn what the coastal environment offers through the National Park Services' activities and their displays at the Marine Resource Center. In addition there is information about the heroic rescues carried out by the many life saving stations that once lined the beaches which were the predessors to today's Coast Guard. The tallest lighthouse in the nation is on Hatteras Island where some 600 ships were snared by the Diamond Shoals, better known today as the Graveyard of the Atlantic. Blackbeard, the famous pirate once terrorized these waters and took refuge in the inland sounds with his stolen loot. Another point of interest is Elizabeth II, which is a replica of a 16th century sailing vessel like those which sailed from England to Roanoke Island between the years of 1584 and 1587. The Lost Colony is another attraction that should not be overlooked because it signifies the beginning of America's 400 year old history.

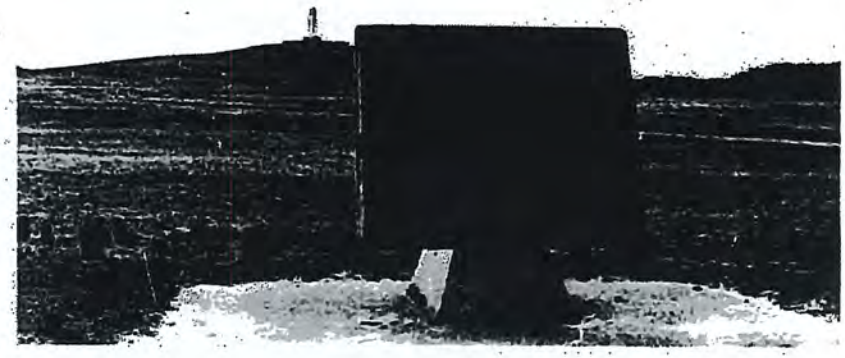
Kill Devil Hills (KDH) lies at the heart of this booming summertime recreational resort area, the Outer Banks. At one time it was a part of Kitty Hawk, but in 1953 KDH became a separate town. KDH takes pride in its reputation as a family beach town, however, it is best known for being the site of man's first successful attempt at powered flight. This was accomplished by the Wright Brothers, Orville and Wilbur, on December 17, 1903. The Wright Brothers' National Park was established to commerate these courageous men and to celebrate the beginning of modern aviation. The park includes several attractions: a museum which houses a full scale replica of the original plane and where presentations on the history of the Wright Brothers are given regularly by rangers; a public air strip that offers plane rides and the temporary tie down of small aircraft; the Wright Brothers 1902-03 camp buildings (living quarters and hangar) and a large granite monument which sits high atop a stabilized sand dune to mark the site of the special event. This park is a major tourist attraction and is visited by thousands each year.

Since 1975, the year round and the summer populations in KDH have both been increasing at a steady rate of about 14.5 % per year. Currently, the

year round population totals about 3,000 residents and during the peak summer season it swells to about 15,000 people. Two of the fastest growing industries in KDH, now, are the tourist and the building industries.

Land development in KDH in the past has been predominantly along the oceanside of the island, however, in the last five years this has begun to change. New development is now occurring more and more along the sound side of the island. Even though the waters in the sound are quite shallow, they can provide an excellent recreational playground for bathers and sport fishermen, alike.

In 1982, the town of Kill Devil Hills purchased 322 acres of land for 1.5 million dollars from Mrs. Diane Baum St. Clair. When she sold the land to the town she requested that the land be used to benefit the entire community. Some of the uses for the land Mrs. St. Clair suggested were community recreation, educational, and municipal offices. This property is referred to as the Baum Tract and is situated next to the Wright Brothers National Park. The site stretches from the Buzzards Bay to an area one block from Route 158 (Bypass).



The Baum Tract is one of the largest parcels of land that is still undeveloped in KDH. It is centrally located within the town of KDH and could provide an excellent place for the community to have direct access to the sound. It is also in an ideal location in that it is already highly visible to tourists due to its adjacency to the Wright Brothers National Park. The town of KDH was very fortunate to be able to purchase this tract of prime developable land but it left them with the challenging task of determining how best to utilize this property to meet the present and future needs of KDH. Rather than to hastily adapt a solution, the town chose to seek professional guidance in helping them sort through the plausible development alternatives that were available to them.

In late August of 1984, Lloyd Balance, the town manager, and Ray Sturza, the town planner, contacted the Community Development Group (CDG) of North Carolina State University in Raleigh, NC, and requested their assistance in determining the best way to develop the town's property. Lloyd and Ray were, both, interested in looking at all the possible ways the site could be utilized and developed. It was important to them that the site generate revenue for the town as well as serve the needs of the community.

The objective of this project for CDG was to look at the present and the future needs of KDH and to propose ways the site could be utilized to satisfy these needs. CDG was interested in having the people of KDH involved in the decision making process from the outset of the project. Therefore, CDG setup workshops with the town at various times throughout the project to get the community's input and assistance on designing a reasonable development scheme for the site.

CDG's first step was to familarize itself with the project, the site, the town and the surrounding area. In September CDG took a field trip to KDH to discuss the project first hand with Lloyd and Ray and to look at the Baum Tract. CDG toured the site by jeep and took slides of the site, the terrain, the vegetation and the surrounding context. Ray provided CDG with the current zoning map of KDH and maps of the Baum Tract.

Upon returning to Raleigh, CDG contacted several experts in an effort to learn more about the natural and dynamic processes that are present in this coastal region of the Outer Banks. The experts contacted were either ones who had studied the coastal regions of North Carolina or ones who had been involved in some type of development in this coastal

region.

Once CDG had familarized itself with the physical site, it was time to turn to the community and find out their needs and ideas about the development of the Baum Tract. The community's ideas generated by the workshops and discussions were transformed by CDG into physical design alternatives for the development of the site. These design alternatives were then shown to the community to get their reactions and comments. Afterwards, these design alternatives were further refined by CDG, based on the community's suggestions, and presented to the town at their monthly town council meeting in March of 1985.

The following five chapters will describe in more detail the process CDG used in arriving at two design proposals for the development of the Baum Tract.

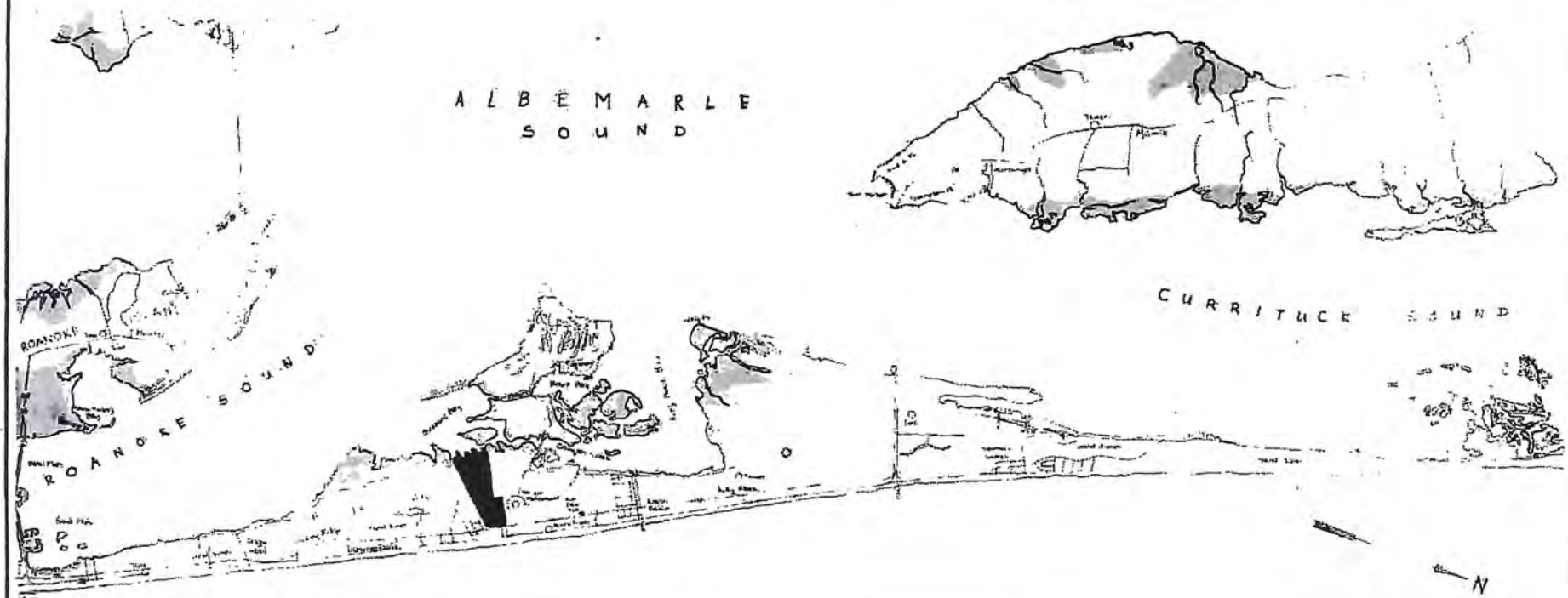
SITE ANALYSIS

SITE ANAYLSIS

LOCATION

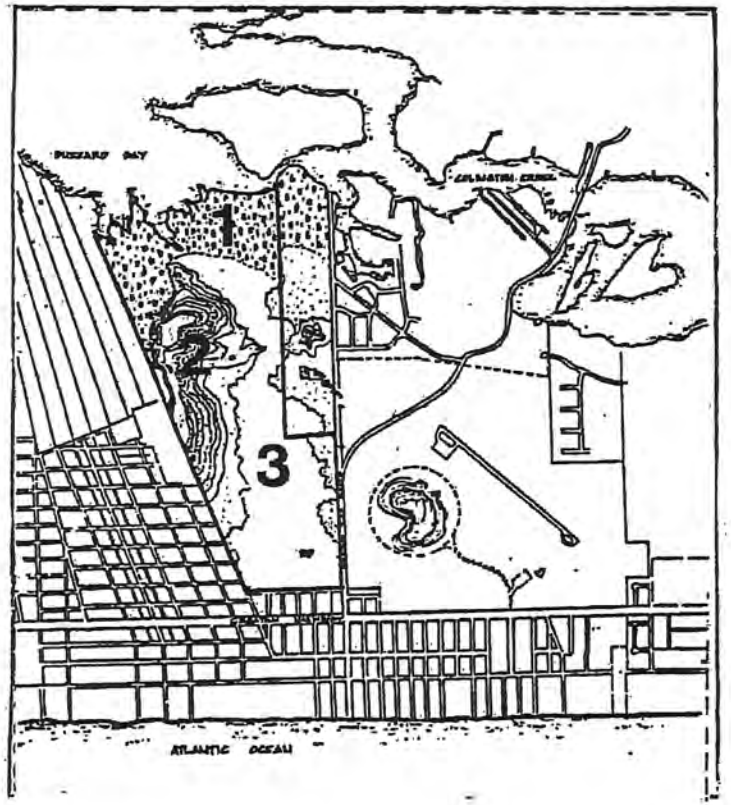
The project site, popularly known as the Baum Tract, is located on the Outer Banks in the heart of the town of Kill Devil Hills, North Carolina. It contains 322 acres of prime developable land . The site is bounded roughly by Buzzards Bay/Roanoke Sound, the Wright Brothers' Monument, Route 158 (Bypass) and some sparsely developed commerical and residential properties.

The site could easily be made accessible by car, however, to date there are no roads on the site except a few four wheel drive trails. A main road runs parallel to the northeast property line and several other side streets terminate on the east, south and southeast ends of the property. Presently, no services or utilities are available on the site. A VEPCO power line on large oversized poles runs across the property and may be put underground at a later date. The only structure on the site is a service garage for the town's vehicles.



SURROUNDING CONTEXT

As can be seen from the map, the Baum Tract is bordered by several different kinds of developments. The town of Kill Devil Hills (KDH) is presently in the process of enacting a new zoning ordinance for the town. This new zoning ordinance will encourage the growth of commerical development to occur between the ocean and the Bypass and will discourage the establishment of new residential districts in this area. Growth from the Bypass to the Sound side will be predominantly reserved for residential uses. The portion of land that lies directly in front of the site for the Wright Brothers Monument will remain as it is to preserve the unobstructed view to the ocean.



SITE DESCRIPTION

The site can be easily subdivided into three distinct regions by using the natural boundaries of the prominent physical features that occur on the site. These regions can be identified as the following:

1. The MARSH which stretches along the entire southwest end of the site and adjoins the Sound covers 65 acres of the site.
2. The SAND DUNE that extends along most of the southern site boundary occuppies 72 acres of the site. It is one of the largest and highest dunes on the island.
3. The FLAT LANDS which extend from the Marsh to the Bypass account for the remaining 185 acres of the site. They are roughly three to six feet above sea level.

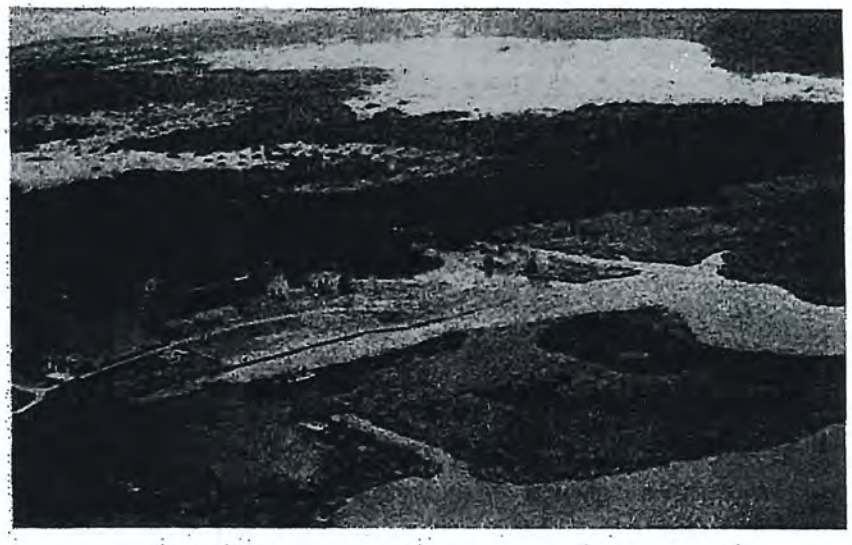
MARSH

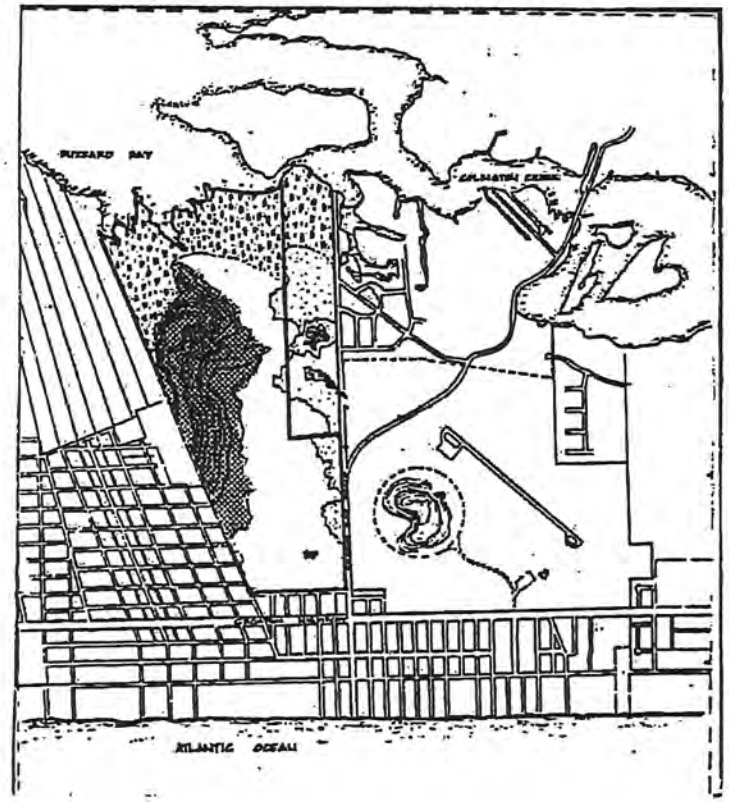
The MARSH is filled with very lush dense vegetation. The marsh plants tend to reduce shoreline erosion because their root systems dissipate the wave action and thus hold the soil from washing into the Sound. Also, the marsh plants act as a water treatment system by absorbing pollutants and excessive

nutrients before they reach the mainland. The roots, stems and seeds from this vegetation provide good nesting materials for the native waterfowl.

The Marsh is also very critical in the production of food for many fish, shellfish, waterfowl and wildlife that live along the Sound. The high productivity levels of food and the complex food chains that are found characteristically along the Sound could not be sustained without the Marsh. This particular marsh is extremely unique because underneath it lies a layer of peat six feet thick.

Due to the significance of the marshes, the federal government has made the codes and restrictions for marshland displacement very severe. Any disturbance, displacement or dredging of marshland requires a federal permit. Since the Marsh extends along the entire water frontage of the Baum Tract, any water related recreational activities proposed for this site, such as boating or fishing, will entail some disturbance to the Marsh and thus a federal permit will be required to approve the installation of these activities.





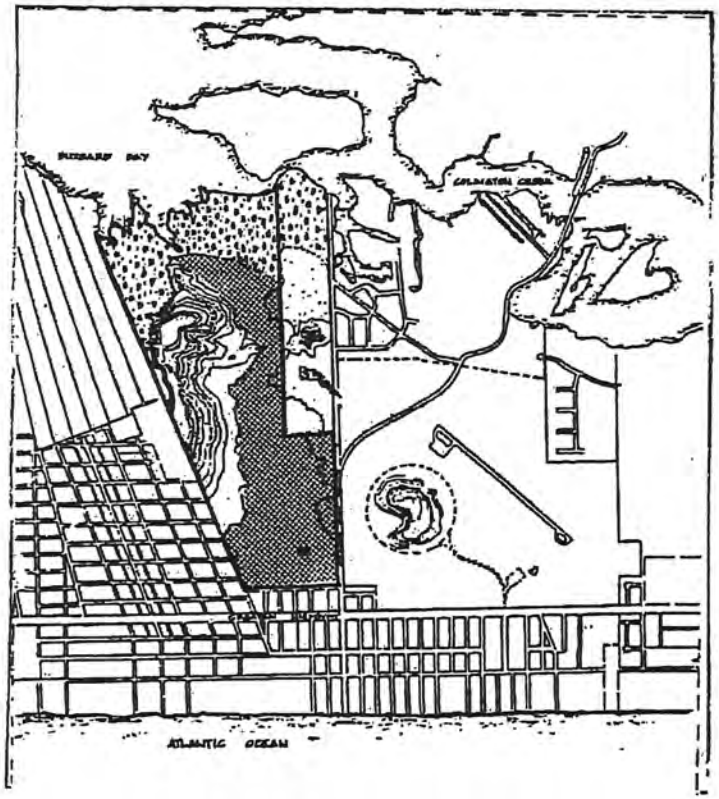
SAND DUNE

The SAND DUNE is referred to by geologists as a Barchan dune that tends to be uniform in nature with a gently undulating surface. It is one of the largest back barrier island dunes on Bodie Island and rises to an elevation of 72 feet above sea level.

The dune was named Run Hill because it is moving very rapidly relative to other sand dunes on the island. It is moving in a southwesterly direction at about eight feet per year. As the dune moves it devours everything in its path which in the past has been anything from trees to roads to even a house. Run Hill is being pushed into the Sound by the driving winter winds from the northeast and as a result it drops off quite sharply on the Sound side of the dune. This wall of sand has protected the adjacent land from salt spray and strong winds and gradually over the years a very dense maritime forest has been able to take root, grow and mature.

The views from the top of the dune are breathtaking especially those looking across the Marsh into the Sound. This region of the site has the potential for several different land uses, however, all of these uses which concern development will weigh

heavily on whether or not the dune can be sufficiently stabilized to permit construction to occur. The sand, on the other hand, could be viewed as a natural resource and be sold or utilized in the manufacturing process for products such as concrete or cement blocks. The dune could also be left in its natural state and serve as a continuation of the Nags Head Woods Nature Preserve that is operated by the Nature Conservancy for recreational and educational purposes.



FLAT LANDS

The mixture and density of the vegetation occurring on the FLAT LANDS region varies. The most dense vegetation is concentrated along the Marsh and becomes gradually less dense the closer the proximity is to the ocean and the affects of the salt spray and harsh winds.

The dense vegetation adjoining the Marsh is known as a maritime forest and is a continuation of the one found in the neighboring Nags Head Woods. The maritime forest possess several characteristics that make it an exceptional example of a natural area. It is considered by naturalists to be the finest example of a matured maritime forest in North America. The forest contains a tremendous amount of natural diversity. This is partially because it is located in the area of transition between the two major maritime life zones and thus contains plants and animals that are characteristic of both the northern and the southern zones. The diversity can also be attributed to the the large sand dunes which have provided protection for this area and in doing so have provided a more stable environment that has allowed not only typical maritime forest species to thrive but also those normally found further inland.

Other portions of the Flat Lands are more

sparsely vegetated with beach grasses and scrubby pine, oak and hickory trees.

This region of the site, in addition to the diverse vegetation, also contains two small fresh water ponds. These ponds are part of an underground aquifar system that extends along the entire Sound side of Bodie Island and are but two in a long string of similar fresh water ponds found in Nags Head Woods. At one time, the largest of these fresh water ponds in Nags Head Woods served as the water supply for both Nags Head and KDH. As the population increased in the two towns, the water supply in the pond was insufficient to meet their needs and consequently both town water plants were shut down.

SOILS

The soils on the site range from poorly drained soils in the Marsh area, to well drained soils on the Flat Lands, to excessively drained soils (sands) found on Run Hill. According to the 1977 Soil Survey published by the North Carolina Department of Agriculture, none of the soils on the site are suitable for on-site severage disposal i.e. septic tanks. Another prohibiting factor to on-site sewerage disposal besides the soils, is the presence of a very shallow aquifar that runs along the Sound side of the island. It is beleived that the effluent from the septic tanks would contaminant this series of aquifars and jeopardize the wildlife and vegetation that exists in the Nags Head Woods Nature Preserve.

More than likely, all the soils on the site could be modified to accommodate any desired use but in some cases the costs environmentally, socially and monetarily could be excessive. If modifications to the site are improperly planned, they could lead to severe environmental problems that would prove costly to both the developers and the local residents. It is,

therefore, extremely important to recognize the limitations of certain soils when evaluating their potentilal usage. The most suitable soils for building occur in the Flat Lands region of the site. The Sand Dune if properly stabilized with vegetation could support structures. The soils found in the Marsh are limited for most all uses except wildlife habitats. The salt content in the Marsh is also very high and when the organic material is exposed to air it gives off a strong unpleasant sulfur odor.

CLIMATE

KDH enjoys a mild climate due to its proximity to the Atlantic Ocean. The temperatures in KDH tend to be warmer in the winter and cooler in the summer than those on the mainland. The freeze-free period is generally about 290 days per year. Rainfall occurs regularly throughout the year with the largest amount falling in the summer months and the least amount in the fall months.

The weather data shown in the chart is from Cape Hatteras which is the only weather station on the Outer Banks. Since Cape Hatteras is somewhat farther south than KDH, weather data from Norfolk, Virginia, has also been included in the chart for comparison purposes.

	Mean Annual Temperature Daily Max °F	Mean Annual Temperature Daily Min °F	Mean Annual Precipitation Inches	Mean Wind Speed MPH	Possible Sunshine % Days	Temperature Days Max 90°F And Above	Temperature Days Min 32°F And Below
Norfolk VA	65.2	47.7	40.48	9.9	56	30	72
Hatteras NC	68.6	55.7	54.47	11.6	63	3	33

WIND

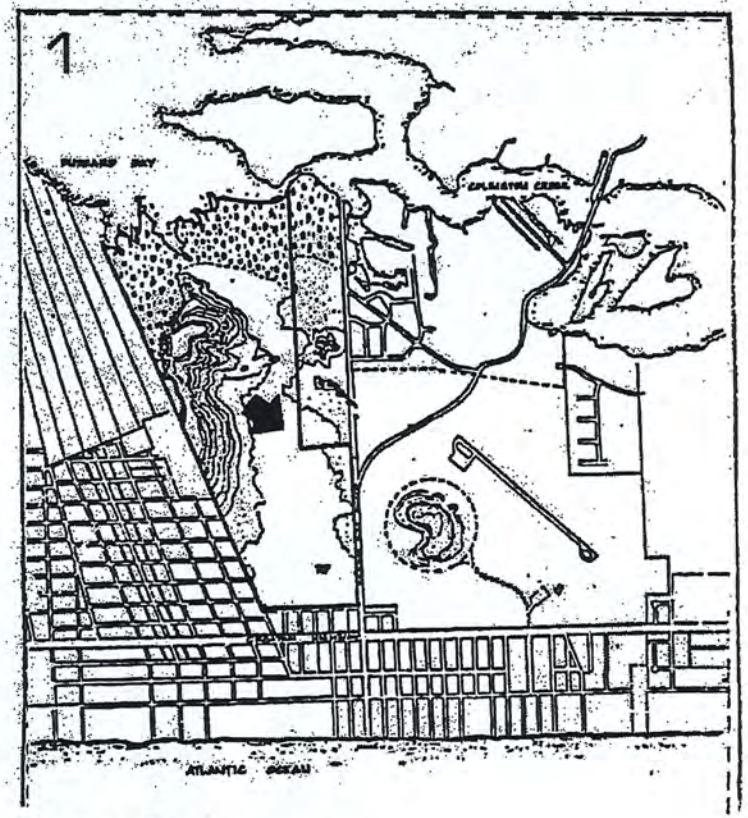
The wind is an ever present force on the Outer Banks and one of the key features that attracted the Wright Brothers to the Outer Banks for their test flights. The average wind speed is from ten to fifteen miles per hour. The prevailing wind direction is southwest from March to August and from September to February it is from the northeast. The strongest and most damaging winds occur in the winter from the northeast.

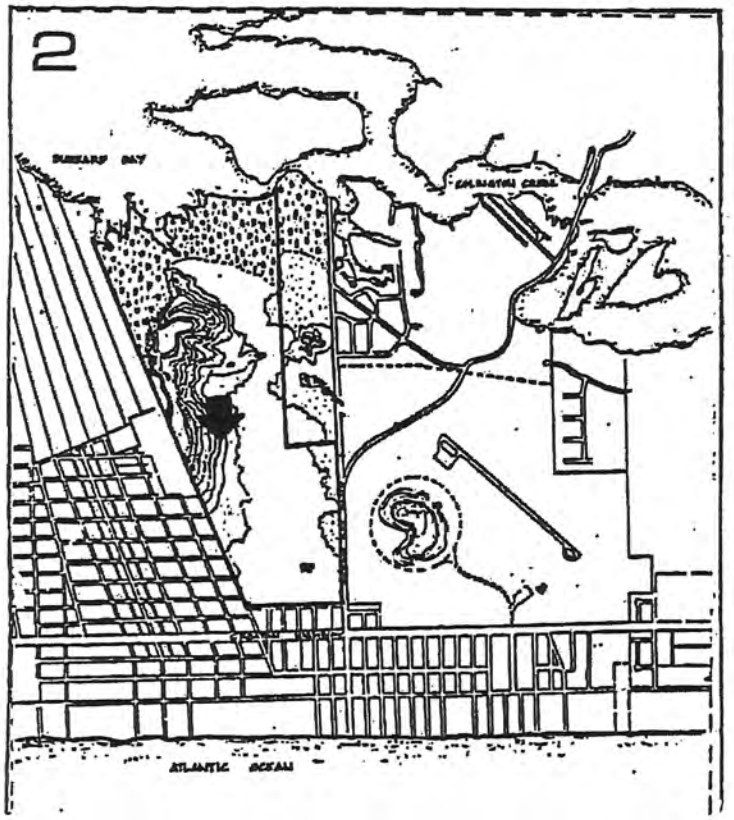
About twice a year, topical hurricanes come close enough to effect the Outer Banks and usually once every ten years, one of these storms hits with enough force to cause major property damage.

VIEWS

Many interesting views can be seen from the top of Run Hill because it is one of the highest points on the island. It provides one with a 360° visual tour of the surrounding area. The Wright Brothers monument can be clearly seen from the top of Run Hill (as shown in View 1). From the same vantage point but looking toward the ocean, one can see the residencial and commerical development that occurs between the ocean and the Bypass (as shown in View 2). Since Run Hill towers high above the thickly wooded maritime forest one is also able to get a spectacular view of the Sound across the Marshland (as shown in View 3). Sunrises and sunsets from this high point would be quite impressive.

Most views from the Flat Lands are obstructed by the thick vegetation, however, an opening occurs in the vegetation near the fresh water ponds which gives one the closest and most direct view of the monument (as shown in View 4). This could be a very picturesque setting for a future community center.

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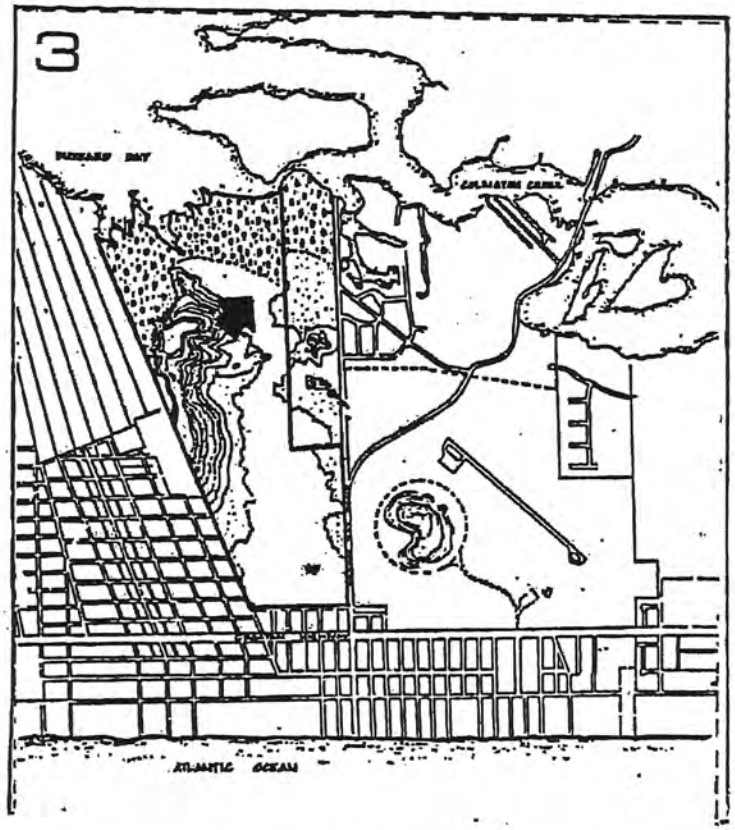
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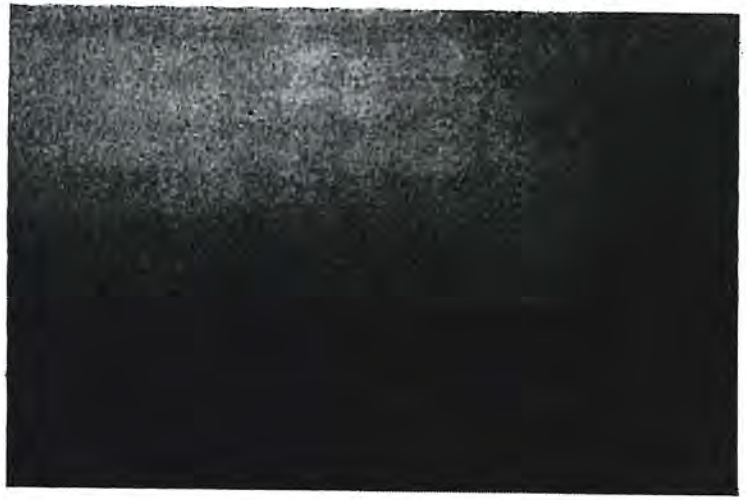

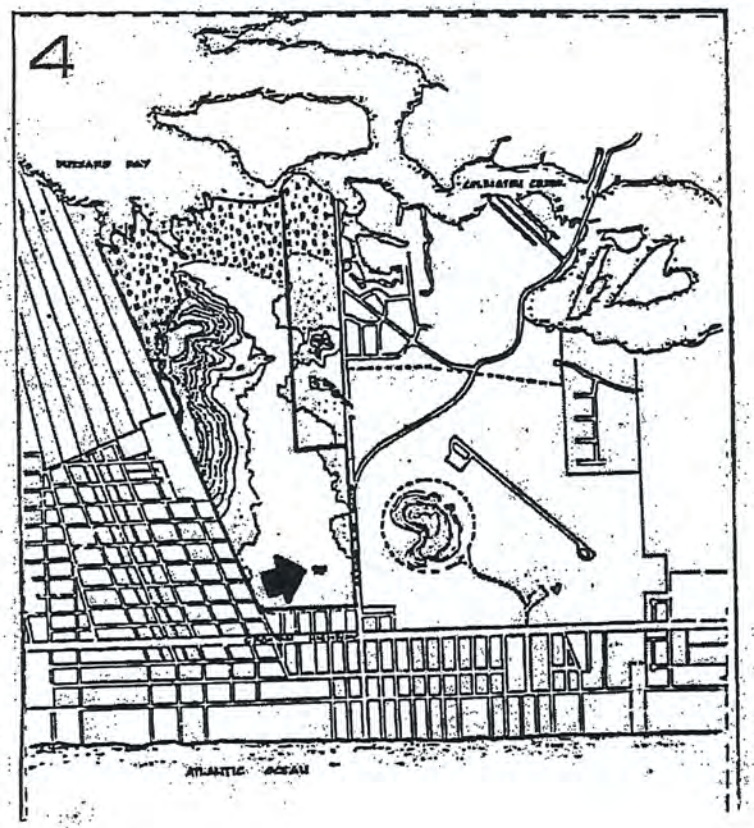
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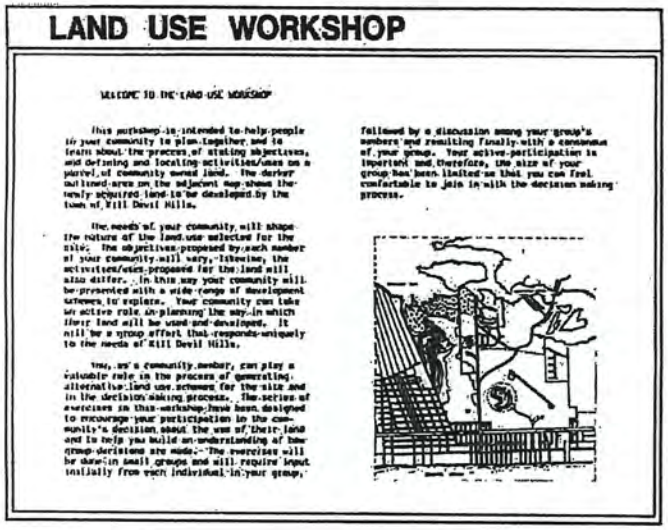
LAND USE WORKSHOP



LAND USE WORKSHOP

WELCOME TO THE LAND USE WORKSHOP

This workshop is intended to help people in your community to plan together and to learn about the process of stating objectives, and defining and locating activities/uses on a parcel of community owned land. The darker outlined area on the adjacent map shows the newly acquired land to be developed by the town of Kill Devil Hills.

The needs of your community will shape the nature of the land use selected for the site. The objectives proposed by each member of your community will vary, likewise, the activities/uses proposed for the land will also differ. In this way your community will be presented with a wide range of development options to explore. Your community can take an active role in planning the way in which their land will be used and developed. It will be a group effort that responds uniquely to the needs of Kill Devil Hills.

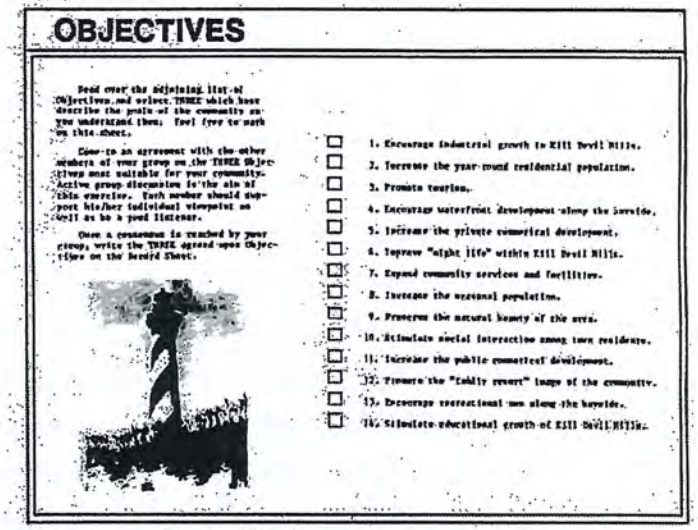
You, as a community member, can play a valuable role in the process of generating alternative land use schemes for the site and in the decision making process. The series of exercises in this workshop have been designed to encourage your participation in the community's decision about the use of their land and to help you build an understanding of how group decisions are made. The exercises will be done in small groups and will require input initially from each individual in your group, followed by a discussion among your group's members and resulting finally with a consensus of your group. Your active participation is important and therefore, the size of your group has been limited so that you can feel comfortable to join in with the decision making process.

LAND USE WORKSHOP

It is extremely important for all members of the community of KDH to become actively involved in the planning and decision making process for the development of the Baum Tract. The future growth and the continued well being of KDH depends on their collective decisions concerning this piece of property. The procedure chosen by CDG to stimulate the community's involvement was a series of workshops. The first of these was called the Land Use Workshop which was designed to familiarize community members with some of the decisions that are required in land use planning. The results of this workshop in turn provided CDG with some essential information that it needed to develop appropriate design alternatives concerning the possible uses for the site.

The first workshop was widely publicized throughout KDH and all members of the community were invited to attend. It was held on September 20, 1984, and fifty members of KDH and the surrounding communities participated in the workshop.

At the beginning of the workshop, CDG organized the workshop participants into small groups of about five. Each participant was given a sheet of objectives for the development of the site, like the one shown, and asked to choose the three most appropriate objectives from this list of fifteen objectives. (Written additions to the list were also welcomed.) They then met with their assigned groups, discussed their individual choices and reached a consensus decision on the three objectives they felt, as a group, best represented the immediate and/or long range objectives of KDH. These three objectives were recorded on the group's Record Sheet (see example).



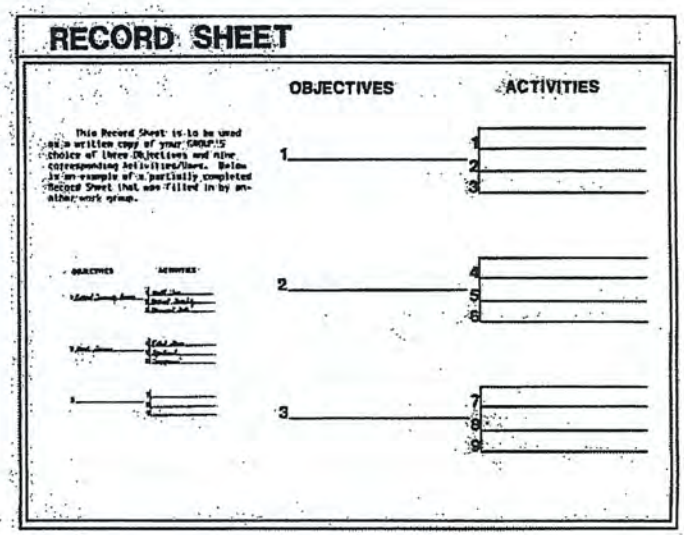
OBJECTIVES

Read over the following list of Objectives and select THREE which best describe the goals of the community as you understand them. Feel free to mark on this sheet.

Come to an agreement with the other members of your group on the THREE Objectives most suitable for your community. Active group discussion is the aim of this exercise. Each member should support his/her individual viewpoint as well as be a good listener.

Once a consensus is reached by your group, write the THREE agreed upon Objectives on the Record Sheet.

- ☐ 1. Encourage industrial growth in Kill Devil Hills.
- ☐ 2. Increase the year-round residential population.
- ☐ 3. Promote tourism.
- ☐ 4. Encourage waterfront development along the bayside.
- ☐ 5. Increase the private commerical development.
- ☐ 6. Improve "night life" within Kill Devil Hills.
- ☐ 7. Expand community services and facilities.
- ☐ 8. Increase the seasonal population.
- ☐ 9. Preserve the natural beauty of the area.
- ☐ 10. Stimulate social interaction among town residents.
- ☐ 11. Increase the public commerical development.
- ☐ 12. Promote the "family resort" image of the community.
- ☐ 13. Encourage recreational use along the bayside.
- ☐ 14. Stimulate educational growth of Kill Devil Hills.

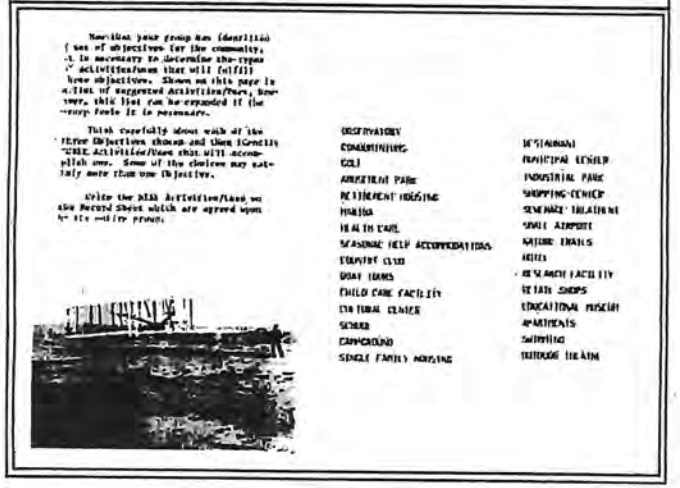


RECORD SHEET

This Record Sheet is to be used as a written copy of your GROUP'S choice of three Objectives and nine corresponding Activities/Uses. Below is an example of a partially completed Record Sheet that was filled in by another work group.

OBJECTIVES	ACTIVITIES
1	1, 2, 3
2	4, 5, 6
3	7, 8, 9

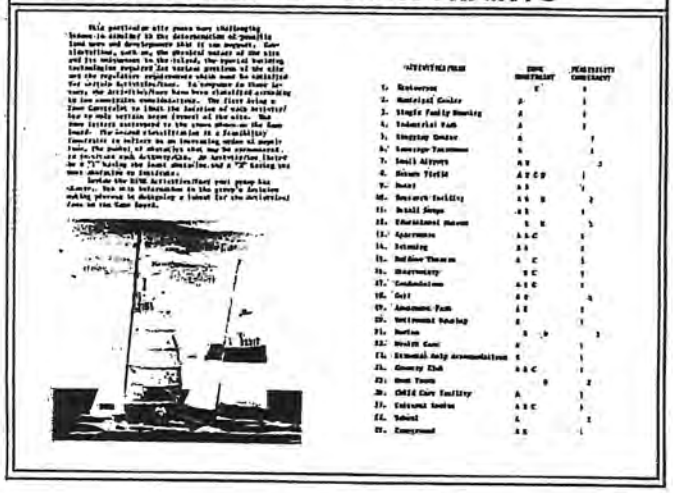
ACTIVITIES/USES



OBSERVATORY
COMMUNITING
GOLF
AMUSEMENT PARK
RETIREMENT HOUSING
MARINA
HEALTH CARE
SEASONAL HELP ACCOMMODATIONS
COUNTRY CLUB
DAY TRIPS
CHILD CARE FACILITY
CULTURAL CENTER
SCHOOL
CAMPGROUND
SINGLE FAMILY HOUSING

SEASONAL
MUNICIPAL LEISURE
INDUSTRIAL PARK
SHOPPING CENTER
SEWAGE TREATMENT
SMALL AIRPORT
NATURE TRAILS
HOTEL
RESEARCH FACILITY
RETAIL SHOPS
EDUCATIONAL MUSEUM
APARTMENTS
SWIMMING
OUTDOOR THEATRE

ACTIVITIES/USES CONSTRAINTS



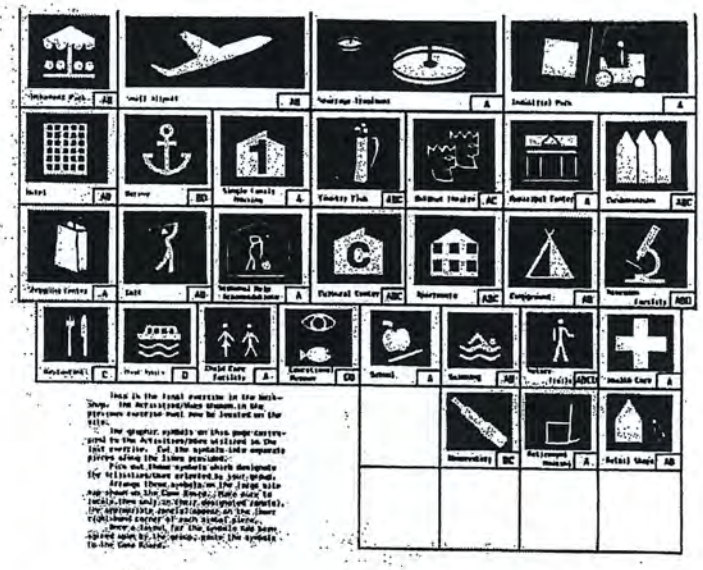
Next, the participants were asked to select from an extensive list of activites/uses (like the one shown), the three activities/uses that would best achieve each of the three objectives chosen by their group. Once the nine activities/uses were agreed upon, they too, were recorded on the group's Record Sheet.

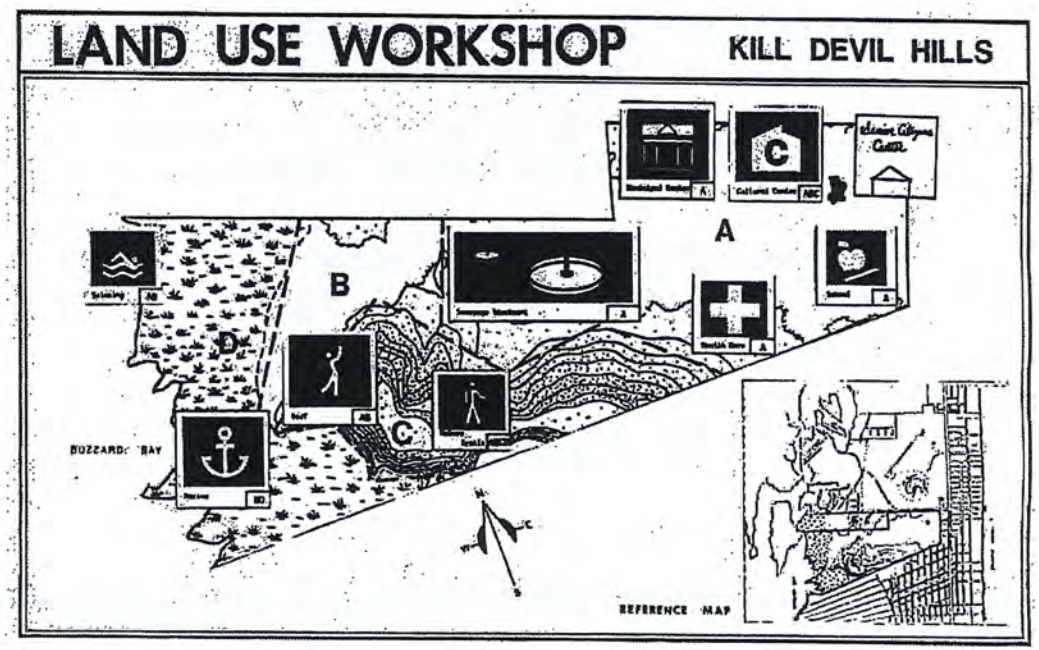
Each group was then given a list of constraints that corresponded to the list of activities/uses (see example shown). The way in which CDG derived these constraints was to divide the site into four zones. The boundaries for the zones were based on the physical characteristics of the site. They were as follows: Zone A-Flat Lands, Zone B-Maritime Forest, Zone C-Sand Dune and Zone D-Marsh Land. CDG used these designated zones and the information it had gathered from talking to various experts concerning issues such as the feasibility of building certain facilities, the regulatory requirements which had to be satisfied for certain activities/uses and the physical limitations of the site, in order to designate which zones were appropriate for each activitiy/use. In addition, CDG rated on a scale from 1 to 3 the feasibility of instituting on the site each activity/use. A "3" was used to designate an activity/use that would present several obstacles to institute on the site and a "1" was used to designate one which would present only a few obstacles.

Each group was next given a bright yellow sheet of game pieces representing all the activities/uses (see example) and a game board which was actually a large map of the site. The groups were encouraged to use the constraints sheet to select and cut-out only the most feasible game pieces that corresponded to their group's selection of activities/uses for the site. As the last step in the game, each group was asked to arrange and tape the cut-out game pieces to their game board, according to the zoning limitations prescribed on the constraints sheet. The game board shown, is an example of one group's game board after the game pieces had been arranged.

The groups discovered that some of their initial choices for activities/uses became less practical and desirable when the realities of the site and prohibitive regulatory requirements were considered. The participants began to realize that there were drawbacks to some of their choices and that planning must follow practical guidelines.

To conclude the workshop, CDG displayed all the game boards on a bulletin board to allow the participants to examine and compare the alternatives that were designed by the various groups.





CDG was pleased by the large turnout of enthusiastic community members at the workshop, however, the workshop results did not provide CDG with a representative cross section of opinions from the residents in KDH. CDG, therefore, decided to conduct interviews with some of the local business owners, real estate developers and town officials, as well as, to conduct a second Land Use Workshop at Manteo High School with high school students from KDH to acquire some of the opinions not represented at the first workshop.

The interviews were conducted on October 5, 1984. The individuals who were interviewed were as follows: Lowell Perry, the Mayor of KDH; Pat Austin, the Principal of Manteo High School; John Bone, the Director of the Chamber of Commerce; Jimbo Ward, the Manager of Beach Realty; Mr. Williams, the Manager of Ocean Beach Club; and Bob Gabriel, the Head of the Beach Rescue Service. The workshop at Manteo High School was also conducted on the same day with nine students from KDH.

LAND USE WORKSHOP
LAND USE WORKSHOP

2-1 OBJECTIVES CHOSEN BY GROUPS AT LAND USE WORKSHOPS

September 21, 1984 Workshop	October 5, 1984 Workshop
20% Preserve the natural beauty of the area	34% Expand community services and facilities
20% Promote the "family resort" image of the community	33% Encourage recreational use along the bayside
20% Build a Senior Citizen Center	11% Improve "night life" within Kill Devil Hills
15% Stimulate social interaction among town residents	11% Preserve the natural beauty of the area
10% Expand community services and facilities	11% Promote the "family resort" image of the community
10% Stimulate educational growth of Kill Devil Hills	
5% Encourage recreational use along the bayside	

CDG acquired two important types of information from the responses given during the interviews and at the two Land Use Workshops. The first being the objectives that KDH residents have for the development of the Baum Tract and KDH in general, and the second being, the activities/uses they feel are needed in KDH and would be suitable for the development of the Baum Tract. Table 2-1 shows the objectives chosen by the groups at the two Land Use Workshops. Table 2-2 shows a tabulated list of all the activities/uses that were mentioned and Table 2-3 groups this list of activities/uses into ten general categories.

The data in Table 2-1 indicates that the objectives of the KDH residents are varied. Some would like to see the natural beauty of the area preserved while others would like to see community services expanded, recreational uses along the bayside encouraged and social interaction stimulated among the residents. It can be seen from the data in Table 2-3, that Recreational activites/uses for the site were mentioned most often followed by Municipal, Passive Education and Social Interaction activities/uses. All of these suggest group oriented activities/uses which is in keeping with Diane Baum St. Clair's original intent for the use of the site when she sold it to the town.

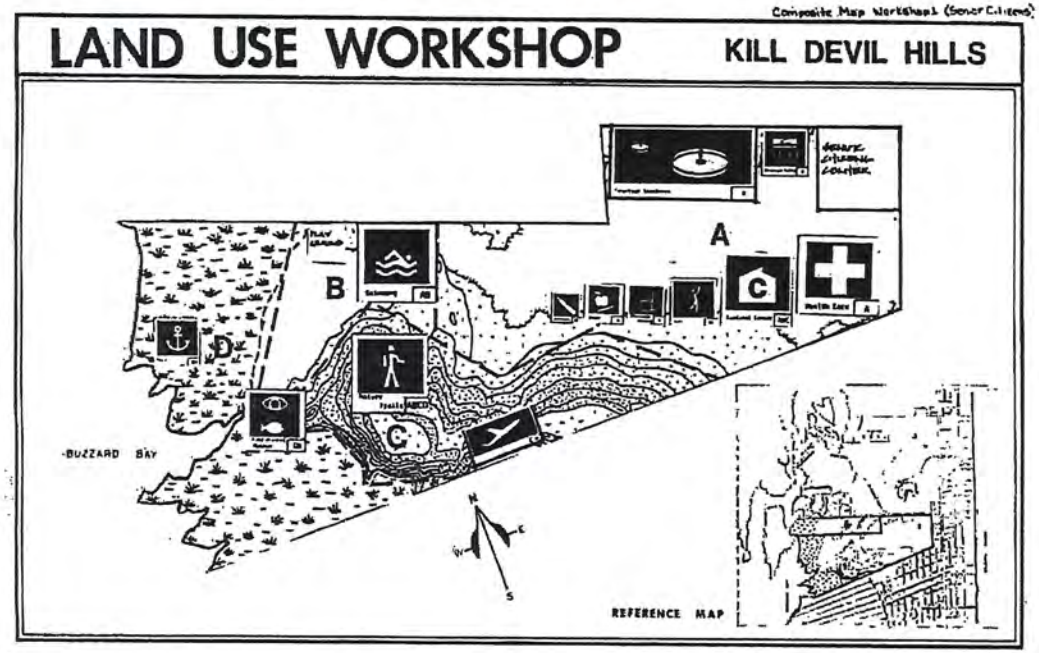
2-2 LIST OF ACTIVITIES/USES

Activities/Uses	# Responses
RECREATIONAL	
Swimming	12
Recreational	6
Playground	6
Golf	5
Racquetball	3
Bicycle Path	2
Boating	2
Bowling	2
Basketball	2
Tennis	2
Horseback Riding	1
Fishing	1
Campground	1
MUNICIPAL	
Health	11
Multiuse Center	10
Central Municipal	6
Police Lock-Up	2
Fire Department	1
PASSIVE EDUCATIONAL	
Nature Trails	9
Educational Museum	5
Public Library	1
Obsevatory	1
SOCIAL INTERACTION	
Cultural Center	6
Marina	3
Amusement Park	2
Dance Hall	2
Drive-In Theatre	1
Outdoor Drama Theatre	1
Boat Tours	1
WASTEWATER TREATMENT	
Sewerage Treatment	9
Drinking Water	3
ZONING/LIGHTING	
Beach Access/Parking	4
Signage/ Street Lighting	3
Zoning	2
Access Off Island	1
HOUSING	
Retirement Housing	3
Seasonal Help Housing	2
Apartments	2
ACTIVE EDUCATIONAL	
School	7
INDUSTRIAL/COMMERCIAL	
Civic Center	2
Convention Center	2
Industrial Park	1
Shopping Center	1
AIRPORT	
Small Aircraft Tie Down	4
Small Airport	1

2-3

GENERAL CATEGORIES OF ACTIVITIES/USES	RESPONSE #	RESPONSE %
Recreational	45	29
Municipal	29	19
Passive Education	16	10
Social Interaction	16	10
Wastewater Treatment	12	8
Zoning/Lighting	10	7
Housing	7	5
Active Education	7	5
Industrial/Commerical	6	4
Airport	5	3
Total	153	100

Composite Map Workshop (Senior Citizens)



The game board shown is a composite game board from the first workshop. It includes all the game pieces that were placed on all the groups game boards. The relative size of each game piece indicates the frequency with which this game piece (activity/use) was selected by the various groups. The location of the game piece on the game board indicates the zone this game piece (activity/use) was most often placed. From looking at the game board, most activities/uses were placed in Zone A which is the zone most suitable for development. The activities/uses mentioned most were senior citizen center, health care, cultural center, and sewerage treatment. Zones B,C and D are primarily suited for recreational purposes which is what most of the groups selected. The small airport was selected by only one group.

KDH 'Game' May Aid Plans In Baum Tract

A land use planning "game" was played last Friday by some 50 people, most of them senior citizens, as a team of four graduate students from the School of Design at N. C. University began a study of how best to utilize the 322-acre tract of land purchased in 1983 by the Town of Kill Devil Hills from Mrs. Diane Baum St. Clair, a one-time mayor of the beach resort.

Responding to an invitation to a public hearing, members of the Outer Banks Senior Fellowship turned out in mass to heavily favor an activities center for use by retired people and other facilities such as a cultural center, nature trails, museum, and parks. Among the group were citizens of Nags Head, Kitty Hawk and Southern Shores.

Arrangements were made, at no cost to the town except travel expenses, for the students of Dr. Henry Sanoff, who teaches community development at N. C. State, to spend approximately three months developing recommendations to the KDH town council. The four students are: Jim Utley of Whiteville, Lisa MacCartney, whose home is in Boston; Emmanuel Abban of Philadelphia, and Brendan Ndukwu of Nigeria.

They brought with them printed forms which asked those participating in their "game" to select between 14 objectives and 29 or more activities, or uses of the property which runs from back of the KDH post office to the sound. The game-players were divided into small groups of four to six persons and asked to agree upon their favored three objectives and three activities for each objective.

The 14 objectives listed were: (1) encourage idustrial growth; (2) increase year 'round residential population, (3) promote tourism; (4) encourage bayside waterfront development, (5) increase private commercial development, (6) improve "night life," (7) expand community services and facilities. And, (8) increase seasonal population, (9) preserve the natural beauty of the area, (10) stimulate social interaction among town residents, (12) promote the "family resort" image of the community, (13) encourage recreational use along the bayside, and (14) stimulate educational growth.

In addition to those favored by the group, specific uses or activities listed included: golf course, marina, country club, boat tours, child care and health care facilities, school, campground, sewage treatment plant, small airport, research facility, swimming pool, outdoor theatre, and commercial entrerprises such as restaurant, hotel, apartments, condominiums, shopping center, retail stores, and an industrial park.

The studetns collected the information derived from Friday's assembly and indicated that they likely would ask for another meeting possibly with members of civic clubs and persons of a different age group and with a broader range of community interests.

They eventually will put together the results of their surveys and present "a book' to the town council with their recommendations as to the best use of the so-called "Baum Tract."

The students called the get-together a "Land Use Workshop" and said the purpose was to give members of the community an opportunity to participate in deciding how the land will be used. They showed color slides of the tract which they had made on a previous visit to the Outer Banks, when they were briefed on the project by Ray Sturza, the town planner, and Lloyd Ballance, town manager.

Mayor Lowell Perry and town commissioners Joseph Deneke and Lura Cowan attended and participated as "game players."

KDH Hearing Set On Study Of Baum Tract

A team of four graduate students from the School of Design at N. C. State University in Raleigh will be in Kill Devil Hills for a public hearing at noon on Sept. 21 in connection with an inventory of natural resources which will be a first step in the development of a master plan for use of the so-called Baum tract purchased last year by the town board from Mrs. Diane Baum St. Clair.

This was announced at yesterday's meeting of the town council and Mayor Lowell Perry urged that citizens attend the hearing and give input on the matter. The students will be accompanied by one of their professors.

Otherwise, the brief meeting of the council heard from the mayor the contents of a letter from C. E. "Smokey" Broughton, Jr. of the Ocean Acres Civic Association asking that the town be prepared to take over operation of the Ocean Acres sewage treatment plant in the event Steve Sawin, the present operator, gives up the project. Perry said the KDH government has been

Public Hearing On Baum Tract Scheduled

By RAY PY

Citizens' suggestions for the development of the Baum Tract in Kill Devil Hills will be heard during a Sept. 21 public hearing at town hall. The meeting is scheduled for noon.

Commissioner Joseph Deneke told the KDH Board of Commissioners, "It's important that citizens be aware of the hearing and participate as much as possible." Deneke spoke during a brief town commissioners' meeting Monday.

Four graduate students from the N.C. State University School of Design requested the meeting with citizens to begin collecting data to be used in developing a master plan for the tract.

The town purchased the property last year from former KDH Mayor and Commissioner Diane Baum St. Clair.

Mayor Lowell Perry said the students will be "taking an inventory of the natural resources which are included in the tract."

In other business, the commissioners:

K.D.H. Citizens Public Workshop Notice!

RE: St. Clair Purchase
Master Plan Development

Date: Sept 21, 1984
Time: 12 noon - @ 2 pm
Place: KDH Municipal Complex
Meeting Room
1634 N. Croatan Hwy.

Sponsored by the Kill Devil Hills Board of Commissioners & the N.C. State U. School of Design to provide the public the opportunity to provide input on the use of this valuable property. Interested citizens make plans now to attend and participate!

Planning Dept. Posted Sept. 14, 1984

ATTENTION

CITIZENS OF KILL DEVIL HILLS

The Town of Kill Devil Hills and the N.C. State University School of Design have scheduled a public workshop concerning the development of a master plan for the St. Clair Tract acquired by the Board of Commissioners in 1983. All interested citizens are encouraged to attend this workshop and provide comments, ask questions, or simply listen to the proceedings. This is your opportunity to influence the future of this valuable property. Make plans now to attend this workshop.

Date: September 21
Time: 12 noon-@ 2 p.m.
Place: Kill Devil Hills Municipal Complex
Meeting Room
1634 N. Croatan Highway

ALTERNATIVE SITE SCHEMES

From

Kill Devil Hills

Don't Let Yourself Be Missed !!
at the Presentation
of Design Proposals for The Baum Tract

KDH TOWN HALL
NOV 14 7PM

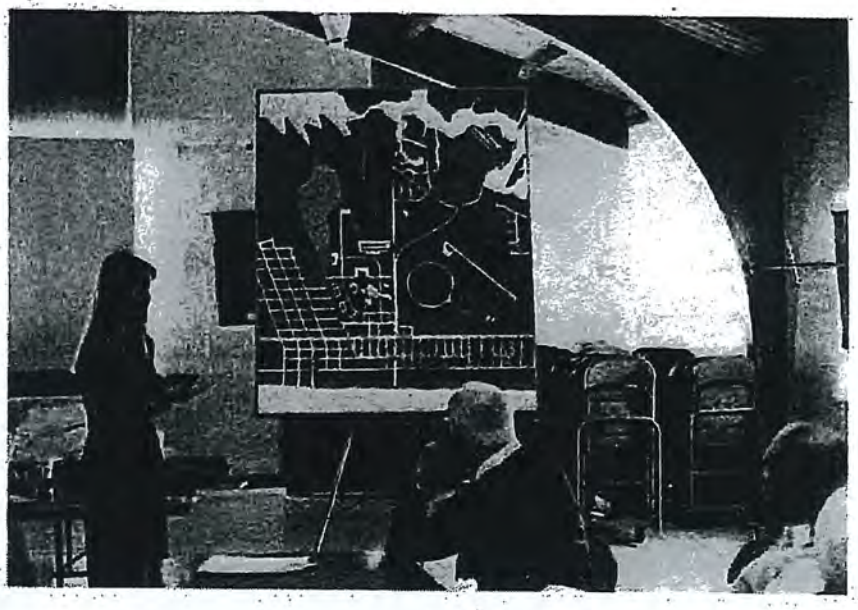
The Community Development Group of North Carolina State University
Invites Your Ideas and Comments Concerning The Design Proposals for The Site

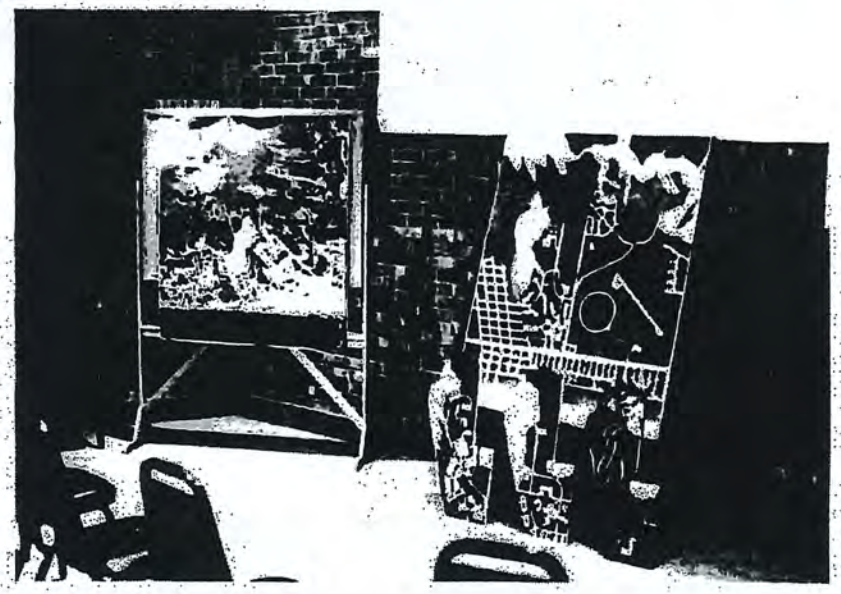
ALTERNATIVE SITE SCHEMES WORKSHOP

Using the information gathered from the Land Use Workshops, CDG designed four different site schemes. The primary intent behind the four schemes was to provide the community with an effective means of comparing various ways of developing the site. Therefore, each scheme was purposely designed to target a different combination of uses for the site and in some cases to focus extensively on one particular use. The schemes vary in several ways, such as, in the degree to which they provide community services, in their ability to generate revenue for the town, in the size and number of facilities located on the site, in the proximity of facilities to each other (i.e. density), in the ways in which they relate to the adjoining neighborhoods and businesses and in their preservation of the natural landscape.

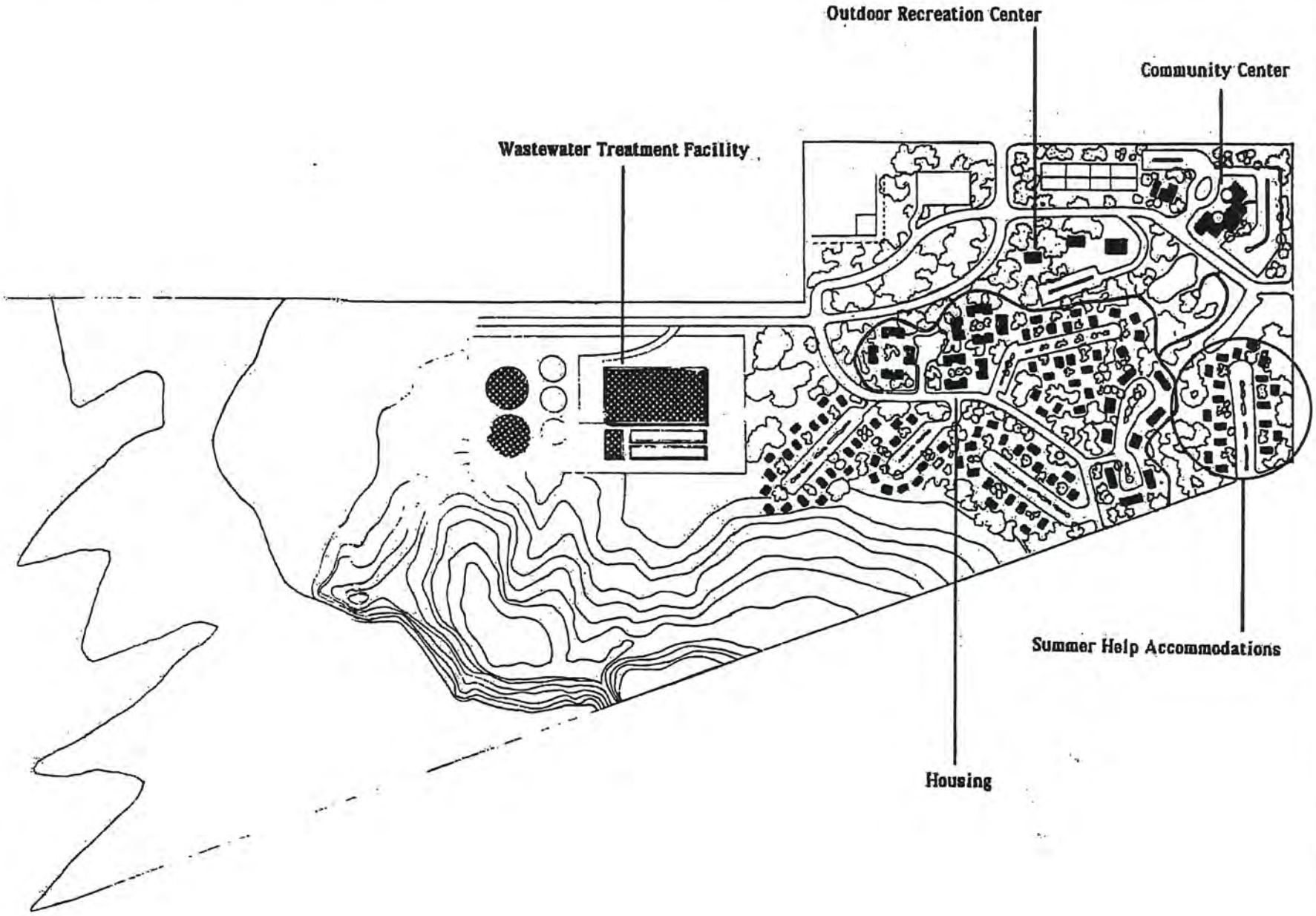
All four site schemes do have one common element which is a waste water treatment facility. This particular facility was included on all the schemes to emphasize the critical need in KDH for a centralized waste water treatment facility. The continued growth and development of the town and more specifically, this site, depends on a more efficient system of waste water disposal than the present septic field system. Hence, a schematic representation of a facility with a daily capacity of a million gallons was shown on each site scheme. Before a facility of this type could be built, a comprehensive study would need to be done to accurately assess what the daily waste water treatment needs for KDH are to better calculate the required daily capacity for a waste water treatment facility.

The format for explaining each of the four site schemes is as follows. Each site scheme is briefly described by first giving a general, overall purpose/intent of the scheme and secondly a more detailed description of each of the proposed activities/uses included in the scheme. A site plan accompanies each scheme description with the locations of the various activities/uses indicated.





SCHEME 1


Outdoor Recreation Center
Community Center
Wastewater Treatment Facility
Summer Help Accommodations
Housing

SCHEME 1

PURPOSE

Designed to address the housing needs of single families and summer help and the community's need for a muti-purpose center and a park which would include several outdoor recreational facilities.

SCHEME 1 DESCRIPTION

Housing
- Medium density
- (3-4 units/acre)
- Single family detached houses
- Summer Help Accommodations
- Duplexes

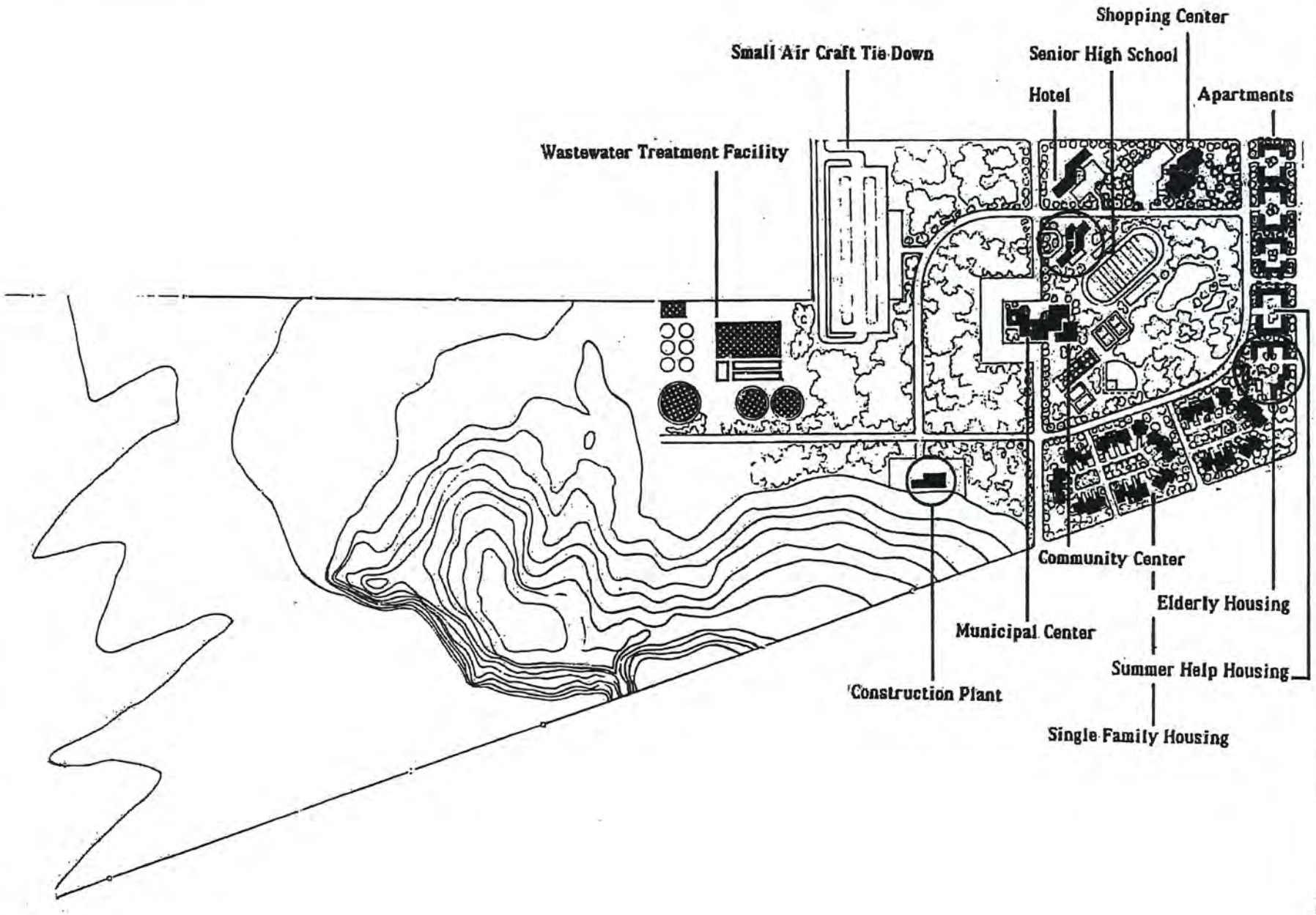
Community Center
- Indoor Recreation
- Library
- Municipal Offices
- Multi-purpose Room
- Meeting Room
- Swimming Pool

Community Park
- Picnic Areas
- Nature Trails
- Bicycle Paths

Outdoor Recreation
- Tennis Courts
- Basketball
- Baseball
- Handball

Wastewater Treatment Facility
- 1 Million Gallons/Day

SCHEME 2


Shopping Center
Small Air Craft Tie-Down
Senior High School
Hotel
Apartments
Wastewater Treatment Facility
Community Center
Elderly Housing
Municipal Center
Summer Help Housing
Construction Plant
Single Family Housing

SCHEME 2

PURPOSE

Designed to expand the residential and community services provided in Scheme 1 by adding a wider variety of housing units and by combining the community center and municipal offices with a senior high school and its facilities. Also, this scheme was designed to increase the revenue generating ability of the site by adding both commerical and industrial uses.

SCHEME 2 DESCRIPTION

Housing
- High Density
- Single family
  - 58 Cluster Units
- Summer Help Accommodations
  - Studio Apartments
- Senior Housing Complex
- Apartments
  - 1,2, & 3 Bedroom Units
  - 56 Units

Community Center
- City Administration
- Meeting Rooms
- Indoor Recreation
  - Swimming Pool, Exercise Room, Bowling Alley, Ping Pong Tables, Pool Tables

Senior High School
- Grades 9-12
- Gymnasium
- Outdoor Recreation Area
  - Track and Field, Tennis Courts, Baseball, Football, Volley Ball, Basketball

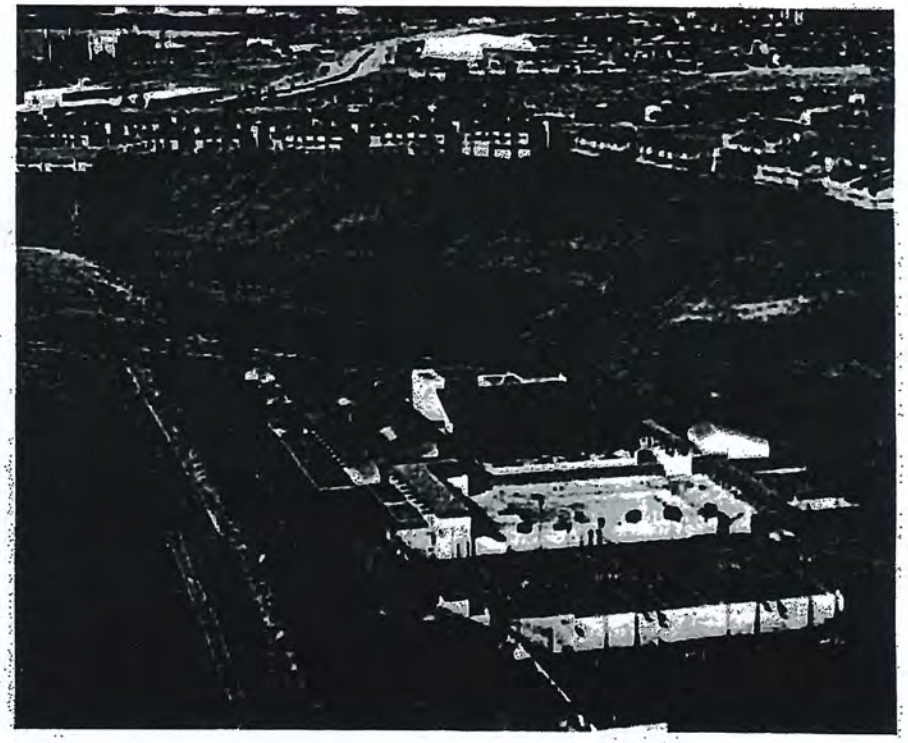
Shopping Center

Hotel
- 100 Rooms
- Restaurant
- Small Convention Center

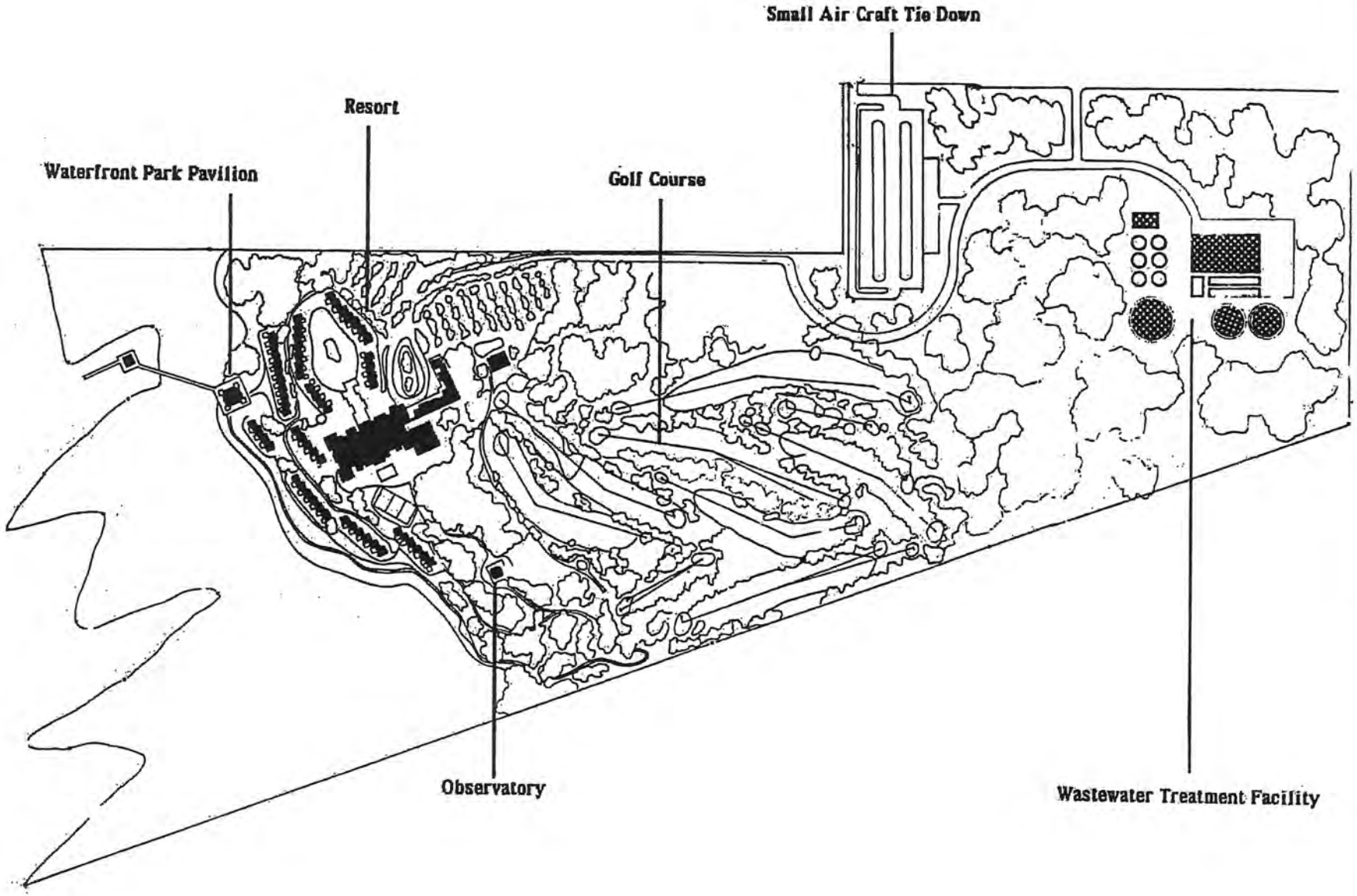
Construction Plant
- Concrete Manufacturing
- Sand Hauling

Small Air Craft Tie Down
- 24 Tie Down Spaces
- Refueling Facility
- Automobile Parking

Wastewater Treatment Facility
- 1 Million Gallons/Day



SCHEME 3


Small Air Craft Tie Down
Resort
Waterfront Park Pavilion
Golf Course
Observatory
Wastewater Treatment Facility

SCHEME 3

PURPOSE

Developed exclusively as a resort complete with various living accommodations, forms of entertainment, restaurants, a small shopping center, a convention center and a variety of outdoor recreational activities ranging from bayside activities to a nine-hole golf course.

SCHEME 3 DESCRIPTION

Resort
- Hotel Accommodations
- 60 Rental Condominiums
- Restaurants
- Olympic Size Swimming Pool
- Shopping Center
- Convention Center

Golf Course
- Nine Holes
- Clubhouse

Waterfront Park Pavilion
- Picnic Area
- Restaurant
- Nature Trails
- Games

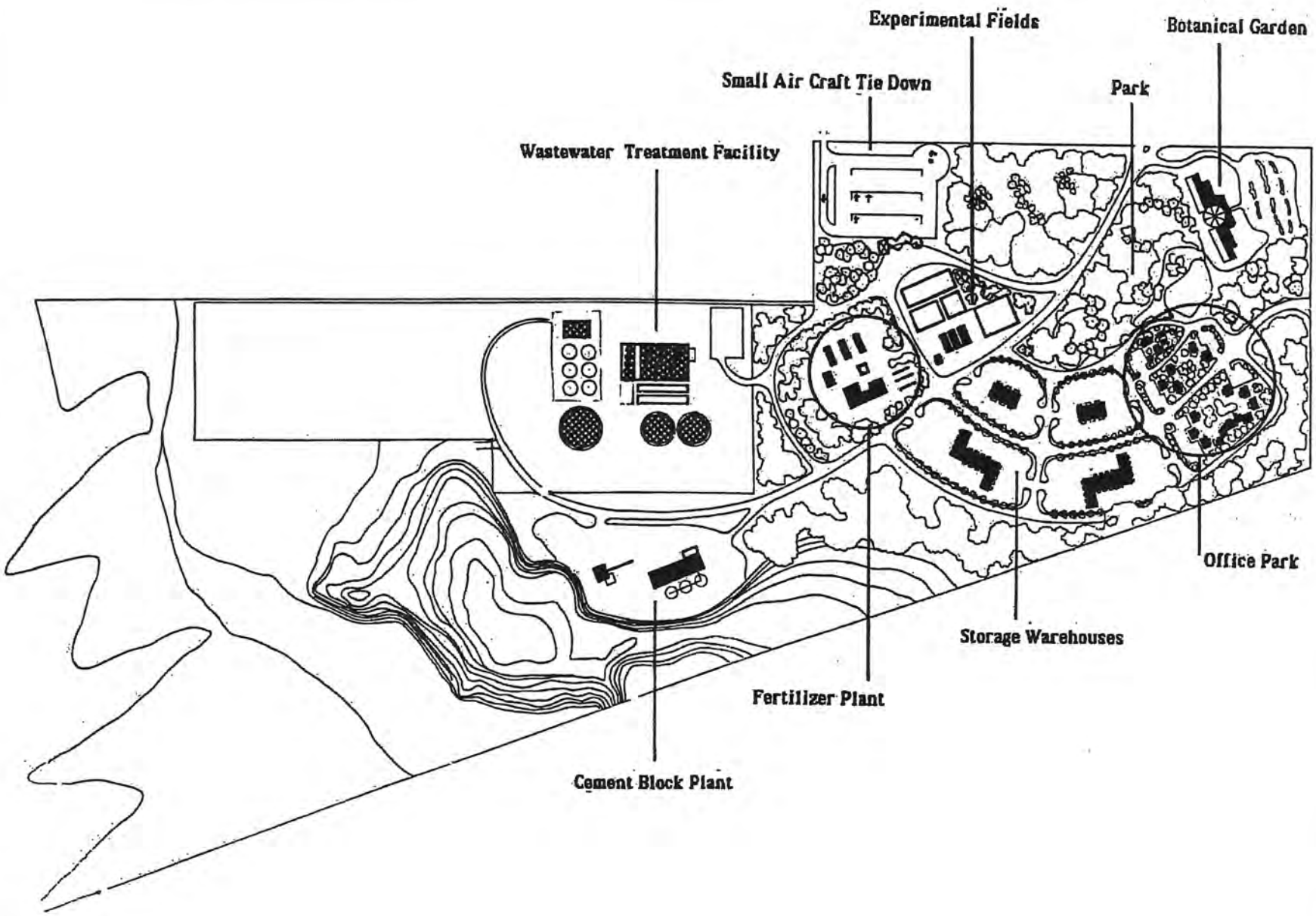
Bayside Dock
- Wind Surfing
- Boat Rentals
- Paddle Boat

Observatory

Small Air Craft Tie Down
- 24 Tie Down Spaces
- Refueling Facility
- Automobile Rental

Wastewater Treatment Facility
- 1 Million Gallons/Day

SCHEME 4


Experimental Fields
Botanical Garden
Small Air Craft Tie Down
Park
Wastewater Treatment Facility
Office Park
Storage Warehouses
Fertilizer Plant
Cement Block Plant

SCHEME 4

PURPOSE

Designed to utilize the site primarily for industrial purposes while at the same time remaining sensitive to the surrounding neighborhoods and areas.

SCHEME 4 DESCRIPTION

Botanical Garden
- Indoor Gardens
- Landscaped Park and Gardens
- Arboretum
- Self-guided Walking Trails
- Pond Side Picnic Area

Fertilizer Processing Plant
- Process Waste Products from Treatment Facility

Experimental Fields
- 3 Greenhouses
- 4 Fields for Testing Fertilizers

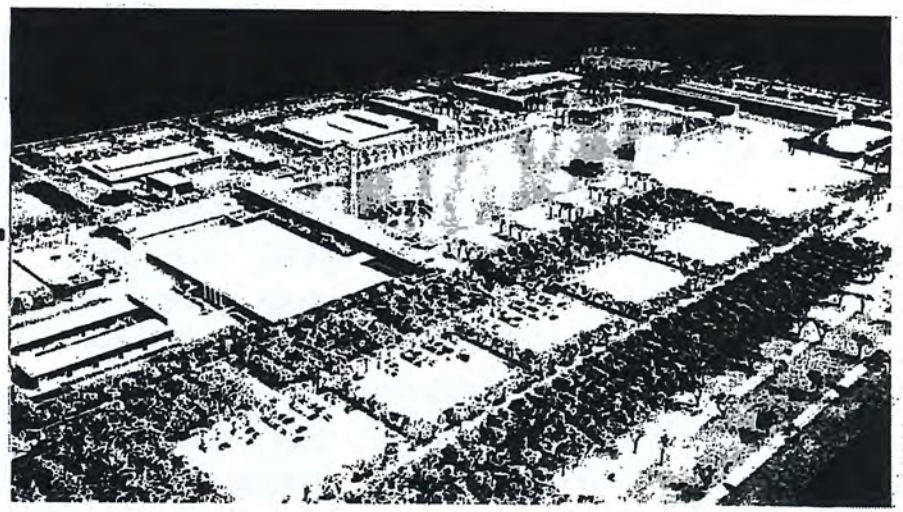
Cement Block Manufacturing Plant

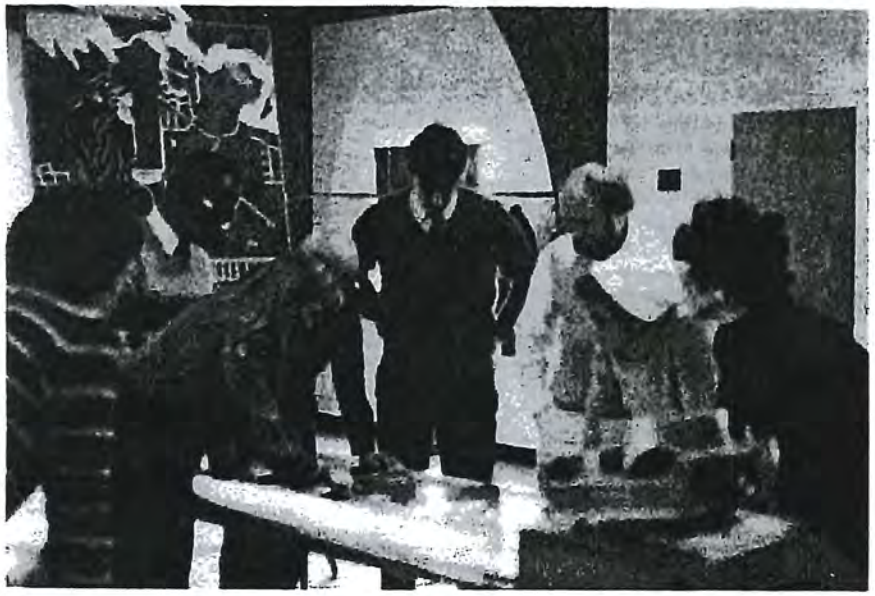
Storage Warehouses
- 52 Storage Units
- 1050 Sq. Ft. to 3500 Sq. Ft.

Office Park
- 35 Office Units
- All Units Separate Entries
- Picnic Areas

Small Air Craft Tie Down
- 18 Tie Down Spaces
- Refueling Facility
- Automobile Parking

Wastewater Treatment Facility
- 1 Million Gallons/Day





The purpose of the Alternative Site Schemes Workshop was different than that of the Land Use Workshop. CDG designed this workshop to provide the community members with the opportunity to compare and evaluate four different development schemes for the site.

The Alternative Site Schemes Workshop with the community was conducted on the evening of November 14, 1984. Fourteen interested community members attended the workshop. Before the workshop began each participant was requested to fill out an information sheet. This information provided CDG with some general demographic data about the individuals participating in the workshop.

As in the previous workshop, one of the primary objectives of the workshop was to encourage participation from all the community members who attended, therefore, they were divided into small groups of three.

Each site scheme was explained to the participants using slides of the site plan and a three dimensional site model of the scheme. Afterwards each participant was asked to write on an index card the three things they liked about the scheme. Then, with their assigned groups, they were to discuss ways to improve the scheme and write down on the group's Consensus Sheet the three changes they would recommend to improve the site scheme. The Group Consensus Sheet shown is an example of one group's recommendations for improving the four schemes.

After all the site schemes had been presented, a Comparison Sheet was given to each group. As shown, the sheet consisted of two different sets of issues. With the set of issues on the left-hand side of the sheet, the groups were asked to circle the number of the scheme which best represented each of the five issues. With the other set of issues, the groups were asked to rank each issue from one to five according to how important it was to KDH. A ranking of "1" indicated it was very important to KDH and a ranking of "5" meant it was very unimportant to KDH.

GROUP CONSENSUS

SCHEME 1

CHANGE #1: do away with Gaming

CHANGE #2: enlarge Community Park.

CHANGE #3: Community Center - change to municipal office - with Preps to Make the

ADDITIONAL COMMENTS: already has tennis Courts - should pay

SCHEME 2

CHANGE #1: Pull out administrative buildings and leave on 158.

CHANGE #2: Eliminate summer help housing.

CHANGE #3: Enlarge apartment housing and eliminate single family housing.

ADDITIONAL COMMENTS:

SCHEME 3

CHANGE #1: Include more nature or bike paths around golf course and resort.

CHANGE #2: Include more recreation facilities for local young people.

CHANGE #3:

ADDITIONAL COMMENTS: Make sure this area is available to local residents at no

SCHEME 4

CHANGE #1: Enlarge Park, nature trails include bike path.

CHANGE #2: Eliminate Convent Plant [illegible]

CHANGE #3:

ADDITIONAL COMMENTS:

COMPARISONS

Based on your group's consensus, please circle the number of the scheme which best represents the following issues.

1. Revenue generating ability	1	2	3	(4)
2. Promote the year round growth of Kill Devil Hills	1	(2)	3	4
3. Satisfies the needs of Kill Devil Hills	(1)	2	3	4
4. Projects an acceptable image for Kill Devil Hills	1	(2)	3	4
5. Satisfies the recreational needs of Kill Devil Hills	1	(2)	3	4

Based on the group's consensus, please rank the following in terms of how important they each are to Kill Devil Hills. Use number 1 to designate the most importance and number 5 to designate the least importance.

1. Use site to generate revenue	1	2	3	(4)	5
2. To promote industrial development	1	2	3	4	(5)
3. A view of the Wright Brothers Memorial	1	2	3	4	(5)
4. Housing development	(1)	2	3	4	5
5. Promote tourism in Kill Devil Hills	1	2	3	(4)	5
6. Develop bayside and sound access for boating & fishing	1	2	3	(4)	5

3-1 Participants of Site Alternatives Workshop

Number of Participants	14	
	YES	**NO**
Resident of Kill Devil Hills(KDH)	71 %	29 %
Work in KDH	57 %	43 %
Own Business in KDH	36 %	64 %
Own Property in KDH	50 %	50 %
Length of Residency in KDH	1-3 yrs.	43 %
	4-9 yrs.	14 %
	10 yrs.	14 %
	NA	29 %
Distance Live from Site	1-3 miles	72 %
	4-7 miles	14 %
	7+ miles	7 %
	NA	7 %

The following four tables, Tables 3-1 through 3-4, show a summary of the results from this workshop. Table 3-1 summarizes the demographic data about the participants who took part in the workshop. From the data it can be seen that about three-fourths of the participants were KDH residents who lived no more than 3 miles from the Baum Tract Site. Half of the participants owned property in KDH while only about one third owned businesses in KDH. A majority of the participants had lived in KDH for three years or less and over half of them worked in KDH.

Table 3-2 shows what the participants liked about each scheme. Most of the participants especially liked the idea of having a small air craft tie down and a community center on the site. The waste water treatment facility was mentioned for all the schemes but with much less enthusiasm. Scheme 2 received the most favorable responses. This scheme tended to have a wide variety of community services integrated with various types of housing. Scheme 1 was also widely liked because of the community recreational facilities that were proposed. The participants thought the resort proposed on Scheme 3 would be desirable if it was smaller so that part of the site could be used for other community activities/uses. Scheme 4 was the least liked scheme of the four because the residents were not in favor of having the site used for industrial purposes.

3-2

ACTIVITIES/USES LIKED* BY WORKSHOP PARTICIPANTS

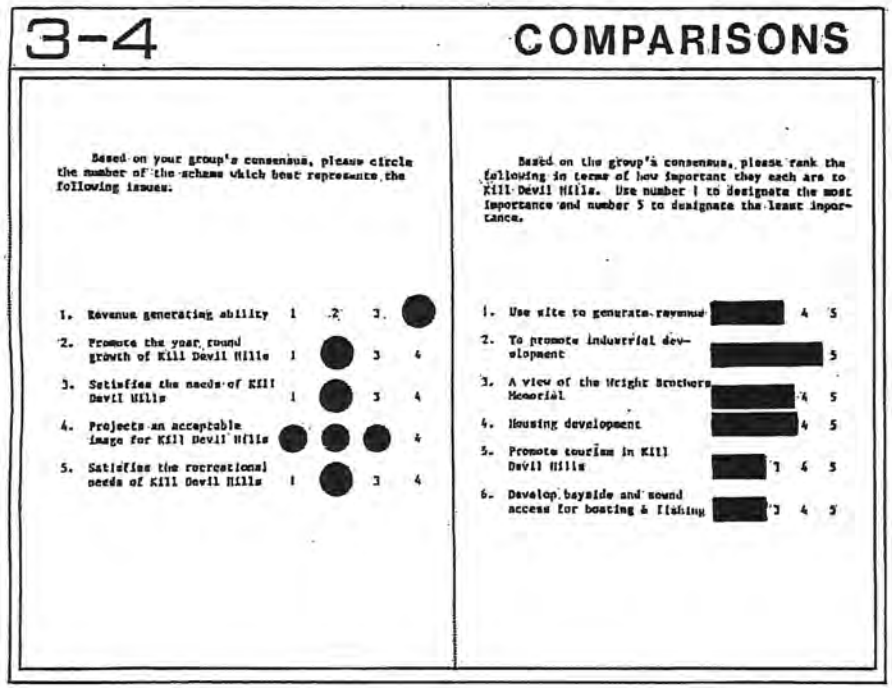
	RESPONSES #	RESPONSES %
SCHEME 1		
Community Center	8	18
Recreation	8	18
Park	6	14
Wastewater Treatment	6	14
Housing	5	11
Miscellaneous	11	25
SCHEME 2		
Small Air Craft Tie Down	10	22
Community Center	9	19
Senior Housing	6	13
Wastewater Treatment	6	13
School	5	11
Miscellaneous	10	22
SCHEME 3		
Small Air Craft Tie Down	7	18
Wastewater Treatment	7	18
Resort	5	13
Dock/Boating	5	13
Miscellaneous	15	38
SCHEME 4		
Small Air Craft Tie Down	7	19
Do Not Like Site Scheme	7	19
Botanical Garden	5	14
Wastewater Treatment	5	14
Office Park	4	11
Miscellaneous	8	23

*Received four or more favorable responses from workshop participants

Table 3-3 shows all the changes that the various groups recommended for the four schemes. The recommendations fell into four general categories which were to add, eliminate, enlarge or change something on the site schemes. The suggestions for all the schemes tended to follow a similar pattern in terms of either increasing the kinds of recreational facilities or enlarging them and also, in terms of using the sand dune primarily for nature trails or passive recreation. For all the schemes there was a wide range of opinions on which facilities to eliminate. For Schemes 1 and 2 the suggestions were to reduce the amount of family housing but to increase the apartment housing. The groups recommended for Schemes 3 and 4 that an air and space museum be either added to the site or replace one of the proposed facilities. In terms of a waste water treatment facility, the suggestions were to either eliminate it all together, enlarge the existing Ocean Beach Club treatment plant on the neighboring site or to build in addition, a solid waste incinerator as an alternative fuel conversion site.

3-3

	ADD	ELIMINATE	ENLARGE	CHANGE
SCHEME 1	Passive Recreation to Sand dune Access to Sound for Activities Nature Walk in Marsh Raised Walks over Dune	Housing Wastewater Treatment Community Center Municipal Officies Multipurpose Room Meeting Room	Community Park	Location of Summer Help Accommodations Reduce Residential Density
SCHEME 2	Integrated Walking/Jogging/ Bicycle Track	Construction Plant Family Housing Shopping Mall Civic Center Wastewater Treatment School/ Football Field Air Craft Tie Down Hotel Summer Help Housing Administrative Offices	Open Space Areas Apartment Housing	
SCHEME 3	Air and Space Museum Campgrounds in Wooded Area Public Recreation Area	Wastewater Treatment Hotel Resort Area	Golf Course Bicycle/Walking Trails throughout Site Ocean Beach Club Treatment Plant	
SCHEME 4	Bicycle Path	Everything Except Storage Area Experimental Fertilizer Fields Cement Plant Entire Plan Sand Dune Development	Air Craft Tie Down Park and Nature Trails	Botanical Gardens to Air and Space Museum Cement Plant to Solid Waste Incinerator/Alternative Fuel Conversion Site Nothing



3-4 COMPARISONS

Based on your group's consensus, please circle the number of the scheme which best represents the following issues:

	1	2	3	4
1. Revenue generating ability			●	
2. Promote the year round growth of Kill Devil Hills		●		
3. Satisfies the needs of Kill Devil Hills		●		
4. Projects an acceptable image for Kill Devil Hills	●	●	●	
5. Satisfies the recreational needs of Kill Devil Hills		●		

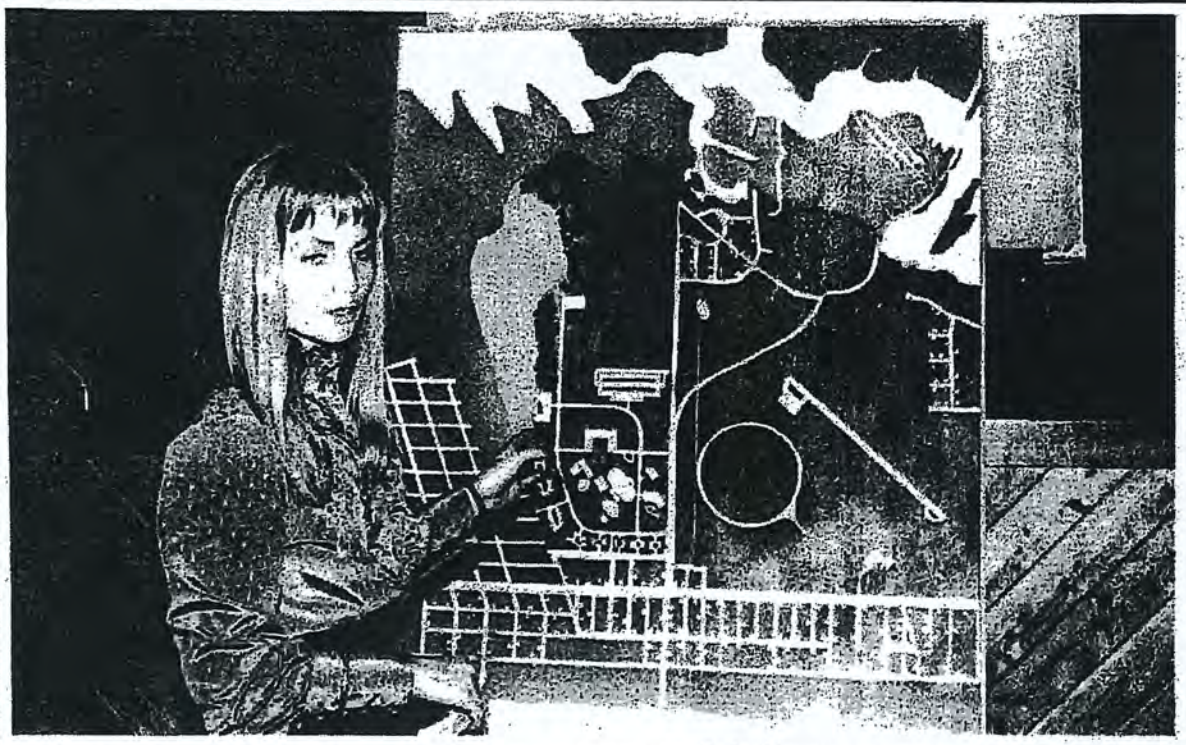
Based on the group's consensus, please rank the following in terms of how important they each are to Kill Devil Hills. Use number 1 to designate the most importance and number 5 to designate the least importance.

	1	2	3	4	5
1. Use site to generate revenue					
2. To promote industrial development					
3. A view of the Wright Brothers Memorial					
4. Housing development					
5. Promote tourism in Kill Devil Hills					
6. Develop bayside and sound access for boating & fishing					

Table 3-4 is a summary of the results from all the groups' Comparison Sheets. Scheme 2 was seen as best representing most of the issues. Scheme 4 was seen as having the best revenue generating ability. Schemes 1, 2 and 3 were all considered to project an acceptable image for KDH while Scheme 4 did not project an acceptable image. The issues considered to be very important were to promote tourism in KDH and to develop bayside and Sound access for boating and fishing. Using the site to generate revenue , for a view of the Wright Brothers Memorial or for housing development were all considered to be mildly important issues. The participants considered using the site to promote industrial development to be very unimportant to KDH.

The next step in CDG's process was to develop two different site proposals by combining all the various recommendations and comments it had gathered from the workshops.

Baum Tract Proposals Unveiled



LISA MacCARTNEY, a graduate student at the N.C. State School of Design, explains "scheme two" for the Baum Tract at a recent meeting.

By ROY LUCAS

Residents of Kill Devils Hills became urban planners Wednesday night, Nov. 14, during a workshop concerning the Baum Tract.

Graduate students from North Carolina State University's School of Design conducted the program at the KDH Town Hall which allowed participants to comment on four proposals for the 322-acre tract. This was the second Baum Tract workshop conducted by the NCSU students at the municipal facilities.

The first session allowed those present to select between 14 objectives and 29 activities and uses for the land. That input was used to help develop the four "schemes" presented Wednesday.

Each of the four plans was based on a theme, explained Jim Utley, a graduate student from Whiteville — low-density housing with emphasis on community activities; high-density housing combined with a high school complex and shopping mall; a resort facility; and an industrial park.

There was no clear-cut consensus from the handful of people attending, but both support and criticism were heard for each plan.

Plan one for low-density housing upset Bill Lippert, a KDH resident who thought that area was going to be used for a recreational area and city offices. Lippert left the workshop when the plan was presented.

Scheme one was better accepted by several others who praised the proposed community center, complete with a swimming pool, a library and indoor recreation facilities, included in the plan.

Most of the housing in the plan was single-family detached homes. Scheme one also incorporated outdoor recreation facilities and a park.

Scheme two contained a community center similar to the one in the first plan with recreation facilities and offices for the town. An outdoor recreation plan was also admitted in the second proposal.

What was unique about proposition number two was a shopping mall, a senior housing complex and

(Continued from Page 1)

a high school. The addition of the housing complex was a direct result of first meeting where senior citizens dominated the crowd.

Some of the participants were not supportive of the high school, citing a lack of need and a conflict with the housing complex.

Many at the workshop also objected to a sand hauling and/or concrete manufacturing plant included in the second plan that would utilize a large sand dune in the tract.

Graduate student Brendan Ndukwu told the group that using the tract's three resources was one of major concerns of the desgin school group, but was not always possible due to usage conflicts.

The second design, in addition to incorporating parts of plan one and plan four (the concrete plant), also contained a hotel/convention center, an idea used on another scale in scheme three.

All four plans included a million-gallon-a-day waste water treatment plant. Plans two, three and four called for the constuction of a small aircraft tie-down connected to the Wright Brothers air strip.

The third scheme proposed a resort that contained a nine-hole golf course, a waterfront pavilion complete with a restaurant, olympic-size pool and a picnic area. Plan three was the only plan that utilized the soundfront in the tract, placing a dock on the shore where visitors could have access to the sound for boating.

An industrial park was the concept adopted in the fourth plan. In addition to the concrete plant, this plan included storage warehouses and an office park.

A novel concept contained in scheme four was the using of waste water from the treatment plant in making fertilizer. Some of that fertilizer would be used on experimental fields and botanical garden in the tract.

Many people at the meeting objected to the idea, but KDH Town Planner Ray Sturza liked the fourth idea based on the fact it would produce the most income for the town.

The town purchased the tract in 1983 and will determine its future use. The students, who are conducting the project under the direction of Dr. Henry Sanoff of the School of Design, will present their recommendations and a "book" to the town council in several weeks.

NCSU Group Presents Ideas For KDH Tract

Four ideas, called "schemes," were presented at a public hearing, called "a land use workshop," held in the Kill Devil Hills town hall Wednesday night to help determine the best uses for the 322-acre Baum Tract purchased by the town in 1983 from Mrs. Diane Baum St. Clair, a one-time mayor of the beach resort.

Unlike the first such get-together of townspeople in September, when 50 persons, most of them senior citizens, attended, the turnout was small but just as cooperative and enthusiastic in being given the opportunity to participate in deciding the future of the community.

A team of four graduate students from the School of Design at N. C. State University in Raleigh conducted the session and engaged those present in filling out forms which showed their likes and dislikes with each of the four "schemes." The students are Jim Utley of Whiteville, Lisa MacCartney of Boston, Emmanuel Abban of Philadelhia and Brendan Ndukwu of Nigeria.

All four of the preliminary proposals called for a wastewater treatment facility, with a capacity of one million gallons daily. Three of the "schemes" showed its location on the extreme western end of the tract, near the sound. The other plan placed it just back of the KDH post office.

Three of the plans provide for extension of the taxiway from the end of the Wright Brothers Memorial airstrip across Colington Road into the Baum Tract, where would be located tiedown areas, and in one instance refueling facilities, for from 18 to 24 planes. It was pointed out that the National Park Service has a limit of 24 hours during which aircraft may remain within the Wright Memorial.

The No. 1 "scheme" was centered around recreational areas, both outdoor and indoor, and included provisions for single family housing, duplexes, and accommodations for persons who are involved in summer employment on the Outer Banks. The No. 2 plan also included summer housing in studio apartments, plus clusters of single family homes, a complex of housing for senior citizens and a hotel of 100 rooms with a convention center.

The No. 3 "scheme" also called for a hotel and convention center in a resort complex that would include a nine-hole golf course built mostly on the sand dunes. This plan would have an Olympic size swimming pool, a shopping center, restaurants, an observatory, and a dock for boat rentals and equipment for wind surfing.

The No. 4 plan was centered around industrial development. Included was a cement block plant, a fertilizer processing plant using wastewater from the treatment facility, storage warehouses for products for re-sale now being trucked to the Outer Banks daily from Norfolk and other metropolitan centers, experimental fields for testing fertilizers, greenhouses, and an office park of 35 units. Also included in this layout was a botanical garden.

The No. 2 plan provides space for a high school and athletic fields. The students said they had consulted with Dare County Board of Education leaders and learned that a high school for the beach area is in the near offing. The students said that, in addition to the two public workshops, they had also asked Kill Devil students at Manteo High School to participate in the land use planning. Likewise, they said they had consulted with Chamber of Commerce officials, with developers, and others in coming up with their four "schemes."

Before the end of the year, the N. C. State University team will present to the KDH town council their recommendations for uses of the Baum Tract. The students, part of a community development program taught by Dr. Henry Sanoff at the university, are working without personal compensation except for their travel expenses. They used color slides and models of the Baum Tract to illustrate their preliminary ideas.

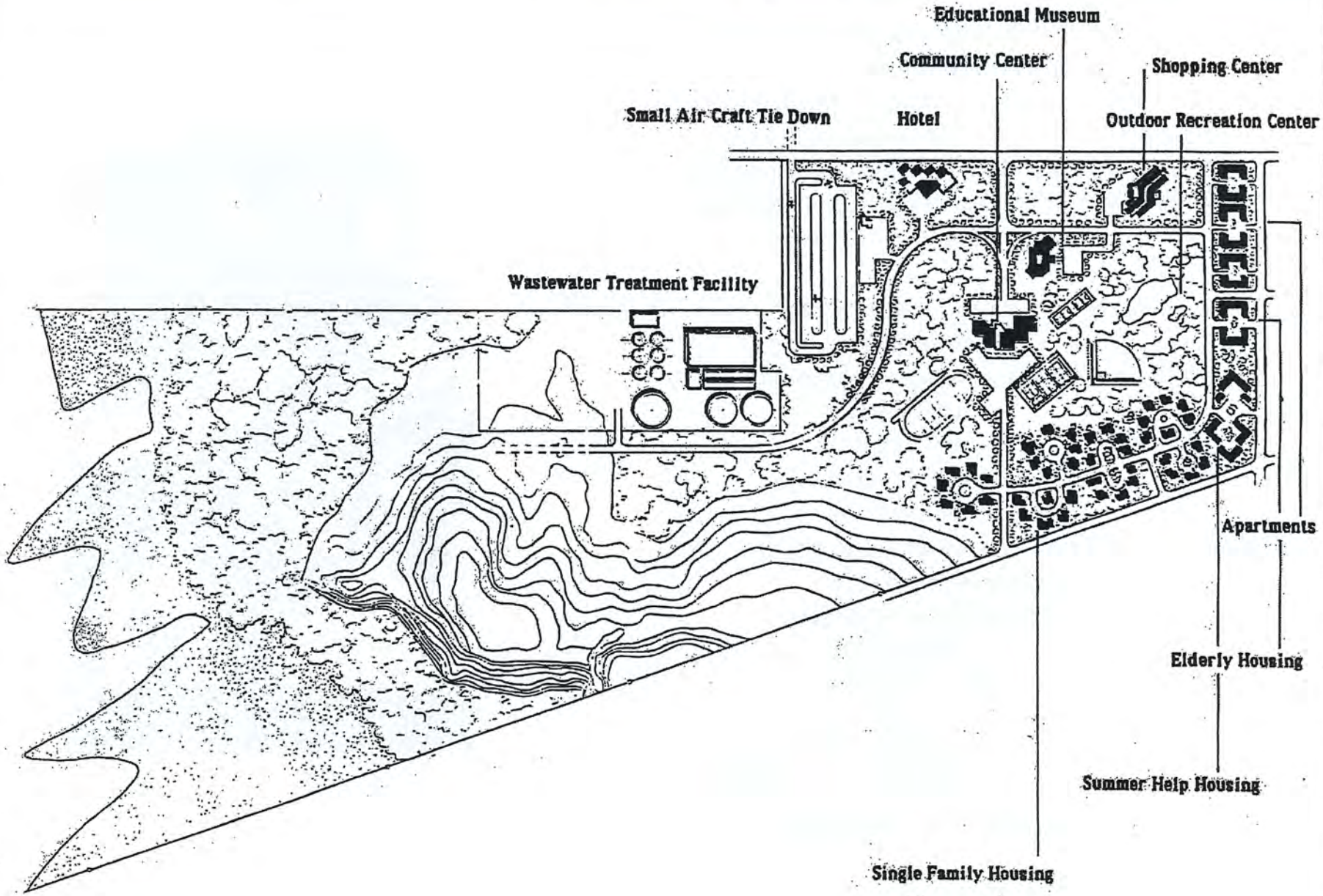
TWO PROPOSALS

TWO DESIGN PROPOSALS FOR THE BAUM TRACT

The last step in CDG's process was to use all the information it had gathered from the Alternative Site Schemes Workshop as well as the other workshops with KDH to design two proposals for the development of the Baum Tract. The two site proposals which resulted from this process are closely related, in that, one is actually an outgrowth of the other. The first site proposal, Site Proposal #1, suggests that the Flatlands area of the site be developed for community facilities leaving the Sand Dune and the Marsh areas virtually intact except for some passive recreational activities. The second site proposal, Site Proposal #2, takes the site development a step further by developing the Flatlands for the community's use and the area near the sound for a resort facility. This type of development would have a far greater impact on the Sand Dune and the Marsh areas of the site and would yield a much higher density of development on the overall site.

Site Proposal #1 consists of the following facilities:

- Cluster Housing units for single family housing
- Summer Help Housing (Apartments)
- Elderly Housing (Apartments)
- Apartments
- Shopping Center to accommodate the needs of primarily the permanent KDH residents
- Educational Museum relating either to the Wright Brothers' National Park or the Nature Conservancy's Nags Head Woods Interpretative Center
- Community Center complete with rooms to accommodate large community social gatherings as well as special groups (Senior Citizens), indoor recreational facilities (swimming pool, gymnasium, locker rooms, racquetball courts, table tennis), game room, municipal offices, picnic area with grills and tables, outdoor recreational facilities (running track, football field, baseball diamond, tennis courts, basketball courts and jogging/bicycle trails)
- Hotel complete with conference center and restaurants
- Small Air Craft Tie Down Area with refueling and overnight car parking facilities
- Wastewater Treatment Plant
- Unpaved Access Road to Sound for launching of small fishing boats and canoes
- Nature Trails throughout marsh, maritime forest and sand dune

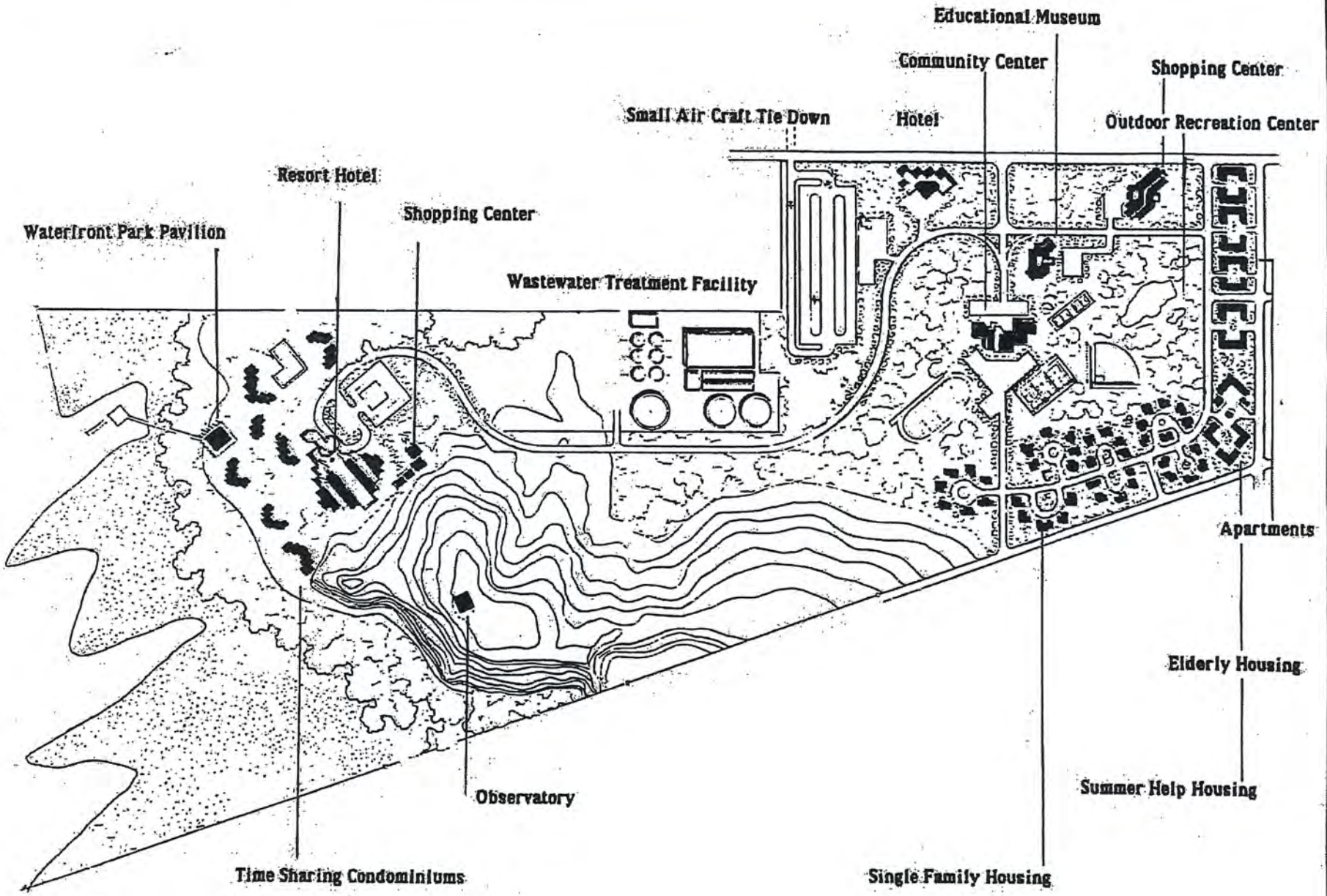

Educational Museum
Community Center
Shopping Center
Small Air Craft Tie Down
Hotel
Outdoor Recreation Center
Wastewater Treatment Facility
Apartments
Elderly Housing
Summer Help Housing
Single Family Housing

Site Proposal #2 includes all the facilities mentioned in Site Proposal #1 with the addition of the following resort area facilities:

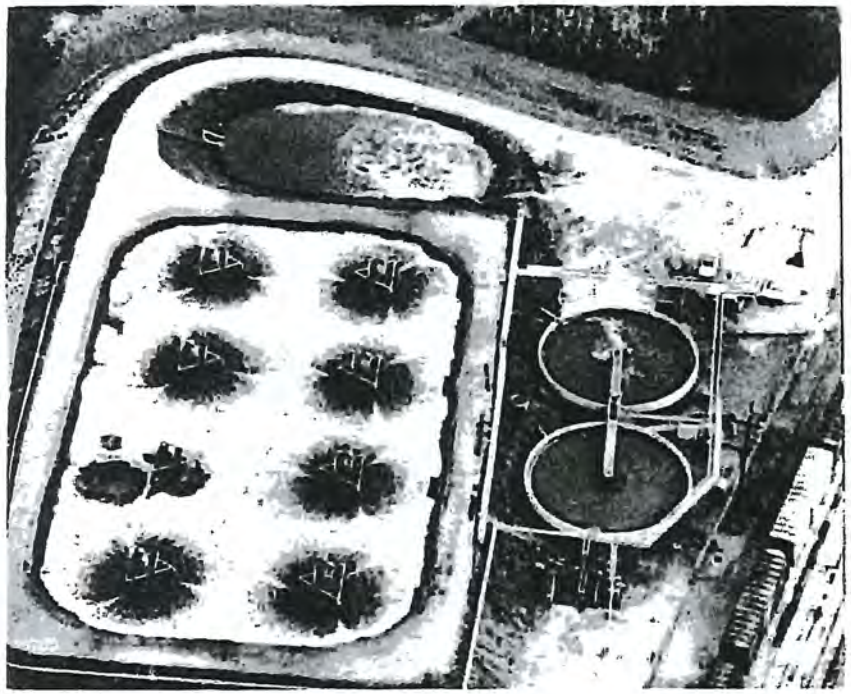
- Luxury Hotel with restaurants and outdoor swimming pool/ health spa accommodations
- Time Sharing Condominium units for private companies or individuals to purchase
- Shopping Center to meet the needs of the resort community
- Waterfront Park Pavilion with activities including boat rentals, swimming area, and restaurants
- Guided Nature Trails through maritime forest
- Raised Walkways over marsh
- Observation Platform on top of sand dune

These two site proposals were presented to the KDH Town Commissioners, the KDH Planning Board and several interested KDH residents on March 6, 1985. A lively conversation with the community members followed the presentation where they were given the opportunity to ask questions and to voice their comments and opinions about the two site proposals.

The proposals were well received by the community.


Educational Museum
Community Center
Shopping Center
Small Air Craft Tie Down
Hotel
Outdoor Recreation Center
Resort Hotel
Shopping Center
Waterfront Park Pavilion
Wastewater Treatment Facility
Apartments
Elderly Housing
Summer Help Housing
Observatory
Time Sharing Condominiums
Single Family Housing

SUGGESTIONS



SUGGESTIONS

The following information will be beneficial to consider for the effective development of the Baum Tract. These suggestions stem from research and interviews with professionals in various fields of expertise; Coastal Engineers, Civil Engineers, Environmental Management Commissioners, Architects, Landscape Architects, Town Planners, Real Estate Managers and Entrepreneurs. The premise of this chapter of the book is to provide a better understanding about the planning, the designing, the siting and/or the ways of utilizing facilities that might be included in KDH's future land use development plan.

WASTE WATER TREATMENT

An advanced treatment system is more favorably received by the general public and environmental management agencies than other waste treatment systems. Even though the effluent from this system is considered clean it does have a high phosphate and nitrate content that could affect the ground water adversely if ground absorption waste water disposal is used. The up front costs for this

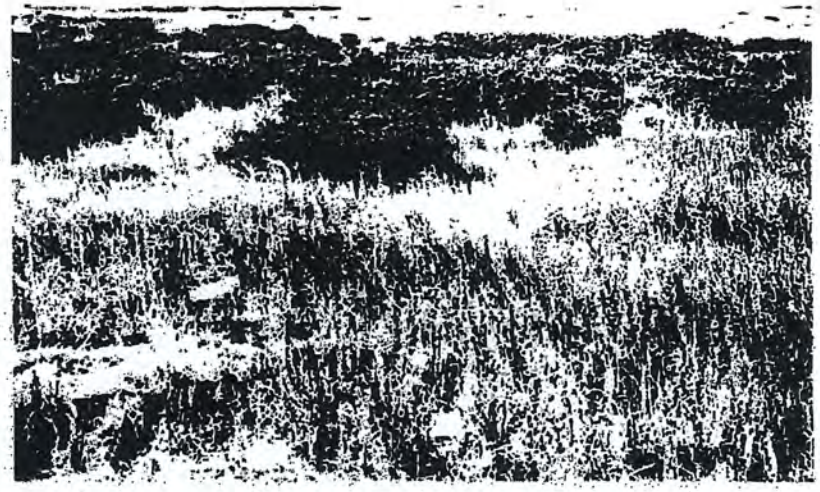
system are greater than for other systems, however, over the long run it would cost KDH less because it is a more efficient system.

Sewer systems with gravity flow are more suitable for regional treatment systems than the pressure flow systems.

MARSH

The Marsh is probably the most ecologically sensitive area on this property. The marsh land litigation requires that any portion of marsh land that is displaced be replaced by a comparable amount of marsh land located near the site. Present federal regulations for dredging are also very stringent.

Offensive odors do occur around the Marsh. This should be considered when selecting activities and facilities to locate near the Marsh.



SAND DUNE

The sheer size and height of the Run Hill make it a unique feature on the site and for the town of KDH. It provides one with many interesting views that can not be seen from many other vantage points on the island.

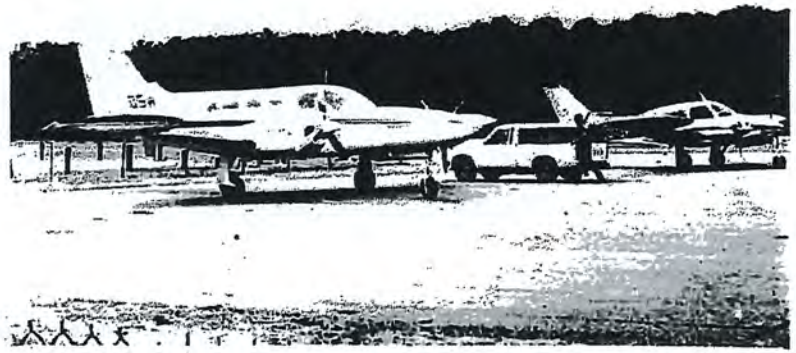
Sand is a natural resource and it could therefore be used to generate revenue for the town. The sand could be sold to industries or companies that require the use of sand in their manufacturing processes such as for making concrete building materials or for making glass.

Stabilization and restructuring of the dune could make it suitable for recreational and entertainment uses. However, the stabilization of an active dune this size would require a considerable amount of time and expenditure. Also once stabilization is initially accomplished it requires continual maintenance and care to retain the dune in a stabilized state.

SMALL AIR CRAFT TIE DOWN

Information from the workshops and personal interviews conducted by CDG revealed that a small air craft tie down facility in KDH would be very beneficial to the residents, businesses and tourists, alike. Since the runway at the Wright Brothers' Memorial is managed by the National Park Service, a private plane is not allowed to tie down on its air strip facility for more than 24 hours. Consequently, the residents of KDH and the surrounding beach towns, the businesses and the tourists, all, have to tie down their planes in Manteo and drive over to the Island if they plan to stay for more than 24 hours. This has and will continue to pose problems since the year round and summer populations of the Outer Banks are both rapidly increasing as well as the number of people who own small planes.

Building a runway on the Baum Tract would only dublicate runway services that exist at the Wright Brothers' National Park and may in fact take away from the original purpose of the runway at the National Park. Presently the runway is not suitable for landing anything other than a very small plane. Extending the runway would be necessary to permit slightly larger planes such as Lear jets to land and take off from the runway. It may be possible to extend the runway but negotiations with the National Park Service would be necessary.



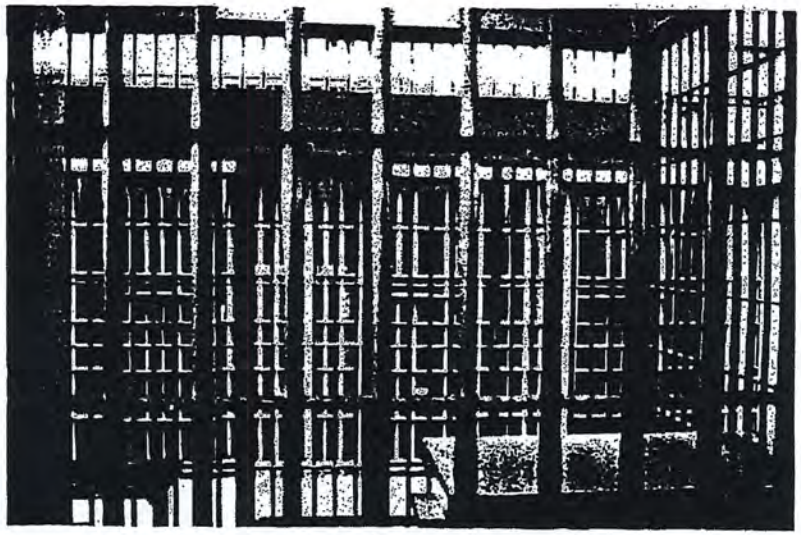
The proposal for a tie down facility on the Baum Tract would require that a taxiway be constructed to link the runway at the National Park with the tie down area. It would be necessary for this taxiway to cross over the road that leads to Collington Island. Therefore, a means of stopping vehicular traffic, similar to railroad crossing gates, would need to be constructed to allow aircrafts to taxi across the roadway.

EDUCATIONAL MUSEUM

The Baum Tract is bordered on one side by Nags Head Woods which is a nature preserve operated by the Nature Conservancy that contains guided nature trails and an interpretive museum, and on the other side by the Wright Brothers' National Park which includes a museum, the Wright Brothers workshop/house, an air strip and the monument. This site could be a very appropriate location for an educational museum that would compliment one of the other nearby educational facilities. The town has already received a proposal for an Air and Space Museum. This could be a positive contribution to the community since KDH is viewed by many as the birthplace of aviation.

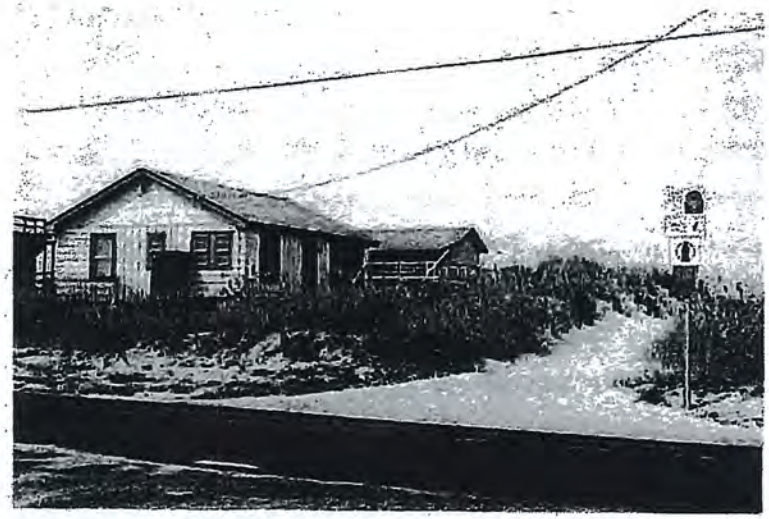
POLICE LOCK-UP

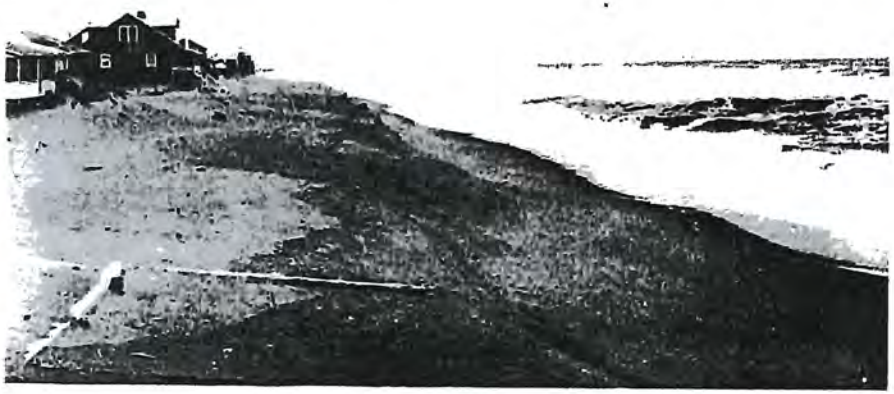
The police in KDH are in need of a more adequate lock-up system. At the present time if an arrest is made and it requires that the individual(s) be held, the police officer making the arrest must take the individual(s) to Manteo which is twenty-five miles away. This leaves the on-duty police force in KDH short-handed. The population of KDH is steadily increasing each year, and consequently, the demand for police protection and services is also increasing. The lack of a lock-up system in the immediate police station, begins to jeopardize the safety and well being of the local citizens and leaves them at times with inadequate police protection.



BEACH ACCESS /PARKING /BATH HOUSE

Tourism is the number one industry on the Outer Banks. The beach continues to be the primary draw for most tourists who come to the Island. KDH, not only has the beach to attract tourists to their town, but also the Wright Brothers' National Park. It is in KDH best interest to improve the quality and supply of amenities for the tourists to assure the continued success of tourism. Much of the beach





front property is owned by private residents who dislike the public trespassing on their property to gain access to the beach. An improvement of the public beach access points would not only better serve the tourists but alleviate some of the hard feelings that property owners now have towards the tourists. Beach access points could better accommodate the "one day" tourists by providing not only a direct public path/boardwalk to the beach but also parking and bath house facilities.

RESOURCES

CONVERSATIONS

Town of Kill Devil Hills

Balance, Lloyd	Town Manager
Bradley, Bonnie	Town Clerk
Perry, Lowell	Mayor
Sturza, Raymond	Town Planner

Residents of the Outer Banks

Bone, John	Director of Chamber of Commerce
Gabriel, Robert	Manager of Beach Rescue Service
Ward, Jimbo	Beach Realty and Construction
Williams, Mr.	Outer Banks Beach Club

Manteo High School

Austin, Pat	Principal
Night, Bass	Superintendent

Experts and Specialists

Abbate, Angelo	Landscape Architect, Graduate Professor at NCSU School of Design
Altman, Richard	Architect/Landscape ArchitectGraduate Professor at NCSU School of Design
Benton, Stephen	Head of Technical Services at NC Office of Coastal Management
Bonne, Robert	Manager of Cary Wastewater Treatment Facility
Cantrell, Ralph	Director of NC Coastal Management
DeBluys, Bill	Director of Nature Conservancy
Fisher, John	Coastal Engineer at NCSU
Flemming, William	Chief of Environmental Resources Department, Sewerage Specialist
Hunter, Tom	Landscape Architect, Dockery Hunter Reynolds & Jewell of Raleigh,NC
Lindsay	Manager of Garner Wastewater Treatment Facility
Mansberg, Laura	Natural Heritage Program, Division of Parks and Recreation
McClure, Wes	Architect, McClure & McClure of Raleigh, NC
Moyer, Jack	Manager of Raleigh Wastewater Treatment Facility
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