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TENNESSEE RIVERPARK: CHATTANOOGA

Moccasin Bend Task Force
Carr, Lynch Associates Inc.

Master Plan

Prepared for the
Moccasin Bend Task Force
of the
Chattanooga/Hamilton
County Regional Planning
Commission

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TENNESSEE RIVERPARK: CHATTANOOGA

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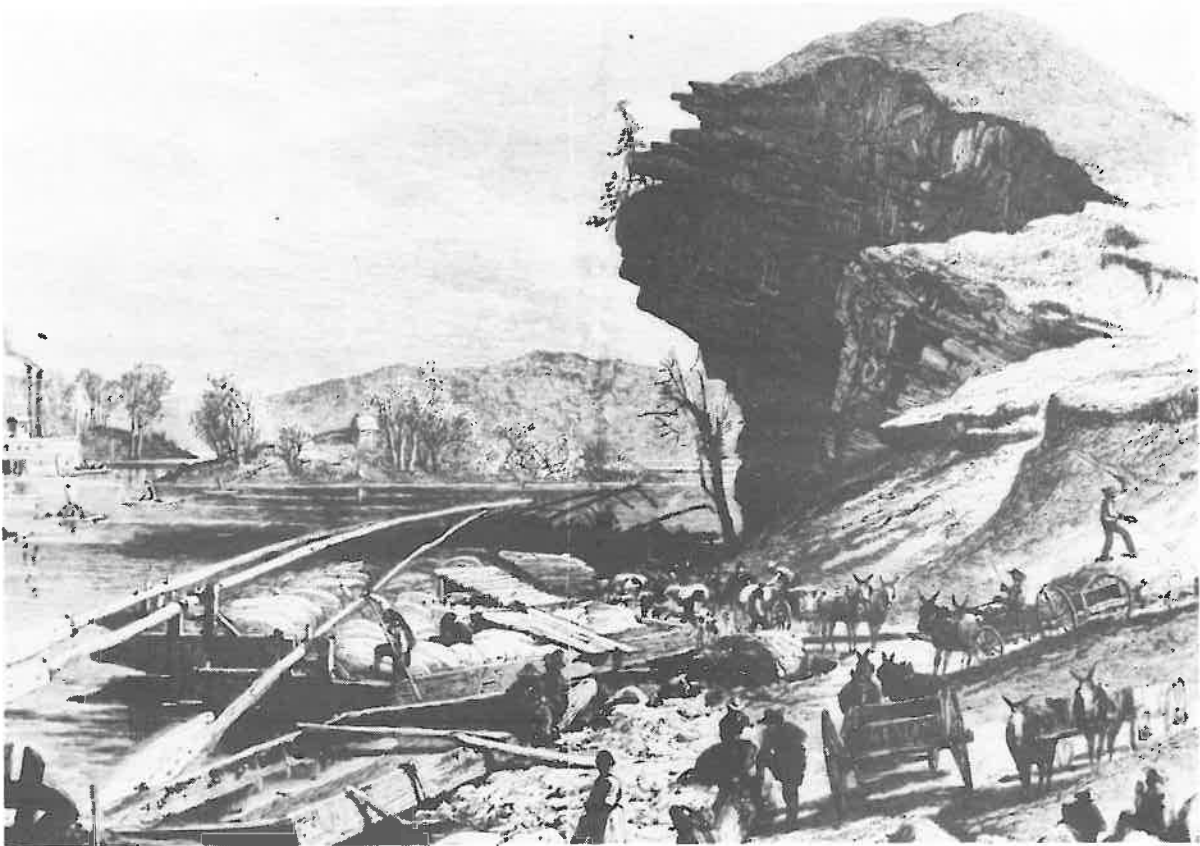
Introduction

The Tennessee River has always been Chattanooga's lifeline. It is the reason for the city's being. Along its banks can be traced the geological, cultural and economic history of this urban region: its origins, its growth and the seeds of its future. Now Chattanooga has the chance to grasp that lifeline anew. By reconnecting with this great river, the city can make over its image, find new sources of pride for its citizens, and fuel the engine of central economic development. These are the purposes of the Tennessee Riverpark Master Plan.

People are drawn to flowing water and have always gathered there.

Rivers directly satisfy human needs: they provide water to drink, fish to eat and fertile banks for farming. They also provide a means of transport and power to generate electricity. They can be a magnificent playground.

Along its riverfront, Chattanooga is opened to the sun, to long views, and to the natural landscape, relieving the tight fit of the urban grid. Thus, people want to have their homes and offices along the Tennessee, as well as water based industry and recreation. When Chattanooga is ready to throw a party, the riverfront is the ideal setting, touching a common chord in all its people.



The Tennessee River at Chattanooga, early 1800's

Few cities in the world have a river to rival the Tennessee. It is one of the great American rivers: powerful, full, deep-cut among its wooded ridges, yet not overwhelming in scale. Along its banks are located some of the most important industries of the southeast. As one learns of its intimate linkage with the history and economy of the land, it becomes a river of mythical dimensions.

If properly done, reconnecting the city with its river, not only physically but by active use, will strengthen community pride.

Chattanooga as a great river city will soon spring to life in the minds of other Americans as well. Tourists will be attracted and the word will spread, an essential step in focusing business and investment interest on Chattanooga. This new economic development will bring new jobs and other opportunities to the people of Chattanooga.

The following pages set out an overall plan and strategy of development to achieve these goals for the city and its residents. This Master Plan is a guiding vision of the future of the Tennessee River in



The Tennessee River at Veteran's Bridge, mid-1980's

Chattanooga. It is meant to sustain and coordinate the actions of public entities and private individuals over the next twenty years.

Part I is a description of the overall concept, the "Tennessee Riverpark," with its broad range of uses and landscape character. Part II describes the major impacts of this development in key areas of concern including the environment, history and the local economy. Part III presents a general implementation strategy, including how to finance such an ambitious undertaking, which steps should be taken first, and what kinds of controls are necessary to ensure a continuing high quality result. The Appendices consist of the background data and technical analyses which underlie the plan.

The development of the riverfront plan has involved repeated sharing and comparing of views between the planning team and a broad range of Chattanooga residents. This participatory process, which should continue for many years of implementation, began on the first day of the project. Members of the Moccasin Bend Task Force, which initiated this study, and their consultants on the planning team spoke to many people in Chattanooga, both individually and in three separate series of community meetings.

The first meetings were designed to elicit from Chattanooga residents their perceptions of the goals, aspirations, problems, and constraints that should shape a riverfront plan. People made it clear that they value the river and its natural landscape and want more

opportunities to live and play along the Tennessee, as well as work there. A number of possible problems and constraints to development were also mentioned, including poor access, the necessity of protecting the natural and historical environment, and the importance of preserving existing industries and creating opportunities for new ones. However, neither these discussions nor our technical evaluation found any insurmountable obstacles to increased public use and more diversified development on the riverfront, provided there is the political will to carry out the public projects which will be required if the plan is to be realized.

Next, Chattanooga residents were asked to comment on alternative concepts for future development consistent with local realities and opportunities. The overall idea to create the Tennessee Riverpark was presented, and development options for the key areas of River's Bend and Moccasin Bend were debated. Over two hundred citizens attended the first two series of planning workshops to present their views and opinions of the alternatives. The Vision 2000 community goal-setting program provided additional input on community objectives and specific ideas for the riverfront plan. The final series of Vision 2000 meetings involved over four hundred citizens.

All of this feedback was considered by Task Force and consultants, and people's preferences were evaluated against the realities of the physical, social, and economic setting. As the result of this process of participation, this Master Plan is the Chattanooga residents' plan for the Tennessee Riverpark.

Plan Summary

The Tennessee Riverpark is a sparkling twenty-mile necklace of recreation, historical exhibits, museums, new housing, working industry, hotels, shopping, and tourist attractions strung along the banks of the magnificent Tennessee River. The Riverpark is designed to delight both residents and tourists and to make the Tennessee the central focus of Chattanooga's future development.

The Riverpark presents to the world three of Chattanooga's most positive but often forgotten attributes: her history, her geography and her economy. This reach of the Tennessee has been central to human activities in the Southeast for over 10,000 years. The story is waiting to be told and reenacted. The beautiful natural landscape, with its mountains, wooded ridges, and winding creeks, lying along the powerful yet peaceful Tennessee River, creates a unique urban setting. The fascinating working industries along the river, which have played an important role in providing food, energy and other basic goods to American households for several decades, wait to be explored and understood. The plan reveals and highlights these attributes by means of new parks, roads, trails, a trolley system, water ferries, restaurants, shops and other intense urban activities. Coming to the Tennessee Riverpark can be an experience that not only fills the hearts and time of local residents but is powerful enough to lure tourists and business people from around the world. It can be a living park of history, recreation, employment, housing, and culture unlike any other urban experience in the world.

The Riverpark would begin upstream at the Chickamauga Dam with the development of new housing on the north bank and a mix of housing, offices, industry, fishing areas, and parks on the south bank, stretching westward to the Hunter Museum. At this point, where the river meets downtown, new development will be more intense on both the north and south banks. The River's Bend area will have a lively mix of retail shops and restaurants, housing, offices, a hotel, museums, and a visitors' center, interlaced with parks, plazas, and gardens. The north bank will be changed from its light industrial and warehouse use to high density housing, parks, and a large public marina, all of which take advantage of the fine views of the river and downtown. Very little new development other than the park and trail system would occur between downtown and Moccasin Bend, since much of this land is already developed with housing and industry on the south side and industry on the north side.

Moccasin Bend would be a special meeting place for the city, focusing on the creation of a cultural heritage park. On the west bank of the river, on the ridge across from Moccasin Bend, new housing is underway and more is expected to be built in the future, although most of the ridge will be conserved. On the east bank going north, a new office-industrial park will be developed. Williams Island, with its rich archaeological history, will be developed into a special resort area. North of Williams Island, conservation is recommended to protect the magnificent natural character of the Tennessee River Gorge,

Although the Tennessee Riverpark is a twenty-mile experience, with numerous places to see and things to do, the plan highlights two key areas for special attention: River's Bend and Moccasin Bend. The quality of these particular developments is critical to the overall success of the Riverpark.

River's Bend is the gateway to the entire system due to its direct connection to downtown. It is here that an overview of the Riverpark in all its drama and diversity must be experienced if one is to be convinced of the value of visiting the whole. The plan therefore proposes to develop the area between the river and Second Street, from Chestnut to Georgia, into an intense urban experience that links the rest of downtown with the river. New mixed-use development of this site can include offices, a hotel, new housing, shops, eating places, several museums, plazas, and parks. At its focal point would be a Visitor's Center that provides an orientation to the entire Riverpark. It would be linked to both downtown and Moccasin Bend by a new trolley system which would cross the historic Walnut Street Bridge, and to the rest of the Riverpark by a fleet of ferryboats.

Moccasin Bend would become a combined theme recreation area and central park for the city. It would be a microcosm of the whole Riverpark system, designed and pro-

moted to both unify the diverse populace of Chattanooga, and lure hundreds of thousands of tourists. Its primary appeal would be a series of first class commercial living history attractions which would work together with other activities such as an archaeological museum, an amphitheater, and a Civil War museum to result in an entertaining and educational experience. All of this is organized around a beautiful park and botanical garden with a central lake, a great tree-lined mall and alternating wooded areas and meadows for strolling, picnicking, and informal games. A marina, new housing, a new golf course, and a special new office/industrial park would also develop the area as a functioning part of the city as well.

Tying this new urban development together is the "Riverway," a delightful park and trail system which would fill many recreational needs of the region and would furnish more reasons for the tourists to come. This park and trail system would provide horseback riding, jogging, biking, fishing, camping, picnicking, and cultural events at intervals designed to serve the adjacent population. Active and passive recreation would be designed to serve all ages, income and ethnic groups. The Riverway would also protect and improve the natural environment along the banks of the Tennessee River, one of Chattanooga's greatest assets.

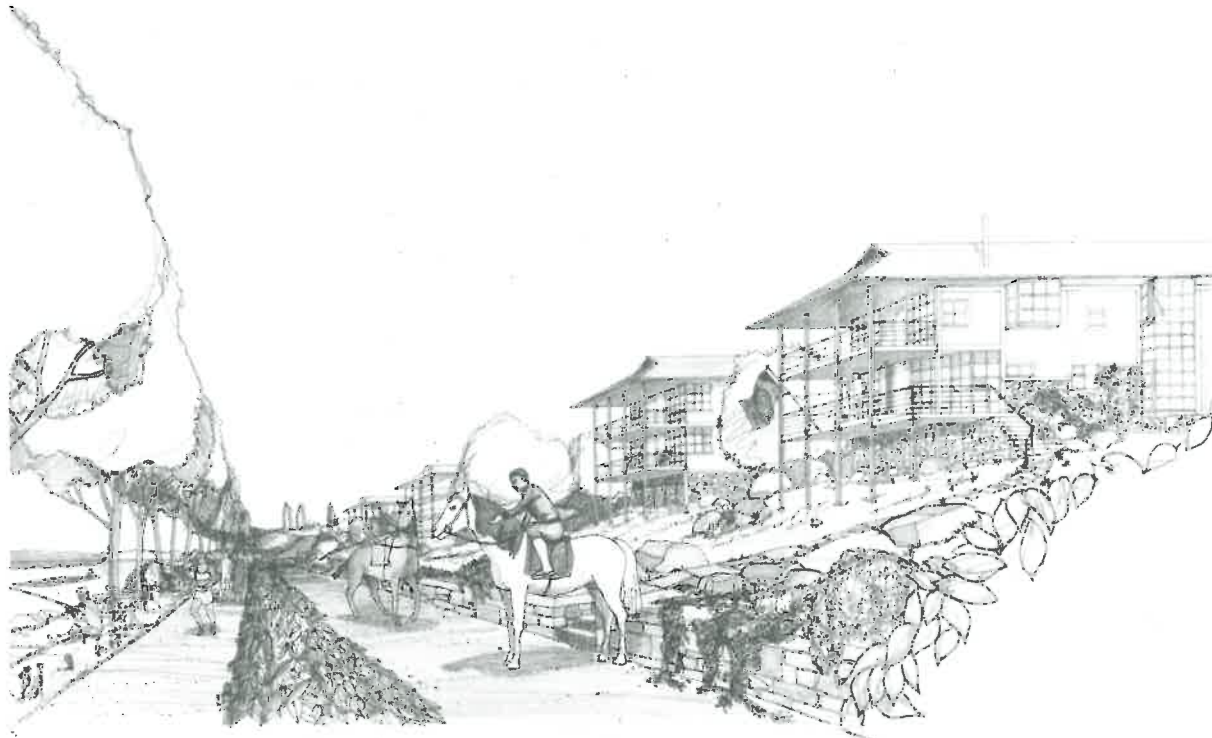


FIGURE 1 New Dwellings Along the Riverway

The Tennessee Riverpark promises to increase Chattanooga's livability and its competitive position for attracting new industry and offices, especially in high technology and service industries. During the first twenty years, the newly developed areas within the Tennessee Riverpark will result in some 300-400 acres of new industry, 350,000 square feet of new offices, a new hotel, nearly 3,500 new housing units, 10,000 new permanent jobs, one million new tourists annually, and \$12.8 million in new revenues on an annual basis by the year 2005. Since this development does not begin to exhaust available riverfront land, more benefits will

come later as other areas fill in. The capital investment that creates these benefits--coming largely from the private sector, but spurred by local, state, and federal funds--will be approximately \$750 million over the twenty year period.

In order to successfully implement this development, the plan proposes a Tennessee Riverpark Corporation, a non-profit public/private corporation to oversee design, funding contributions and management of the entire system. A financing strategy for the overall development suggests that this corporation creatively combine a number of public and private sources of capital.

These sources would include private contributions, general obligation and revenue bonds, the U.D.A.G. program, land leasing, and parking revenues. Seeking donated land easements, a creative land acquisition technique, is also recommended. Finally, the plan recommends the creation and adoption of a special zoning overlay map and detailed design guidelines which would protect the integrity of the plan and serve as a standard basis by which all projects would be evaluated over time.

In sum, the Tennessee Riverpark will link the people of Chattanooga to their river and create a new mental image of Chattanooga in the minds of visitors. The Riverpark between city and river will be a means for improving the quality of life for local citizens, for increasing community pride and cohesion, and for reaching out to the rest of the nation to stimulate the economic growth of this city. Fundamentally, then, this is an economic development plan.

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FIGURE 2 Tennessee Riverpark Master Plan

The Tennessee Riverpark

Several cities around the country have realized the importance and value of packaging together their many small and separate natural and man-made attractions, historical sites, and activities. They have taken these elements which had previously been ignored or were functioning in a scattered, disjointed way and linked them to create an organized, well presented, comprehensive urban cultural park system. The development of a coherent experience has galvanized many cities and towns to come alive, sparking new interest and pride from both residents and visitors from near and far. Examples of the benefits of this approach can be found in Lowell and Springfield, Massachusetts, and Schenectady, New York.

In this approach to urban development, the diverse cultural resources of a city are brought together into a fascinating network of sights and activities that compels one to visit and study it repeatedly. Factories take on new meaning as people are brought inside and shown what actually goes on and how this work relates to their everyday life. History comes to life through photos and reenactments presented on trails, in old buildings, at museums and within parks. The appreciation of outdoor recreation, active and passive, is heightened as people come out to enjoy new bike and hiking trails, amidst the wildlife. The soothing qualities of water bodies are recognized and reinstated into the lives of urban dwellers. Old rivers are coming alive with boats, ferries, docks, and piers. The City of Chattanooga has a unique opportunity to become the first

city in the Southeast to link its rich array of historical and natural resources and development opportunities along the riverfront into an urban cultural park system, the "Tennessee Riverpark."

The Chattanooga riverfront should be developed from here on under a guiding idea which will bring its banks to life, make it a central point of pride for the City's people, and move it to the forefront of national consciousness. The Tennessee Riverpark will consist of a wide band of land with a mix of new and existing uses along both sides of the river from Chickamauga Dam to Suck Creek and perhaps, in time, through the gorge. This urban cultural park must embrace the industrial heritage of the city, as well as its natural beauty. It will be the setting for fine new residential developments, serving a broad range of people. Along the river, Chattanooga's glistening thread, will be strung the city's jewels: its finest sites for recreation and pleasure, its most important cultural institutions, and its key tourist attractions. The Riverpark will provide a unifying image--historically, physically, and socially.

The history of the city will be dramatically presented at numerous historical sites to be protected and interpreted for both residents and tourists. Indian and pioneer settlements, historical farms and villages, will be partially or fully recreated and made into revenue producing attractions, where appropriate. The great struggles over the control of these lands, from Indian wars to the Civil War, will be recalled and revisited.

The industrial history from the Bluff Furnace to the contemporary technology of Combustion Engineering can also be displayed and explained in engaging ways, so that productive processes are open to view whenever possible. Here, the fascinating story of the movement of goods such as foodstuffs, fuels, metals and chemicals on our nation's central waterways will be told. Industries can be seen processing these primary goods for further shipment by road and rail.

To the banks of the Tennessee River will be drawn vigorous new private development. Over the next twenty years and beyond, the sites which are suitable for housing will be filled with a range of offerings, developed under strict controls on siting and architectural character. This housing will often need to be raised above existing grade, most naturally by regrading, filling, and creating riverbank ponds on which the houses can front.

Although an accurate prediction is difficult, new industry--also to be developed under guidelines for design and relevance to the river--will locate in the riverport site and other locations.

New commercial uses, including shops, restaurants, offices, and at least one hotel, will also be drawn to the banks of the Tennessee. They will cluster at River's Bend, giving the city a new "front" on--and connection with--the river, at the point where the city began. A new trolley will connect this special place to the rest of downtown along Market Street, making it easy for office workers to enjoy the river during lunch and after work.

A few other commercial uses will find their particular locations along the river. Restaurants, especially, will locate near tourist attractions and places where local activity can be viewed.

Properly presented and marketed, the elements of the Tennessee Riverpark will be of compelling interest to the tourist as well as to the resident of the region. These elements must be connected both by land and by water, and by various modes of travel. There should be rapid boat tours offering a brief overview, and more leisurely ferryboat rides stopping at each site. Access by car to these sites must also be made easy and pleasant. In a central location at River's Bend there would be a Riverpark Visitor's Center, presenting the history of the river and the region and giving an overview of the Tennessee Riverpark, its particular attractions, and the various ways of visiting them.

Between and among these many points of interest, for the length of the river and on both its banks, will be built a magnificent landscaped park and trail system, "The Riverway." This natural area would be similar in extent and quality to Boston's "Emerald Necklace" and would embrace the entire central city. It will become the primary recreation place for Chattanooga's people, and will include activities for every group and taste. The Riverway will range from a narrow band of about 30 feet across, designed for walking, jogging, bicycle and horseback riding, to a great "Central Park" on Moccasin Bend.

At appropriate locations for the user population, the Riverway would provide for the passive enjoyment of nature, for picnicking and relaxing on the grass, for fishing, golf and tennis, and for team sports of all types. It would provide marinas, boat rental facilities, landings and docks to encourage recreational boating below the dam. Some areas such as Stringer's Ridge and Maclellan Island would be kept wild, penetrated only by nature trails, while others may be specially developed as lush botanical gardens.

Perhaps the best way to see the Tennessee Riverpark as it might be seen in 2005 with the plan fully implemented would be by tour on the Riverway.

South Bank

Chickamauga Dam is the easternmost point of the Riverpark. A landscaped and well marked access road will bring us from Amnicola Highway into a small park located at the foot of the dam. This park site includes picnic facilities, a boat launch, fishing platforms, playground equipment and a bike rental facility.

After watching the fishermen for a while, we then rent bicycles for a quick tour of the south bank of Riverpark. The Riverway, with fishing facilities along it, leads us past the Technical Community College. Students of the college will be sitting along the river's edge studying their notes, making new acquaintances, or waiting for a water taxi that will take them downtown to Ross' Landing. Some will be sipping a cool drink on the patio of a new student-run restaurant and lounge built to look over the trail and river.



Proposed Mixed Use Site at Robinson Bridge

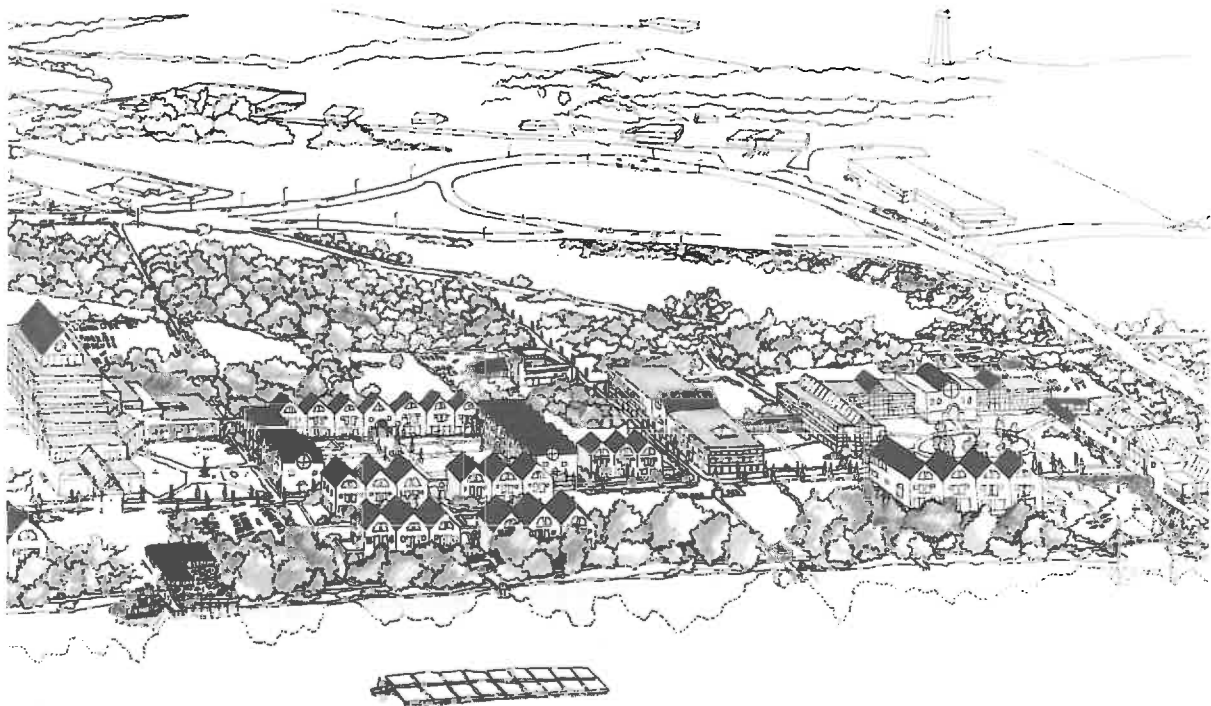


FIGURE 3 Mixed Use Development

Proceeding past a small industrial concern we come to a vibrant complex of mixed income housing for families and students, combined with offices and a small local convenience center, all on the east side of Robinson Bridge. The Riverway widens here and connects with a larger park site serving residents and tourists. A portion of the park site will be designed to accommodate tourists in recreation vehicles who will come here to spend several days fishing on the many piers designed for the purpose. Horse rentals are available here, and there is a small restaurant. New industry occupies

that portion of the site west of the bridge between the Riverway and Amnicola Highway.

Continuing downstream we come to the large park at South Chickamauga Creek. Maybe we will stop to canoe up the creek and back, under the beautiful arched bridge that continues the Riverway. This park highlights the fact that this area was once a major Cherokee town in the 1700's and includes an Indian settlement and burial area which dates between 8000 and 1500 B.C. We'll see interpretive exhibits showing how these settlements may have looked and functioned.

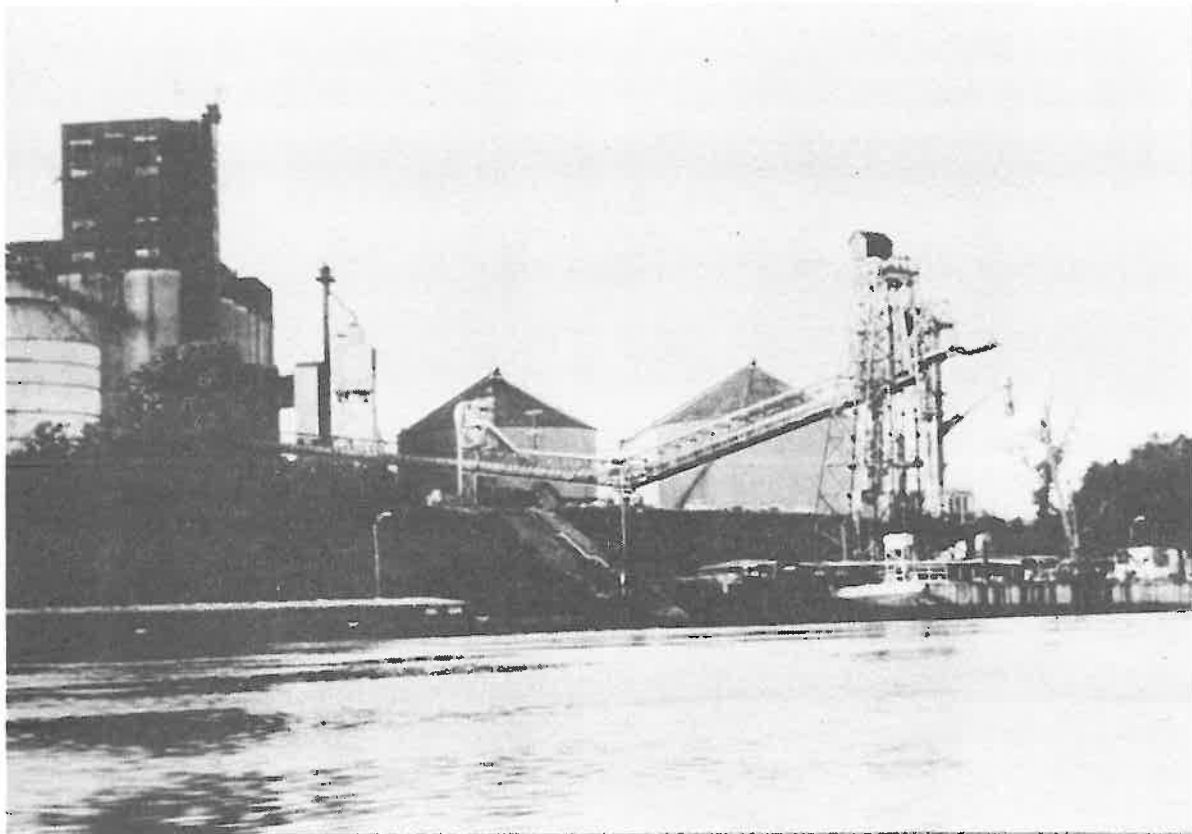


Historic Chattanooga, 1800's

Since the site also abuts the magnificent industrial complex of Central Soya, interpretive exhibits concerning this company, its inner workings and its products can also be found in the park. A representative of Central Soya will also be available on a regular schedule to speak to groups here in a small pavilion and to take us on a tour of the plant, showing how this company uses the river, the railroad and the highway to move supplies and products from place to place.

Moving south along the Riverway we come to the new county-owned public port. Here, we can watch the dramatic loading and unloading of a

multitude of goods and learn how these goods affect our daily lives and environment. We can also leave the Riverway for a while and walk inland to see how the lives of plants and animals are progressing within the Amnicola Marsh, protected from the operations of the main port. Here on special trails we will see, if they will reveal themselves, several kinds of frogs, rare birds and other species of plants and animals native to marshlands. Through interpretive exhibits we can learn how this environment operates as a total ecological system. On our return to the Riverway we will stop to read the interpretive exhibits



Central Soya

along the path which tell how this site was used during the 1800's. Its significance as a large farm that once had slaves will be remembered.

Having returned to the Riverway we come to another interesting development, just south of the new port. Here also, riverview housing is mixed with attractive new offices, a restaurant and other small commercial establishments. After a sandwich here we will travel on to learn about the operations of Quaker Oats and other smaller working industries along the way, resting only when we reach yet another wonderful park through which Citico Creek flows. Here we will find burial grounds which date back to 900 A.D. and perhaps some recreations of the types of housing that existed during the Mississippian period and during the 1700's, when it was also a major Cherokee town. Maybe we will stop at the water inlet just north of the creek, which has been developed for safe swimming. Perhaps we will also take the tour of the Water Company and learn how the water taken from the river is purified for drinking. This is also the end of the horse trail on the south bank, and there are rental stables here as well.

Just a few yards south of the new Citico Creek Park we may stop to have tea at the elegant Riverway Inn and visit its luxurious English Garden. Here, there is also a learning garden where the staff will instruct us on how to raise the beautiful flowers we see in the English Gardens. If we hurry on to the University of Tennessee complex, we may see an important tennis match at the private tennis club located here or view the school's rowing team in practice on the river. Beyond this point the severe stone bluffs will force the Riverway from the river's edge to the parkway for a few blocks, but the trail is a pleasant one as we observe the handsome historic houses along the way and visit the stimulating Hunter Art Museum on the top of the bluff. This museum is the first in a series of cultural and educational institutions clustered in the River's Bend area.

Fat Chance!

From art on canvas we will then experience the art of ironworks at the Bluff Furnace Museum, located on the side of the bluff. Here we will learn how the first ironworks in this region was built, how it functioned and what role this site played throughout the history of the city, from the early establishment of Ross' Ferry Landing to the construction of the railroad system.

?

We will need quite a bit of time at this point for even a quick tour of the River's Bend area. Here we can choose among the Regional History Museum, restaurants and specialty shops, the Visitor's Center, and the Living River Center and Aquarium. We might even take a side trip on the trolley to the City/County Convention Center, Warehouse Row, the Freight Depot Marketplace, TVA office complex or the Choo Choo.

Returning to the Riverway, we will take pleasure in studying all the interesting boats which will be docked at the marina at Ross' Landing, and in watching the strings of barges moving up and down the river. At the western end of Ross' Landing Park we will learn more of the working industries along the river by visiting the Industrial Heritage Exhibit. Combustion Engineering, Gilman Paint Company, Dixie Sand and Gravel, and others will have interesting information and displays which tell their story: what they produce and how they produce it.

Continuing west, we will reach a small new park where Martin Luther King Avenue will now be connected to the river. We will be provided with some interesting black history at the exhibits to be placed here, along with a memorial in honor of the slain civil rights leader to whom the park is dedicated.

Our trek along the Riverway at this point will provide us with a view of the actual workings of Combustion Engineering and other industries along the south bank, which we have explained in the Industrial Heritage Exhibit. We may stop and rest at a new park located at the base of Tannery Flats, where residents from Alton Park and the area just south of the freeway, between Broad and Market, come to picnic, fish, and take in the picturesque view of Stringer's Ridge directly across the river.

Our curiosity about what lies on the west side of Moccasin Bend will be satisfied once we cross the footbridges over Chattanooga and Lookout Creeks. We may choose to leave the Riverway for a side trip to the Nature Center and the historic Reflection Riding, but eventually we will reach the new Brown's Ferry housing development and marina. Although it is now a private residence, the original Brown's Tavern can be seen across from the new housing complex, illustrating part of the rich history on this side of the river.

A short distance north we will arrive at the original site of Brown's Ferry, which has significance in both Indian and Civil War history. A new ferry landing will be located here and interpretive exhibits of its history will be on display. Continuing, we will come to a large new housing development, with spectacular views in three directions: to Lookout Mountain, Raccoon Mountain and to Signal Mountain, across the historic Williams Island.

From this point on, the Riverway continues as a smaller trail through conservation land. From this trail, we can see the Tennessee River Gorge and Suck Creek from the south bank. Otherwise, we can take a ferry back to Ross' Landing and our hotel, for a much needed night's sleep. Tomorrow we can explore the north bank.



Moccasin Bend, Historic Overview .

North Bank

Our tour of the north bank will also begin at Chickamauga Dam where a small museum will be located. The museum presents the interesting and exciting history of the development of the Tennessee Valley Authority and its economic and social achievements. It will show how this great agency has helped transform the City of Chattanooga into a major industrial center. TVA's quest for cheap sources of energy will be explained, showing photos and films of the diverse TVA facilities located throughout the valley. The construction of the system and its human effects will be told by films and videos of older residents who have experienced its 50 year history. Tours of the actual generating facility at the dam and of the locks between the two lakes will originate at the Museum.

As we go downstream we will pass an attractive series of old and new housing developments, all of high quality but displaying a wide variety of styles and landscaping. This housing ranges from a mixed income development at the eastern end of Robinson Bridge to large family estates, like the Harrison farm.

We may stop along the way to watch a ball game at Rivermont Park. From another small park further south we can watch the interesting loading and unloading of goods in progress on the other side. The golfing skill of the patrons at the two private golf courses along this stretch should be interesting to watch.

As we approach the River's Bend area, our trip will be flanked by the natural green landscape conserved on Maclellan Island. We may choose to take a water taxi to the island to see the rare birds from the interpretive trails. If not, we may stop to watch a team from the Girls Preparatory School practicing on the playing fields adjacent to the Riverway. We may also be in time to catch a matinee performance at the Little Theater or a tasty lunch at the Fehn's Restaurant, located just beyond Veteran's Bridge.

Beginning at the Little Theatre, we will experience a wonderful new park and housing area that takes full advantage of the views of downtown, across the river. We may also take a quick detour up to Manufacturer's Road, located behind the housing, to purchase some small items in the shops located there. The large new public marina on the west side of the Market Street Bridge will be exciting to watch, as pleasure boats come and go. We can also see interpretive exhibits in the parks showing how life may have been for the Black population which settled at this spot in the mid 1800's, seeking refuge from the ravages of the Civil War. This great new park will continue past the Olgiati Bridge where the Riverway will narrow once again. Beyond this point we will pass the Amoco and Texaco tank farms and other small industries that use this edge. From this area along the eastern side of Moccasin Bend at the foot of Stringer's Ridge, we will also get a good view of the industries operating on the opposite bank, including Combustion Engineering.

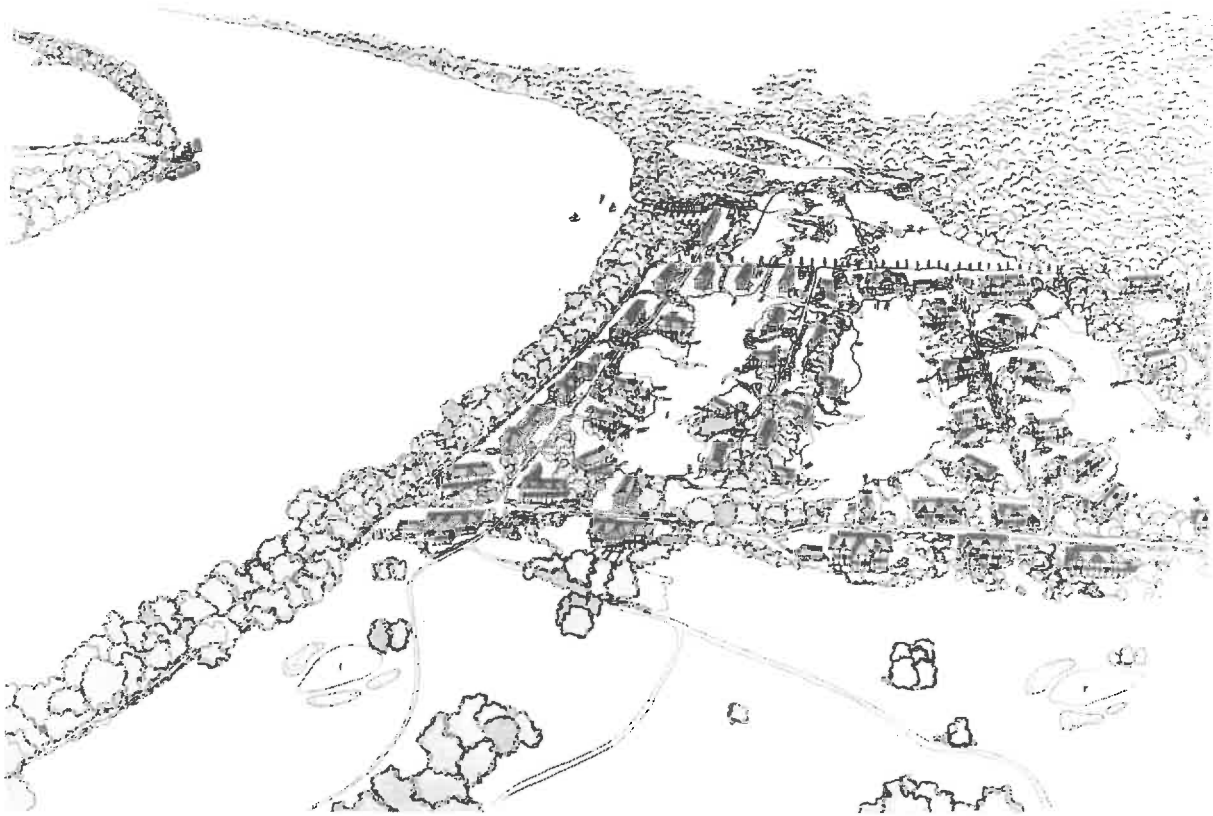


FIGURE 4 Riverside Housing

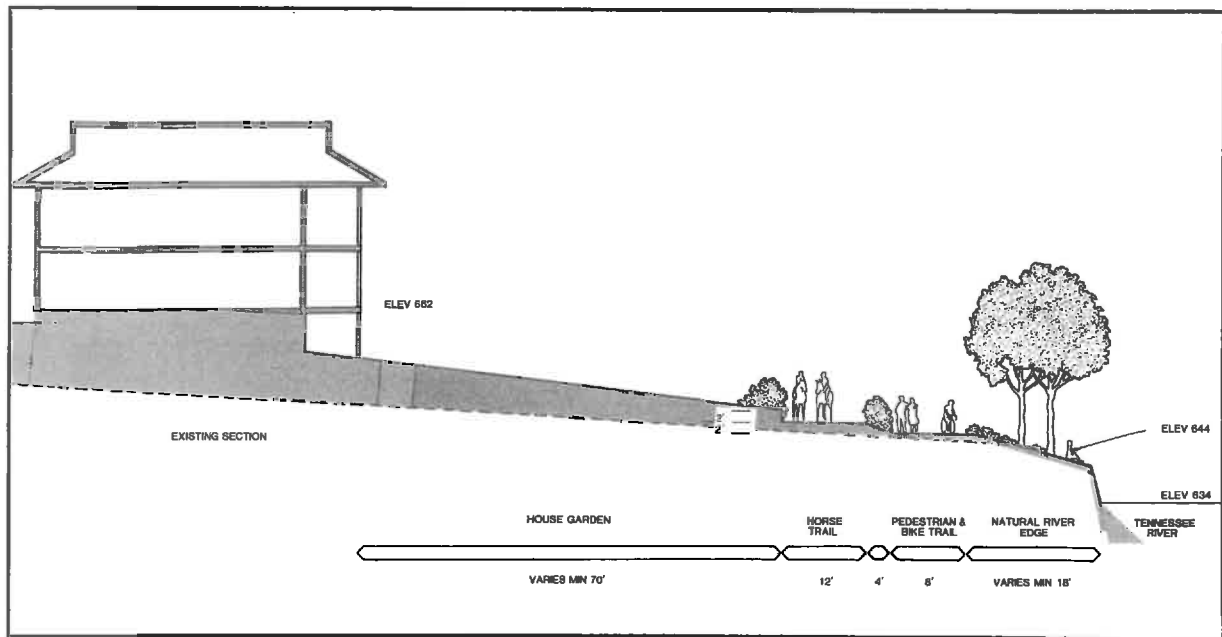


FIGURE 5 Section through Housing and the Riverway

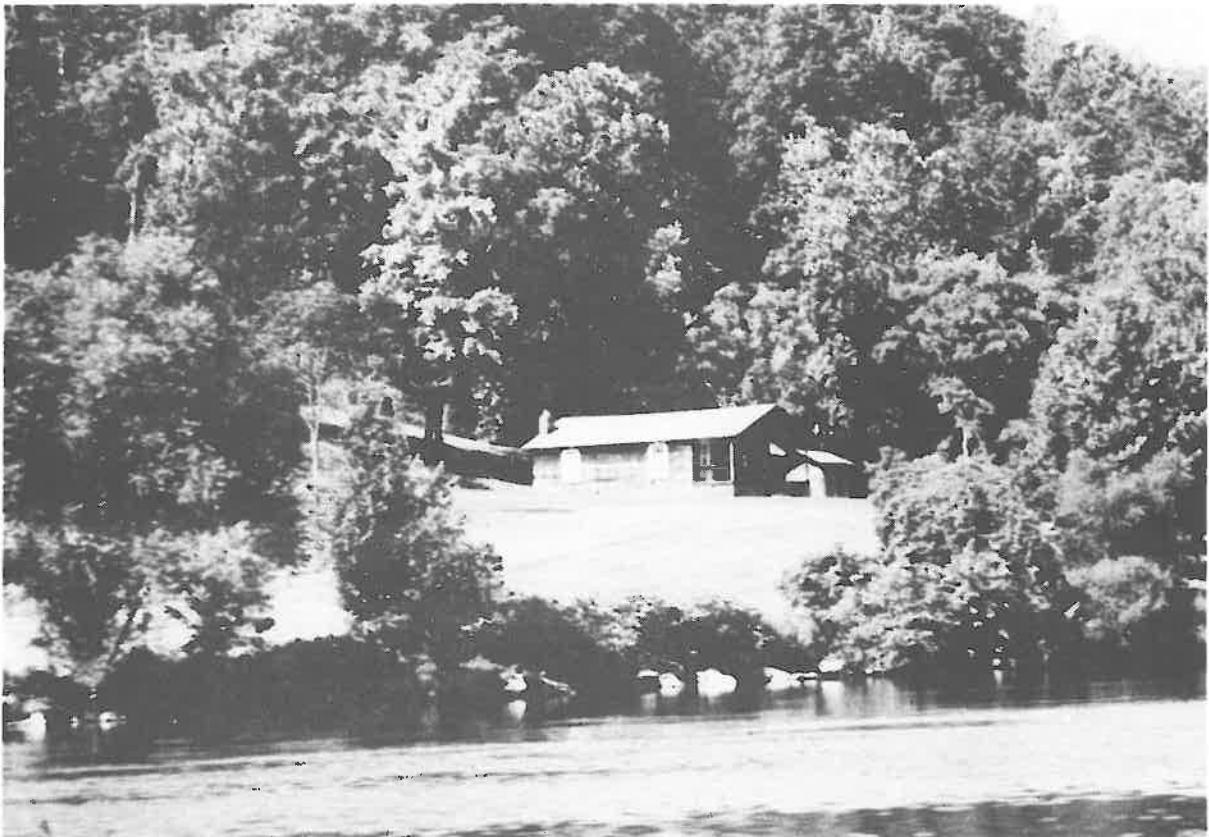
have we missed the sewage treatment plant?

If we leave the Riverway and hike up the ridge, we may be lucky enough to spot deer or other animals that have managed to maintain a home there. Midway down the peninsula we may choose to cut through the ridge along the new access road to experience the Cultural Heritage Park on the western side. On the other hand, we may choose to continue along the Riverway through broad fields and meadows where the deer also roam south to the toe of the Bend. Here we catch our breath at the beauty of Lookout Mountain standing majestically on the opposite bank. As we round the toe of Moccasin Bend and proceed north we see the new institutions and activities which have been developed on the Bend, but since we will need an entire day to explore them, we will save this for another time. After passing the new public marina on the west side of the Bend, we reach the **championship public golf course**. From here we can also see the lovely Brown's Ferry housing and marina and the conserved green ridges and mountains on the opposite bank.

Just north of the golf course, we will come to an interesting new area of industry and offices, laced with beautifully landscaped fingers of public park. Ahead of us, we will also see Williams Island which has been developed as a unique resort. We will get a clearer understanding of that island's Indian and Civil War history from the interpretive exhibits that will be on display at the new park just south of Baylor School. This park will also be the point at which patrons of the resort and those interested in visiting the Indian sites will be shuttled by water taxi from the mainland to the island.

As we continue north along the Riverway, we will come upon another large new housing development with a private marina, which has replaced a quarry and cement operation. The Riverway will then run along the edge of Suck Creek Road, where existing older family housing is scattered along the narrow strip between the road and the river. We may choose to stop at the River Inn and sample a dish of catfish or a bit of local culture and conversation. As we proceed further, we

see that the landscape is still in its natural undeveloped state because of its designation as conservation area. When we reach the historic Suck Creek, we will gaze out to see the beautiful Tennessee River Gorge, imagining times when Davy Crockett and his Indian neighbors hunted in these mountains. Tired again, we will probably want to catch a ferry here and return to River's Bend for another well deserved rest.



Near the Tennessee Gorge Area

River's Bend

The City of Chattanooga has made tremendous strides in bringing new development downtown. The Chattanooga Choo Choo, the TVA complex, the Convention Center, a new hotel, Warehouse Row, Miller Park, Freight Depot Marketplace, and Market Street Improvements are concrete proof of the active downtown revitalization process. What is needed now, to spur continued downtown growth, is a way of connecting this new development to the city's greatest resource--its river. Further, the success of the Tennessee Riverpark concept will partly depend on whether or not a positive experience and thorough orientation is received by residents and visitors at the point where downtown meets the river.

This plan presents a design concept for the River's Bend area that connects downtown, south of Second Street, with the river by means of an intense mixed use public/private development. Fronting on this development is a system of plazas and parks which provide active and pleasant promenades near the water, terracing down to the river's edge. Some pedestrians will be satisfied with a breathtaking view of the river and the mountains beyond from the main plazas, some fifty feet above the level of the water. Others will be drawn to the grassy and shaded terraces just below, with their Catfish Grotto restaurant and band concerts on the lawn in front of the museum. Some will wander down to the river's edge by way of gentle ramped steps and terraces. Here they will find a boardwalk--part of the riverway--with fishing piers, boat docks,

ferry landings and floating restaurants, all of which they have seen from above.

All terrace levels will be designed to look out over the parkway, and its presence will be softened with more trees and other plantings along its verges and in the median. People passing by in cars will still be able to enjoy this fine open view of the river, but trucks may be prohibited from using it. Safe pedestrian crossings will be developed at the Broad Street intersection. To the west, a special footbridge will carry pedestrians over the road from the Living River center to Ross' Landing. To the east, a path will be created under the road, connecting the Regional Museum to the Bluff Furnace Museum and to the boardwalk.

The plan proposes to develop a critical mass of brilliantly designed new facilities along the high promenade to support people-intensive activities and to draw residents and visitors to the riverfront. These activities will include retail markets, a 200,000 square foot office building, a 200 room hotel, the Chattanooga Museum of Regional History, The Tennessee Riverpark Visitor's Center, the Living River Center and Aquarium, and three to four hundred units of new housing. This development is tied together by a series of beautifully landscaped and developed public plazas. The two-story front markets and public buildings should have terraces, colorful awnings and lookouts, thus taking full advantage of the openness and fine views. The offices

and hotel would look out at the river and mountains across a busy foreground of markets and plazas. These buildings themselves, rather than being overwhelming towers or horizontal slabs which would create a wall to the city behind, should be mid-rise terraced structures, ranging from seven to nine stories. Their forms could recall those of Lookout Mountain and Cameron Hill (which will be visible behind them as one crosses the Market Street Bridge), thus creating a unique and appropriate visual landmark for this critical point in the city. There are some old buildings in the area which may be considered for restoration and incorporation into the plan after more detailed study.

The connection of the riverfront to the rest of downtown is further strengthened with the establishment of a trolley, which will travel up Market Street from the Choo Choo, turn right on First Street and left at Walnut Street to cross the old renovated bridge. The trolley would then proceed along to the north bank on Frazier Avenue serving the shops, the new housing, the park, marina, the Little Theater, and Fehn's Restaurant. It would continue along the new road to the Moccasin Bend Cultural Heritage Park.



Early Chattanooga at Ross' Landing



Existing Conditions at River's Bend

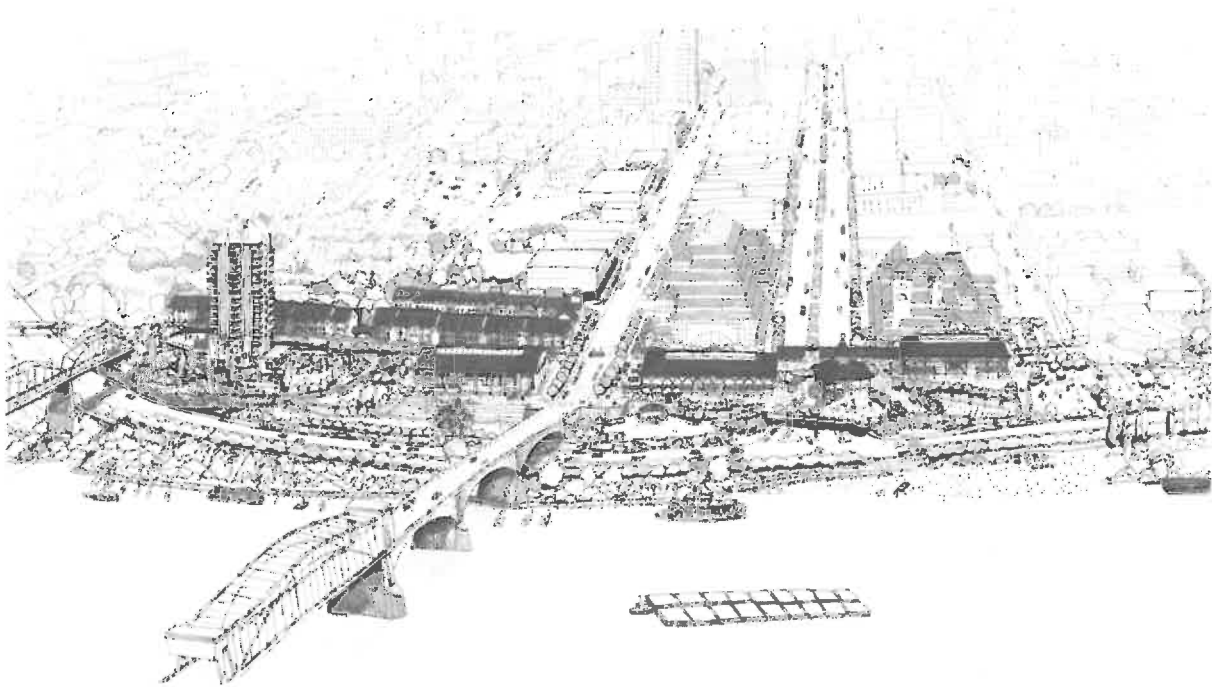


FIGURE 6 River's Bend Birdseye View

Touring the River's Bend area might begin by driving down Chestnut Street, past Kirkman High, to park in the well-lit, ventilated, and secure parking structure under the high plaza level. We start our visit with the Living River Center and Aquarium. This center would present the story of the Tennessee River itself, its origins, its relationship to America's central river system, and the life it supports. Exhibits would begin with the water itself: its sources, its quality and the recent successes in controlling its pollution. Next, the river ecology would be dramatized, showing how the river supports the myriad life forms that occur within and along it. Film and video loops would show the development of this ecosystem and the delicate mutual dependencies of plant and animal life. Some of the more interesting of the river's fish, turtles, water snakes and other aquatic life would be displayed in large aquarium tanks. The displays would end with a section on the human uses of the river, including: hunter-gatherers, flooding and early farming, the history of water transport, water power, water recreation, and water and urban development.

From the Living River Center we will walk east on the plaza level drawn by the banners, colorful awnings, and bustle of a two story retail market building. Here shoppers and tourists will find a unique variety of shops organized around a skylit atrium. On the second level, a fine terrace restaurant will look out to the river. Looking downtown, we will

see a new seven story, first class hotel with balconied rooms, stepping back and looking out to the river. In its base will be public rooms for small meetings and banquets. On top will be a fine restaurant.

Continuing along the deck promenade, which now is above Broad Street, we will reach the Tennessee Riverpark Visitor's Center. In this landmark building, we can explore the exhibits and receive an overview of what the City of Chattanooga and the Tennessee Riverpark has to offer. Exhibits might include a multi-projector slide and tape presentation giving the history and uses of the Tennessee River and its importance to the region and the nation. Television loops and photos would introduce various attractions in the Riverpark. Large maps and schedule information would show various tours available as well as how to get around on your own. Each major industry along the river would have an exhibit of its products and processes. The Visitor's Center would also contain small shops selling samples of goods made locally, such as textiles manufactured at Dixie Yarns and Dupont or souvenir items which may have been available in years past: perhaps baskets and other crafts made by descendants of various Indian tribes which once inhabited this area.

Just beyond the Visitor's Center we will come to another market building on the river side of the promenade, but this time we will find food of all types. A farmers' market will occupy the Market Street edge, and many types

of cafes offering quick cuisine will be open well into the night. To our right looking south would be a nine story terraced office building with a glass-enclosed cafe along the Market Street edge. Both the offices and the market must have active frontage on Market Street, where there will be a trolley stop.

Crossing Market Street we will reach the Chattanooga Museum of Regional History on the north corner. This institution will have both indoor and outdoor exhibits and will attract people to its shops and to an elegant cafe on the

Market Street edge. Exhibits in the Regional History Museum will be organized around a series of relief models of the region which focus on the river. These models will show settlement at various periods of history: prehistoric times, European settlement and the Indian Wars, the early town and the Civil War, industrial development and the T.V.A., and the modern city and its future. Spotlights keyed to audio descriptions would activate the models. Arranged around them would be drawings, photos and artifacts of the time period. All exhibits would encourage people to visit the actual sites and the living history

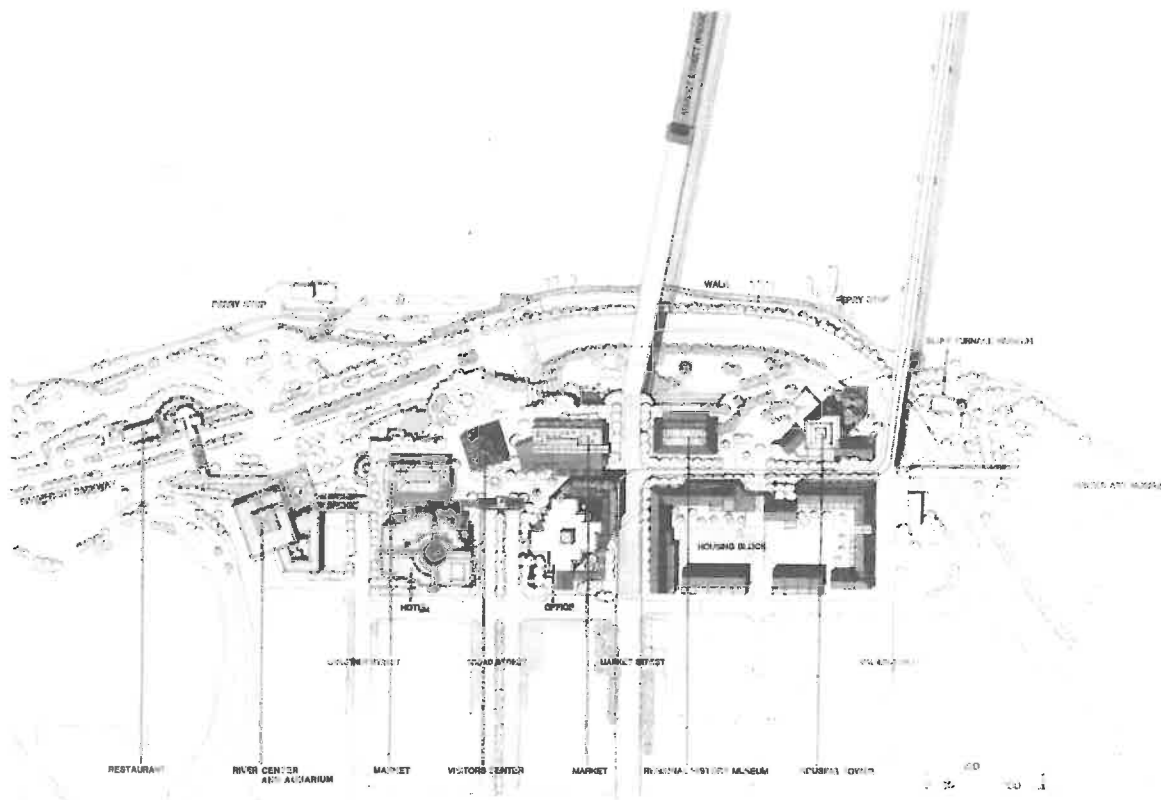


FIGURE 7 The River's Bend Plan



River's Bend from Market Street Bridge

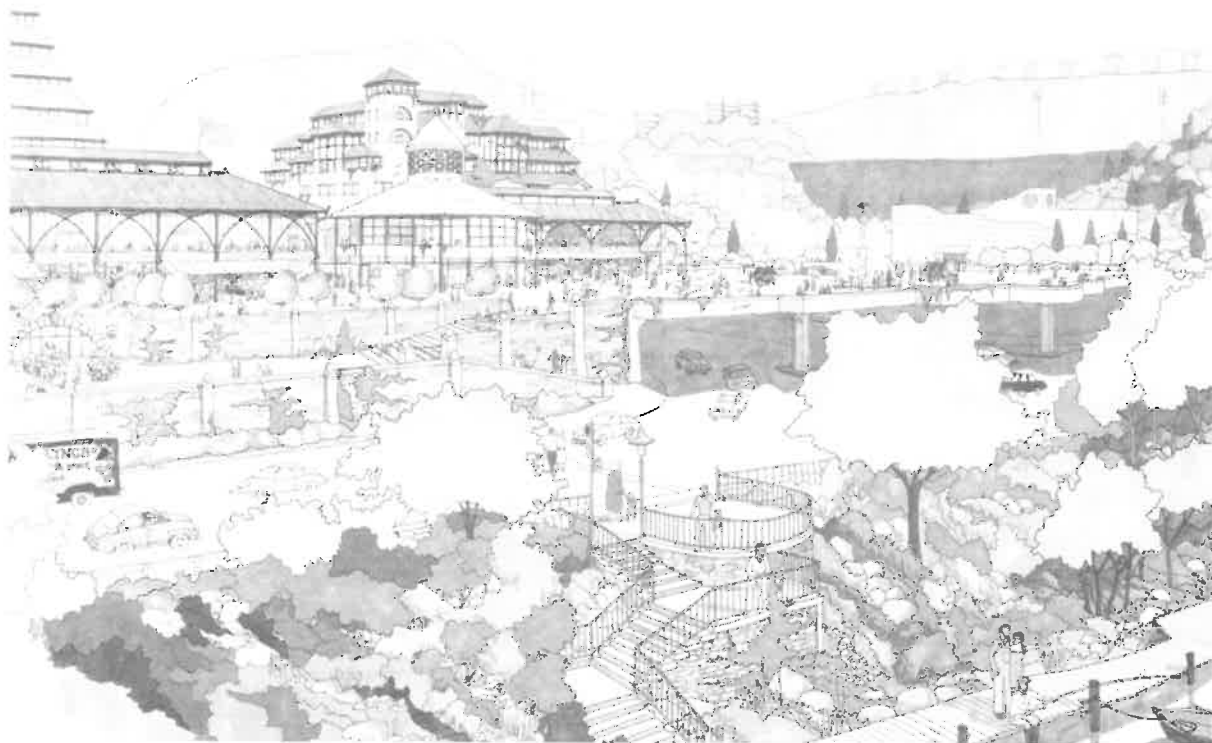


FIGURE 8 River's Bend Public Terraces

attractions. On the river side of the museum a broad flight of steps leads down to a green common, where a bandstand is the focus. The steps and park will invite tourists and residents to sit and eat a bag lunch, listen to a concert, or tour along a path under the parkway to reach the river or Bluff Furnace Museum. This area would also be one of several within the River's Bend area that would be utilized for some of the concerts and activities during the annual River-bend Festival.

Just beyond the museum along First Street will be a landmark housing tower, offering the best views in Chattanooga. On the two blocks south of First Street will be lower rise housing, offering a wide variety of unit choices. If we continue along First Street we will either cross the Parkway on a foot-bridge to the Hunter Museum, or turn left on Walnut Street and walk across the renovated bridge to take pictures of the magnificent river and its banks from this dramatic vantage point.

From the Hunter Museum we can descend along a walkway down the side of the bluff to the Bluff Furnace Museum. Just west of the foot of Walnut Street Bridge, we will also learn that this was the original Ross' Landing site. Then we can simply stroll along the boardwalk, just above water level all the way to Ross' Landing park and marina. Along the way we can watch ferries and other boats coming and going, or eat in one of the riverboats tied up here or in the new restaurant that has been built on shore. We can also watch skilled men and women fishing, or simply sit and catch our breath and thoughts. Finally we will take the pedestrian bridge over the parkway back to the parking structure at Chestnut Street to recover our car and return home. It has been quite a day.

Moccasin Bend

Moccasin Bend, which triggered this study, is the largest piece of land in public ownership along the river. It is controlled by the city, the county, and the state. Except for the mental health complex, a golf course and the city's main sewage treatment plant, it is still open land. Stringer's Ridge lies dramatically along the eastern edge of the peninsula, but most of the land is low-lying and flat. In places it is wet, having recently been filled. There are important Indian sites from various periods, some of which have had recent archaeological work as well as continued looting. On the ridge are the traces of cannon emplacements from the Civil War period.

The development of this important piece of land into a southeastern Cultural Heritage Park focuses around the foundation of the region's history: its natural ecology and the life of its earliest humans. It includes opportunities for education, research and active and passive recreation of all types. It also provides places for people to live and even perhaps, in time, places to work. Thus it is an appropriate focal area for the Tennessee Riverpark.

The central feature of this park will be a high quality commercial living history complex, developed and run by a non-profit corporation with city and county capital funding. It will be similar to such successful ventures in other areas of the country as Sturbridge Village or Plimouth Plantation in Massachusetts, Williamsburg in Virginia or Oconoluftee Indian Village in Cherokee, North Carolina, each of which routinely attracts hun-

dreds of thousands of visitors each year. Several of the exhibits would be built around existing archaeological sites from various periods, and would display the environment and living conditions of the time. The most important archaeological sites would be carefully protected and researched over time, and would thus offer visitors the opportunity to return year after year to see the excavations in progress. At each exhibit the visitor would find the typical settlements, plant life, and wild and domestic animals of the time. Actors would be in authentic dress,



Actors Performing as Cobblers at Williamsburg

doing the chores, and making crafts and foods of the period. The entire history of the region, up to and including the Civil War, would be recapitulated in one continuous visit to the Bend.

Although many of the exhibits here would charge admission, the park will also offer numerous low cost activities. These include a great central lake with canoes and small scale stern-wheeler riverboats, a magnificent large park and botanical garden around the lake, and an amphitheater. This amphitheater will offer Civil War pageants and summer entertainment, including

free concerts by local groups and churches, theater and dance presentations, popular music, and symphony and opera performances. In time, its program and draw may come to approach centers such as Tanglewood, in western Massachusetts or Wolf Trap, outside of Washington, D.C.

A working farm will also be available for touring. Produce farmed by high school students under the supervision of retired farmers from the nearby countryside will be for sale. Stables for horses will be available for private boarding and for horse rentals to those who wish



Historic Farm Enactment

to travel the trails along the Riverway. The farm might also offer overnight and weekend accommodations for adults and youth who wish to experience life in this setting. A summer camp program might also be established.

A new public marina will also be built along the western edge of the Bend and a larger, new championship public golf course will occupy the land on three sides of the sewage treatment plant.

Moccasin Bend will also be home for some six or seven hundred households in a new community organized around a large marina (if environmental studies determine that odors from the sewage treatment facility are not prohibitive). The plan is also designed so that most of the mental health complex could continue to function here without disturbance for as long as this location seems to be suitable for this service. Conversion of these buildings to a hotel/conference center may occur in the future if the complex chooses to relocate. The Winston Building, which is a small structure, located to the north and somewhat removed from the main complex, would be converted into an Archaeological Center and function as an integral part of the Cultural Heritage Park.

A tour of Moccasin Bend would begin at River's Bend where special buses and an extension of the Market Street Trolley across the Walnut Street Bridge would carry passengers along Manufacturer's Road to connect with a new access road built along the eastern edge of Stringer's Ridge. This road provides entry to the park close to

main parking areas, and by-passes the sewage treatment plant and traffic which must go north on the Bend. Our special bus or trolley would take us directly to the Visitor's Center for the park where we shall learn about all the exciting exhibits, and facilities that are available here, and where we will purchase a string of tickets to the attractions which most appeal to us. The Visitor's Center will be on the lake shore, will include some great rooms, and will be designed to recall Chattanooga's fine, old Lookout Mountain Hotel. It will be one of several buildings built here as a small scale recreation of the City of Chattanooga as it may have looked in the mid 1800's. These buildings will have shops, eating places, historic exhibits, and a host of other things to see and do. From here we can either walk through the central park or take the special internal trolley or horse drawn carts to tour the various exhibits.

The first area we would reach as we travel south along the western edge of the Bend would be an Archaic Indian exhibit showing how life may have been for humans from 8000 to 1500 B.C. We shall see displays of artifacts which have been found here, some ongoing excavations and, possibly, recreated features human activities at those times. A Woodland Period Site, showing life from 1500 B.C. to 900 A.D., is next. Perhaps the structure, dated at about 1300 B.C., will be exposed and protected so we can better understand how these early humans lived. Going further south we would come to a recreation of a Mississippian Period Site, where we

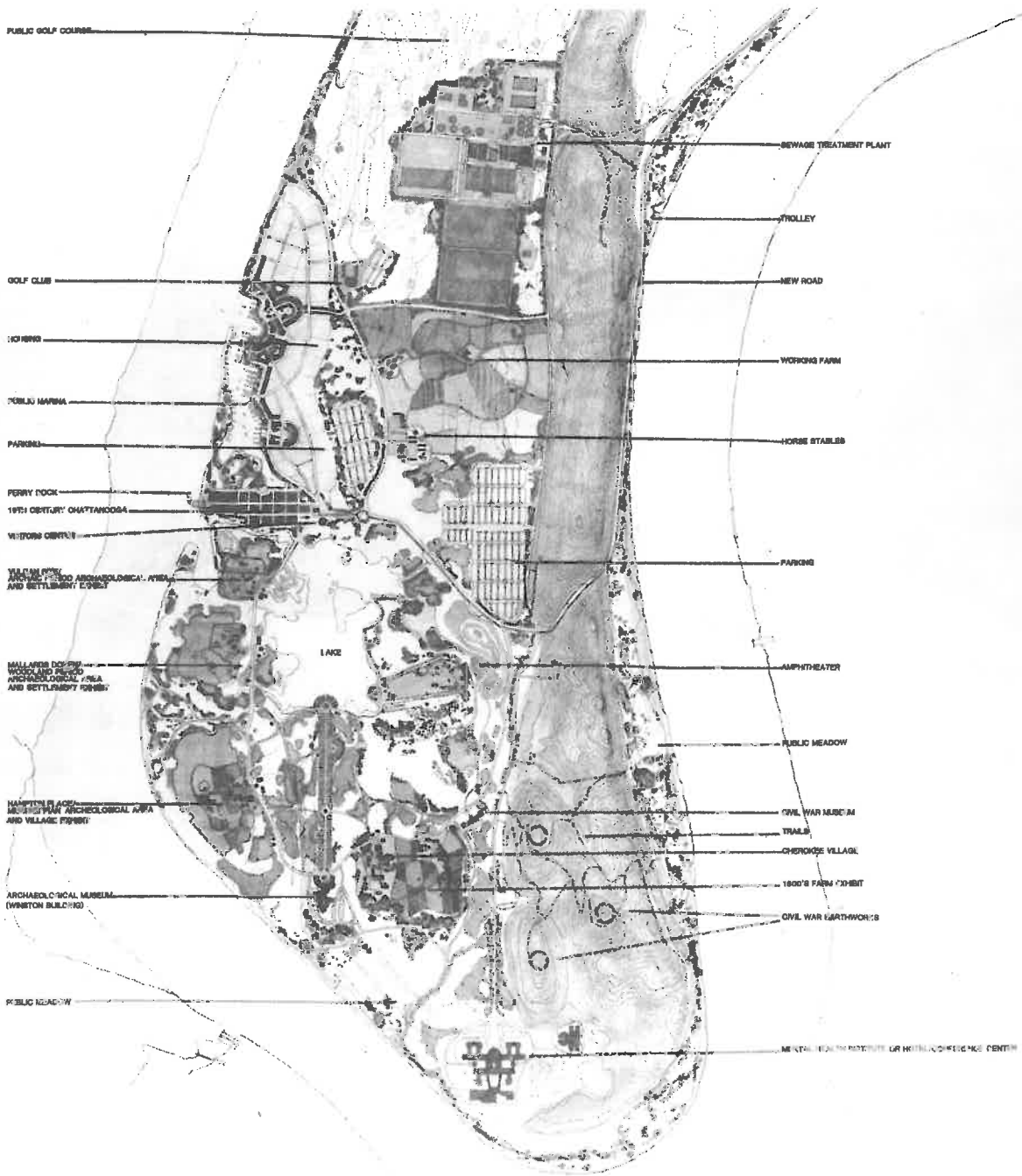


FIGURE 9 The Moccasin Bend Plan

reenactment of how the Spanish may have visited these people during the 1500's. The plant and animal life around and within these recreations of historical settlements will be selected to simulate the ecology of the time, as best as it is understood.

Next we will visit the Archaeological Center. The Center will house a wealth of artifacts and information about ancient peoples of the regions, and about the historical finds and sites along the river and throughout the Chattanooga area. Many exhibits will have interactive computer

graphics terminals allowing for search into any aspect of history which may interest the visitor. Significant events will be re-enacted by sound and light on a large scale model of the River Valley. The Archaeological Center could also serve as a research center and institute where ongoing study would occur.

On the east side of the Archaeological Center will be a recreation of a Cherokee town showing how life may have been for the Cherokees in the 1700's before their townsites along the river were burned down by European settlers. An 1800's



Plimouth Plantation Living History Museum

settler's farm will be located on the east side of the Cherokee town. Here special attention would be given to children, with supervised animal contact encouraged.

*Transport
Confidential*

Just north of this exhibit, a Civil War Museum will present the events of the war as they happened in the Chattanooga area. Another large model with sound and lights will dramatize the battles. Nearby will be an outdoor amphitheatre which could become an important focal point for the city, providing a place for major events like concerts, dance presentations and other programs. Between the Civil War Museum and the Amphitheatre, further north, we may wish to stroll through the lush park and botanical garden or hike up Stringer's Ridge to see the actual Civil War earthworks. When we wish, the trolley will return us to the Visitor's Center.

We may now choose to explore the sights, sounds and shops of Old Chattanooga, or wander along the marina to see the boats and the new housing. We could also catch a ferry to other points of interest in the Riverpark. We may even walk to the golf course clubhouse and enjoy a meal, or walk east to the working farm to buy some fresh fruits and vegetables. Within the working farm, we will also be able to watch the manufacture of present folk crafts, listen to country music or even dance in the large barn. Perhaps we will rent a horse at the stables on the south edge of the farm and ride along the Riverway upstream to the north side of River's Bend or downstream to Williams Island. Most likely we will be too tired for many of these things and plan instead to return another day soon.

Economic

The impact of an improvement like the proposed Riverpark on the city's overall economic development and fiscal health will be positive. Observations of the experiences of other cities where large scale recreational waterfront projects have been completed show that such projects tend to focus development, enhance land values and tax revenues, and positively impact the overall quality of life in the city. Case studies in San Antonio, San Diego, Lowell, Mass., St. Louis, Chicago, Dayton, and many other cities indicate that projects such as Riverpark provide the framework for significant investment, increased tax revenues, increased local pride, and improvement of the quality of life. This enhancement of the quality of life is a key factor in overall economic development because it influences industrial location, office loca-

tion and the provision of sites for housing and recreational amenities. These amenities are often critical to hiring and retaining staff, particularly for the emerging high-tech and service oriented businesses.

The impact analysis for this project is based on the estimated waterfront development potential to the year 2005, which is shown in Table 1. The only variation from these development potentials is that construction of a 200-room hotel and 50-room inn is assumed, rather than development of the full 325 hotel and motel rooms that are estimated to be supportable through the year 2005. If a hotel/conference center is ultimately developed at Moccasin Bend, the public revenue and employment impacts from the hotel sector would increase.

TABLE 1 Riverfront Development Potentials to Year 2005

<u>Use</u>	<u>Amount</u>
Market Rate Housing	2,600 units
Subsidized Housing	800 units
Office	350,000 sq. ft.
Specialty Retail	200,000 sq. ft.
Small Commercial Recreation	150,000 sq. ft.
Major Commercial Recreation	400 acres
Water Related Industry	300 acres
Hotel	325 rooms

Revenues

Property Taxes

Economics Research Associates estimates that the uses developed within the initial twenty years will generate approximately \$6,184,260 in city and \$5,800,270 in county property tax revenues annually, or a combined annual figure of \$11,984,530. These projections broken down by use are shown in Table 2. The total cumulative property tax revenues over the 20-year period will be much greater.

To estimate these revenues, Economics Research Associates first calculated the total value of each of the land uses. Then, the assessed value of the properties for both Hamilton County and the City of Chattanooga were identified. Residential property is assessed at 25 percent of full market value and commercial and industrial property at 40 percent of full market value. Finally, the current property tax rates of \$3.06 per \$100 of assessed value for the city and \$2.87 per \$100 of assessed value for the county were applied to these assessed values. The figures are conservative because annual increases in property values

TABLE 2 Annual New Property Tax Revenues by Year 2005

	<u>City</u>	<u>County</u>
Housing	\$1,716,660	\$1,610,070
Office	\$ 321,300	\$ 301,350
Specialty Retail	\$ 220,320	\$ 206,640
Industry	\$3,672,000	\$3,444,000
Hotel <u>1/</u>	<u>\$ 253,980</u>	<u>\$ 238,210</u>
Subtotal:	\$6,184,260	\$5,800,270
Total, City and County:	\$11,984,530	

1/ Assumes construction of 200-room hotel at \$100,000/room and 50-room inn at \$15,000/room.

Source: Hamilton County Finance Division, City of Chattanooga Auditor, Economics Research Associates

were not factored in. Public revenues for small and major commercial recreation facilities were not estimated because it is assumed that most will be developed by tax-exempt, non-profit corporations.

Sales Tax Revenues

Projected annual sales tax revenues for the completed riverfront retail centers are as follows:

<u>City</u>	<u>County</u>	<u>Total</u>
\$329,920	\$430,940	\$760,860

ERA assumed average annual sales of \$250/square foot for the specialty retail shops and restaurants at the specialty retail center based on the experience of similar centers nationally and an understanding of the Chattanooga retail market. ERA's estimates also show actual proceeds to the city and county, not collections. Retail sales taxes are distributed to the county and city by a rather complicated formula. The 200,000 square feet of retail space will produce an estimated \$50 million in annual sales. This will be taxed by a 1.75 percent county and city local option tax, producing \$875,000 in annual sales tax receipts. After subtracting a 1.5 percent state charge for collecting the tax, Hamilton County will receive roughly half the remainder. Chattanooga will receive a proportion of the other half, based on its population as a share of the total population of all cities in the county. Tennessee cities also

get a portion of the 5.5 percent sales tax and Chattanooga will get a share of this amount based on its population as a share of the total population of all cities in Tennessee.

Hotel-Motel Tax

The Hamilton County Trustees currently impose a hotel-motel tax on accommodations in the county on a temporary basis. The tax levy is 3 percent of the costs of room occupancy. ERA estimates that \$57,460 will be collected annually, once the 250 hotel and inn rooms are built, if this tax is continued. This estimate is based on current collections from hotels in Hamilton County.

Employment

ERA projects that the development of the Tennessee Riverpark will generate 15,342 construction jobs over the 1985-2005 period. This translates into 767 construction jobs per year through 2005. These projections are shown in Table 3. These figures understate the actual number of construction jobs to be created, because they are based on impacts of the private development. They do not include the construction employment which will be generated by the public improvements such as building new access roads, renovating the Walnut Street

Bridge, or stabilizing the river's edge. They also measure direct construction employment impacts only, and do not account for multiplier effects.

ERA also estimates that twenty-year development will create 10,628 direct permanent jobs. These new job opportunities are shown in Table 4. This figure is conservative because it does not include multiplier effects.

TABLE 3 Direct Construction Employment Impact (1984 dollars)

Development Cost <u>1/</u>	\$697,370,000
Construction Payroll <u>2/</u>	383,553,500
Total Employment @ \$25,000 per person	15,342
Average Annual Employment <u>3/</u>	767

1/ Assumes development costs of \$66,000 per unit for market rate and subsidized housing; \$75 per sq. ft. for offices; \$90 per sq. ft. for specialty retail; \$115 per sq. ft. for small commercial recreation; \$1 million per acre for industry; \$100,000 per room for hotel; \$15,000/room for inn; \$220,000 per acre and \$38 per sq. ft. for parking.

2/ At 55 percent of development cost.

3/ Over a twenty year development period.

Source: Economics Research Associates

TABLE 4 Direct Employment Impact by Year 2005

<u>Land Use</u>	<u>Annual Employment</u>
Office	1,750 <u>1/</u>
Retail	235 <u>2/</u>
Small Commercial Recreation	75 <u>3/</u>
Major Commercial Recreation	150 <u>4/</u>
Industry	8,168 <u>5/</u>
Hotel	<u>250</u> <u>6/</u>
Total Employment	10,628

1/ Based on 1 employee per 200 sq. ft.

2/ Based on 1 employee per 850 sq. ft.

3/ Based on 1 employee per 2,000 sq. ft.

4/ Full time employees; 500 seasonal employment.

5/ Acreage at 50 percent coverage; based on 1 employee per 800 sq. ft.

6/ Based on 1 employee per room.

Tourism

The Tennessee Riverpark attractions will have significant impact on tourism in the Chattanooga area. ERA estimates that 9,200,000 people currently visit the Chattanooga area annually, based on adjusted traffic count figures taken at Interstate 24 at the Tiftonia Tennessee Welcome Center. This figure includes business travelers, relatives visiting local residents,

highway travelers who currently stop only for a meal, and vacationers. In 1983, U.S. travelers spent approximately \$180,000,000 in travel-related expenditures in Hamilton, Marion, and Sequatchie Counties, based on data from the U.S. Travel Data Center. This amounts to about \$19.60 per capita in travel expenditures.

The riverfront development plan will impact the tourism sector in two ways. First, it will attract additional visitors to the Chattanooga area. Second, it will prolong the stay of the existing 9.2 million visitors.

To quantify these impacts ERA has assumed that this development could attract 1,000,000 new visitors to the Chattanooga area annually. These estimates are largely based on the attendance experienced at historic villages around the country. Some of these figures are shown in the Appendices of this report. ERA also believes that

these new visitors could be expected to stay for at least two days. It is also assumed that the riverfront attractions could prolong the stay of 20 percent of the 9.2 million current visitors to the Chattanooga area. These estimates are based on the experience of other cities with major waterfront-related attractions and our assessment of the Chattanooga visitor market. These two factors would produce an estimated annual increase of \$75,264,000 in travel expenditures in the Chattanooga area, once the plan is completed, as shown in Table 5.

TABLE 5 Tourism Impacts

<u>Market Segment</u>	<u>Number</u>	<u>Annual Expenditure</u>
New Visitors	1,000,000	\$39,200,000 <u>1/</u>
Prolonged Stay of Existing Visitors	1,840,000	\$36,064,000 <u>2/</u>
Total:	2,840,000	\$75,264,000

1/ Assumes 1,000,000 new visitors staying two days with per capita expenditures of \$19.60

2/ Assumes attractions prolong stay of 20 percent of existing 9.2 million annual visitors to Chattanooga with per capita expenditures of \$19.60.

Source: Tennessee Department of Tourist Development, U.S. Travel Data Center, Economics Research Associates

Social

The development of the Tennessee Riverpark system will provide numerous and important social benefits for Chattanooga. Some of these, like employment opportunities, have been discussed in the previous section. The greatest social benefit is likely to be the increased pride of Chattanooga in their City. This, however, is hard to measure. Recreation, housing, economic integration, and racial harmony are also important social benefits that will result. Impacts in these areas will be discussed on the following pages.

Recreation

The Tennessee Riverpark will fill many of the gaps in urban and county recreation which have been documented by various agencies over the years. The needs for more fishing, picnicking, and basketball courts, for example, will be partially met. These needs are documented in the Appendices of this report. Some 2,000 acres of new park sites and trails will contain a wide variety of activities including horseback riding, miniature golf, camping, picnicking, fishing, basketball, hiking, and indoor/outdoor cultural events. These active and passive river edge uses will offer a variety which has appeal to all age, income, and ethnic groups.

The plan should also increase the use of existing recreation areas, such as Reflection Riding, since the urban cultural park concept will link all facilities together as a package, drawing greater attention to each element. Detailed

design and program planning of Riverpark facilities should be careful not to duplicate existing attractions. For example, the Living River Center and Aquarium should not offer the same types of exhibits or activities currently available at the Nature Center. Nearly all existing facilities would remain as they are or be improved, as in the case of the Regional Museum and the golf course on Moccasin Bend.

Personal security within the thirty mile recreation system is a concern that must be addressed. For this reason the development of a park ranger program is encouraged. Similar in concept to the Boston Park Rangers program, such a program would provide uniformed men and women, typically on horseback, to perform a wide range of functions: bandaging scraped knees, locating lost children, leading tours of historical and cultural areas, and generally watching for potential misuse and abuse of the parklands. The Boston Park Rangers program is jointly funded by the public and private sector and has proven to be extremely effective in encouraging greater and proper use of the park system, and in reducing the incidence of crime. Detailed design, which allows good visibility within the Riverway, and adequate lighting are also important security elements which must be worked out in further detailed studies.

This plan also presents residents with an unparalleled, comprehensive cultural program relating to their collective history, consisting of historical and archaeological exhibits, museums, and theatres.

Since many of these sites combine historical education with either active or commercial recreation, an entire day could be devoted to many of these sites and institutions.

New activities at River's Bend, the central point of the Riverpark, will greatly increase urban recreation opportunities for both residents and tourists. The existing Chattanooga Regional History Museum would be upgraded to include such things as Afro-American history, and moved into new quarters as a major exhibit. The Bluff Furnace Museum, an extremely important historic landmark, is also shown. For maximum efficiency in operations, fundraising and other administrative concerns, all new museums should become branch facilities of the Chattanooga Regional History Museum.

The Living River Center is more than an aquarium of fish common to Tennessee. This institution would explore all of the diverse elements of the local ecological system and would include birds, creatures that live in the marshes and woods, and plant life. A unique exhibit showing the exciting world that functions only after dark, a nocturnal zoo, might be developed. The installation of these institutions supported by restaurants, the special retail complex at the foot of Market Street and even the trolley, offers a wealth of recreational opportunities.

Moccasin Bend is another special area in the plan which has considerable recreational benefits. This combined Cultural Heritage Park and "Central Park" provides a gathering place where all sectors

of the community can come together to enjoy greenery, animals, water, music, science and history. The offerings here will include a new public golf course, a working farm where crafts, music and dancing will be offered, living history exhibits and re-enactments, a lake, a botanical garden, horse stables, museums, and an amphitheatre. The barn at the working farm and the amphitheatre will be of particular importance since these are places where residents will have an opportunity to demonstrate and share their talents and cultures.

Recreation on the river itself will also be made more possible for all Chattanooga's residents. The creation of a water taxi system should provide river recreation opportunities even for residents with low incomes. Boat rental, servicing and launching opportunities will be developed at several points. At least two new public marinas are recommended, one on the north bank at River's Bend and the other on the west bank of Moccasin Bend. This should dramatically increase boating within this portion of the river.

The Tennessee Riverpark will be a unique and important experience for the tourist. The Riverway trail system with its many parks, special exhibits, commercial uses, restaurants and interesting sights to see; the ferry boats and water taxis; the cluster of arts and cultural institutions within River's Bend; the marinas; and the Living History Exhibits on Moccasin Bend will provide an unparalleled package of things to do. Although some visitors will take only the one day boat tour of the river seeing the

Historic

The panorama of history that has taken place in the Chattanooga area is fascinating enough to draw visitors from across the country and from other continents. Documented evidence shows that human habitation along the Tennessee River dates back over 10,000 years to a time when nomadic hunters followed mammoth game into these regions south of the glaciers. Succeeding inhabitants became more sedentary; some developed agriculture and built high mounds and villages surrounded by palisades and traded extensively along river networks. Hernando DeSoto's expedition in 1540 has been traced passing through this section of the Tennessee River, stopping at island settlements. The Cherokees, called one of the five "civilized tribes" of the New World, were relatively late comers to the area; they were pressured by the conflicts between the British and the Americans and were later evacuated from Chattanooga to the West in one of the most tragic dramas of American history known as the "Trail of Tears."

White settlers, travelling down the river on the way to Alabama and Georgia, began to settle in this territory in the 1800's, establishing Hamilton County in 1815 and Chattanooga in 1838. Because of the river's gateway location between the East coast and the Mississippi River, Chattanooga became a key center for the steamboat business and a major crossroads for the railroads. Consequently, as a transportation and supply center, Chattanooga played a crucial role in the Civil War and several of the most cataclysmic battles took place here.

Following the war, this riverport town grew into a thriving industrial city establishing itself as a modern trade and transport center. By the mid-twentieth century the river became the basis for the nation's first and most significant hydro-power production and flood control experiments, beginning with the construction of Hales Bar Dam in 1913 and leading to the establishment of the Tennessee Valley Authority in 1933.

This powerful and active river is very different today from its beginnings; so are the peoples who have inhabited its shores and used its power. The changes portrayed by life on this river create a most dramatic and exciting story of the history of human civilization which deserves to be enacted for today's inhabitants and coming generations.

Many of the area's historical sites are located along or near the riverfront. Twenty-two of these locations have been identified for their historical significance to this planned heritage parkway. Other sites will be identified and researched as the plan is implemented. Some of these sites are more publicly recognized than others, but all of them are worthy of focus because they reveal a part of the fascinating history of the area and, indeed, the development of human life on this continent. These sites are listed here and described in the Appendices.

Historic Sites

1. Chickamauga Dam & Lake
2. Archaic Period Site
3. South Chickamauga Creek Area
4. Crutchfield Farm Site
5. Citico Creek Area
6. Stockades for Cherokee Removal
7. Maclellan Island
8. Bluff Furnace
9. Ross' Landing and Ferry
10. Walnut Street Bridge
11. Early Black Settlement
12. The Original City
13. Civil War Earthworks
14. Moccasin Bend Burial Mounds
15. Lookout Mountain
16. Hampton Place
17. Mallards Dozen
18. Vulcan Site
19. Brown's Tavern
20. Brown's Ferry
21. Williams Island
22. The Suck

Special attention must be given to the archaeological sites in the study area. A cultural overview is already underway to synthesize information on known and suspected archaeological deposits along the riverfront. These and other sites encountered during the implementation of the project must be properly investigated before construction, and special care must be given any human burials. In some cases, artifacts will be removed for research or exhibit; in other cases a park site might include a specially protected area containing burial grounds; and some sites would be set aside as permanently protected areas for research and interpretation.

Only some of the twenty-two sites, and possible other sites identified during the implementation period, would be developed into major exhibits or reenactments. All of them, however, should be acknowledged through information kiosks or other forms of interpretive displays at appropriate locations along the Riverway or at other locations within the Tennessee Riverpark. Several institutions which will present historical facts in a comprehensive manner indoors have also been proposed. They are a TVA Museum, Industrial Heritage Exhibit, Bluff Furnace Museum, Visitors' Center, Civil War Museum, Archaeological Center, and an upgraded Chattanooga Regional History Museum. This series of sites and institutions will carry residents and visitors through thousands of years of history and will encourage them to return time and again to see all the sites and to keep up with new exhibits as research continues.

Environment

The Tennessee River is one of the most handsome waterways in the country. Its banks, even where there is industry behind, are mostly undeveloped, covered with trees and other greenery. Several areas along the river such as the Amnicola Marsh and Stringer's Ridge are natural habitats for wildlife. This natural appearance is very unique to urban centers and is one of Chattanooga's greatest resources.

The development of the Tennessee Riverpark is an effort to preserve this irreplaceable resource for the benefit of citizens, visitors and wildlife. This plan therefore recommends actions for three categories of this natural environment: parks, trails and conservation land.

The development of a continuous riveredge trail, the Riverway, would make only a modest alteration of the existing green edge. Paths would be created for bikes and pedestrians; horse trails would be developed; interpretive kiosks, signs and nature exhibits would be installed; the banks would be protected from erosion with riprap; and safe fishing piers and docks would be created. This not only preserves the natural and scenic appearance of the river and its edges, but also protects the banks from the damage of continued erosion.

Parks throughout the Riverpark will take on a variety of characteristics. Some places which are currently natural habitats, such as Maclellan Island, would be designed for only minimal intrusion, mostly as a learning experience for humans. This is not only important for the preservation of the wildlife in a developing environment, but also for the education and enrichment citizens of urban areas who might not otherwise be exposed to some of the creatures who also share this earth. In every instance native vegetation will be encouraged and new plants given an opportunity to naturalize, maintaining or creating semi-natural settings wherever possible.

In the third category of green space, conservation land, are areas which should remain in a natural state going well beyond the riveredge. These areas have valuable significance for the aesthetic quality of the entire region. They include the north bank from the north end of Williams Island to Suck Creek, the south bank from the southern end of Williams Island to Suck Creek, the ridges between Brown's Ferry Road and the river south to Lookout Creek, and most of Stringer's Ridge located on Moccasin Bend. Little should be done here other than bank protection.

It is not intended that any of these categories be considered temporary land uses. Rather, it is proposed that steps be taken to insure that this treatment of the Chattanooga Riverfront greenspace be permanent. The Implementation section of this report discusses a variety of techniques which might be used to achieve this goal.

This plan should also not erode air or water quality. Although new industrial land is proposed, maintaining the working character of this river and the important employment base for the City, these industries should not pose negative impacts on the air or water if EPA and state standards are strictly enforced. Similarly, policing the increased recreation craft on the river will be necessary to maintain a favorable water quality.

Transportation

Transportation-related proposals within this plan include new access roads to the river edge, a trolley along Market Street, a new access road to Moccasin Bend, closing Chestnut Street at First Street, and a limited reopening of the Walnut Street Bridge, closing First Street between Chestnut and Market Streets and increasing the volume of river traffic. These proposals should pose no negative impacts on the excellent transportation system of the city. Since activities of the Tennessee Riverpark are spread throughout the length of the river, concentrations of traffic should be limited to periodic special events. All proposals, however, will require more detailed studies prior to actual implementation.

Several new local roads are recommended to provide direct access to the riverfront. In practically every case these roads lead to a new park where parking spaces would also be available. These locations include Robinson Bridge, South Chickamauga Creek, Citico Creek, Martin Luther King Avenue, Tannery Flats, and Baylor School Road. Detailed design studies would be required in each case to provide proper and easy turns and to minimize disruption to existing major roads especially along Amnicola Highway. These roads should be complemented with an extensive new system of signs, brochures, and maps which will help residents and visitors locate these new routes to the riverfront.

Changes in the transportation system should also include improved pedestrian crossings on Broad Street to create easy access to new

parks which are shown south of Combustion Engineering. Improving this road for bicyclists is also recommended. The creation of a pedestrian crossing of the river in the eastern sector of the riverfront area is also recommended. This might be achieved through modifications to the catwalk beneath the deck of the new Robinson Bridge presently used only by service personnel.

Changes to the transportation network in the River's Bend area are minimal. The construction of the promenade deck for pedestrians with 1500 parking spaces below it will require the termination of Chestnut Street before it reaches the Parkway and of First Street between Chestnut and Market Streets. Chestnut Street would lead into an entrance for the underground parking area. Neither of these streets plays a significant role in the downtown traffic system and their closing should not result in a serious negative impact for the area. The construction of one pedestrian bridge above the parkway near Chestnut Street and a path below it near Cherry Street will have no impact on the Parkway. The improvement of the on-grade pedestrian crossing across the Parkway at Broad Street, however, should result in a much needed slowdown of traffic at this point.

The installation of a trolley along Market Street which would turn on First to Walnut and travel to the north side of the river over the renovated Walnut Street Bridge is extremely critical to the future of downtown Chattanooga and its riverfront. Except at peak hours, the

reduced flow along Market Street would generally not be a problem due to numerous bridge alternatives that are now available. A concern about the trolley's potential impact on the flow along Market Street during peak hours will require a more detailed study. A continuation of the trolley along Frazier Avenue and Manufacturer's Road to Moccasin Bend as shown in the drawings should pose no major problems.

A major new access road is recommended to carry traffic from Manufacturer's Road, along the flat land on the east edge of the ridge on Moccasin Bend, through a break in the ridge midway down the peninsula, and to the central parking area for Moccasin Bend and other local access roads. The smaller access roads will serve the golf course, the marina, the new housing, and other major activity areas on the Bend. The new road is recommended not only to avoid the visual encounter with the sewage treatment plant, but also to prevent any slowdowns or tie ups at the intersection of Manufacturer's Road and Moccasin Bend Road. This particular intersection is crucial for proper access to Pineville Road which serves Signal Mountain and other points north.

Moccasin Bend Road would receive only modest upgrading where necessary. A new landscape screen in front of the sewage treatment plant is highly recommended. Two major parking areas which have a combined capacity of 3,000 vehicles are also proposed. The new housing complex would provide private parking for its residents.

Increased traffic on the river itself is easily accommodated. Data provided in the Appendices of this report indicate that the channel is wide enough and slow enough to accommodate a significant increase in recreation craft as well as barges. Since only 491 strings of barges passed through the locks at Chickamauga Dam in 1983--less than an average of two per day--there is ample lock capacity to handle the craft wishing to reach the upstream portion of the river and docking facilities on the Chickamauga Lake during the week. Further, since recreation craft is likely to be most active on weekends, conflicts with the barges should be minimal. As usage increases, a new special lock limited to recreation craft might be investigated. The construction of public and private marinas within the study area, however, should encourage increased boat storage within this downstream portion of the river system.

Another key element in the river transportation network is the establishment of a water taxi service and increasing the number of ferries. This system should be flexible enough to provide short or long trips to locations and facilities along the Riverpark. The pricing system should also be set to allow maximum use by all economic groups including students and low income residents. Such an approach will insure the system's use as a transportation device rather than purely a tourist attraction.



Potential Character of New Marinas

Investment

As might be expected, the total amount of public and private investment during the first twenty years of developing the Tennessee Riverpark System is great. We estimate that it will be in the range of \$750 million in today's dollars. This is a modest investment which will accomplish a great deal for the city and is comparable to Chattanooga's recent development projects. For example, the South Central Business District Improvement Program which is well underway represents \$284 million in public and private investment. This project includes the Trade Center, TVA office building, one hotel, a garage, and some street improvements. To this can be added the \$35 million Heritage Landing Condominium complex on the north bank of the river, the \$25 million Brown's Ferry housing development, and the \$13.5 million City/County port facility currently under construction.

Of the total investment for the Tennessee Riverpark, only 20-25% would need to be public investment from all sources, federal, state and local. More precise estimates of the required public investment is impossible at this stage since a project like this will involve dozens of negotiated public/private partnerships for each plan element over a long period of time. To illustrate this, costs are presented on the following pages broken into categories of potential public/private ratios. The categories are:

- A) projects which are likely to be borne fully by the public sector
- B) projects which might receive private participation up to 10%
- C) projects which might receive 25-50% in private investment funding
- D) projects which should receive a significant amount of private, tax-exempt contributions
- E) projects which are likely to be borne fully by the private sector

Estimates here involve only the basic capital investment in 1984 dollars. An additional ten to twenty percent must be added to this amount for the cost of administration, design and other development fees. The additional cost of financing has also not been added, but is discussed in the Implementation section of this plan.

The following costs have been divided into three major sections: General River Improvements, River's Bend, and Moccasin Bend. These divisions should aid in the analysis and understanding of the relative returns of investment in various areas of the project. At River's Bend, for example, the amount of private capital investment should be at least three times that of the public sector. Added to this would be the property taxes, sales taxes and other revenues mentioned in the Economic section of this report. By comparison, a relatively high proportion of the Moccasin Bend project will need to be borne by the public sector. However, we anticipate that this project will support its own operation and maintenance. The returns to the City caused by a dramatic increase in tourism (also discussed in the Economic section) should also be considered.

TABLE 6 General River Improvements

	<u>Unit Cost</u>	<u>Total Units</u>	<u>Cost</u>
<u>Category A:</u>			
New Access Roads	\$1,000,000/mile	2 miles	\$ 2,000,000
Pedestrian Footbridges	\$120,000 each	11	1,320,000
Ferry Fishing Piers	\$ 20,000 each	25	500,000
Ferry Shelters	\$ 25,000	12	300,000
Security Fencing (indus.)	\$7.50/ft	54,000 ft	405,000
Landscaped Screening 20' wide	\$50,000/mile	6 miles	300,000
Land Acquisition (parks/trails)	\$10,000/acre	700 acres	7,000,000
Land Acquisiton (No. Bank River's Bend Hsg)	\$10,000/acre	50 acres	500,000
River's Edge Stabilization	\$90,000/mile	20 miles	1,800,000
Park Upgrade	\$5,000/acre	100 acres	500,000
Gasoline Tank Removal	\$50,000/each	2	100,000
Walnut St. Bridge Renovation			8,000,000
Pub. Marina/Boat Rental		1	2,500,000
TVA Museum and Exhibits	\$115,000/sq ft	30,000 sq ft	3,450,000
Site Preparation (Robinson Br. Indus. Site)	\$40,000/acre	70	2,800,000
Site Preparation (Robinson Br. Mixed Use Site)	\$40,000/acre	80	3,200,000
Pedestrian Crossing on Robinson Bridge			<u>1,500,000</u>
			\$36,175,000

TABLE 6 (continued)

Category B:

Pedestrian/Bike Trails	\$40,000/mile	33 miles	\$ 1,320,000
Horse Riding Trails	\$62,000/acre	19 miles	1,178,000
Parks	\$30,000/acre	850 acres	<u>25,500,000</u>
			\$27,998,000

Category C:

Subsidized Housing	\$66,000/unit	800 units	<u>\$52,800,000</u>
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Category E:

Housing	\$66,000/unit	1,550 units	\$102,300,000
Offices	\$75/sq ft	150,000 sq ft	11,250,000
Retail	\$90/sq ft	50,000 sq ft	4,500,000
Industry	\$1,000,000/acre	300 acres	300,000,000
Inn	\$15,000/room	50 rooms	<u>750,000</u>
			\$418,800,000
General Riverfront Total			\$535,773,000

TABLE 7 River's Bend Improvements

	<u>Unit Cost</u>	<u>Total Units</u>	<u>Cost</u>
<u>Category A:</u>			
Ferry/Fishing Piers	\$20,000 each	2	\$ 40,000
Ferry Shelters	\$25,000 each	2	50,000
Land Acquisition	\$50,000/acre	8 acres	400,000
Riverway Walk	\$50/sq ft	20,000 ft	1,000,000
Pedestrian Bridges	\$250,000 each	2	500,000
Amphitheatre on Kirkman grounds	\$75,000/acre	2 acres	150,000
Parkland	\$60,000/acre	6 acres	<u>360,000</u>
			\$ 2,500,000
<u>Category B:</u>			
Trolley System	\$1.25 mil/mile	2 miles	<u>\$ 2,500,000</u>
<u>Category C:</u>			
Platform Slab	\$50/sq ft	30,000 sq ft	\$ 1,500,000
Plazas	\$40/sq ft	100,000 sq ft	4,000,000
Public Parking Garage	\$38/sq ft	350,000 sq ft	13,300,000
Retaining Walls	\$200/ft	3,000 ft	<u>600,000</u>
			\$19,400,000

TABLE 7 (continued)

Category D:

Living River Center	\$115/sq ft	30,000 sq ft	\$ 3,450,000
Regional History Museum	\$115/sq ft	35,000 sq ft	4,025,000
Bluff Furnace Exhibit	\$115/sq ft	10,000 sq ft	1,150,000
Visitors Center & Exhibits	\$90/sq ft	17,000 sq ft	<u>1,530,000</u>
			\$10,155,000

Category E:

Hotel	\$100,000/room	200 rooms	\$20,000,000
Restaurant	\$75/sq ft	8,000 sq ft	600,000
Specialty Retail Centers	\$90/sq ft	100,000 sq ft	9,000,000
Offices	\$75/sq ft	200,000 sq ft	15,000,000
Office Parking	\$38/sq ft	165,000 sq ft	6,270,000
Housing	\$66,000/unit	350 units	<u>23,000,000</u>
			\$73,870,000
River's Bend Total			\$108,425,000

TABLE 8 Moccasin Bend Improvements

Category A:

	<u>Unit Price</u>	<u>Total Units</u>	<u>Cost</u>
Stables			\$ 750,000
Public Marina			2,500,000
Golf Course			3,000,000
Parkland	\$45,000/acre	200 acres	9,000,000
Lake	\$90,000/acre	50 acres	4,500,000
Parking	\$220,000/acre	36 acres	7,900,000
New Access Roads 30' wide	\$1,000,000/mi.	5 miles	5,000,000
Land Acquisition	\$10,000/acre	5 acres	50,000
Landscaped Screening	\$5/sq yd	5,200 sq yds	25,000
Relocation of Powerlines			840,000
New Hospital Building	\$75/sq ft	50,000 sq ft	3,750,000
Trolley from Walnut St. to Park	\$1.25 mil/mile	3.7 miles	4,625,000
Hiking Paths on Ridge	\$10,000/mile	5 miles	<u>50,000</u>
			\$41,990,000

Category D:

Heritage Interpretive Park Archaic Settlement Woodland Settlement Mississippian Settlement Cherokee Settlement Pioneer Settlement Pioneer Farm	\$150,000/acre	50 acres	\$ 7,500,000
Archaeological Center	\$85/sq ft	20,000 sq ft	1,700,000

TABLE 8 (continued)

Category D, cont.

Civil War Museum	\$115/sq ft	20,000 sq ft	2,300,000
Working Farm	\$10,000/acre	100 acres	<u>1,000,000</u>
			\$12,500,000

Category E:

Housing	\$66,000/unit	700 units	\$46,200,000
Retail	\$90/sq ft	40,000 sq ft	<u>3,600,000</u>
			\$49,800,000

Moccasin Bend Total \$104,290,000

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Overall Strategy

The overall strategy with the creation of the Tennessee Riverpark is to develop an environment which will tie together many of the historical, natural, cultural and recreational resources of the community. It is this great Riverpark system which will bring Chattanooga quickly back to the river, draw national attention to the city, and charge the engines of growth. In Chattanooga, an appropriate balance of riverfront uses, with an emphasis on public and commercial recreation, will require a comprehensive implementation strategy.

A principal element of such a strategy should be modelled on the public/private efforts which have occurred in other cities around the country. This partnership must go beyond merely working out which entities will contribute projects within the overall plan. This partnership must be extended to cover the overall coordination and management of the development process as well as the long-term administration of the Riverpark system.

Many cities are setting up non-profit corporations or public/private commissions for such purposes with considerable success. The Lowertown Redevelopment Corporation, for example, managed to orchestrate over \$24 million in new development and stimulate plans for \$117 million of additional projects during its first two years of redevelopment efforts in the downtown and riverfront areas of St. Paul, Minnesota (1978-1980). The Lowertown Redevelopment Corporation has a small board and staff and acts as a visionary

leader to create new images of the project area. It performs the role of interim developer to stimulate projects, and serves as a vehicle for addressing social needs and aspirations consistent with broad city goals. The corporation provides gap financing, conducts design review and coordination and carries on an extensive marketing program for the area. The Lowertown experience has shown the advantages of establishing an entity which involves the appropriate public and private players who are released from the restrictions and red tape often imposed on the public sector.

This concept is not foreign to Chattanooga. The city has witnessed progress on many recent projects which have involved such groups. The Carter Street Corporation, which will be discussed in greater detail later, and the East Ninth Street Redevelopment Corporation are two examples of local non-profit corporations which are stimulating major projects within the city. A preliminary analysis of the tasks envisioned in the development and management of the Tennessee Riverpark has resulted in a recommendation to form another public/private, non-profit organization: the Tennessee Riverpark Corporation. Although the precise size and structure must be studied in more detail, below is a general description of this new entity.

The Tennessee Riverpark Corporation would have as its purposes the development and long-term management of the entire Riverpark system, the boundaries of which are shown on the Phasing Map. The organization would design, fund, build, and man-

age the system, maximizing and coordinating a multitude of public and private resources and maintaining the integrity and high standards of the plan. Its jurisdiction would go beyond the trails and parks to include the stimulation and oversight of all development within the project area. This would include, in some cases, actual land acquisition, land sales or leasing, and direct involvement in some construction projects.

The corporation would conduct design review of all projects within the area boundaries. It would also see to the long term management of most of the open space and some of the exhibits, like the Visitors' Center, amphitheatre, and public marinas. Other parts of the Riverpark would be operated and managed by other private or public groups in coordination and cooperation with this body. These institutions would include the Chattanooga Regional History Museum, the Bluff Furnace Exhibit, and the Living History complex on Moccasin Bend. Some projects might require initial management by the corporation and be taken over by another group or company later. The ferry system, for example, might fall into this short-term category.

Although the most ideal size of the central governing body or Board of Directors is yet to be determined, its membership would probably range between five and thirty individuals. Its members would be nominated by special interest groups such as business organizations or historic preservation groups, but appointed finally by City and County officials in a ratio that must

also be worked out. The appointments should result in a body that possesses a broad range of skills and disciplines consistent with the comprehensive nature of the organization's tasks. This corporation should also include a cross section of the area population, including representation of minorities and females.

Standing committees to concentrate on key areas of the development program will be needed. These might include committees on housing, programming, and history. Ad-hoc committees would also be necessary from time to time to handle special short-term projects. One such committee might stimulate the development of the River Museum, a project which should then be taken over by the State government or a non-profit museum group.

The Tennessee Riverpark Corporation will require a professional staff to carry on its day to day work. This staff must also have a range of skills relevant to the tasks and would probably include a Management Director, Program Coordinator, Architect, Landscape Architect, and Planner. Specialists would also be called in from time to time to undertake special projects on a contractual basis. Archaeologists, environmentalists, museum designers, and housing specialists are examples of special consultants which are likely to be necessary. As with board membership, the staff composition of the corporation should also be consistent with the racial and sexual make-up of the area's population.

A support group called Friends of Riverpark should also be established. This vehicle would be an important way for hundreds of citizens to become involved with the development, financing and operations of the Riverpark. Through this organization citizens could provide input and volunteer assistance to the work of the Tennessee Riverpark Corporation on a continuous basis. This group might be a division of the corporation or might be incorporated as a separate non-profit entity.

A successful development strategy will also require a strong commitment to several other well designed implementation elements, some of which have already been mentioned. These include the use of creative land acquisition techniques, the development of a special overlay zoning map and design review process, and the design of clear phasing and financing strategies. These crucial elements of the implementation strategy are discussed in more detail on the following pages.

Phasing

Although the full development of land identified for use along the twenty mile study area will probably take some thirty to fifty years, the new image of the Tennessee Riverpark can be created much sooner. In fact, the concept can be brought to life in enough depth in the minds and eyes of residents and visitors to bring significant new attention and benefits to the City within a ten year period.

To achieve this maximum benefit within a short period of time, phasing and appropriate sequencing will be important. Any phasing strategy must address at least three key areas of consideration related to proposed projects: visibility and functional effectiveness; logistics and ease of implementation; and, financing and cost effectiveness. For these reasons, there should be four phases in the creation of the Tennessee Riverpark.

Phase I (years 1-5) should be devoted to the development of River's Bend and the south bank from the dam to the University of Tennessee. River's Bend is the focal point of the project and tied to the City's program to redirect attention and activity downtown. This area is the most visible, given its position downtown and its symbolization of the city's relationship with the river.

Some of the players necessary to develop projects proposed for this area are already active. Modest investments have been made and great interest has been expressed within the private developer sector of Chattanooga during the past several months. The board of the

Chattanooga Regional History Museum is actively planning to upgrade its facility. Organizers of the Bluff Furnace Museum have been active for some time fundraising for this project. Boat tours along the river originating here have already been established by a private operator. Clearly any public investment here stands to generate private investments at ratios of three or four to one.

The development of the Riverway, historic exhibits, and mixed use developments along the south bank from the TVA dam to River's Bend is important in demonstrating the future function and character of the Riverpark system as it will be developed throughout the twenty miles. This stretch of the river is easily reached from downtown along Amnicola Highway and is visible from two bridges and North Chattanooga. Much of the land along this portion of the river is already publicly owned and stands ready for next steps. County officials have expressed an interest in incorporating the Riverway into Centre South, the new port facility which is currently being designed. Interest by developers to create mixed use areas along Amnicola Highway has also been received. The immediate benefits of the new river related recreation would affect thousands of residents. The housing, office and industrial developments will also result in great benefits for the city.

Phase II (years 5 - 10) should focus on the development of the north bank at River's Bend and the southern half of Moccasin Bend. Because the commercial recreation complex on Moccasin Bend is a very desirable project for increasing Chattanooga's appeal to tourists, the southern portion of the bend should be tackled immediately after River's Bend is well on its way. This project would include the Living History Exhibits, museums, lake, park, and botanical garden. All of the land in this section of Moccasin Bend is publicly owned eliminating the need for complex land assembly. The relocation of patients from the Winston Building should have been worked out by this time and a private operator for the Living History Exhibits identified.

Improving the attractiveness of the north bank at River's Bend will also be important if residents are to be drawn to the north side and on to Moccasin Bend. Since the south bank and downtown will offer wonderful new views, developing and marketing housing that face onto a wonderful new public park should not be difficult. The cost effectiveness of these two projects for the City will be immense.

Phase III (years 10 - 20) would be devoted to the completion of the Riverway and the Cultural Heritage Park on Moccasin Bend. Once the southern portion of Moccasin Bend is completed, the marina, working farm and new golf course should be built. The installation of these fine amenities should attract a developer for the housing which fronts on the marina. The public's desire to have the Riverway completed should also be well established by this time.

Phase IV (years 20 - 50) would involve little or no public stimulation. The Riverpark environment would have been set in place and the demands by individuals and companies to be located here would have increased. The remaining undeveloped land will be filled in by the private sector as the market calls for it.

Sequencing within each of these phases will also be important. Because a proper beginning of this massive project is so critical a more complete listing and sequencing of projects which should occur during Phase I is presented.

<u>South Bank</u>	<u>Investment</u>
1. The Riverway, park and fishing facilities should be developed on the publicly owned land at Robinson Bridge as shown.	\$ 3,000,000
2. The Riverway along the edge of the State's vocational college should be built.	30,000
3. The Riverway and park along the edge of the new port should be designed and built.	1,000,000
4. A developer should be encouraged to build the mixed uses on the site just south of the new port to include the Riverway.	50,000,000
5. That portion of publicly owned land at Robinson Bridge designated for mixed use should be prepared and a developer found.	53,200,000
6. The Riverway and remaining parks should be constructed. The Citico Creek Park should be an early project.	7,000,000
7. The Inn and English Garden should be built.	1,000,000
8. All historic exhibits should be installed along the Riverway and in the parks.	100,000
9. Horse and bike rental facilities should be established and operated.	500,000
10. That portion of publicly owned land at Robinson Bridge designated for industrial use should be prepared and leased.	<u>2,800,000</u>
	\$118,630,000

<u>River's Bend</u>	<u>Investment</u>
1. The new Chattanooga Regional History Museum should be constructed as well as the park and plaza which surrounds it.	\$ 4,475,000
2. The Bluff Furnace Museum should be built as well as the park and Riverway which connects it to the Regional Museum site.	1,150,000
3. The Living River Center should be built on Chestnut Street to anchor the west end of the area.	3,450,000
4. Developers should be assembled to participate in the construction of the deck, plaza, and parking system.	19,400,000
5. The hotel should be constructed.	20,000,000
6. The Visitor's Center should be built on the deck.	1,530,000
7. The trolley system should be constructed to connect all activities along Market Street.	2,500,000
8. The housing tower should be built.	10,000,000
9. The office tower with parking should be built.	21,270,000
10. The specialty market which will feature restaurants, cafes and other food establishments should be constructed.	4,500,000
11. The specialty market which will feature retail shops should be built.	4,500,000
12. The low rise housing complex should be developed.	<u>13,000,000</u>
	\$105,775,000

Other

Investment

1. Land on the north bank of River's Bend designated for housing should be acquired and assembled.

\$ 500,000

2. Critical portions of Riverbank should be protected from further erosion.

1,000,000

FIGURE 10 Phasing Strategy

Acquisition

Although some land along the river edge is already publicly owned, a great deal is not. Public control of additional land on a gradual basis will therefore be critical to the creation of the Riverway and park system, which is a continuous strip along the north and south banks of the river. Land acquisition might also be necessary for other projects within the Riverpark where public intervention seems necessary for a positive result. It would be advisable for the Tennessee Riverpark Corporation to acquire sites on which mixed income housing is desired. Such sites should be acquired early before land values escalate making affordable housing nearly impossible. The Corporation or another public body should oversee development of those sites on which the quality of design and function are of extremely high concern due to surrounding uses, views, or other factors vital to the success of the Riverpark. Land which should be protected from the pressures of intense development and maintained in its natural state will also require intervention.

Since the resources for acquisition will most likely remain limited, acquisition techniques other than an outright purchase of the title should be explored and utilized wherever feasible. Obtaining voluntary contributions of conservation easements may prove to be an effective technique for some parks, portions of the Riverway and conservation areas. A conservation easement is the conveyance of a share in the property interest that is legally enforceable between the recipient of the easement and all present and future owners of that

land. The present owner of the land can convey certain rights to another party and agree to restricted development of the property limiting changes or improvements which can be made to the natural landscape. An easement does not automatically open the owner's land to the general public, but this is certainly a term that must be included for the Riverway and public parks. Under current tax laws the owner could receive the value which has been lost by limiting the land development potential through tax deductions after the property is reappraised as a conservation area. These deductions can often be very advantageous to owners in high tax brackets. The owner retains the obligation to pay taxes on the property, but at a stabilized or often reduced assessment. If the land is to be opened up for public use, a maintenance agreement would also become part of the easement document.

Although this technique is sometimes less expensive than fee title transactions, there is some cost of administration to be borne by the recipient. This technique has been used throughout the country since the early 1900's, but may not always be the desirable option from the standpoint of the recipient. Such easements, by definition, restrict the degree to which the land can be developed. In some parks along the river, for example, the construction of a restaurant or some other commercial establishment would probably not be permitted under the law.

Land owners who wish to remove themselves completely from all property taxes or liability may choose to donate the land outright. Others who may not benefit from tax deductions may want to sell an easement for a fee. Such easements are more flexible, as the terms of this shared title interest can be defined by the parties. A standard purchase of the land in question may be the only option of interest to some owners.

The ownership or control of land along the Riverway and within the parks that are linked by the trail should lie with the Corporation wherever possible. This will be important to maintain clarity as to who is responsible for the long-term programming and management of the entire park system. Land which is in public ownership now or in the future should be assigned to the Corporation through a long-term lease or management agreement to ensure this clarity and continuity. It is also of considerable importance that arrangements be developed between the Corporation and the public sector which direct all income from user fees, sub-leases payments and other activities to the Corporation. These revenues will be of significant importance for covering the costs of park operations and management.

The Corporation should be given control of other sites which are currently publicly owned and designated for intense development. This involvement and status is not only important for insuring the ultimate character and function of new development but also for the revenues from these projects which would play an important role in providing seed capital for other projects as well as operating funds for the park system.

Controls

Not unlike many American cities, Chattanooga has a zoning system which has few design requirements allowing developers maximum flexibility. This has been a wise course in the past for communities that needed to stimulate as much growth as was physically and financially possible. On the other hand this approach to development has very often resulted in poor site use, unattractive structures, blocked views and sunlight, and other negative characteristics. Many cities and towns are re-evaluating existing zoning standards and amending them to include more guidelines for the design character of new projects. Chattanooga, like other cities, has instituted, for example, the "planned unit development" process which provides for a more comprehensive review of large projects.

Although progress has been made in this area, the tools for control which are currently available in Chattanooga are inadequate to ensure that the development of the Tennessee Riverpark will result in the character that is generally described within this plan. This Master Plan provides only general guidance on how the land should be used and what the environmental character should be. It is not a legal tool nor is it in enough detail to serve as a standard by which all projects can be evaluated. For this reason, more detailed design studies and guidelines should be developed and formally incorporated into the zoning process. These standards should be more specific as to the intensity of uses, height and bulk of buildings, architectural character, type and extent of land-

scaping, access, circulation and parking, and the relationship of proposed projects to other uses which are nearby. These guidelines should also establish standards for signs. Although often overlooked, these small elements within the environment very often create dramatic negative impacts. Sign control standards which have been developed but not adopted for the downtown area might be a useful source of ideas for the entire Tennessee Riverpark.

To achieve these goals a special Overlay Zoning District should be established which specifies regulations applied to all uses within a defined geographic area in addition to those required by the normal underlying zoning. Where the regulations for this district differ from those of the underlying zoning the more restrictive provisions would apply. The purpose of such a district would be to accomplish the objectives of the Master Plan and to provide an opportunity for a smooth transition from the character of the Chattanooga Riverfront area to those uses which are located on lands adjacent to the project area.

All projects would be taken through the normal zoning process. The Tennessee Riverpark Corporation would conduct a review concurrent with that of the Planning Commission's staff. Although this aspect of the review process would not be binding, this participation would probably be welcomed as a valuable additional source of expertise and advice by the Planning Commission and the City and County Commissions which are the official decision making entities. These bodies are

often stretched thin and would be well served by this assistance.

The corporation's staff or designated advisors would perform a thorough analysis of all proposals and report their findings and recommendations to the governing board of the corporation. The corporation's final views and recommendations would be forwarded to the staff of the Planning Commission and to the City or County Commissioners as appropriate. The corporation would monitor all construction projects through completion checking for conformance and providing advice when needed.

The corporation might also investigate the possibility of becoming a Historic District Commission. This designation would provide this body the ability to review projects from a historic conservation perspective and to intervene in the building permit process when necessary. The Tennessee Riverpark is replete with historic sites which are key elements in the success of the total project. The historic interests must therefore be protected and enhanced to the greatest degree possible.

Finally, control over development is sometimes best achieved through an effective and consistent system of communications with developers, public bodies, and other organizations which are also active in development. The Tennessee Riverpark Corporation should maintain vigorous contact and coordination with all parties which may have an interest in or near the study area. These actions will be of particular importance in the River's Bend area since there are a number of corporations, committees, study groups, and individuals actively working on various aspects of the downtown revival. In fact, some attention should be given to this growing number of players who often overlap each other. An assessment of the most efficient organization of resources and manpower for dealing with River's Bend and the entire downtown area should be made as soon as possible.

Financing

Based on a review of resources which are available to the local public sector, a table of which is shown in the Appendices, coupled with the national experience of similar waterfront developments which have successfully attracted private investors, we believe that the financing of this \$750 million project will be complex, but possible. There are two key ingredients for a successful financing program. One is the need for a serious and long-term commitment by local government bodies to utilize the resources that do exist. The other is the structuring and staffing of the Tennessee Riverpark Corporation in such a way that it will have the capability to skillfully design and organize creative financing packages for the many elements and phases of this project, utilizing and attracting both public and private sources.

A continued high level of public support for the project should bring about the needed commitment by government officials. The creation of the Tennessee Riverpark Corporation as previously described should also not be a terribly difficult step to achieve if a careful, more detailed study of its final structure is undertaken. Here again, we recommend looking to a successful local model to understand how this new corporation might administer the complex financing of this development. That model is the Carter Street Corporation.

The Carter Street Corporation was chartered as a non-profit corporation by the City of Chattanooga and Hamilton County in December, 1981 to develop and channel funds

to the Chattanooga-Hamilton County Convention and Trade Center. This entity was created to maximize cooperation between the city and county over development of the convention center. The Carter Street Corporation board is made up of three members appointed by the County Commission, three members appointed by the City Commission, and one joint county-city member who serves as chairman. All Board members serve in a non-paid status. Its operating costs are annually funded by a 50/50 split between the city and county. The corporation has played an important design, development and management role in the new Chattanooga-Hamilton County Convention and Trade Center and the adjacent 1200-car public parking garage.

Included in the financing of this multi-million dollar project were two separate UDAG grants. \$3 million in UDAG funds assisted in the construction of the new convention and trade center and the hotel common areas. \$2.1 million of UDAG funds helped build the 1200-car public parking garage. A City and County bond issue of \$17,950,000 provided the additional local funding for the trade center and garage. The Carter Street Corporation leases air rights and dedicated parking spaces to the private developers of the adjacent privately financed 350-room hotel.

A corporation, modeled after the Carter Street Corporation, would also have access to a variety of capital and operating funds. Pass-through revenue from governmental units is a significant potential source of funds for the Tennessee Riverpark. City or County General

Obligation Bonds could be channelled through Riverpark Corporation for specific projects. Both the City and County currently have excess bonding capacity. Debt will be limited by public opposition to significant property tax increases, especially since both the City and County recently raised their property tax rates. However, a modest tax increase, which may be politically feasible, would produce significant bond financing. For example, according to the Hamilton County Administrator of Finance, a tax increase of about \$.20 per \$100 of assessed value would pay for an approximate \$25 million County bond issue, assuming a 15-year term and 9 percent interest.

Revenue Bonds could be issued for self-supporting activities. Revenue Bonds have been issued for recreational projects, such as historic villages, in other areas based on the projects' ability to be self-supporting. To be considered for Revenue Bond financing, proposed projects in the riverfront plan must be subject to detailed project-by-project evaluation.

Urban Development Action Grants and developer contributions could also be passed through this entity. Tax Increment Financing (TIF) is another possible source of funds for some components of the plan. The mixed-use and industrial areas near Robinson Bridge may be appropriate areas for the use of TIF. A non-profit entity that represented the interests of the city and county would minimize potential inter-governmental conflicts.

Another significant source of capital is donations and gifts to the corporation, whether individual or corporate. Supportive private property owners might want to donate easements for trails and other property areas to the Corporation. This could significantly reduce land acquisition costs. Foundation support could be significant for several aspects of the development.

One potentially very important source of funds for the Riverpark Corporation would be grant or low interest loans from the several large Chattanooga based foundations. In St. Paul, Minnesota, the McKnight Foundation made a \$10 million commitment to the Lowertown Redevelopment Corporation for the revitalization of a large area of old warehouses and factories on the edge of downtown. Of this amount, \$9 million was designated for concessional, subordinated loans or guarantees of first mortgage debt. One million was designated for project development, limited financial support to projects of special value and operations of the corporation. The first \$5 million of these funds has already leveraged some \$77.4 million in development and influenced \$40 million in additional development, according to the director of the corporation. If the Chattanooga foundations could agree to pool resources for this effort, a similar amount might be raised for Riverpark.

Operating revenues could be drawn from a wide range of sources. The Tennessee Riverpark Corporation could lease back properties it owns

and on which it has developed infrastructure to private developers for a fee. The 1,500 parking spaces at River's Bend, in addition to the parking at Moccasin Bend, will generate substantial parking revenues. Admission charges and other types of user fees to the commercial recreation facilities as well as fares for the proposed light rail trolley and river ferry will also generate income. User fees could be charged for bicycle, horse, and boat rental, and other activities. The corporation could also generate revenues from operating food and other concessions along the riverfront.

Corporate sponsorships of events and some construction items could also reduce development and operating costs. For example, the owners of industrial sites requiring security fencing along the river may be willing to share the costs of erecting the fencing in exchange for placing signs showing corporate sponsorship of the riverfront plan. There are also many opportunities for advertising revenue at visitor centers, ferry stops, and other locations.

To supplement these sources of capital and operating revenue the new support group, Friends of Riverpark, could sell family memberships and corporate memberships. In exchange for supporting the Riverpark, members would be entitled to public recognition and possible discounts at Riverpark events. Friends of Riverpark could also generate income by merchandising riverfront-related T-shirts, jewelry, and other themed items. This is a popular way for museums and other attractions to generate revenues and voluntary manpower for various projects in support of the overall plan.

The table which follows is a guide of the kinds of funding sources and partnerships which might be utilized for each element of the project. Funding of the Tennessee Riverpark Corporation would come from a variety of public and private sources as described above. The revenue generating potential of each element is also noted.

TABLE 9 Funding by Component

General River Improvements

<u>Category A:</u>	<u>Total Cost</u>	<u>Funding</u>	<u>Revenue Production Potential</u>
New Access Roads	\$2,000,000	City/County Capital Improvement Plan	No
Pedestrian Footbridges	1,320,000	Riverpark Corp.	No
Ferry Fishing Piers	500,000	Park Dept./TVA/ State Parks and recreation funding	Yes - fishing licenses
Ferry Shelters	300,000	Riverpark Corp.	Yes - advertising
Security Fencing (indus.)	405,000	Riverpark Corp./ shared where possible, i.e., corporate sponsorship	Yes - corporate sponsorship, advertising
Landscaped Screening 20' wide	300,000	Riverpark Corp./ shared where possible, i.e., corporate sponsorship	No
Land Acquisition (parks/trails)	7,000,000	Riverpark Corp./ costs may be substantially reduced thru purchase or gift of easements for trails	No
Land Acquisition (No. Bank River's Bend Hsg)	500,000	Riverpark	Yes - land sales
Rivers Edge Stabilization	1,800,000	Riverpark Corp./ State/Federal participation/ Corps of Engineers	No
Park Upgrade	500,000	City/County Capital Improvements	No
Gasoline Tank Removal	100,000	Riverpark Corp.	No
Walnut St. Bridge Renovation	8,000,000	Riverpark Corp./ City/County	Yes - corporate sponsorship, events
Public Marina/Boat Rental	2,500,000	Riverpark Corp. State, local	Yes - user fees
TVA Museum and Exhibits	3,450,000	TVA	Yes
Site Preparation (Robinson Br. Indus. Site)	2,800,000	Riverpark Corp. Tax Increment Financing	Yes - self supporting thru land leases
Site Preparation (Robinson Br. Mixed Use Site)	3,200,000	Riverpark Corp. Tax Increment	Yes - land sales and leasing
Pedestrian Crossing on Robinson Bridge	<u>1,500,000</u>	State/Federal Funding	No
	\$36,175,000		

TABLE 9 (continued)

General River Improvements con'td.

<u>Category B:</u>	<u>Total Cost</u>	<u>Funding</u>	<u>Revenue Production Potential</u>
Pedestrian/Bike Trails	\$1,320,000	Riverpark Corp.	Yes - bike rentals
Horse Riding Trails	1,178,000	Riverpark Corp.	Yes - horse rentals
Parks	<u>25,500,000</u>	City-County/ Riverpark Corp.	Yes - special events
	\$27,998,000		
 <u>Category C:</u>			
Subsidized Housing	<u>\$52,800,000</u>	Private	Yes - to developer
 <u>Category E:</u>			
Housing	\$102,300,000	Private	Yes - developer
Offices	11,250,000	Private	Yes - developer
Retail	4,500,000	Private	Yes - developer
Industry	300,000,000	Private	Yes - developer
Inn (on North Bank)	<u>\$ 750,000</u>	Private	Yes - developer
	\$418,800,000		
 General Riverfront Total	 \$528,273,000		
 <u>River's Bend</u>			
<u>Category A:</u>	<u>Total Cost</u>	<u>Funding</u>	<u>Revenue Production Potential</u>
Ferry/Fishing Piers	\$ 40,000	Riverpark Corp.	Yes - licenses
Ferry Shelters	50,000	Riverpark Corp.	Yes - advertising
Land Acquisition	400,000	Riverpark Corp.	No
Riverway Walk	1,000,000	Riverpark Corp.	Yes - corporate sponsorship, advertising
Pedestrian Bridges	500,000	Riverpark Corp.	No
Amphitheatre on Kirkman grounds	150,000	Riverpark Corp.	Yes - special events
Parkland	<u>360,000</u>	Riverpark Corp.	Yes - events
	\$2,500,000		
 <u>Category B:</u>			
Trolley System	<u>\$2,500,000</u>	CARTA/UMTA	Yes

TABLE 9 (continued)

River's Bend cont'd.

<u>Category C:</u>	<u>Total Cost</u>	<u>Funding</u>	<u>Revenue Production Potential</u>
Platform Slab	\$1,500,000	Riverpark Corp.	No
Plazas	4,000,000	Riverpark Corp./ private	Yes - corporate sponsorship, events revenue
Parking Garage	13,300,000	Riverpark Corp./ private	Yes - substantial revenue potential
Retaining Walls	<u>600,000</u>	Riverpark Corp.	No
	\$19,400,000		
<u>Category D:</u>			
Living River Center	\$ 3,450,000	State/private	Yes - self supporting
Regional History Museum	4,025,000	Private/non-profit	Yes - self supporting
Bluff Furnace Exhibit	1,150,000	Private/non-profit	Yes - self supporting
Visitors Center & Exhibits	<u>1,530,000</u>	Riverpark Corp.	Yes
	\$10,155,000		
<u>Category E:</u>			
Hotel	\$20,000,000	Private	Yes - developer
Restaurant	600,000	Private	Yes - developer
Specialty Retail Centers	9,000,000	Private	Yes - developer
Offices	15,000,000	Private	Yes - developer
Parking for Offices	6,270,000	Private	Yes - developer
Housing	<u>23,000,000</u>	Private	Yes - developer
	73,870,000		
River's Bend Total	\$108,425,000		
<u>Moccasin Bend</u>			
<u>Category A:</u>	<u>Total Cost</u>	<u>Funding</u>	<u>Revenue Production Potential</u>
Stables	\$ 750,000	Riverpark Corp.	Yes - lease, user fees self supporting
Public Marina	2,500,000	Riverpark Corp.	Yes - user fees self supporting
Golf Course	3,000,000	Riverpark Corp. (or) City/County	Yes - user fees self supporting

TABLE 9 (continued)

Moccasin Bend cont'd.

<u>Category A: con'td.</u>	<u>Total Cost</u>	<u>Funding</u>	<u>Revenue Production Potential</u>
Parkland	9,000,000	City/County Parks	Yes - special events
Lake	4,500,000	Riverpark Corp.	Yes - boat rentals
Parking	7,900,000	Riverpark Corp.	Yes - self supporting
New Access Roads 30' wide	5,000,000	City/County Capital Improvement Plan	No
Land Acquisition	50,000	Riverpark Corp.	No
Relocation of Powerlines	840,000	City/County	No
Landscaped Screening	25,000	Riverpark Corp.	No
New Hospital Building	3,750,000	State	No
Trolley from Walnut St. to Park	4,625,000	CARTA/UMTA	Yes-fares
Hiking Paths on Ridge	<u>50,000</u>	Riverpark Corp.	No
	\$41,990,000		
<u>Category D:</u>			
Heritage Interpretive Park	\$7,500,000	Riverpark Corp. State, or non-profit sponsor	Yes - admissions self supporting
Archaic Settlement			
Woodland Settlement			
Mississippian Settlement			
Cherokee Settlement			
Pioneer Settlement			
Pioneer Farm			
Protected Archaeological Sites	100,000	Non-profit	Yes - admissions, donations
Archaeological Museum	1,700,000	Non-profit	Yes - admissions
Civil War Museum	2,300,000	Non-profit corp.	Yes - admissions, self-supporting
Working Farm	<u>1,000,000</u>	School Board/ Non-profit corp.	Yes - sale of goods, special events
	\$12,600,000		
<u>Category E:</u>			
Housing	\$46,200,000	Private	Yes - developer
Retail	<u>3,600,000</u>	Private	Yes - developer
	\$49,800,000		
Moccasin Bend Total	\$104,290,000		

Source: Economics Research Associates

Further Studies

Additional detailed planning and design will be needed to prepare for the implementation of Riverpark. This work should be undertaken immediately and proceed rapidly in order to keep the momentum going. There are five principal tasks to be done:

1. The overall theme of Riverpark --the history and accomplishments of human development in the Southeast--must now be spelled out in concrete detail. The basis for this will be several research papers, collating and summarizing what is currently known of the history of the Tennessee River in Chattanooga. These must start with the geology and ecology of the project area, with emphasis on the flora and fauna which can now be observed along this reach. A second paper would review the rich history of Native American settlement along the river, up to the 18th century. A third paper would cover the history of European and black settlement, including the Indian Wars and the Civil War, as it was shaped by the Tennessee River. A fourth would deal with the influence of the river on economic development, from the Bluff Furnace through TVA, shipping, railroads, and current industry. Each of these research efforts would also collect visual materials illustrating the history and would describe all sites of significance on the river. This material would then be synthesized into the overall theme. The methods for interpreting this history in place would be developed, including the design of exhibits and their costs. Typical visitation scenarios for various types of people would be writ-

ten, showing how this history would be experienced.

2. The Riverpark development strategy must also be developed in more detail including the particular mechanisms, controls, and processes for carrying it out. The development and management entity must be designed, both in its composition and in its powers and methods of operation. These will include the means of acquisition and finance, changes to zoning and other controls, and incentives to private development. Detailed design guidelines will be needed, as well as a design review process. All of this must be developed into an action plan for the City and County governments, including recommendations for any needed legislation.

3. A master plan and detailed development strategy is now needed for River's Bend on both banks of the river. This study must clearly define the public interest in this area and show what the public sector is willing to do in order to achieve proper development. It will begin with a study of the market and feasibility of each of the proposed project elements. Urban design studies will further define building location and massing; the character of public space; access, circulation and parking; and connections to Ross' Landing. Connections to the rest of the urban context will also be better defined, including the proposed trolley, traffic circulation, and the developments proposed in the downtown housing plan. Cost estimates for public and private elements of River's Bend will then be prepared. A detailed implementation

strategy will be laid out, including phasing, the public/private funding package and the final design and development process. This work should be done in dialogue with present owners in the area and the results assembled into a developer's list.

4. Similar studies will be needed to prepare a master plan and development strategy for Moccasin Bend. The market, financial feasibility and design work will need to be done in close coordination with the development of a thematic program for the site and preparation of an archaeological master plan. This program will define the history to be portrayed, the paid attractions and their character, and the interrelationships among elements. Design studies will show the character of the great central park as well as the living history elements and other facilities, such as the marina and housing. Access and circulation must be further defined as well. Also, the study must look at ways of accommodating the continued presence of the Mental Health Institute at least in the short run, with possible early reuse of the Winston Building. Again, cost estimates, a detailed implementation strategy and materials suitable to spur the interest of potential developers must all be products of the study.

5. Finally, more detailed design and feasibility studies are needed for the early implementation area, on the south bank from Citico Creek to the dam. These studies should include the proposed park at Citico Creek (working with the Water Company), the proposed integration of the Riverway with the riverport site and adjacent private development, work with TVA to develop the concept of the fishing park and the TVA Museum, and work with industries along the way to show how the Riverway can be built and also to show how their processes and products can be put on display. A market and site study would also be done for the potential large mixed-use development site just to the east of the Robinson Bridge. This study could be expanded to include the proposed Martin Luther King park and the Riverway along the Combustion Engineering site, since these appear to be likely prospects for early implementation as well. This work would result in a step by step action plan for these first construction opportunities.



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Introduction

This section presents an analysis of existing conditions along this 20 mile stretch of the Tennessee River, with an evaluation of the principal constraints and opportunities to development of the study area. The most general finding is that although there are some significant constraints and problems to be overcome, they are far outweighed by the opportunities.

To look first at the constraints, the banks are alternately steep, or low and prone to flooding. They are occupied by extensive industry, by housing, and by high flood waters. In places, freeways and parkways squeeze out the available riverside lands, or make access to them difficult. In others, existing industrial development or the distance of roads from the river make for poor or non-existent physical and visual access.

There are numerous fixed points along the river's course which will not easily be altered: major industries, docks, bridges, archaeological sites, and natural areas that should be preserved. Residents whose homes overlook the river can be disturbed by the possibility of additional development which may change their view or generate new traffic loads. Other residents, especially blacks and people of lower income generally, have very limited access to the river from their neighborhoods.

The present economic uses of the river are in decline, although the demand for water-related industrial space will likely increase with the completion of the Tennessee-Tombigbee Waterway next spring. There are already numerous major

industrial sites along the river which must be retained so long as the industries are viable. To make Chattanooga competitive for waterway related growth and strengthen the economic base, the County is in the process of developing a large new riverport between the Amnicola Highway and the river. Still other lands may need to be set aside for possible additional growth, since the effects of the waterway and the future of water transport cannot be closely predicted. Although such industrial uses of land may be in some competition with other potentials, they will be an essential ingredient of a successful plan for this working river.

Other uses of the riverfront--say for housing, offices, or retail--are constrained by the overall market and income levels in Chattanooga, as well as by some of the access problems and physical conditions of the land. The projected demand for housing on the riverfront, within the 20 year scope of this study, is for 3,400 new units, 350,000 square feet of office space, and 200,000 square feet of retail.

Some of the most attractive sites are either too steep (and precious as a natural resource) for development or so low-lying that they will require extensive and expensive re-grading and fill. On the other hand, as the river picks up momentum as a central focus for the city growth, some of these constraints will loosen.

Tourism, which can be a key to reviving the image and economic attractiveness of a city, has been on a long-term decline. The scenic

wonders of Chattanooga--the Tennessee River Gorge, Lookout Mountain, and Ruby Falls--cannot compete with the proliferating theme parks, resorts and wilderness areas that are today's major destinations. The potential attractions of the river itself and the city's rich history have hardly been tapped. Thus, Chattanooga has become little more than an overnight stop on the way to somewhere else.

Nearly all of these "constraints" and "problems," looked at in another way, present significant opportunities. The fact that Chattanooga has ignored the riverfront for most types of development other than industry has left much land in low intensity use such as farming, or in a semi-natural state. This is a tremendous resource for new development, for conservation of the river's natural beauty, and for recreation.

New industry along the river, if well planned and designed, need not be a degradation of the river landscape. The Tennessee is a working river, and its barges and industrial sheds give it life and meaning. The river is a fine setting for recreational boating, but above all it is a major economic artery. Any plan for the riverside must increase this direct economic potential, while also increasing access to the water for other purposes. These are not incompatible aims.

The fact that market demand for riverside land has been low has created the opportunity that now exists for shaping the riverfront to the City's purposes. If it accelerates slowly, that may also be

a benefit in allowing for an orderly and sensitive development process. The riverfront is Chattanooga's most precious resource and its proper long-term use is all-important to the future of the city. Many cities have rushed into ill-conceived waterfront development, only to regret it later. The development of the banks of the Tennessee must be organic to Chattanooga and celebrate the special qualities of the city. Most important, it must serve and appeal to all of her people. This takes time.

The beauty of the City and the strong character of her people are well kept secrets, a lodestone yet to be uncovered. By fully realizing the potential of the river and the city as a major tourist destination, Chattanooga will be "discovered." From that discovery can flow not just the direct economic benefits to the hotels, restaurants, and gas stations, but the far more important indirect benefits of making Chattanooga a more desirable place to live and work.

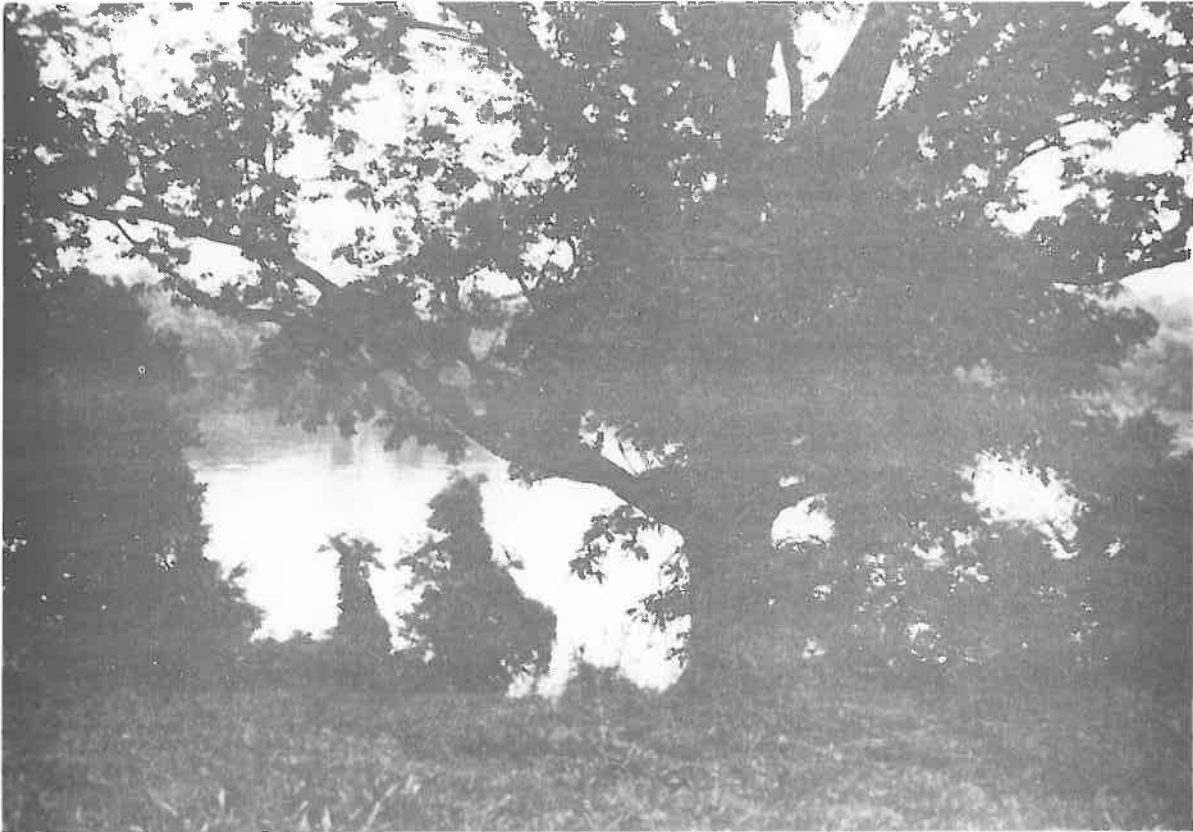
Americans and American business are constantly seeking the attributes this city possesses. As long as there are reasonably good transportation connections, which Chattanooga has in abundance (except for its present air service), the livability and recreational opportunities offered by a city are primary attractors. Chattanooga has not yet begun to realize its potential as a business location in the Southeast.

Landscape

The twenty mile riverfront study area lies within Hamilton County in the southeast section of Tennessee. The area is bounded on the east by Chickamauga Dam and on the west by the Marion County line. While the primary study area is the Tennessee River and the land areas that lie within 400 feet of its banks, a much larger part of Chattanooga is, as it should be, within the zone of influence of the river.

Chattanooga is characterized by a dramatic topography, ranging from mountains to flood plains. To the west, Raccoon Mountain forms a backdrop to the river and together with Signal Mountain shapes the

spectacular "Grand Canyon of the Tennessee." To the east, Missionary Ridge is the backdrop to the city. In the center, Lookout Mountain is the principal landmark, looking out over Moccasin Bend and Stringer's Ridge, which roughly parallels the river to the north. These land formations are extremely steep and are, for the most part, in a forested natural state. This makes the natural landscape visibly present from most of the city, even though the river itself is largely invisible. The changing seasons are marked by the visible changes in the presence and color of this highlands vegetation.



River Edge Character

Moving along the river itself is a delightful experience, not only for the fine views of the larger natural landscape but also for the man-made events which punctuate the trip. On the north bank, one sees the fine neighborhoods and golf courses of Rivermont, River Hills, and Riverview, and by contrast, grain elevators and other large industrial structures to the south. Maclellan Island and the high bridges are dramatic events, as are the limestone bluffs topped by the Hunter Art Museum. The end of Stringer's Ridge on Moccasin Bend is set off by the massive industrial sheds of Combustion Engineering, almost at the scale of natural features. Around Moccasin Bend, one moves into the pleasant green world of the valley. Unfortunately, from the land, most of this is out of view from the principal paths of movement.

It is from the peaks and ridges, and especially from Lookout Mountain, that one can get an overview of the city and the river. The meanderings of the Tennessee form a striking pattern in the landscape. The extended peninsula of Moccasin Bend, Williams Island and Maclellan Island stand out as special places, each with fascinating histories as to people who inhabited them and activities which took place there. From the heights, one can also see the small creeks that flow into the Tennessee River, each of which has its own story. Floating along one

of them, it is easy to imagine early times when only an occasional hunter or settler could be seen. These creeks are North Chickamauga, South Chickamauga, Citico, Chattanooga, and Lookout. Intense new development in the Central Business District, on Cameron Hill, and in the Urban Renewal area add interest to this landscape, if not always beauty.

Existing Land Uses

Uses along the Tennessee River between the dam and the Marion County line fall into four major categories: industrial, institutional (schools and recreation), undeveloped and steeply sloped, and undeveloped lowlands.

Industrial

There are several major industries which are located adjacent to the river. These include Central Soya, Dixie Yarns, and Quaker Oats on the eastern end, and Combustion Engineering, Brooks Welding, and Dixie Sand and Gravel near Ross' Landing in the central portion. There is also an industrial area on the western edge of Moccasin Bend north of the waste water treatment plant. Some of these industries are heavy in nature and give off smoke and other harsh visual impacts common to such use. Others, however, are large but fairly modern and relatively attractive in appearance. Central Soya, for example, is a large facility, but not unattractive. Compared to many riverfronts, the number of grimy, unattractive industrial users is few. Although not yet developed, another large site, the Amnicola Riverport area, will consist of several additional industries in the future. Most of these will be storage facilities whose design should be carefully monitored so as to improve the visual quality along the river.

Institutional

Several schools and recreation sites line the riverfront. These schools include the Technical Community College, the Vocational Technical School, the Bright School (private), the Girls' Preparatory School (private), and the Baylor School (private). Each school has a fairly attractive physical plant and nicely landscaped grounds and is a visual asset to the riverfront. This is also true of the State Mental Hospital on Moccasin Bend. The City's Waste Water Treatment Plant on Moccasin Bend, while not visually offensive, does emit odors which affect the quality of life throughout North Chattanooga.

The other category of institutional uses is recreation, both public and private. Beginning at the dam, there is a small park on the river edge of the Technical Community College; Rivermont Park is on the north bank; Rivermont Golf and Country Club and the Chattanooga Golf and Country Club are located on the north bank; Manker Patten Tennis Club and Hunter Art Museum follow on the South Bank; Maclellan Island's bird sanctuary lies in the middle of the stream; the Little Theatre is next on the north side; Ross' Landing is on the south bank; numerous tourist attractions are at Lookout Mountain high above the river; and a municipal golf course and a private gun club occupy Moccasin Bend.

Undeveloped Land

Two categories of undeveloped land take a large percentage of river-front area. The first category is on steep banks and bluffs such as the ridges along Elder Mountain and Raccoon Mountain. The second category is lowlands, a good deal of which experience frequent flooding such as parcels owned by Dupont and Dixie Yarns. Williams Island is also largely undeveloped and privately owned.

Residential

Only a minute amount of residential use occurs at the river's edge. This includes the housing high up on the stone ridge overlooking MacLellan's Island on the south bank, new housing developing around Brown's Ferry, Riverview Apartments on the north bank, housing on the high elevations of Cameron Hill and Lookout Mountain, and housing on the north bank in Riverview and Rivermont generally set back from the river or high on the hills. A small complex of poor housing is located near Chattanooga Creek at the foot of Moccasin Bend on the south bank and two public housing complexes are situated near the Combustion Engineering property along Riverfront Parkway.

Climate

Chattanooga enjoys a moderate climate, characterized by cool winters and quite warm summers. Because of the sheltering effect of the mountains, winter temperatures average about 3 degrees warmer than those at stations on the southern Cumberland Plateau section of the State. Winter weather is changeable and alternates between cool spells and brief cold periods. Daytime temperatures average 50 degrees. Extreme cold is rare. Temperatures fall as low as the freezing point on a little over one-half of the winter days. Temperatures below zero have occurred only 15 times since 1879. Snowfall from year to year is greatly variable. Some winters have little or none. Heavy snowfalls have occurred, but any appreciable accumulation of snow seldom remains on the ground more than a few days. Ice storms of freezing rain or glaze are not uncommon; occasionally mid-winter icing becomes severe enough to do some damage in the area. The river, however, never freezes over.

Summer temperatures are either in the high eighties or low nineties. Temperatures of 100 degrees or higher are unusual, having occurred in less than one-fourth of the years since the turn of the century. Most afternoon temperatures are modified by thunderstorms, with temperatures frequently dropping 10 to 15 degrees in a matter of minutes during one of these showers.

Precipitation in the Chattanooga area is well distributed throughout the year with the greater amounts in wintertime when cyclonic storms from the Gulf of Mexico reach the area with greater intensity and frequency. A second peak of rainfall period generally occurs in July. On the average, a rainfall at least as great as 1.5 inches in one hour can be expected about once every two years, 3 inches in two hours once every ten years, and 4 inches in 12 hours every five or six years.

Spring and autumn are nearly ideal seasons in Chattanooga. Rainfall is at a minimum, sunshine at a relative maximum and temperature extremes are practically nonexistent.

Ecology

Eastern Tennessee has an extremely rich ecology. The species of plants and animals are numerous. The forests and waterways of this region are home to rare species. An ecological study now underway sponsored by the Tennessee Department of Conservation has documented several sites worthy of special protection within the Tennessee Gorge. This covers a stretch of the Tennessee River which begins just north of Tumbling Shoals (within this study area) continuing for about 23 miles downstream.

Although there has been no thorough assessment within our area of focus, reports of local ecologists suggest that a similar comprehensive study of the upstream portion might also be quite beneficial. The rare Yellow-Crowned Night Heron, for example, is reported to have a nesting site near the Chattanooga State Technical Community College. Stringer's Ridge is also home to a rather large Whitetail Deer herd as well as a variety of other animal species. Documented sites of ecological importance should be seriously considered for long term natural conservation and should be viewed as additional resources for tourist attractions.

Amnicola Marsh

Although there has been no comprehensive ecological study of the entire study area, a few sites have received the attention of scientists and ecologists. One site is the controversial Amnicola Marsh. The marsh is a thirty acre area adjacent to Amnicola Highway approximately three miles south of

Chickamauga Dam. The water level of 18-36 inches is maintained by one or more springs and occasional floods. This marsh is a small remnant of what was once an extensive wetlands along the river. Civil War accounts tell of soldiers frequently losing their horses in the dense swamps of this area. Some one hundred sixty-six species of birds have now been recorded there.

Although there had been considerable pressure on Norfolk Southern Corporation to sell the land for industrial use, ecologists have convinced the railroad company of the importance of maintaining the area as wetlands. The company has recently agreed to donate the land for conservation purposes and the County is designing its new 300 acre industrial port with this in mind. The Corps of Engineers has also officially designated the marsh as a wetlands subject to the Corps jurisdiction over its use and design in the future.

Maclellan Island

Another important ecological area is Maclellan Island, a twenty-eight acre land mass below the new Veteran's Bridge. The Chattanooga Audubon Society has owned and maintained this island as a bird sanctuary for many years. The McKinnon Bridge Company which is building the new bridge above has been working with the Audubon Society to make improvements to the island sanctuary. A bird observation platform has been built at the center of the upstream portion of the island. Two Osprey nesting platforms have been constructed at the

head and foot of the island to entice Osprey that have been reintroduced in the area to nest locally.

This unique partnership is also developing a small, one acre seasonal wetland in a low-lying portion of Maclellan Island. This project is the first known attempt in the southern states to intentionally create a forested freshwater wetland area.

Water Quality

Various federal and state agencies are involved in water quality monitoring. These include the Tennessee Division of Water Quality Control, the U.S. Geological Survey, the TVA, the U.S. Forest Service, the National Park Service, the Department of Energy, and the EPA. These agencies periodically identify pollution problems, determine whether or not wastewater discharges meet state and federal requirements, determine trends in ambient water quality, and determine the quality of water flowing into and out of the reservoirs.

Although the Tennessee River is the fifth largest river in the United States, the water in the Tennessee River was ranked tenth cleanest in 1980 in comparison to 25 of the largest river systems in the United States. TVA data indicate that this river has quality better than the national average. Excluding a low rating for dissolved oxygen content, the Tennessee ranked among the top five rivers. Specifically it ranked 4th in fecal coliforms, 6th in turbidity, 6th in dissolved solids, 3rd in phosphorus and 12th in nitrogen.

Despite the favorable comparison with other areas of the country, problems in stream quality do exist. The waterways in the Chattanooga area have been significantly affected over the years by industrial and municipal discharges and by mining activities. The quality of the many municipal wastewater discharges has improved during the past decade, but adverse impacts continue.

The Chattanooga, Citico, and South Chickamauga Creeks which flow into

the Tennessee River reportedly continue to have toxic organics, heavy metals and municipal discharges. These problems are due to both municipal practices and to industrial spills. Discharge permits have been revised to reduce point source pollution and an area-wide waste management plan has begun.

Within the city limits of Chattanooga, Nickajack Lake lies between Tennessee River Mile 453.5 and 470.5. The river is classified by the State as suitable for fishing, boating and body contact recreation for the entire length. This rating is not valid for several days following major storms, however. The water quality in the river drops periodically because of the thirty combined sewer outfall lines between Citico and Chattanooga Creeks which dump untreated surface runoff into the river during storms.

The following water quality information in Table 10 is based upon mid-stream data. The quality along the river's edge in quiescent embayments will depend upon the quality of the tributary feeding the embayment and the rate of exchange with the main stream which varies seasonally throughout the year.

Table 11 provides the State's rules which are to be followed in maintaining the water quality for specific classifications. It should be noted here that the recreation standard is based on a fecal coliform density of 200 per 100 milliliters (ml). However, recent studies by EPA have found that there is no correlation between total fecal coliform density and swimmer-related illnesses. There

is, however, a direct relationship between the levels of E. Coli and enterococci and rates of swimming-associated gastroenteritis. Due to these findings, EPA is establishing new ambient water criteria. For fresh water, the recommended criteria will be based on either 20 enterococci per 100 ml or 77 E. Coli per 100 ml. It is not yet certain how these new standards will affect the rating of this river related to swimming.

There is no quantitative standard for chemical content in relation to swimming and boating. The toxicity limit for fish and aquatic life is one-tenth of the concentration that would kill 50 percent of the sensitive organisms within 96 hours (96-hour LC50). The Tennessee Department of Health and Environment, Division of Water management, points out that there may be several pollutants which are within toxic limits individually but which in combination create hazardous conditions that will limit the use of the body of water.

TABLE 10 Stream Use Classifications

Stream	Description	Use Classifications						
		Domes- tic	Indus- trial	Fish	Recrea- tion	Irriga- tion	Livestock Watering and Wildlife	Naviga- tion
Tennessee River	Mile 448.0 to 460.0		X	X		X	X	X
Shoal Creek	Mile 0.0 to Origin			X	X	X	X	
Unnamed Tributary	At Tennessee River Mile 455.6; Mile 0.0 to 0.3			X		X	X	
Unnamed Tributary	At Tennessee River Mile 458.7; Mile 0.0 to Origin			X	X	X	X	
Lookout Creek	Mile 0.0 to Georgia-Tennessee State Line		X	X		X	X	
Chattanooga Creek	Mile 0.0 to Georgia-Tennessee State Line		X	X		X	X	
Tennessee River	Mile 460.6 to 499.4	X	X	X	X	X	X	X
Citico Creek	Mile 0.0 to Origin			X				
South Chickamauga Creek	Mile 0.0 To Georgia-Tennessee State Line		X	X		X	X	
North Chickamauga Creek	Mile 0.0 to Origin			X	X	X	X	

TABLE 11 State of Tennessee Water Quality Standards

Domestic Water Supply

1. Dissolved Oxygen - Must be present in levels sufficient to prevent odors of decomposition.
 2. pH - 6.0-9.0 shall not vary more than one unit in 24 hours.
 3. Hardness or Mineral Compounds - No additions of hardness or minerals that will impair this use of the water.
 4. Solids, Floating Materials, and Deposits - No visible oil, scum, solids, foam, or materials leading to the transformation of slimes, bottom deposits, or sludge banks.
 5. Turbidity or Color - No turbidity or color shall be added in amounts that cannot be reduced by conventional treatment.
 6. Temperature - The maximum temperature change shall be 3 degrees Celsius. The maximum temperature shall be 30.5 degrees Celsius, and the maximum rate of change shall not exceed 2 degrees Celsius per hour. Temperature is to be measured at mid-depth or 5 feet, whichever is less.
 7. Fecal Coliforms - The geometric mean shall not exceed 1,000 per 100 ml based on a minimum of 10 samples over a 30-day period with sampling intervals of not less than 12 hours.
 8. Taste or Odor - No substances may be added which will result in taste or odor which cannot be removed by conventional treatment.
 9. Toxic Substances - No toxics which affect the health and safety of man or animals or which impair the safe use of water supplies may be added.
 10. Other - Total dissolved solids are not to exceed 500 mg/l. No other pollutants may be added to the water in quantities that may be detrimental to public health or impair this use of the water.
-

TABLE 11 (continued)

Recreation

1. Dissolved Oxygen - Must be present in levels sufficient to prevent odors of decomposition.
2. Fecal Coliforms - The geometric mean shall not exceed 200/100 ml based on a minimum of 10 samples collected over a 30-day period at intervals of more than 12 hours. The maximum for any sample may not exceed 1,000 per 100 ml.
3. Taste or Odor - No substances may be added that would result in taste or odor which might prevent this use of the water.
4. Toxic Substances - No toxics which affect the health and safety of man or animals or which impair the safe use of water supplies may be added.
5. Other - Other pollutants may not be added in quantities sufficient to impair this use of the water.

Navigation

1. Dissolved oxygen - Same as for domestic water supplies.
 2. Hardness or Mineral Compounds - Same as for domestic water supplies.
 3. Solids, Floating Materials, and Deposits - Same as for domestic water supplies.
 4. Temperature - Temperature shall not be changed to such an extent as to interfere with this use of the water.
 5. Toxic Substances - Same as for recreation water supplies.
 6. Other - Same as for fish and aquatic life.
-

TABLE 11 (continued)

Fish and Aquatic Life

1. Dissolved Oxygen - Minimum of 5.0 mg/l, except where irretrievable man-induced conditions or natural background levels cause lower concentrations. Trout streams must have a minimum of 6.0 mg/l. In no cases shall any stream have less than a 3.0-mg/l level.
 2. pH - 6.5-8.5 shall vary less than one unit in 24 hours.
 3. Solids, Floating Materials, and Deposits - Same as for domestic water supplies.
 4. Turbidity or Color - No turbidity or color may be added in levels that will materially impair this use of water.
 5. Temperature - Same as for domestic water supplies.
 6. Fecal coliforms - Same as for domestic water supplies.
 7. Taste or Odor - Same as for recreation water supplies.
 8. Toxic Substances - Same as for recreation water supplies. Stream concentrations of toxics shall not exceed 1/10 of the 96-hour LC50 based on available data using the most sensitive organism of the aquatic community.
 9. Other - Other pollutants may not be added in quantities sufficient to impair this use of the water.
-

Another more general problem is the control of plant growth nutrients (nitrogen and phosphorus). These nutrients enter the river upstream from Chattanooga and have periodically caused excessive algae and aquatic weed growth as well as dissolved oxygen depletion. Dissolved oxygen, of course, is vital to the respiration process in fish and other aquatic animals.

Because Nickajack has a good flow and short retention time, the production of algae and aquatic weeds per unit nutrient load resembles

that of a river more than a lake. Algae are rapidly flushed through the system. Since the water is uniformly mixed, the degradation caused by eutrophication in natural lakes is not apparent in the main body of the reservoir. However, water quality is significantly affected in the sheltered embayments where quiescent conditions and shallow depths enhance the production of aquatic weeds and accelerated algae growth. Table 12 shows the extent of the aquatic weed infestation.

TABLE 12 Annual Trend of Aquatic Weed Infestation

Year	1979	1980	1981	1982	1983
Acres	734	1,025	1,200	1,150	1,150
Percent Infested	7	10	12	12	12

To regulate the density of aquatic weeds, TVA uses a combination of water level drawdowns and herbicide treatments. The highest priority for herbicide treatments is assigned to locations where the greatest social and economic benefits will result. Criteria for selection of these areas include:

1. High-use recreation and public access sites.
2. Reservoir areas adjacent to seasonal and permanent lake-side residences, resorts, camps and commercial marinas.
3. Small, expanding weed colonies within large reservoirs having a history of extensive infestations.
4. Areas adjacent to water intakes for TVA power facilities and industries.
5. Areas with dense weeds and associated mosquito populations that show tolerance to conventional mosquito larvicides.

About 360 acres of watermilfoil and other weeds are projected to be treated in Nickajack Lake during 1984.

Tributary inflow and point source discharges of municipal and industrial waste in the Chattanooga area have a minimal impact on the progress of eutrophication. TVA authorities have concluded that phosphorus and/or nitrogen removal from Chattanooga area municipal waste effluents or elimination of nutrients in local industrial discharges are not likely to significantly improve Nickajack Reservoir at this time. Maintenance must be relied upon.

Flooding

Significant portions of land along the river and its tributaries are below the 100 year flood elevations. The City of Chattanooga has adopted floodplain regulations consistent with the requirements for community participation in the National Flood Insurance Program. Any proposed development must comply with local floodplain regulations. Generally, the development of structures is prohibited within the 100 year floodplain.

TVA also has the authority to regulate development within and adjacent to the river. All proposals must receive 26a approval before construction can begin. As a part of the 26a review process any construction proposed for the 100 year floodplain would be subject to compliance with Executive Order 11988, which states that construction within the floodplain should be avoided unless there is "no practical alternative" to the proposed floodplain siting.

Table 13 describes the 100 year and 500 year flood elevations at points along the river. Clearly any parcels slated for development would need to be raised with fill to result in a level that exceeds the 100 year elevation.

This area has also been studied to predict the Maximum Probable Flood levels. This term is used to describe a flood comparable to the largest floods known to have occurred in the eastern part of the United States. It is used in planning flood protection works, the failure of which might be disastrous, and in establishing critical elevations of major water control structures. Table 14 shows the elevations for such a flood.

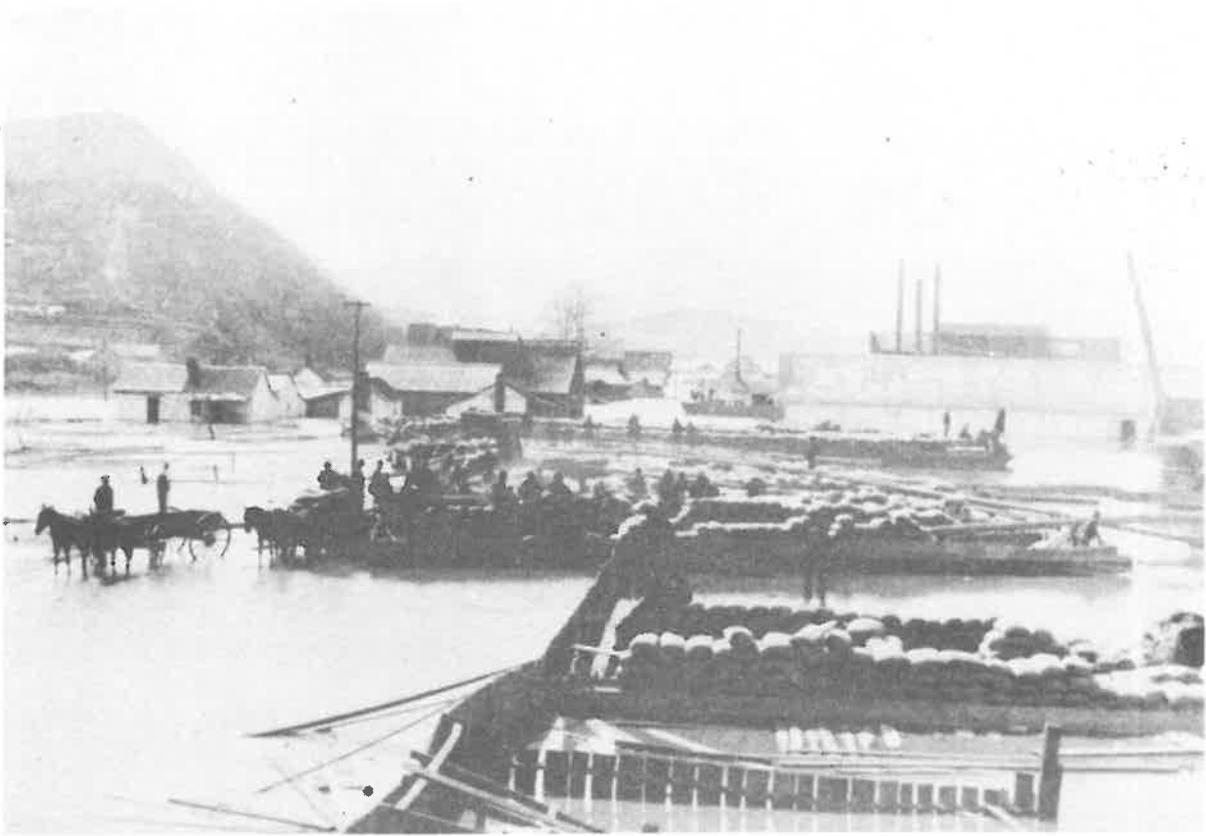
Because TVA must be concerned about the maximum floods, it has established a structure standard which is applicable for TVA properties. These standards mark the elevation above which structures are permit-

TABLE 13 Flood Elevations

<u>Mile</u>	<u>100-Year Elevation (Feet)</u>	<u>500-Year Elevation (Feet)</u>
452.06	650.0	655.4
453.11	651.4	657.0
454.16	652.1	657.9
455.21	652.7	658.5
456.27	653.2	659.0
458.37	654.1	659.9
460.48	655.1	661.0
462.58	656.4	662.4
464.69	657.4	663.4
466.79	658.5	664.4
468.90	659.8	665.6
471.00	660.8	666.6

TABLE 14 Maximum Probable Flood Elevations

<u>Tennessee River Miles</u>		<u>Elevation (Feet)</u>
<u>From</u>	<u>To</u>	
452	453	675
453	454	676
454	457	678
457	459	679
459	460	680
460	463	681
463	466	682
466	468	683
468	471	684



Ross' Landing during a Flood

ted on all lands which TVA either owns or on which TVA has certain landrights. In no instance are buildings for human habitation or any other form of development subject to significant damage permitted below this elevation. The profile is developed to avoid the flood damage potential in areas affected by reservoir operations. The elevations are shown in Table 15 and exceed the 100 year flood elevations in Table 13.

TABLE 15 Structure Profile Elevations

Tennessee River		Elevation (Feet)
From	To	
452	453	663
453	454	664
454	455	665
455	458	666
458	461	667
461	463	668
463	465	669
465	467	670
467	469	671
469	471	672

These elevations are also recommended for properties not within TVA jurisdiction for maximum flood protection.

Any changes along this floodway must also involve the Army Corps of Engineers under Sections 401 and 404 of the Federal Water Pollution Control Act and the U.S. Coast Guard. TVA's program which prohibits the construction, operation, or maintenance of any structure affecting navigation, flood control, or public lands located across,

along, or in the Tennessee River and its tributaries is administered jointly with the Corps of Engineers. In addition to this responsibility, the Corps issues permits for the discharge of dredged or fill material into navigable waterways. The joint permitting program administered by TVA and the Corps allows simultaneous filing of applications to expedite the review procedure. When applicable, these agencies also notify the U.S. Coast Guard and submit a copy of the application to them on behalf of the applicant. The Coast Guard has responsibility for issuing permits for bridges across navigable waterways and lights for structures near the navigation channel.

If construction or operation of the project results in a discharge to the Tennessee River system, the project is subject to the provisions of the Federal Water Pollution Control Act (P.L. 92-500, as amended) and to certification by appropriate state and interstate water pollution control agencies (P.L. 92-500, Sections 301, 302, 306, and 307). Agencies involved in the certification review include the Tennessee Division of Water Management, Tennessee Wildlife Resources Agency, Tennessee Historical Commission, and other agencies in the A-95 multi-agency review process.



The Scenic Beauty of Chattanooga, 1950's

Recreation

Hamilton County offers a wealth of recreation resources for residents and visitors. There are numerous active and passive facilities-- public and commercial. A few of these resources include the following:

- canoeing on North Chickamauga Creek
- camping on Raccoon Mountain
- Ruby Falls at Lookout Mountain
- the Incline Railroad on Lookout Mountain
- camping and swimming at Booker T. Washington State Park
- the annual Riverbend Festival
- the Fall Color cruise in October
- Chattanooga Choo Choo complex
- weekend sailing regattas on Chickamauga Lake
- the annual river raft race
- annual bass tournament
- the bird sanctuary on Maclellan Island
- plays at the Little Theatre
- lunch on the barge at Ross' Landing
- golf at Moccasin Bend and other golf courses
- concerts in Miller Park
- nature trails and educational programs at Reflection Riding and the Nature Center

These are but a few of the many things to do and see in Chattanooga. The City and County are also in the midst of improving their facilities as outlined in the Recreation Recovery Action Program. These actions include the installation of a fishing pier for the elderly and handicapped at Ross' Landing, expansion of Miller Park in downtown, and encouragement of more self-directed recreation on Stringers Ridge on Moccasin Bend.

The City's neighborhoods contain some parks, ballfields and tennis courts as well as some public swimming pools, used mostly by children and teens. The active outdoor recreation facilities within those planning districts closest to the Tennessee River are listed in Table 16.

TABLE 16 Existing Outdoor Recreation

<u>Plng</u> <u>Dst</u>	<u>Ball</u> <u>Flds</u>	<u>Tennis</u>	<u>Pool</u>
1 College Hill	X	X	
Howard High	X	X	
Kirkman High	X		
*9th Street Boys Club	X		
19th and Carter	X		
Grove St.	X		
Miller Park (largely passive, band shell and waterfall)			
Ross' Landing (boat launch, Marina)			
2 McCallie Homes	X		
East Lake Courts	X	X	
East Lake	X	X	
St. Elmo	X	X	
Emma Wheeler	X		
Alton Park	X	X	
3 Carver	X	X	X
Glenwood		X	
Ridgedale	X	X	
Montague	X	X	
Warner Park	X	X	X
4 Avondale	X	X	
E. Chattanooga	X	X	
5 No. Chattanooga	X		
Colville Street	X	X	
10 Rivermont Park	X	X	
*Stuart Heights			X
*Lupton City	X		X

*Privately owned, but open to the public

Although the lists sound impressive, there are recreational needs which have been identified by both the regional planning agency and the Tennessee Valley Authority. In 1974, TVA prepared an Outdoor Recreation Plan which identified the kinds of recreation needs for the year 2000 based on current trends and the growing population in this part of Tennessee. This agency projected the number of times a particular sport would be in demand on an annual basis by the year 2000 as follows:

boating	5,005
horseback riding	2,149
camping	1,619
bicycling	20,874
picnicking	8,220
canoeing	252
nature walks	8,220
fishing	3,292
hiking	290
water skiing	585

In most categories, the numbers represent a demand four to five times the supply available in 1974. This activity projection was also translated into new physical facilities that would be needed to accommodate the demand.

TVA also recommended that Hamilton County increase the size of its camping areas and increase the number of amenities located at each site to include tennis, play equipment and paddle ball. The agency also strongly suggested the development of bicycle trails to link parks, residential areas and historical sites. These recommendations were made in the Nickajack-Chattanooga Area Recreation Study dated November, 1973.

A more recent needs assessment was prepared by the regional Council of Governments (CARGOG) as part of their Regional Development Plan - 2,000. Highlights are shown below in Table 17.

TABLE 17 Hamilton County Recreation Needs

<u>Type</u>	<u>Demand</u>	<u>Supply</u>	<u>Shortage</u>
fishing (acres)	286,800	21,200	265,600
bicycling (miles)	381	27	354
basketball (goals)	1,280	227	1,053
theatre (acres)	250	1	240
picnicking (sites)	1,595	1,195	400

This study warned, however, that there seems to be an adequate countywide supply of nature displays, tennis courts, and motor boating facilities. This study recommended the establishment of greenbelts along area streams and the preservation or reclamation of natural features and amenities in the urban center. This agency also cited a need to extend public transportation to specifically serve recreation facilities. The youth interviewed during the process cited the need for many more swimming pools.

TVA has also made more recent assessments in this area as they focused upon methods of increasing tourism within the valley. This 1984 assessment recommended the following:

- the creation of a new, more exciting image -- different from the old railroad town or more recent "Scenic Center of the South" approaches
- a major Visitor's Center which has easy access and parking for tourists
- a unified brochure which lists all free activities and activities particularly geared to children
- more nightlife
- more special activities during the winter to draw visitors from November through March

The Local Recreation Recovery Action Plan of 1982 developed by the Regional Planning Commission also cited some specific needs for

its planning districts. Of greatest concern is the physical condition of the neighborhood indoor recreation centers. Many centers are in dire need of rehabilitation. Several also report conditions of overcrowding. A second major concern appears to be the number of swimming pools available close to the public housing complexes where there are large numbers of children. This is particularly acute in Planning District 1 (the Central City).

Although a great deal of effort has been made to utilize the natural resource of water by developing recreation at places like the Chickamauga Dam and at other points along the TVA waterways, there is an acutely small number of recreation facilities which have been developed within the study area. Recreation which is available to the general public is listed here from east to west:

- boat launch and picnic area at Technical Community College (south bank)
- Rivermont Park with ballfields and tennis (north bank)
- Hunter Art Museum (south bank)
- Little Theatre (north bank)
- Ross' Landing (south bank)
- Lookout Mountain (south bank)
- Moccasin Bend Golf Course (north bank)
- Prentice-Cooper State Park (north bank)

and hunted over vast, ill-defined territories claimed in the name of their tribes. During the early 18th century the Cherokee controlled approximately two-thirds of the present limits of the state of Tennessee as a hunting ground from their Overhill Towns on the Little Tennessee, Tellico, and Hiwassee rivers.

The center of the Cherokee Nation gravitated toward the Chattanooga area in the 1780's, as a result of American settlers violating colonial treaties established by the British and moving further into Cherokee territory west of the Appalachians. In 1775, when the settlers purchased large tracts of land from older chiefs, the younger chiefs, called the "Chickamaugas," led by Chief Dragging Canoe, broke from the Cherokee Nation and migrated down the Tennessee River Valley to the area now called South Chickamauga Creek.

As the Revolutionary War mounted, the town sites of these British aligned Chickamaugas were burned by the American army bands. The Chickamaugas moved further south forming the Five Lower Towns of the Tennessee and gaining control of the river at the entrance to The Suck. By the time of Dragging Canoe's death and the defeat of the Chickamaugas in 1794, other bands of Cherokees had settled in this region including northwest Georgia and east Alabama.

During the early 1800's the Cherokee were encouraged to adopt the white settler's way of life. They responded in a way unmatched by any other native American tribe. Their houses, dress, and farms were simi-

lar to those of the white settlers. They engaged in commerce and basic industry, founding Ross' Landing and the ferry which later became the beginnings of Chattanooga. They were the only native tribe to devise an alphabet, to hold a written constitution, and to publish a bilingual newspaper, The Cherokee Phoenix, (1828) for their literate population.

The Tennessee River was the dividing line between the Cherokee lands to the south and the white settlers' lands on the north bank. The State of Georgia to the south wanted access to the Tennessee River and began to pressure the Cherokee to sell their lands. Finally, demands swelled into a call for confiscation and removal of the tribe to the west. Georgia passed laws denying Cherokee civil liberties, and the Congress drafted a removal treaty in 1835. Resistance, led by John Ross and others, succeeded in having the Supreme Court declare the Georgia laws unconstitutional; but President Andrew Jackson refused to enforce the decision. Federal troops moved in, rounded up the Cherokees, and forcibly removed them by 1838, tragically ending a unique chapter of American history.

The City Develops

Even while the Cherokee removal was underway, squatters moved across to the south side of the river to occupy choice lands. Most of the activity focused on Ross' Landing, already a commercial center and active port. Georgia had authorized a railroad to open access to middle America, and Ross' Landing, located on the nearest tributary to

the Mississippi River, was a likely destination. By 1850, the Western and Atlantic Railroad was completed in Chattanooga, the first line to connect the eastern seacoast to the Tennessee River. By the end of the decade, four railroads were centered here, the Union Depot was constructed, and Chattanooga became a major railroad center.

By 1860, Chattanooga was a town of 2,540. Six commission merchants and six hotels were in business. Twenty-two small manufacturing concerns operated in Hamilton County with the majority in Chattanooga. Most were processors of farm and forest products: flour millers, meat packers, distillers, tanners, lumbermen, and furniture makers. Prominent southern capitalists joined local leaders in forming mining companies and launched a productive iron business. In 1854, a blast furnace was built on the bluffs of the Tennessee River at the foot of Walnut Street. It was the first experiment in the region to use coke as fuel and failed only because of its destruction during the Civil War.

The area's sentiments were split over the impending war: Hamilton County voted against secession and Chattanooga voted for secession, with opposing sympathizers firing on each other. In November 1861, Confederate troops arrived in Chattanooga. Everyone believed the war would end shortly, but by April 1862, this hope vanished. Andrew's Raid, designed to damage the W & A Railroad, brought a dramatic war-time story to the junction town.

One June 7th, a federal reconnaissance force under General James S.

Negley appeared on the north bank of the Tennessee River and opened fire on the town. The two great armies met in a fierce and bloody battle in the woods and fields of Chickamauga on September 19 and 20, 1863, resulting in over 34,000 casualties. The Union troops had been forced from the field and retired to Chattanooga. Confederate siege lines from Raccoon to Lookout Mountains and on to Missionary Ridge penned the Federals into an area of one square mile with their backs to the river. One month later, however, the Union Army, commanded by General Ulysses S. Grant, built a pontoon bridge and opened up a river supply route called the Cracker Line. A series of battles fought around Chattanooga --primarily Lookout Mountain and Missionary Ridge--on November 23, 24, and 25 ended in a major victory for which nearly all the leading Union generals had assembled.

The geography of the area played a determining role in the war. The river itself was key, defining enemy boundaries, providing a supply route, and requiring an engineering feat to cross it. The mountains and ridges created strongholds and provided a panoramic landscape from which the whole battlefield could be viewed. As a result many journals, letters, and drawings by witnesses make it one of the most described battles of the war.

From this point the town suffered many severe setbacks. Occupation by both armies had left the area denuded and the town practically destroyed by 1865. A powerful flood in 1867 swept away nearly every building on the riverbank, and two fierce fires in 1867 and

1871 destroyed businesses and homes along Market Street. Almost none of the original city exists today. Epidemics of cholera in 1873 and yellow fever in 1878 quarantined the town and cost hundreds of lives.

Despite these obstacles, the residents of the town, including returning veterans of both armies and an active black population, built a thriving industrial and commercial city with a population of over 30,000 by 1900. Many buildings and structures remain from this era, recording the area's history in its rich architectural fabric. Railroad, steamboat, and streetcar transport thrived, industry diversified, and residents established many new services, schools, and cultural institutions. The first electric lights and telephone service were installed in the 1880's. In 1913, private investors built the Hales Bar Dam, creating the first hydropower dam on the Tennessee River and giving Chattanooga its name, "The Dynamo of Dixie." Establishment of the Chattanooga-Chickamauga National Military Park in 1890 and later the tourist sites on Lookout Mountain made it known as "The Scenic Center of the South."

The booming national economy of the 1920's wove its threads directly into the city's history, as did the succeeding Depression. The Tennessee Valley Authority was created in 1933 and its success in improving river navigation, reducing flooding, and creating cheap electricity were major factors in initially attracting industries such as Quaker Oats, Central Soya and DuPont. The opening of the Tombigbee Waterway in April 1985 will begin a

new chapter in the river's history, cutting off 800 miles of its journey to the Gulf of Mexico. Today the city and county continue to respond to national trends. As manufacturing declines nationwide and service industries are on the rise, the Chattanooga area is actively creating a new place for itself in the region's economy.

1. Chickamauga Dam & Lake

Labor day, 1940, thousands of visitors were present at the dedication of the Chickamauga Dam. This massive structure was the sixth in a series of nine to be built in the Valley. It is 5,800 feet wide, stands 129 feet high and has a capacity to provide 81,000 kilowatt hours of electricity. Four thousand men were employed in this \$38.9 million project.

Construction of the dam created Chickamauga Lake, which is 58.9 miles long, providing over 35,000 acres for water recreation and other uses.

The creation of this and other large inland lakes, while positive in many ways, presented some problems as well. Lands that were to be used for reservoir margins had to be purchased. Homes, schools, churches and cemeteries had to be relocated. Some 60,000 acres of land were purchased to create the Chickamauga Lake and dam complex, and eighty-one miles of road were rerouted.

2. Archaic Period Site

An Archaic Period site had been located near the Rivermont area on

the north bank of the river. There have been no serious archaeological studies here to actually reveal the full extent of artifacts which may be present at this location.

3. South Chickamauga Creek Area

Archaeologists report the presence of several burial mounds from the Woodland Period at a location between the river and Amnicola Highway just north of South Chickamauga Creek. Some of these mounds have been marked; others have been eliminated over the years by commercial development.

A town site was established here by the "Chickamaugas," a splinter band of Cherokees led by Dragging Canoe. This settlement was burned in 1779 by Colonel Evan Shelby's expedition against the British and these British-aligned Chickamaugas in the American Revolutionary War. After this Dragging Canoe led his band further downstream.

About 1770, John McDonald opened a trading post on the Chickamauga Creek where the "Great Indian Warpath" crossed the stream. This Carolina trader, who was the first white businessman in the area, married a Cherokee and their grandson was John Ross, the famous leader of the Cherokees at the time of the "Trail of Tears." Land bought from John McDonald inland on Chickamauga Creek became the site of Brainerd Mission in 1817. On Sundays, whites, blacks and reds worshipped there together. This church-supported school encouraged Sequoyah's efforts to devise a Cherokee alphabet and it departed with the Cherokees.

The famous Donelson party came here with 30 to 40 river rafts, carrying a band of 300 settlers to Nashville and the Cumberland River. One of their party later became Mrs. Andrew Jackson and First Lady. The party stopped at South Chickamauga creek where the first white child was born; the child was lost overboard the next day when the party was attacked by Chickamaugas in The Suck.

4. Crutchfield Farm Site

Thomas Crutchfield, Sr. gained a national reputation for his farming techniques in Spring Farm during the 1840's and was the owner of a major brickyard in Chattanooga for which over seventy slaves labored. It was his son, Thomas Crutchfield, Jr., who owned and operated the famous hotel, Crutchfield House, near the depot in downtown Chattanooga. He purchased the Amnicola Farm in 1863 believing that this location some five miles from the center of town would be safer during the Civil War.

However, the farm did not escape the war and, in fact, became a focus of activity. Because Crutchfield aided the Union troops, he became a target of the Confederate cavalry which routinely swept through the area. Sherman's men built a bridgehead here and crossed to this south bank to fight the decisive battle of Missionary Ridge. Hospitals were set up on the farm, the crops were ruined and the livestock were driven off. Soon after the war, however, Crutchfield rebuilt the farm to its earlier prominence. He developed an impressive sheep herd and an

orchard that contained more than one thousand trees. His wool won a gold medal at the World Exposition in Paris. All structures of this early farm have been demolished.

5. Citico Creek Area

This site, where Citico Creek converges with the river, marks the location of a Mississippian era settlement. It once consisted of one large and several smaller mounds, since destroyed by development in the late 1800's and, more recently, by the construction of Riverside Drive. No major scientific excavation has been undertaken at the Citico site. A Cherokee town, Sti'Ka-yi, was located here in the late 1700's.

6. Stockades for Cherokee Removal

When the Federal government fashioned a removal treaty in 1835, a few unofficial Cherokee representatives agreed. A few hundred Cherokee left on March 3, 1837, but the majority followed a policy of passive resistance and sought efforts to nullify the treaty. As a result, President Andrew Jackson dispatched some 7,000 Federal troops to forcibly remove the remaining Cherokee. The soldiers' stockade to direct the removal was built at Citico Creek. Incarceration camps for the 15,000 Cherokee were erected at the Old Agency on the Hiwassee, Ross' Landing and at Gunter's Landing. They were forced from their homes by rifle point, without time to gather personal possessions needed for the journey. The tremendous summer heat in the crowded camps led to many deaths; it is estimated that 4,000 died in the course of capture and

removal. The tragic "Trail of Tears" began at these camps and continued by river and overland to Oklahoma where only a few hundred survived.

7. Maclellan Island

Archaeologists found prehistoric skeletons buried in sitting positions on Maclellan Island during the early 1900's. Bones which were found there were moved elsewhere, but additional investigation needs to be conducted for remaining artifacts.

In the early 1800's the only way to cross the river was by means of a "swing ferry" which used cables to guide the raft with the current. The swing ferry operated from the bluff to the north side of the river by way of Maclellan Island.

Today this island is a bird sanctuary preserved by the Audubon Society. Chattanooga's newest bridge crosses the river at Maclellan Island.

8. Bluff Furnace

In 1847, Robert Craven and Col. James A. Whiteside organized the East Tennessee Manufacturing Company and built a blast furnace on the bluff above the river, just west of present Hunter Art Museum in 1854. This furnace, known as the "Bluff Furnace," was the first in the south to use coke in the smelting of iron. The building of the blast furnace also marked the beginning of the industrial development of Chattanooga. The furnace was first dismantled by its Confederate owners and later totally demolished by Union troops in

1864. The furnace ruins are the most important known archaeological remains in the downtown area. Evidence of the Bluff Furnace is still present in the form of walls, a slag heap, anchor bolts in the bluff face, and possibly, a pipe chase cut into the bluff.

9. Ross' Landing and Ferry

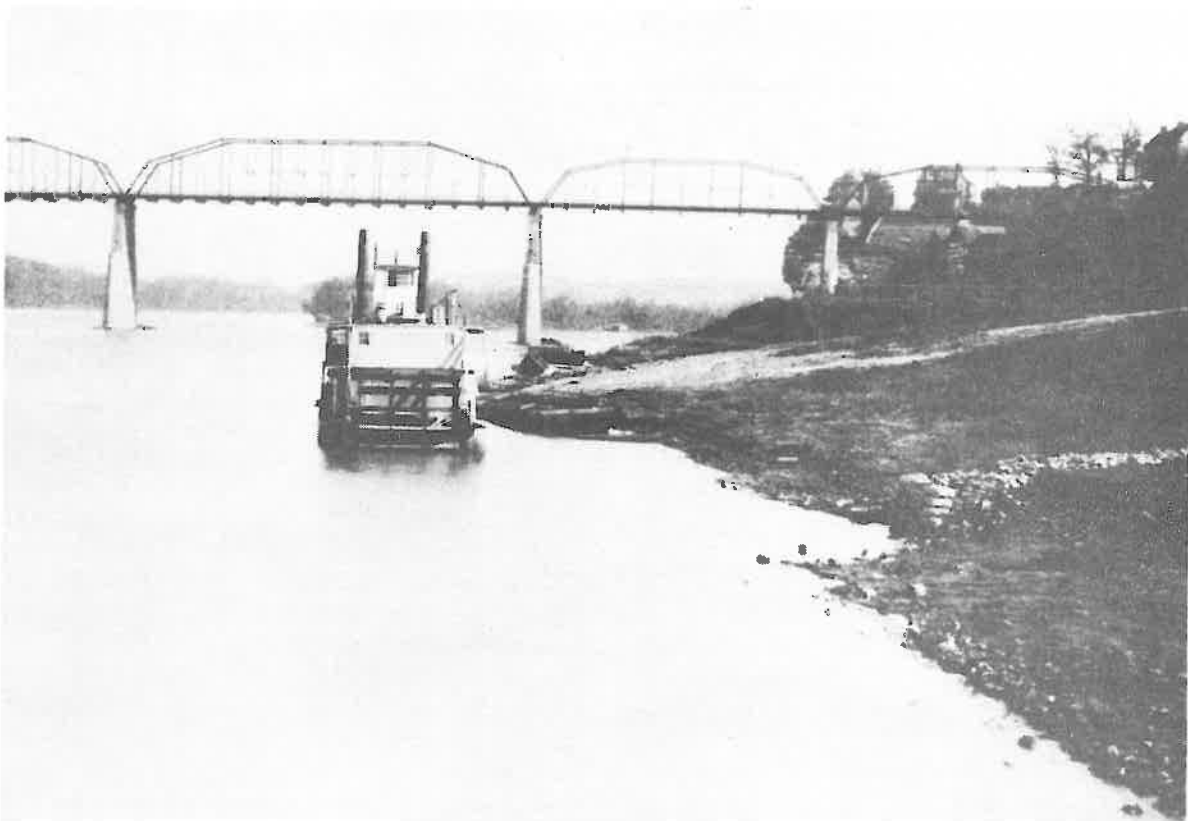
Ross' Landing, originally located just a few yards west of the foot of present day Walnut Street, was a well-known trading center. About 1815, two men of mixed blood, John Ross and his brother Lewis, established a landing and ferry service. Goods brought down the river

were traded here, making it an important supply point for both Cherokees and whites. This busy ferry landing determined the site for the beginning of present day Chattanooga after the Cherokee removal in 1837.

The steamboat Atlas made its successful upriver trip to Knoxville, stopping here in 1828. This marked the beginning of commercial interest in the Tennessee river, in which Chattanooga was to play an active role.

10. Walnut Street Bridge

The Walnut Street Bridge was opened



Ross' Landing and Walnut Street Bridge

in 1891. Its opening stimulated the formal development of the city's north side. It was built high to accommodate the river traffic and is one of the few remaining iron bridges of this type in the country.

11. Early Black Settlement

Historians have noted the development of a black settlement of houses and huts on the north side of the river. According to local historians, the settlement began during the Civil War and was largely populated by former slaves liberated by Sherman during his march through Georgia. According to early census records, some 3,500 black residents lived in this area in 1865. Over the years, Spears Avenue developed as a main street for black life with Blacks owning large tracts of property throughout the area. Although Blacks now live throughout the City of Chattanooga, this is still the only area north of the river that exhibits more than a minute percentage of non-white residents to this day.

12. The Original City

Chattanooga began as a town in 1839 following the removal of the Cherokee population. Whites began to cross the Tennessee River, which was the boundary between whites and Cherokee land, to claim land. They gathered at Ross' Landing where the removal was centered and commercial interests concentrated.

The first commissioners laid out the town in 240 acres, bounded by the river and Ninth Street and by Georgia Avenue and Cameron Hill. At a public meeting the town's name

was changed from Ross' Landing to Chattanooga after the Cherokee town Tsa'Ta Nugi at the foot of Lookout Mountain.

Early buildings centered near the riverfront. They included Swim's Jail, John P. Long's store and post office, Henderson's tavern and residence, Ross' Ferry House, the Chattanooga Gazette office, a log school house, and a hotel on the bluff.

In the 1850's Chattanooga became a major rail junction with four main railroads locating here and joining together to build the Union Depot. Early iron and smelting industries contributed to the rail construction and early development of the area.

13. Civil War Earthworks

During the Civil War, federal troops constructed defensive earthworks on Stringer's Ridge including artillery batteries, gun emplacements, rifle pits, and bivouac areas. Coupled with extensive Union positions on the western side of Moccasin Bend, the Stringer's Ridge District is associated with historic events including the federal capture of Chattanooga and the battles of Chickamauga and Lookout Mountain. These earthworks are still visible in the hardwood forest on the ridge. They have retained their integrity of design, materials, construction, and setting. They were key to the protection of federal supply lines which fed the troops and people of Chattanooga. Eight sites are included in the historic district representing earthwork features and possible bivouac areas around an

extinct spring. Segments of the road network shown on 1864 maps are also still evident.

14. Woodland Period Archaeological District/Burial Mounds

Located at the southern toe of Moccasin Bend is a complex of seven mounds. Although they have eroded and were partially excavated by a 1915 archaeological expedition, they make up a district of special use sites and collectively may yield significant data on the middle and late Woodland period. Based on other sites of this type within the region, the mounds are expected to contain evidence of construction techniques, mortuary practices, rank and status of the primary interment and other special function uses of the area.

This area also contains Mississippian period mound remains and a large Mississippian habitation. One of the mounds is also reported to contain a number of coffins, possibly Union Army casualties of the Stringer's Ridge action. Local archaeologists also indicate that a Civil War period saw mill occupied this site.

15. Lookout Mountain

Within the mountain are numerous caves and an underground waterfall which played a role in native history and in the Civil War. During the Civil War this mountain position was first held by the Confederate troops and was key in keeping Union troops pinned down in the city for several weeks. It is the site of the famous "Battle Above the Clouds". Robert Craven's house on the side of the mountain

became Hooker's headquarters. The house, one of the few pre-Civil War buildings still intact, is part of the Chickamauga-Chattanooga National Military Park.

16. Hampton Place

Hampton Place, a premier archaeological site on approximately 20 acres on Moccasin Bend, contains burned houses whose collapse preserved nearly intact late prehistoric artifacts and quantities of Spanish items dating from the sixteenth century.

The primary significance of this site lies in the research questions it could answer in regard to Spanish contact with native cultures. The first major penetration of the interior of what is now the Southeastern U.S. was initiated by Hernando de Soto. In 1540, his expedition reached the "Pine Woods" where they were met by a group of "peaceful Indians from Chiaha". They stayed at Chiaha some 26 days. Its exact location cannot be established, but excavations indicate that DeSoto or the party led by Juan Pardo, twenty-five years later, may have journeyed in this area. This area was also part of a 640 acre reservation established through a treaty with John Brown in 1817.

17. Mallards Dozen

This sixteen-acre site is located on the Western margin of Moccasin Bend. The site is a prehistoric, multicomponent archaeological site which was occupied during the Archaic and Woodland periods. One structure discovered during subsurface testing was radiocarbon dated at approximately AD 405.

18. Vulcan Site

Located on the western margin of Moccasin Bend, the site is a multi-component prehistoric site which was occupied during the Archaic and Woodland periods. It is stratified with subsurface deposits containing archaeological materials including lithic, ceramic and faunal artifacts. Testing demonstrated the presence of a semi-subterranean structure radiocarbon dated at 1335 BC. The sealed middle Archaic component near the river is one of only two known within the main Tennessee Valley.

The site has been demonstrated to contain data on subsistence and habitation from the late/terminal Archaic period in an undisturbed context that is likely to yield important information on the early development of house forms and exploitative subsistence techniques.

19. Brown's Ferry Tavern

The original Brown's Tavern is an interesting example of frontier architecture. It still has its original logs and chimneys and stands on its original site. It was built for John Brown, a wealthy man of mixed blood (Cherokee and White), by Casper Vaught in 1803. The tavern served as an overnight stopping place for travelers through the Cherokee nation.

20. Brown's Ferry Landing

A ferry landing, a short distance north, was also operated by John Brown during the early 1800's. It was located at a traditional Indian crossing place of the Tennessee on

the Great Trading Path. During the Civil War, General Ulysses S. Grant arrived in the area during October of 1863 and used Brown's ferry as the site of the first series of operations to provide vital supplies to and relief for the Union troops who were under seige in Chattanooga.

21. Williams Island

Tuskigi Island, now called Williams Island, is believed to be a significant complex of historic and prehistoric cultural resources in the area. There has been no prior professional field work on the Island, according to local archaeologists, but historians believe that a large Mississippian town existed here based on cultural materials washed out by floods and found here by local citizens.

It has also been suggested that a group of Upper Creeks led by Tustanage occupied the island around 1760. This leader is believed to have helped instigate the Cherokee-English War of 1760. The Cherokee town of Tuskigi was located on Williams Island in the 1780's. Joseph Brown, who wrote one of the most fascinating captivity narratives of the Tennessee frontier, spent 14 months as a prisoner of the family of Cutteotoy, the 22-year-old Chief of Tuskigi.

Also fighting against the English, the French claim to have established a trading post here about 1760 to take advantage of the defeat of the British at Ft. Loudon.

The island is named after Samuel Williams, an early settler, whose

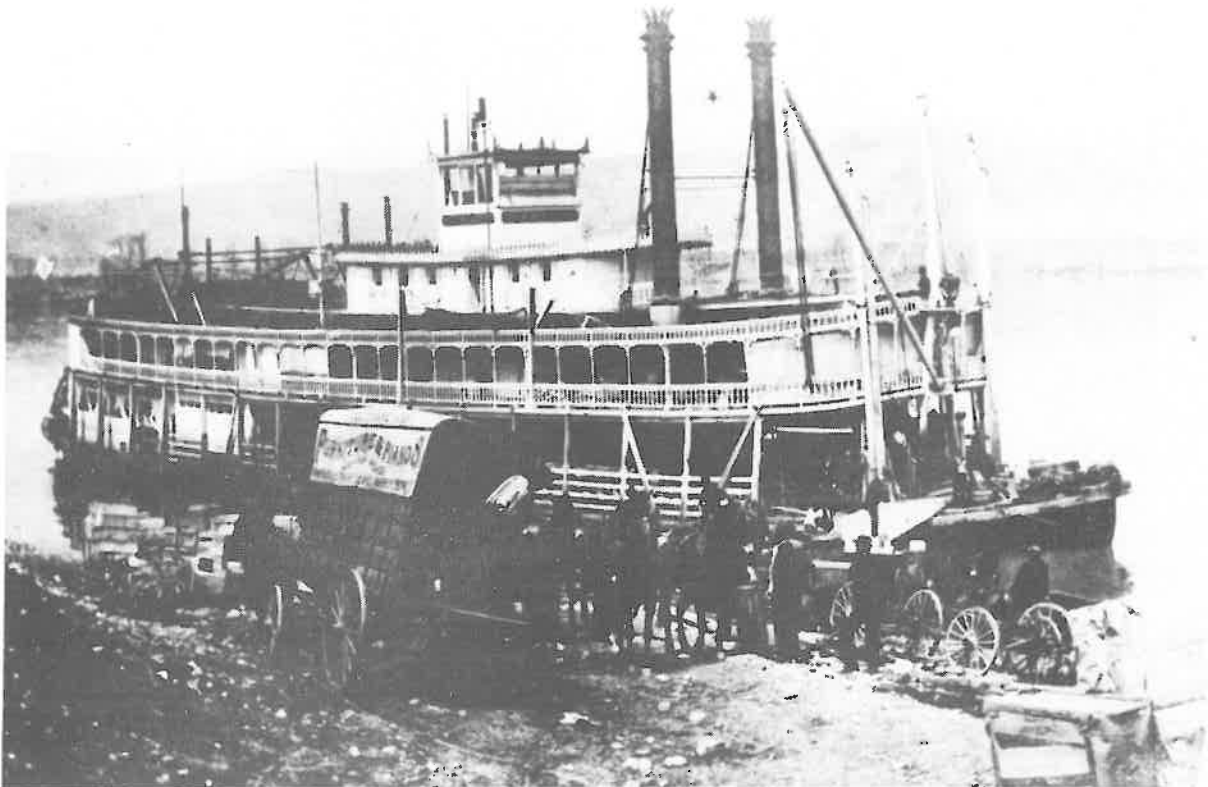
farm was located at the foot of Signal Mountain nearby. James Andrews, leader of Andrews' Raiders, was finally captured on Williams Island.

22. The Suck

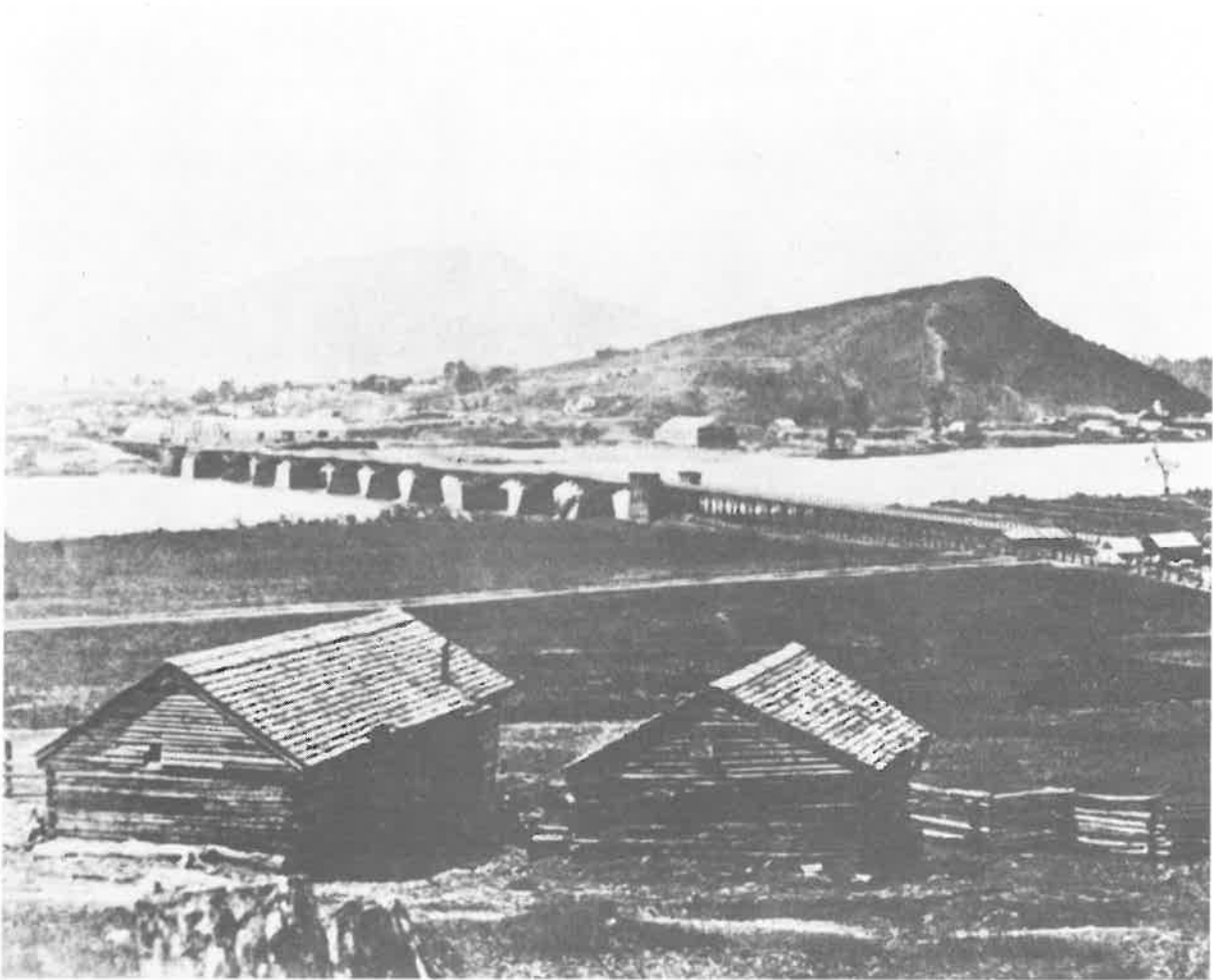
The imagination of the Cherokees was stirred by the exciting great whirlpool in the Tennessee Gorge. In their story about Untsaiyi, the gambler, they described the origin of the Suck as being a consequence of the time when his neighbor, Thunder, and the latter's wife boiled their son with a mess of roots to heal him of a skin erup-

tion. They threw the whole concoction, including the boy and the pot, into the river. A great cloud of steam arose, out of which the boy emerged, healed of his affliction, and, the myth continues, "Ever since there is an eddy there that we call Untiguhi, 'Pot-in-the-water'."

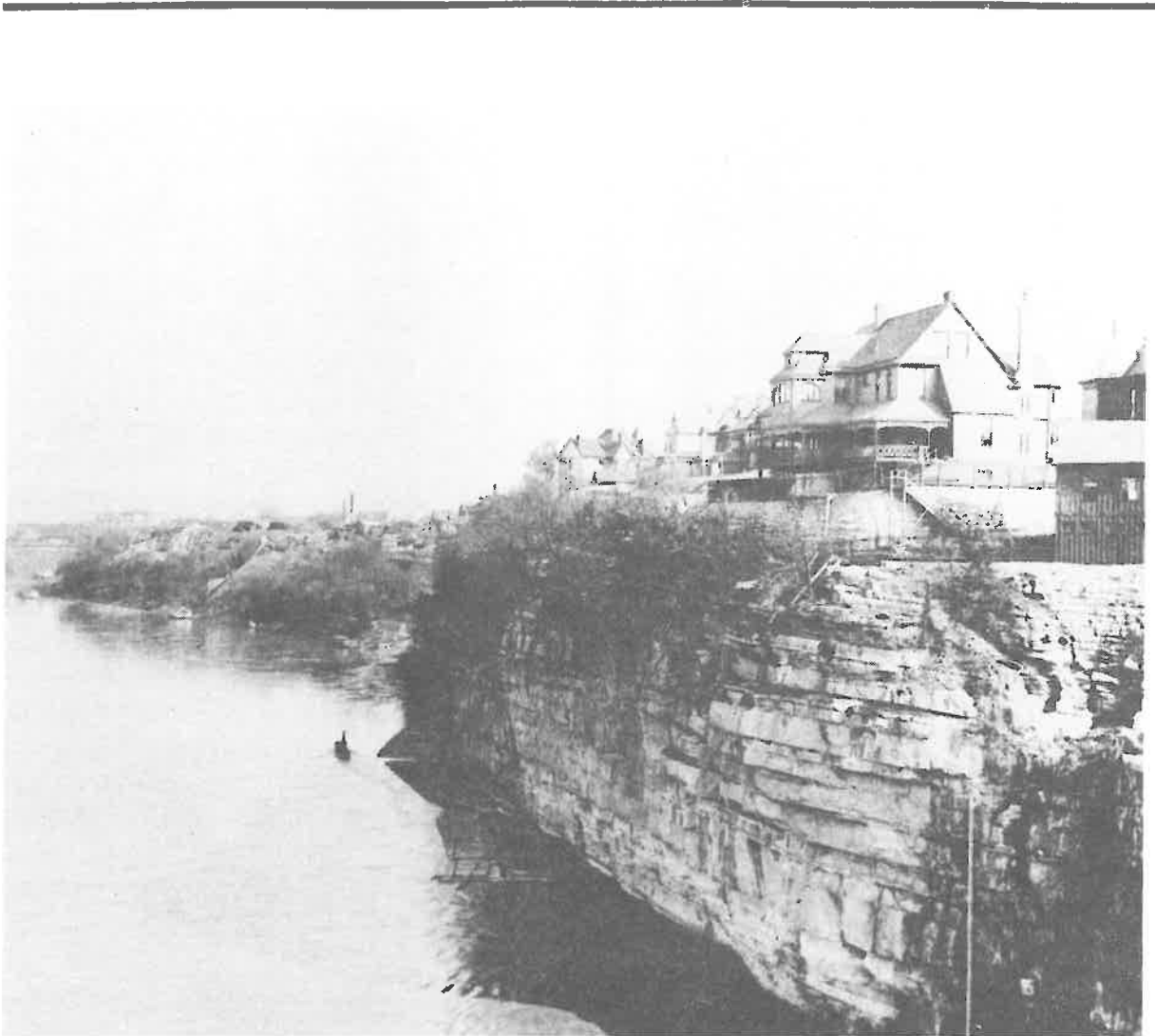
"The Valley of the Whirlpool Rapids" or the "Grand Canyon of the Tennessee" was first called "The Suck" by a British Army Engineer in a 1768 report. This treacherous area saw the end of many lives until the building of the dams tamed it.



Early Riverboat at Ross' Landing



Chattanooga during the Civil War



The Bluffs, from Walnut Street Bridge mid-1890's

Transportation

Transportation to and through the City of Chattanooga is excellent as Chattanooga serves as the crossroads of Tennessee, Alabama and Georgia and carries a large amount of the travelers between the mid-west and Florida. The City is centrally located in the southeastern corner of Tennessee only 113 miles from Atlanta, 111 miles from Knoxville and 129 miles from Nashville. Although there is no passenger rail service to or through Chattanooga, it serves as a major hub for freight railroad traffic. It is a major switching center for more than 118,000 annual car loadings. The train web utilizes trunk veins of Southern Railway, Family Lines (formerly Louisville and Nashville), Seaboard, Central of Georgia, and Norfolk systems.

Much of Chattanooga's workforce lives outside the city limits in the far reaches of Hamilton County and in neighboring states. The metropolitan transportation system, therefore, has been designed to carry large numbers of automobiles quickly from the center city to distant places in a short stretch of time. According to the CUATS 1983 Annual Report, for example, the entire riverfront area is within a 15-minute drive from the CBD.

Circulation in the vicinity of the river is provided by: Riverside Drive, Riverfront Parkway, Manufacturers Road, and Amnicola Highway, which principally provide access to abutting industrial and commercial uses; Browns Ferry Road and Hixon Pike, which principally provide access to residential developments; and Moccasin Bend Road, which serves the mental

hospital, the waste water treatment plant, the golf course, and the police firing range on Moccasin Bend.

Circulation across the river is reasonably good. There are six bridge crossings of the river at the time of this writing (five operational and one closed for safety reasons). The crossings principally provide links between land uses on either side of the river.

Traffic flow is highly unbalanced, with about 80% of the peak hour flow across the Market Street Bridge and the Olgiati Bridge inbound in the morning and outbound in the evening (thus the reversible lane operation on Market Street Bridge). This unbalanced traffic flow implies a greater excess capacity for non-peak-direction movements (outbound in the morning, inbound in the evening) than the daily volume-capacity data indicate. Future attractions on Moccasin Bend might benefit from this excess capacity, depending upon the land uses that develop there.

The Market Street Bridge also operates with reversible lanes, so that there are three inbound lanes (toward the CBD) in the morning with one outbound lane, and the reverse in the evening. At other times, the bridge operates with two lanes in each direction. Whether this reversible-lane operation will continue now that the Veterans Bridge has opened is not yet determined.

While recently construction and repairs on two of the bridges were underway, the three bridges that

TABLE 19 Bridge Capacity

<u>Bridge</u>	<u>Daily Capacity</u>	<u>Daily Volume</u> <u>1/</u>	<u>Comments</u>
Olgiati (I-124)	45,000	43,850	
Market Street	30,000	23,470	Reversible lanes in rush hours. 3:1
Walnut Street	0	0	Closed; unsafe
Robinson	65,000	55,450	
Thrasher(dam)	45,000 <u>2/</u>	0	Widened and re-opened fall 1984
Veterans	15,000 <u>3/</u>	0	Newly completed and opened fall 1984

1/ Tenn DOT report, 1983

2/ With widening

3/ Volume will increase to 25,000 with proposed improvements at 4th Street and Georgia Avenue

were in use were operating near capacity; with the completion of the Veterans Bridge and the re-opening of the Thrasher Bridge, the total rivercrossing capacity has been dramatically increased. With the five bridges open to traffic, there should continue to be some adjustment of travel patterns, and the volume-capacity ratios can be expected to change. Furthermore, the demands on Olgiati Bridge will likely increase in a few years when SR29 is built to SR 153. Since the Olgiati is already near capacity, the volume on the Market Street Bridge might also increase. Some thought is being given to a new bridge across the river, from Martin Luther King Boulevard to Moccasin Bend. No studies exist, or are currently planned, regarding

the feasibility of this bridge. Traffic flow in the CBD should be improved with the installation of a comprehensive computerized signal system, scheduled for completion during the spring of 1985 at a cost of \$510,000.

Despite the abundance of major arterials and bridges in the riverfront area, access to the river itself and the land closely adjacent to it is extremely poor. Long stretches of the riverfront are inaccessible from the Riverfront Parkway and other main roads blocked by private businesses. Private service roads are nearly all closed to public use. Parking is also a problem. Except for Ross' Landing, with 143 parking spaces, all commercial parking is

south of 4th Street. On Moccasin Bend, parking is only provided for the hospital, the golf course, and the police firing range.

The bus system, operated by CARTA, has experienced recent service area cutbacks and route consolidations. There are now two bus routes that cross the river (on the Market Street Bridge) and provide some, though not direct, access to the water: the North Chattanooga line and the Red Bank line.

The former line provides five buses in each direction in the morning and five buses in each direction in the evening; the latter line provides nine buses in each direction in the morning and eight buses in each direction in the evening.

Whether approaching the river from a car or bus, one is then faced with a lack of pedestrian links with the river. There are no walking or bicycle trails at the riverfront. The only formal pedestrian links with the river occur at Chickamauga Dam, Ross' Landing, and Rivermont Park.

Several plans are under consideration that would improve access to the river. None of these plans, however, are committed to the point where access in the near future could be expected.

One proposal is the development of a transit shuttle system for the CBD. One thought is to extend the system as a light rail operation south to connect with Chattanooga Choo Choo, and north, across the river using a reconstructed Walnut Street Bridge, to serve Moccasin Bend. The costs of this system

would be substantial, although UMTA funds may be available. Reconstruction of the bridge alone is estimated at between \$5 and \$8 million.

It might be noted that there is some conflict between plans and present policy regarding transit. While the light rail shuttle operation is being considered, CARTA is cutting back on current bus operations.

The 1983-84 Unified Planning Work Program proposes an examination of alternative modes of transportation to improve pedestrian and vehicular movement into, out of, and within the CBD. The examination would investigate current travel patterns and opportunities for mode shifts and effective combinations of public and private involvement in the provision of transportation service. Application has been made to UMTA for funds for the study.

The River itself also provides an important segment of the overall transportation system. The locks and dams constructed by the Tennessee Valley Authority have created a navigable 9 foot channel, throughout the length of the Tennessee River, of some 650 miles connecting to the Ohio and Mississippi River systems. Transportation by the efficient, but slow, barge vehicle has been an important factor in moving bulky commodities over the years. Since 1974, the use of this means of transport along this stretch of the river has increased. Barge traffic through the locks at Chickamauga Dam rose from an annual figure of 3,937 in 1974 to 9,063 in 1978. Feasibility studies for the new County port

have indicated an increase in public terminal tonnage of goods in Chattanooga as follows:

	<u>Inbound</u>	<u>Outbound</u>
1977	398,400	223,150
1980	424,750	591,580

These studies anticipate that some 1,110 barges will require docking facilities at the new port site on an annual basis.

The principal transportation needs for successful waterfront development are: 1) improved vehicular access 2) improved pedestrian access and circulation 3) transportation system clarification 4) adequate parking. With the new five-lane bridge, there should be adequate capacity for moving vehicles across the river, provided the development takes place where the bridges provide the capacity. What is essential is a series of logical paths, clearly marked, leading from each bridge to the waterfront. The confusion and disorientation that currently exist, especially at the north ends of the Market Street Bridge and the Olgiate Bridge, need to be eliminated if the waterfront is to attract people who are not intimately familiar with Chattanooga's streets. Provision must be made for parking the vehicles of visitors to the waterfront. And, not least, it will be necessary to make walking an attractive and desirable way of reaching the waterfront and circulating along it.

Population and Neighborhoods

A review of 1980 census data reveals a number of interesting trends in the socio-economic profile of the Chattanooga riverfront. Many of these trends have implications for future development. First, nearly 40% of the city's population (70,000) lives within these census tracts in close proximity to the river (i.e. generally within 1.2 miles). This means that intense uses along the river have the potential of influencing the lifestyles of a significant portion of the population of this city. What the data also shows, however, is that the population that lives closest to the river tends to have low household budgets and therefore does not have a good deal of money available to pay for additional new commercial activities. The percentage of children under 18 tends to be greater than 20%, implying a need for as much recreation and youth oriented activities as possible, but again, at low or no cost to the user.

The data also shows the racial make-up of neighborhoods to be somewhat segregated. Of twenty-four census tracts examined, 63% of them show a high concentration (more than 80%) of one particular race. There is an extremely low percentage of non-whites on the north side of the river and on the south side west of Lookout Mountain. The neighborhoods along the south side of the river, on the other hand, tend to have populations which have high percentages of non-whites. Only four census tracts exhibit a fairly even split and mix of the races. This is where no one race exceeds 60% of the total population. Observation,

however, reveals that even within these balanced census tracts, segregation often exists by neighborhood. Some tracts also appear to be in transition and seem to be headed toward imbalance. Downtown neighborhoods, for example, are experiencing a process of gentrification and may eventually lose their racial balance and become predominantly white. What this suggests is the need to balance new housing and activities so that uses along the river will not be broken down into black or white.

A review of the median household incomes will reveal that they seem relatively low compared to those in other urban areas throughout the country. A publication of the Bureau of Labor Statistics suggested budget levels for low, intermediate or high spending patterns relative to the varying costs of goods and services in different areas of the country. If one turns to the budget levels suggested for the City of Atlanta and makes an adjustment for households of three persons (the average household size within our study area) rather than the four person household that this agency commonly uses, the following ranges seem to be reasonable for our study area:

<u>Budget Level</u>	<u>Range</u>
Low	Less than \$14,000
Intermediate	\$14,000 -- \$21,700
High	\$21,700+

Housing statistics also show extremely low percentages of home ownership and areas where there are high percentages of persons over age 65. These two factors suggest existing or potential trouble with regard to the quality and stability

TABLE 20 1980 Socio-Economic Profile

Plng. Dist.	Census	Total Pop.	% Non-White	% White	Under 18 No./ %	Over 65 No./ %	Units	House-Holds	Vacant Units % / No.	% Owner Occ.	Med. Val.	Med. Rent	Med. Hsld. Income
1	5	954	56	44	140) 15	(183) 19	684	488	(28) 193	6	\$ 28,800	\$ 129.	\$ 8,642
	9	459	4	96	(7) 2	(13) 3	362	322	(10) 36	1	N/A	296	20,893
	16	3,060	72	28	(793) 26	(1009) 36	1,812	1,680	(2) 38	1	32,500	79	4,339
	10	2,149	49	51	(263) 12	(212) 10	788	643	(15) 121	12	39,100	115	7,587
	15	1,832	91	9	(349) 19	(419) 23	991	827	(20) 201	10	20,000	72	5,466
	21	1,379	95	5	(319) 23	(244) 18	637	634	(14) 87	18	13,000	76	7,121
	20	1,726	99	1	(650) 38	(306) 17	642	568	(4) 25	8	16,100	65	4,508
31	872	22	78	(7) 1	(392) 45	354	350	(1) 5	1	N/A	100	5,341	
3	4	4,847	97	3	(1320) 27	(770) 16	1,953	1,809	(7) 127	30	20,500	106	7,594
	11	2,611	62	38	(581) 22	(480) 18	1,132	1,081	(7) 77	38	23,300	116	10,484
	12	4,634	88	12	(1417) 31	(657) 14	1,570	1,498	(4) 64	35	26,000	139	11,105
5	6	3,369	8	92	(839) 25	(560) 17	1,536	1,394	(10) 155	51	24,200	133	10,922
	7	3,945	9	91	(787) 20	(758) 19	1,863	1,835	(7) 124	60	34,300	220	16,357
	8	1,913	37	63	(528) 28	(268) 14	799	628	(9) 69	44	16,800	104	9,007
10	105.02	2,826	5	95	(619) 22	(336) 12	1,335	1,155	(14) 188	53	42,400	236	20,344
	-109	5,792	5	95	(1356) 23	(541) 9	2,794	2,343	(15) 427	33	33,500	280	16,759
4	115	2,156	43	57	(562) 26	(318) 15	775	679	(6) 43	74	26,600	129	13,582
	3	3,463	95	5	(1530) 44	(284) 8	1,132	1,059	(5) 58	26	19,900	89	6,547
	2	1,666	85	15	(565) 34	(174) 10	530	548	(3) 15	59	20,100	129	12,656
	1	3,370	29	71	(873) 26	(607) 18	1,449	1,236	(11) 160	54	20,200	108	8,350
2	18	4,188	40	60	(1061) 25	(677) 16	1,757	1,575	(9) 160	56	20,500	123	11,412
	19	7,515	98	2	(3002) 40	(737) 10	2,346	2,293	(3) 64	27	17,200	80	5,030
	121	5,733	1	99	(1627) 28	(472) 8	2,130	1,952	(5) 112	74	32,200	153	16,516
	120	1,886	6	94	(453) 24	(363) 19	790	759	(5) 40	78	100,500	210	31,472
Total	72,345	50%	50%	19,648 27	10780 15	29,353	27,356	9 2589					

of the housing stock and character of neighborhoods through which visitors to the riverfront must travel. Efforts must be made to increase the percentage of home-ownership, to assist older citizens in the upkeep of their homes, and to see to the orderly transfer of the homes of senior citizens to younger, stable homeowners. A chart of the 1980 census tract data, shown above, presents each tract in detail to the extent that such data is available. Following is a brief background summary of some of these areas.

Planning District 4

Planning District 4 is on the south side of the river at the eastern-most point of the study area.

C.T. 115

Census Tract 115 lies directly adjacent to the river and census tracts 1 and 3 are a bit inland, but within close proximity to the river. This tract has traditionally experienced a great deal of flooding because of the presence of Citico Creek and the Tennessee River itself. The Creek has also been plagued with high rates of pollution. This tract was not fully annexed into the city until 1973. The residential population is located to the south of Amnicola Highway. Neat clusters of houses which have not yet been taken over by expanding industrial development are nestled behind the commercial strip along the highway. It is one of few tracts which has a racially balanced population. It also has a high owner occupancy rate of 74%.

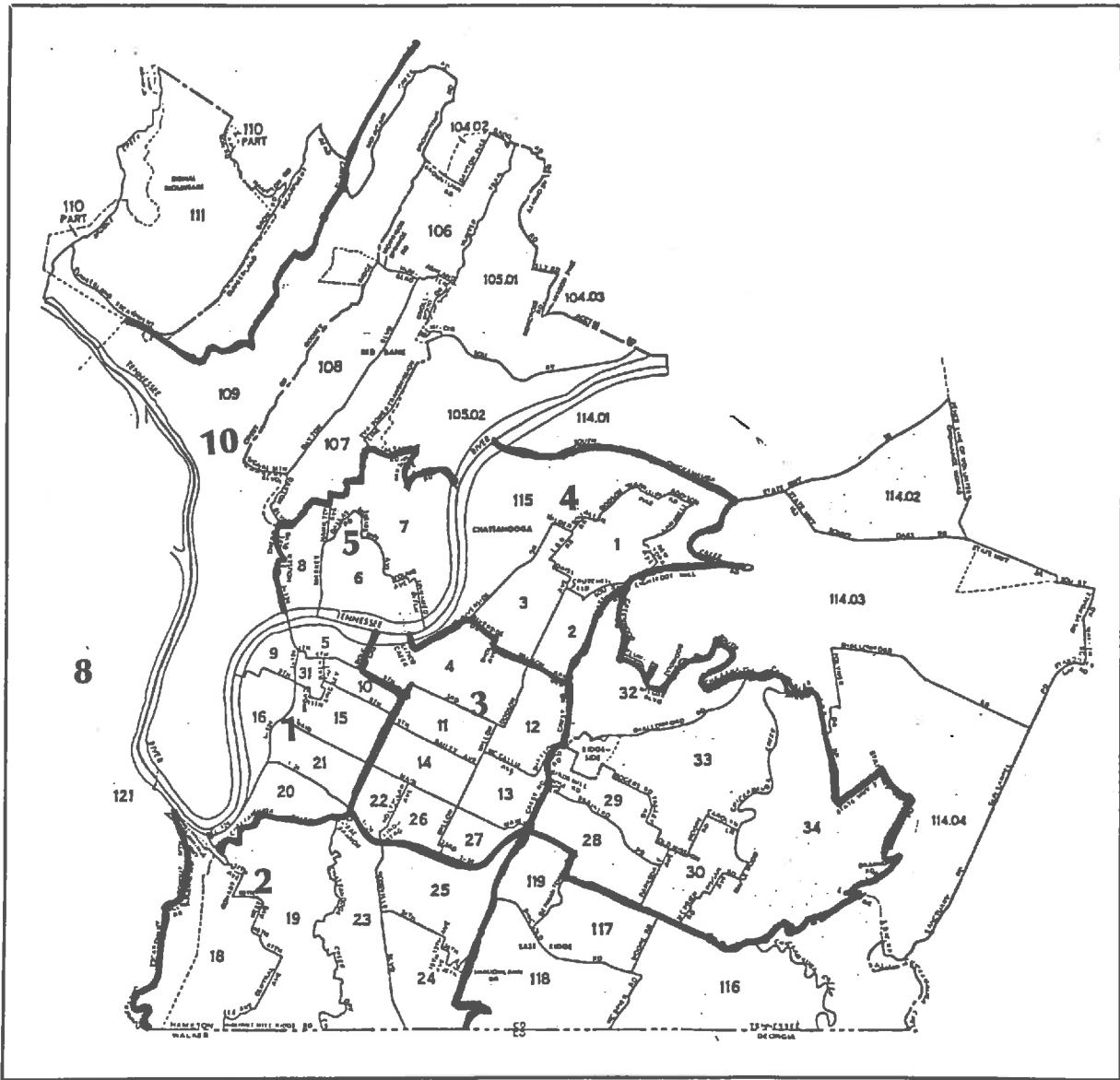


FIGURE 13 Planning Districts and Census Tracts

Two elementary schools in this area were closed some time ago and the children reassigned to Rivermont Elementary, which lies across the river on the north side.

C.T. 1

This area was annexed to the city in 1923 and remains a relatively stable one. Its owner occupancy rate is 54% and the median value of the homes is \$20,200. The population is predominantly white at 71%.

C.T. 3

This tract is 95% black. It experienced a rapid change in the racial make-up during the 1960's when many families which were forced to relocate from the Golden Gateway Urban Renewal area settled there. The tract has an extremely high percentage of children under 18 (44%) and a low median household income of \$6,547.

Planning District 3

Planning District 3 is also on the south side of the river to the southwest of District 4. Most of the homes in this district were built between 1910 and 1930. Some years ago a large portion of the District was declared an urban renewal area within which existing structures were to have been rehabilitated, blighted houses demolished, and new low and moderate income housing constructed.

C.T. 4

This tract borders the river and contains large areas of vacant land largely due to flooding and the

presence of railroad yards. The population and number of units have decreased dramatically over the past decade. The population decreased by 3,000 persons and approximately 600 units were lost. Some of the drop in population appears to have been caused by the failure of public housing authorities to repair vacant units and return them to active use. There are a few new market rate houses in the area. The median value of homes, however, is about average for the city at \$20,500. The population is 97% non-white.

C.T. 11

This tract is south of census tract 4 and exhibits a more racially balanced population with 62% of the population being non-white. The population and number of units here have also dropped. The cause may be that only 33% of the units were of sound condition in 1974. This area has within it one of the city's major recreation facilities, Warner Park. This facility includes twelve tennis courts, playgrounds, an art shop, and other amenities. The median household income is very low at \$10,484.

Planning District 1

Planning District 1 is the Central City: downtown, which is undergoing new office construction; the 1960's urban renewal area including the middle income rental complex at the top of Cameron Hill; some public housing complexes; and a great deal of heavy industry west of Ross' Landing. Bluff View, a higher income residential area, and the University of Tennessee at

Chattanooga are also located within this district. Most of the census tracts here exhibit high percentages of non-white citizens. All of the tracts have extremely low percentages of owner occupancy, the highest being 18% in census tract 21. Except for census tract 9, Cameron Hill, the median household income is less than \$9,000 throughout the District. The lowest median household income is in census tract 16 at \$4,339.

Planning District 2

Census tract 18 and 19, those closest to the river, were both separate cities until annexation in 1930.

C.T. 18

This tract is commonly known as St. Elmo and is an older residential, but tourist oriented area. One section of this tract is on the National Register of Historic Places. The northern end has a concentration of commercial development related to Lookout Mountain attractions. The tract has a well balanced racial population and the owner occupancy rate is fairly good at 56%. The median household income is \$11,412.

C.T. 19

Much of the land in this tract is low, swampy and vacant because of Chattanooga Creek. This creek was once very polluted, and it still periodically suffers reduced water quality as a result of industrial activity, some of which is located on the Georgia side of the border. The area is characterized by a mix-

ture of housing and heavy industry. There are two very large public housing projects making up nearly half of the housing stock. This tract underwent a racial transition from white to predominately black during the 1950's. Forty percent of the population is under 18 years of age and the median household income is extremely low at \$5,030.

Planning District 8

Planning District 8 comprises the entire western and southwestern edge of the riverfront. Elder, Raccoon and Lookout Mountains are located in this district and residential areas are limited and the population relatively small.

C.T. 120

This census tract lies on the top of Lookout Mountain and is the wealthiest neighborhood within the study area boundaries. Its 1980 population was under 2,000 and was 95% white. The median value of the homes is \$100,600. The median household income is \$31,472.

C.T. 121

This area is commonly known as Tiftonia and the bulk of the population lives along Brown's Ferry Road with scattered settlements within the forests on mountainsides. A new high income housing development is under construction on the river's edge which looks out on the Moccasin Bend Golf Course. These homes are being marketed at prices that exceed \$100,000. This area is 99% white and has a high owner occupancy rate of 74%. The

median income is \$16,516. This median should rise once families move in to occupy the new houses.

Planning District 10

This district also covers a very large land area, a great deal of which is taken up by Moccasin Bend and Stringers Ridge. Only census tracts 109 and 105.02 border the river, however.

C.T. 109

The southern third of this tract is Moccasin Bend, occupied by Chattanooga's sewage treatment plant, the State Mental Hospital, a golf course, and a shooting range, plus a few private residences opposite the wastewater treatment plant. There is a major concentration of industry along Suck Creek and Pineville Roads. The Red Bank sewage treatment facility is also located near the center of the tract. The two sewage treatment facilities have presented major concerns about odors and river pollution for several years.

Housing lies in the northern sectors of the tract mostly away from the river. Although the median value of homes is \$33,500, there was a relatively low percentage of owner occupancy of 33% in 1980. This is largely due to the increase in multi-family housing during the past twenty years.

C.T. 105.02

This census tract is the home of Dixie Yarns and the Dupont plant. The area occupies the extreme

northeastern edge of the study area and extends east along Chickamauga Lake. The tract is 95% white and has a strong owner occupancy rate of 53%. The median value of homes is \$42,400 and the median household income is \$20,344.

Planning District 5

Planning District 5 is known as North Chattanooga. It is made up of three census tracts all of which border the river. Except for the land adjacent to the river, the District is extremely hilly, some portions too steep for development. Most residences were built during the 1920's and 1930's.

C.T. 8

This tract lies on the western side of the district and is the oldest in terms of settlement. Historians indicate that the first settlement of Blacks after the Civil War occurred in this District. It is the only area on the north side of the river which currently has a sizeable and growing non-white population (37%). The tract has a fair amount of industrial development which is concentrated along the southern portion closest to the river. Odors from the sewage treatment plant on Moccasin Bend also detract from the attractiveness of the area. The median value of the homes here is only \$16,800 and the median household income is fairly low at \$9,007.

C.T. 6

This tract is in the center of the District. It has experienced a decrease of 1,000 housing units over the past ten years. Yet its current vacancy rate is reasonable at 10% and there is an owner occupancy rate of 51%. The median value of homes is \$24,200 and the median household income is low at \$10,922. The population here is 92% white.

C.T. 7

This area has a mixture of modest workers' housing and very expensive homes in Riverview on the hill-sides, occupied by many business, professional and civic leaders. The median value of homes is a strong \$24,300 and the median household income is \$16,357.

Economic Trends

The economic climate defines the possibilities for waterfront development in Chattanooga. This section will analyze trends in the Chattanooga regional economy, providing background on the historical development and current status of Chattanooga's economy. A summary will be presented on Chattanooga's current and projected economy relative to other Tennessee SMSA's. In addition, this section will analyze the economic impacts of tourism on Hamilton County, and present population and housing trends.

Employment

Manufacturing has historically been the employment base of the Chattanooga economy. The development of Chattanooga's manufacturing economy in the 19th century depended on its access to river navigation and rail facilities. These factors were responsible for the growth of the early industries of coal, iron (and some steel), textiles, and food processing and packaging.

Between the 1950's and early 1970's Chattanooga experienced an industrial growth rate greater than any other Tennessee city. This growth was fueled by the construction of a new highway and interstate system which linked Chattanooga to major markets, and the provision of cheap electric power by the Tennessee Valley Authority. The area also offered abundant water resources for manufacturing processes and river transportation, but local industrial growth slowed in the 1970's and 1980's. In 1970, manufacturing employment in the Chatta-

nooga SMSA accounted for 41.7% of total non-agricultural employment. By 1980, that figure had dropped to 30.2%. Over the same period, government employment grew from 13.0% to 20.5%, and services increased from 12.1% to 16.6%.

Chattanooga still ranks high as an industrial center for the South and the nation. In 1980, it ranked highest among six other major southern cities in terms of concentration in manufacturing. The figures were: Chattanooga, 30.2%; Charlotte, North Carolina, 26.6%; Birmingham, Alabama 17.0%; Memphis, Tennessee 16.4%; and Atlanta, Georgia 15.0%. In 1984, it ranked 16th among major metropolitan areas in the U.S. in the number of manufacturing workers as a percentage of total non-agricultural employment. The primary manufacturing industries are textiles, fabricated metals, chemicals, primary metals, food products, apparel, paper products, and leather goods.

In spite of Chattanooga's relative strength in manufacturing employment, there is a clear trend away from manufacturing to service industries. There are a number of reasons for this trend, some local, some tied to the national economy. The designation of much of the Chattanooga central city as an air quality non-attainment area slowed industrial growth. In the past, more rural, outlying areas in the SMSA have been able to offer industrial parks all utilities and more competitive land costs, taxes and wage rates than Chattanooga. Hamilton County now appears to be taking aggressive steps to develop more industrial sites that will be competitive with others in the region.

The downturn in Chattanooga's manufacturing base is also related to both cyclical downturns and structural changes in the national economy. Many of the durable goods industries in the region are sensitive to national economic trends and were hard hit by the recession of the early 1980's.

The textile, chemical, fabricated metals, primary metals, apparel, and leather goods industries, which represent a large portion of Chattanooga's manufacturing base, are the U.S. industries that have been hardest hit by foreign competition. Two short-term economic trends also lessen the possibility of Chattanooga experiencing significant industrial growth in the near future. First, the strong U.S. dollar makes U.S. exports less competitive relative to foreign products. In the short term, this will reduce Chattanooga's potential as a major export center, even with the reduced water transportation costs induced by the Tennessee-Tombigbee Waterway. Secondly, the market for Appalachian coal, which accounts for 60% of the tonnage shipped on the Tennessee River, is currently depressed because of the current low prices for energy substitutes.

Increased use of the Tennessee River for water transportation, due to the completion of the Tennessee-Tombigbee project, is likely. Some outside industries have indicated an interest in locating new facilities on the Tennessee River. The new Center South Industrial Park (Riverport) that is planned for Chattanooga will accommodate this demand. It may be desirable to

target this industrial property to industries requiring waterfront transportation so that use of the limited supply of waterfront land is maximized.

Thus, Chattanooga is experiencing a decline in its manufacturing base. There is a shift away from the types of industries that built its old manufacturing base. These were the capital and energy-intensive industries relying on shipments of bulk commodities, for which water transportation is an advantage. This trend indicates that heavy manufacturing is not expected to grow in Chattanooga.

Employment by Industry: Chattanooga SMSA Versus Other Tennessee SMSA's

A comparison of the Chattanooga SMSA's 1983 employment by industry with that of the other five Tennessee SMSA's reveals that the Chattanooga SMSA had the second highest concentration in manufacturing employment. The data also show that the Chattanooga SMSA had the second highest concentration in Finance, Insurance, and Real Estate (F.I.R.E.), after Nashville; it was tied for third place with Knoxville in the services category, after Memphis and Nashville; and it had the third highest concentration in government, behind Clarksville-Hopkinsville and Knoxville.

The Chattanooga economy experienced a shift away from manufacturing to services between 1979 and 1983, as seen in Table 21. This trend was a continuation of patterns begun in the 1970's, and it parallels changes in the national economy.

TABLE 21 Non Agricultural Wage and Salary Employment
(by place of work)

	1979	1980	1981	1982	1983
TOTAL	174.6	168.7	171.2	164.6	164.5
Manufacturing	54.8	50.2	48.4	44.1	43.1
Food and Kindred Products . .	5.0	5.1	5.1	5.3	5.7
Textile Mill Products	13.4	11.7	11.4	10.4	10.7
Apparel and Other					
Finished Textiles	1.3	1.2	1.1	1.1	1.2
Lumber and Wood Products,					
Except Furniture	0.8	0.7	0.7	0.6	0.6
Furniture and Fixtures	1/	1/	1/	1/	1/
Paper and Allied Products . .	1.3	1.2	1.1	1.1	1.3
Printing, Publishing, and					
Allied Industries	1.7	1.5	1.6	1.8	1.8
Chemicals and Allied Products	6.1	5.7	5.4	5.0	3.8
Rubber and Miscellaneous					
Plastic Products	1/	1/	1/	1/	1/
Leather and Leather Products	1/	1/	1/	1/	1/
Stone, Clay, and					
Glass Products	2.3	2.0	1.8	1.4	1.4
Metals and Machinery	16.7	15.4	14.4	12.3	11.4
Transportation Equipment . .	1/	1/	1/	1/	1/
All Other Manufacturing	6.2	5.7	5.8	5.1	5.2
Nonmanufacturing	119.8	118.5	122.8	120.5	121.4
Contract Construction	6.7	6.5	6.0	5.8	5.7
Transportation, Communica-					
tion, and Utilities	7.1	7.3	7.7	7.5	7.3
Wholesale and Retail Trade .	34.1	33.0	36.5	35.3	36.5
Finance, Insurance, and					
Real Estate	9.9	9.6	10.0	10.0	9.8
Service	27.9	28.2	29.8	29.2	30.1
Government	32.8	32.7	31.5	31.3	30.8
All Other Manufacturing	1.3	1.2	1.3	1.4	1.2

1/ Included in "All Other Manufacturing" to avoid disclosure of individual establishment data.

Source: Tennessee Department of Employment Security.

Between 1979 and 1983, Chattanooga's concentration in manufacturing employment decreased from 31.4 % to 26.2%; wholesale and retail trade increased from 19.5% to 22.2%; F.I.R.E. increased from 5.7% to 6.0%; services increased from 16.0% to 18.3%; and government declined slightly from 18.8% to 18.7%.

Unemployment: Chattanooga SMSA
Versus Other Tennessee SMSA's

The Chattanooga SMSA experienced a 1983 unemployment rate of 9.9%, the fourth highest of the five Tennessee SMSA's. Over the 1979-1983 period, Chattanooga fared worse than other Tennessee SMSA's,

TABLE 22 Preliminary June 1984 Unemployment Rates

	<u>Unemployment Rate</u>
U.S. <u>1/</u>	7.4
Tennessee <u>2/</u>	8.7
SMSA Areas:	
Tri-Cities	8.6
Chattanooga	8.3
Knoxville	8.1
Memphis	7.7
Nashville	5.8

1/ Error range for these estimates is plus or minus .2 percentage points.

2/ Error range for these estimates cannot be computed.

Source: Tennessee Department of Employment Security, 1984

probably because its heavy concentration in manufacturing made it more vulnerable to the recession of the early 1980's.

Preliminary June 1984 unemployment data for Tennessee is shown in Table 22.

These figures show that while Chattanooga is doing better than the state of Tennessee as a whole, it has the second highest unemployment rate of the five SMSA's. Chattanooga's lagging performance is likely due to the fact that its heavy manufacturing base has prevented it from fully joining the national recovery. Note that the Tri-Cities SMSA, which posted the highest preliminary June 1984 unemployment figure, was the Tennessee SMSA most concentrated in manufacturing employment in 1983.

Employment Projections

The most recent available projections that compare employment in the major Tennessee SMSA's show that the Chattanooga SMSA is projected to experience one of the lowest percentage changes in total nonagricultural employment of the SMSA's between 1980 and 1989. Trends that stand out in other categories include:

- 1) Chattanooga is projected to experience the second highest percentage increase in construction
- 2) It will have the lowest percentage increases in mining, services, trade, F.I.R.E., and government

-
- 3) It will have the highest percentage increases in transportation, communication, and public utilities
 - 4) Chattanooga is tied for second place with Knoxville for projected percentage increase in manufacturing employment

Looking at actual employment in the Chattanooga SMSA from 1979-1983, definite patterns of growth and decline emerge. The total size of the nonagricultural labor force has declined. Employment in manufacturing experienced the sharpest decline. Numbers of employees in trade, services, F.I.R.E., T.C.P.U., and government has remained relatively stable.

Several estimates about the future course of Chattanooga's economy are clear from the research conducted by Economics Research Associates. The manufacturing climate is currently stable, according to interviews with the Chattanooga Manufacturers Association. Given the decline in manufacturing employment as a percentage of total nonagricultural employment which Chattanooga has experienced in the 1970's and early 80's, no significant growth in manufacturing employment is projected. However, Chattanooga and Hamilton County are making serious efforts to increase the availability of industrial land, and this will make the region more attractive for manufacturing, at least holding manufacturing employment steady. A decrease in construction employment for the next five years is projected, due to a slowdown in new office construction caused by TVA's move. In the short

term, housing-related construction may also decline due to current high interest rates. Employment in trade, services, and F.I.R.E. should be stable and growing, since Chattanooga's economy is following the national trend of a shift away from manufacturing to service employment. The Tennessee-Tombigbee Waterway may produce an increase in transportation employment.

Tourism

The Chattanooga area has many tourism and recreational resources. Its geographic features--the Tennessee River, lakes, and mountains--and historical sites make it a potentially strong tourism area. Yet, it is ranked fifth out of the top five Tennessee tourism areas in terms of economic impacts of tourism.

This section will compare Chattanooga to other Tennessee cities regarding tourism impacts and describe Chattanooga's major tourism attractions.

The Economic Impacts of Tourism on Tennessee and Hamilton County

In 1983, about \$3 billion was spent on tourism in the state, according to the U.S. Travel Data Center. This created a payroll of over \$600 million and 76,000 jobs, and added \$108.8 million in state, \$44.6 million in local and \$107.6 million in federal tax receipts, adding up to \$261 million in tax revenues. Tennessee ranked twentieth out of the top U.S. states in U.S. resident travel expenditures in 1982. In 1983, it ranked fifth out of the

ten southern states in the Discover America Travel Region in resident travel expenditures. That state experienced a 19.4% increase in travel expenditures. The state 1982 (the year it hosted the World's Fair), and a 5.5% decrease from 1982 to 1983.

Hamilton County trailed the four other leading Tennessee centers of tourism activity in 1983, as seen in Table 23. While Hamilton County falls significantly behind the top four, it is a strong fifth, as it is far ahead of the other competitors. For example, Sullivan County, the number six county in terms of tourism impacts, experienced total travel expenditures of \$70,234,000, less than half that of Hamilton County.

Between 1982 and 1983, travel expenditures in Hamilton County increased 2.4%, from \$168,242,000 to \$172,349,000. Between 1981 and 1983, they increased 3.7%, from \$166,253,000 to the 1983 level. Between 1982 and 1983, travel impacts on Hamilton County changed as follows: payroll, up 2.3%; employment, down 0.1%; state tax receipts, up 0.1%; and local tax receipts, up 2.6%.

Hotel and motel business is another indicator of tourism traffic. A recent survey reveals that hotel-motel rates in Chattanooga are lower than those in other cities. Average daily room and guest rates for the spring of 1983 and 1984 were the lowest of the cities surveyed. In addition, Chattanooga accommodations have a higher occupancy rate relative to other cities. For the five months of spring in 1983 and 1984, Chatta-

nooga had the highest occupancy rates of any city.

Chattanooga is strategically located to capture tourism traffic from the Great Lakes area, Canada, and Florida. Hamilton County has excellent highway access, with Interstates 24 (Nashville connector), 59 (Birmingham connector), and 75 (North-South connector), and other state and federal highways. Furthermore, Chattanooga is ideally positioned to capture tourism business from the growing South. The South is projected to have larger increases in population, immigration, and personal income than the U.S. as a whole, and it is the number one U.S. region for automobile travel.

Chattanooga Area Attractions and Visitation Patterns

The Chattanooga area, with its beautiful Tennessee River, lakes, mountains, and historical sites, has too many tourist attractions and events to mention here. We will list only some of the major attractions and events.

Interviews with the Tennessee Welcome centers around Chattanooga revealed that the greatest percentage of motorists' requests for directions are for Lookout Mountain and its three attractions of the Incline Railway, Rock City, and Ruby Falls. Attractions like the Chattanooga Choo-Choo, the Tennessee Valley Railroad Museum, Confederama (at the base of Lookout Mountain), and boat cruises, receive the second largest number of inquiries.

The river and area lakes also pro-

TABLE 23 Impact of Travel on the Top Five Tennessee Counties, 1983

County (and Major City)	Total Travel Expenditures (Thousands)	Travel Generated Payroll (Thousands)	Travel Generated Employment (Jobs)	State Tax Receipts (Thousands)	Local Tax Receipts (Thousands)
Davidson (Nashville) (% of State Total)	891,965 (29.81)	182,313 (30.01)	23,158 (30.48)	33,107 (30.42)	15,245 (34.15)
Shelby (Memphis) (%)	701,042 (23.43)	147,873 (24.34)	16,172 (21.29)	21,351 (19.62)	8,992 (20.14)
Sevier (Resort towns of Gatlinburg and Pigeon Forge) (%)	305,338 (10.20)	59,683 (9.82)	8,332 (10.97)	12,543 (11.52)	4,232 (9.48)
Knox (Knoxville) (%)	217,122 (7.26)	44,029 (7.25)	5,954 (7.84)	8,837 (8.12)	3,014 (6.75)
Hamilton (Chattanooga) (%)	172,349 (5.76)	34,834 (5.73)	4,340 (5.71)	6,215 (5.71)	2,449 (5.49)
Subtotal Top Five:	2,287,816	468,732	57,956	82,053	33,932
Other Counties	704,569	138,837	18,013	26,780	10,708
State Total	2,992,385	607,569	75,969	108,833	44,640

Source: U.S. Travel Data Center, 1984

vide many tourism and recreational opportunities. Water sports are very popular on Chickamauga Lake. The Tennessee River is also used for major tourist events. The Riverbend Festival, held at Ross' Landing in June, features OMC Formula 1 power boat races (the only place in the South to do so), concerts, the arts, symphony, and fireworks. This year's festival, held June 19-24, drew 150,000 people, mostly from Tennessee, Georgia, and Alabama. Attendance

at the fall Color Cruise, a boat cruise down the Tennessee River to view fall foliage in October, has grown from 350 in 1969 to over 80,000 persons in 1983.

Chattanooga's tourism trade is highly seasonal. The heaviest season is from June to August. Fall is another heavy season, due to fall foliage viewing. As seen in Table 24, attendance at two major Lookout Mountain attractions, the Incline Railway and Point Park,

TABLE 24 Monthly Paid Attendance —
Incline Railway and Point Park (1983)

<u>Month</u>	<u>Incline Railway</u>	<u>Point Park</u>
January	3,494	4,818
February	5,854	9,446
March	8,626	16,332
April	15,772	21,386
May	36,696	23,903
June	59,960	30,083
July	66,340	43,206
August	57,434	36,911
September	26,386	25,048
October	20,199	24,801
November	9,002	14,794
December	5,791	4,300
TOTAL	315,554	255,028
Average Monthly Paid Attendance	26,296	21,252

1/ Lookout Mountain's Incline Railway lets in about 500 free visits per year.

2/ Point Park's attendance figures are totals; they do not charge to enter the park and only charge at one site, the Cravens House, which is 50¢.

TABLE 25 Annual Paid Attendance
Incline Railway, Point Park, and Ruby Falls (1980-83)

<u>Years</u>	<u>Incline Railway^{1/}</u>	<u>Point Park^{2/}</u>	<u>Ruby Falls^{3/}</u>
1980	300,000	255,796	300,000
1981	313,484	283,832	300,000
1982	322,000	297,021	300,000
1983	315,554	255,028	300,000
TOTAL	1,251,038	1,091,677	1,200,000
Average Annual Park Attendance	312,760	272,919	300,000

1/ Lookout Mountain's Incline Railway lets in about 500 free passes per year.

2/ Point Park's attendance figures are totals; they do not charge to enter the park and only charge at one site, the Clavens House, which is 50¢.

3/ Ruby Falls' Annual Paid Attendance figures are rough aggregates.

Source: Economics Research Associates

is highest in the summer months of June through August, and visitation remains strong through September and October.

We also identified certain trends in the origins and destinations of Chattanooga tourists, based on interviews, research, and other studies. During the winter months, a great number of Florida-bound travelers pass by Chattanooga. While it is believed that Chattanooga captures a large scale of this Florida-bound traffic, the evidence does not support this view. In the summer of 1983, the percentages of visitors to major Lookout Mountain attractions with

Florida destinations were: Ruby Falls, 7%; Rock City, 8%; the incline, 5%. About 75% of the visitors to these three attractions had Tennessee destinations. Furthermore, persons on shorter trips were more likely to visit these attractions than those on longer trips.^{1/} Seventy-five percent of the current visitors to Ruby Falls are from the states of Tennessee, Georgia, Alabama, Indiana, Ohio,

1/ Carrier and Associates, Inc., An Assessment of the Marketing Potentialities of Ruby Falls, Rock City, and The Incline, 1983.

Illinois, and Michigan. Chattanooga also receives significant cross-traffic from persons bound for the Great Smokey Mountains.

Table 25 shows that attendance at the Incline Railway and Point Park increased from 1980 to 1981 and from 1981 to 1982, but decreased between 1982 and 1983.

Conclusion

In conclusion, the Florida tourist market appears to be a difficult market to capture. At the peak of the Florida pass-through in the Chattanooga area (in the winter months), the Lookout Mountain attractions experience their lowest visitation levels. Even in the summer, when the weather is nicer on Lookout Mountain, it is evident that the Florida-bound travelers are not being successfully lured off of I-75. Indeed, most of these travelers are destination-oriented; they stop only for the things they need, ie. food, lodging and gasoline. The need for food and lodging should be the primary thrust in a marketing effort aimed to attract Florida-bound traffic.

Early phased commercial recreation land use planning should be targeted to the local market and travelers with Tennessee destinations. From a facilities perspective, small attractions should comprise the bulk of early phase efforts.

It is important that developments be massed together, if at all possible, in order to create critical mass. Thus, the bunching of museum, retail, theaters, etc. at Ross' Landing makes sense. It is

proximate to the downtown, it is near an existing museum, and it is in a relatively accessible and central location with respect to most parts of Chattanooga.

Population Projections

Between 1970 and 1980 the population of Hamilton County grew from 255,077 to 287,740 representing an increase in population of 1.3 percent per year. Recently, projections for Hamilton County population have been conducted by 1) the University of Tennessee Department of Sociology, 2) the Chattanooga-Hamilton County Regional Planning Commission, and 3) Hammer, Siler, and George Associates in its report entitled "Market and Economic Development Study, Downtown Chattanooga." The projections from all these sources were based on the 1980 census figures and all appear to be in agreement. Specifically, the projections show Hamilton County population as growing from 287,740 persons in 1980 to between 306,000 and 310,000 persons in 1990 and by the year 2000, Hamilton County population is projected to grow to approximately 322,000 persons. This represents an average annual rate of growth between 1980 and 1990 of 0.7%, and an annual rate of growth between 1990 and the year 2000 of 0.5%.

TABLE 26 Housing Unit Projections

<u>Census Tracts</u>	<u>1980 Total Housing Units</u>	<u>1990 Total Housing Units</u>	<u>1980-1990 Percent Change</u>	<u>2000 Total Housing Units</u>	<u>1990-2000 Percent Change</u>
<u>South Side of River</u>					
4	1,953	1,953	0%	1,041	-46.7%
5	684	542	-20.8	467	-13.8
9	362	362	0	452	24.9
16	1,812	3,376	86.3	2,944	-12.8
20	642	561	-12.6	433	-22.8
115	775	725	- 6.5	631	-13.0
121	2,130	2,502	17.5	2,823	12.8
Sub Total	8,358	10,021	19.9%	8,791	-12.3%
<u>North Side of River</u>					
6	1,536	1,427	- 7.1%	1,226	-14.1%
7	1,863	1,956	5.0	2,017	3.1
8	799	765	- 4.3	688	-10.1
105.02	1,335	1,746	30.8	2,150	23.1
109	2,794	3,975	42.3	4,976	25.2
Sub Total	8,327	9,869	18.5%	11,057	12.0%
TOTAL	16,685	19,890	19.2%	19,848	- 0.2%

Source: Chattanooga - Tennessee County Regional Planning Commission and
Economics Research Associates

Hamilton County's population appears to be stabilizing at a slower growth rate than that projected in the early 1980's. This assessment is supported by population estimates for the early 1980's by the United States Census Bureau as well as by ERA's conversations with area residential real estate professionals. In light of this recent moderation in population growth, the population projections prepared by the University of Tennessee and the Chattanooga-Hamilton County Regional Planning Commission for the years 1990 and 2000 are viewed as target estimates to be used in conjunction with determining residential land use demands along the riverfront.

Population growth certainly affects demand for new housing construction, but other factors play a role as well. Table 26 presents housing unit projections for census tracts bordering the Tennessee River within the study area. These projections, which are based on the target population projections, indicate that there will be significant growth in demand for new housing units in riverfront census tracts between 1980 and 1990, but that the demand for housing between 1990 and 2000 is expected to decline. If the riverfront is developed into an attractive living environment for families over the next 5-7 years, this will push up demand for new housing units along the Tennessee River, despite recent projections. This may increase demand for both single family and condominium units.

Development Potentials

To provide guidelines for land planning along the Chattanooga riverfront, Economics Research Associates has developed a table of Chattanooga waterfront potentials for the years 1985-1990. Please refer to Table 27.

For market rate housing, Economics Research Associates has developed order of magnitude estimates of housing development potentials, by type of housing product, for areas along the waterfront. These estimates should be considered targets for riverfront residential development. The estimates are based on the assumption that a rate of population growth, similar to the rate experienced between 1970 and 1980, will continue through 1990. These estimates also assume that the city and county will take a proactive role in encouraging residential development in selected areas along the Tennessee River waterfront. Because of the changing age structure in Hamilton County, Economics Research Associates projects that the greatest demand for housing will be for ownership-type units as opposed to rental units. The easiest and most marketable areas for new riverfront housing are areas that are proximate to existing and established residential areas. Unestablished and/or mixed residential neighborhoods will present greater difficulties when it comes to marketing new planned housing developments. This would include areas such as Moccasin Bend, areas proximate to Brown's Ferry Road, and downtown riverfront locations.

density housing. Large commercial recreation attractions such as a theme park, zoo, or outdoor village are not recommended for Chattanooga until beyond 1990.

Industrial development along the Tennessee River waterfront should be managed carefully to maximize the industrial use of precious waterfront property. The City of Chattanooga and/or the county might take exception to this suggestion if there is a lack of high quality industrial sites at non-riverfront locations. Riverfront industrial land planning should focus on the development of the Riverport project currently under progress and following that, the recycling of existing zoned industrial properties.

Hotel development along the waterfront may be precluded during the 1985-1990 period due to the new downtown Chattanooga hotel development that is currently underway. The development potential of a small specialty hotel would be enhanced by the concurrent development of new waterfront retail and commercial recreation attractions.

Demand for waterfront development could continue beyond 1990. Intelligent leveraging of this valuable waterfront resource during the next 5-7 years could create the framework for continued population and employment growth in Chattanooga and Hamilton County.

Potential to the Year 2005

Based on the research and understanding of these markets, the projected incremental changes for the 1985-1990 period will be similar for each five-year period from 1990 to the year 2005, except for four categories. These land-use categories are low-rise multi-family, single family, regional and national serving office, and industry.

Demographic changes between 1985 and 2005 will alter the relative demand for low-rise multi-family and single family housing. By the year 2005, older people will make up a larger proportion of the population than in 1985. This trend will likely slow down demand for single family housing and increase demand for multi-family housing. The increased demand for multi-family housing will primarily affect low-rise, rather than mid-high rise units, because elderly people prefer low-rise units. In terms of ERA's projections, demand for single family housing will likely be less than the 175-275 units projected for 1985-1990 for the periods 1990-1995, 1995-2000, and 2000-2005. Conversely, demand for low-rise multi-family housing will likely be somewhat greater than 175-275 units for these three periods.

Although no demand for regional and national serving offices for the period 1985-1990 was indicated, ERA projects that there may be demand for riverfront office space after 1990. The riverfront is perceived as a desirable office location in the future by many Chattanooga developers. The glut in office

space caused by TVA's move will make the construction of high-rise office space uneconomic anywhere in Chattanooga for the next two to three years. But after the surplus has been absorbed, and particularly if Chattanooga moves forward with developing amenities on the riverfront (such as housing, specialty retail, and small commercial recreation attractions), then demand for regional and national serving offices (particularly owner-occupied) along the waterfront will be expected.

ERA projects that demand for industrial space along the river will slow down after 1990. The figure of 100-200 acres for 1985-1990 was derived from two factors. First, there does appear to be a present shortage of large parcels of industrial space served by all utilities and having good transportation access in Hamilton County. Unplugging this bottleneck should induce some industrial growth in the short-run. Second, the completion of the Tennessee-Tombigbee waterway may also produce industrial growth along the river. However, all employment projections point to a decrease in manufacturing as a percentage of total nonagricultural employment in the Chattanooga SMSA during the 1980's. This trend may cause a falling-off in demand for riverfront industrial space after 1990 from the 1985-1990 levels projected.

Finally, for hotel development, there will be increased demand for riverfront hotel development between 1985 and 2005, particularly if other amenities are developed along the Tennessee River.

Following is a table of ERA's sense of the maximum development potentials along the riverfront to the year 2005:

TABLE 28 Chattanooga Waterfront Development Potentials to Year 2005

	<u>Location</u>	<u>Amount</u>	<u>Acres</u>
I. Market Rate Housing			
A. Mid-High Rise Multi-family (50 u/acre)	No. & So. Sides	800 units	16
B. Low Rise Multi-family (10-20 u/acre)	So. Side No. Side	400 units 700 units	20 35
C. Single Family (2-4 u/acre)	So. Side No. Side	300 units 400 units	75-100 100-200
II. Subsidized Housing	No & So. Sides	800 units	40
III. Regional & National Serving Offices	So. Side	150,000 s.f.	
IV. Professional & Local Serving Offices	So. Side	200,000 s.f.	
V. Specialty Retail	So. Side	200,000 s.f.	
VI. Small Comm. Recreation (e.g. theatres, museums, etc.)	So. Side	150,000 s.f.	
VII. Major Comm. Recreation (e.g. zoo, historic village, etc.)	Moccasin Bend		400
VIII. Industry (Requiring Waterfront Access)	No. & So. Side		300
IX. Hotel	So. Side	2 hotels, 1 motel, 325 rooms max.	

Resources

The City of Chattanooga and Hamilton County have a wide variety of options available for financing waterfront development projects and public improvements. Please refer to Table 29.

A significant portion of the taxes levied at the city and county levels are earmarked for education, but the remainder goes to general funds which can be allocated for public improvements. Federal revenue sharing funds and local general obligation and revenue bonds are the most likely sources for financing waterfront-related public improvements, since they are currently devoted primarily to public improvements. Industrial revenue bonds could be used to lower the costs of financing to manufacturing firms locating along the river, but they are not a very promising source of funds for public improvements. Urban Development Action Grant (UDAG) and Community Development Block Grant (CDBG) funds have both been used for public improvements in Chattanooga. In addition, UDAG's could help finance the development costs of riverfront commercial real estate development.

Furthermore, the Tennessee River is part of the reservoir system under the control of the Tennessee Valley Authority. This super agency, with its wealth of resources, was set up to create and improve the public use of its rivers and streams, to preserve natural areas and archaeological sites, and to increase recreational facilities and access along the waterways. TVA has the ability to acquire land and to develop facilities if it so chooses. This agency has expressed great interest in improving access and recreational facilities along this portion of the Nickajack reservoir in the past and may be willing to play a major role in spearheading new development of all types along the Chattanooga riverfront.

TABLE 29 Potential Sources of Riverfront Project Funding

FEDERAL SOURCES

<u>Program</u>	<u>Description</u>	<u>Uses in Chattanooga</u>
1) Urban Development Action Grant (UDAG)	Awarded to cities for local economic development activities sponsored by the private sector that directly create new employment and increase tax revenues and private investment.	Chattanooga received a \$10 million UDAG for major street, infrastructure, and site improvements in the southern CBD in support of the new TVA Office Complex; a \$1 million UDAG for development of a parking garage and overhead pedestrian walkway for the Tallan Office Building; a \$3 million UDAG to assist in the development of the Chattanooga Hotel/Convention Center; a \$4,680,000 UDAG for rehabilitation of Warehouse Row; and grants for residential and other projects.
2) Community Development Block Grants (CDBG)	Awarded to cities that meet certain criteria for housing, economic development, and job training programs. City decides how funds will be used.	CDBG funds have been used for a number of public improvement programs, primarily street/drainage/sidewalk, and for housing rehabilitation.

DEBT

City of Chattanooga

<u>Debt</u>	<u>Source of Revenue</u>	<u>Terms</u>	<u>Purposes</u>	<u>Comments</u>
1) General Obligation Bonds	General tax revenues.	Average term of 20 years.	Sewer, street improvements, public works, parks and playgrounds, municipal buildings, urban transit, airport improvements upcoming. Lately, most bonds have been for sewer.	The city does not presently issue revenue bonds.
2) Commercial Paper	-	-	-	The city now has an outstanding issue of \$32 million in commercial paper, which will mature in December, 1984.
3) Industrial Revenue Bonds	Majority from private banks.	Rates currently 9.25-9.5%. Average term of 15-20 years.	To generate new jobs. Chattanooga Industrial Development Board issues IRBs primarily for manufacturing facilities.	In the past, IRBs have been issued for commercial, office, and warehouse uses. The Board prefers not to issue IRBs for residential purposes. IRBs have not been used for public improvements in the past, but they could possibly in the future.

TABLE 29 (continued)

TAXES

City of Chattanooga

<u>Taxes Imposed by City</u>	<u>Existing Levy</u>	<u>Amount Raised in Most Recent Fiscal Year</u>	<u>Purposes</u>	<u>Comments</u>
1) Property	\$3.06 per \$100 assessed value (new levy for FY 84-85; old levy was \$2.56)	\$28,489,618.81 collected in FY 83-84.	General revenues, not earmarked.	Residential property assessed at 25% of full market value, commercial and industrial property at 40% of full market value.
2) Retail Sales	1.75% of every \$1.00, local option tax	In FY 83-84, the city's portion of the county-wide sales tax was \$7.9 million, which went to general revenues. The local option tax raised \$8.1 million.	Department of Education, general funds.	The total retail sales tax in Chattanooga is 8.25%, including: a) 1.75% local option tax. The first 50% of revenues goes to the Dept. of Education and the balance to general funds; b) a new 1% local tax on amusement items; c) a 5.5% state retail sales tax. Tennessee apportions these revenues to Chattanooga and other cities by a formula based on population and sales. Chattanooga will receive an estimated \$4.9 million in FY 84-85 from this source.
3) Mixed Drink		Will raise an estimated \$.75 million in FY 84-85.		A new tax levied on establishments that serve mixed drinks. Establishments pay the state and the state pays the city.
4) Gross Receipts		Will raise an estimated \$1.1 million in FY 84-85.	General revenues.	Levied on business inventories.
5) Beer, Liquor, Franchise		Will raise estimated for FY 84-85: Beer- \$3 million, Liquor- \$950,000, Franchise- \$171,250.	General revenues.	-
<u>Revenue Sharing</u>				
1) Federal	-	Received \$3,928,000 in FY 83-84.	\$2.6 million of this went to Dept. of Education for operations. Balance went to capital projects or purchases.	Capital projects and purchases included sewer projects, street projects (paving), purchase of fire and EMT equipment, lighting for ballfields, and other recreational facilities.

TABLE 29 (continued)

DEBT

Hamilton County

<u>Debt</u>	<u>Source of Revenue</u>	<u>Terms</u>	<u>Purposes</u>	<u>Comments</u>
1) General Obligation Bonds	General tax revenues, backed by full faith and credit of county.	Most are for 15 years, maximum of 20 years. No maximum amount.	Schools, highways, parking facilities, general improvements, recreation, build- ings, auditoriums.	
2) Revenue Bonds	Particular type of revenue, backed by full faith and credit of county.	Most are for 15 years, maximum of 20 years. No maximum amount.	Schools, highways, parking facilities, general improvements, recreation, build- ings, auditoriums.	
3) Industrial Revenue Bonds	Majority from private banks.	Vary with credit- worthiness of applicant. Rates lower because in- terest is tax-free. Normally, 65-80% of prime with var- iable rates.	To provide a means of reducing the costs of financing projects that will promote or preserve employment to resi- dents and increase the tax base.	IRBs are administered by the Hamilton County Bond Board, established in August 1981. They have been used for multi-family housing, shopping centers, manu- facturing expansion, the Trade and Conven- tion Center. By fed- eral statute, only 25% of the bond can be used for land acquisition. The closing fees earned by the Bond Board can be used to create industrial space, for example, staging areas.

TABLE 29 (continued)

TAXES

Hamilton County

<u>Taxes Imposed by County</u>	<u>Existing Levy</u>	<u>Amount Raised in Most Recent Fiscal Year</u>	<u>Purposes</u>	<u>Comments</u>
1) Property	\$2.87 per \$100 assessed	\$40,436,000 (6/30/84 estimate) (Just the amount that becomes county funds, some funds are passed through to city.)	Of this \$2.87, \$1.55 is for general purpose schools (split with city), \$.44 for debt service (incl. school debt), \$.85 for general purpose, and \$.03 for special roads.	Residential property assessed at 25% of full market value, commercial and industrial property at 40% of full market value.
2) Sales	1.75% of every \$1.00	\$19,960,212 total. (6/30/84 estimate)	50% of whole 1.75% goes for education.	Revenues split between county and cities by formula.
3) Gross Receipts	Less than 1% of gross receipts.	Raises a couple million dollars annually.	To general funds.	Gross receipts tax replaced the business license tax.
4) Beer	17.5¢ per gallon	Raises \$300,000 a year.		Levied at wholesaler level.
5) Hotel-motel accommodations tax	3% of cost of room occupancy	\$775,625.57 in 1983	To finance tourism development projects	Distributed into County fund. Was used to pay back debt costs on University of Tennessee-Chattanooga arena.

Revenue Sharing

1) Federal		Receives \$2.25 million in federal revenue sharing. Also receives \$250,000 from small shares of state income tax and state liquor tax.	All used for public improvements.	Revenue sharing funds are used for long-term capital projects. Most federal and state funds go for education and highways. Funds have been used for building, purchases, renovations, and roads. It would be unlikely for the county to spend its limited funds on roads related to Chattanooga waterfront development since the roads are in the city and the city also receives revenue sharing. Revenue sharing funds are limited.
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Source: Interviews, Economics Research Associates, 1984.



Urban Cultural Parks

Urban Cultural Park System, New York State

A few years ago, the State of New York recognized that several of its cities and towns contain places of historic or cultural value, but that many of these sites are in a serious state of deterioration and threatened with demolition. It was also apparent that the significance of many of these places was relatively unknown to the general public and to tourists. In 1981 the State formally decided to make an investment which would preserve, interpret and develop the State's historical and cultural evolution. This would be achieved by identifying several significant places, investing funds into their restoration or development and linking them through promotional and physical means to create a major park system of interest to both New York residents and out-of-state visitors. Their belief is that by organizing several individual parks into a unified system, a stronger collective identity can be developed.

This system seeks to combine economic development goals with the preservation and interpretive display of important buildings, cultural artifacts and ways of life. Some sites therefore will be places for shopping, for outdoor concerts, for farmers' markets and ethnic festivals. Although many sites contain an architectural landmark or civic monument, in some instances, the restoration will involve tree planting, uncovering cobbled streets, retaining old street lights, installing interpretive signage and exhibits inviting pedestrians to sit and eat,

enjoying and recalling a time when cars were less a part of urban life.

New York's heritage has been divided into a series of cultural "themes" around which each park will emphasize one and sometimes illustrate others. The themes are natural environment, defense, maritime trade, business and capital, transportation, labor and industry, immigration and migration, reform movements, and flowering of culture. In most cases one park will really be a combination of several sites within one city or within a region.

Each park will have at least one visitors' center which will provide an orientation to the park and offer help in finding a place to stay, choosing a restaurant, or deciding what to see. Visitors will be able to choose from a variety of tours and attractions based on the theme of the park. Each park will be a living exhibit, interpreted as the people wander through and use the environment. Signs will commemorate important sites, displays will reproduce old photographs, and slides and lectures will be provided. Most parks incorporate river, canal and lake fronts which have previously been inaccessible or neglected. Each site will be linked by walking and bicycle routes.

Although the system is only in the initial stages of development, it has been projected to provide considerable benefits to the communities involved and to the State: save irreplaceable historic areas; create new recreation facilities and protect natural features where they can be enjoyed by the greatest

number of people; increase community cohesion and pride by celebrating the history and significance of forgotten places and people; improve the visual and functional quality of downtowns making them more attractive places to live and do business; and, expand upon the cultural tourism industry in New York State, creating value from underutilized historic resources and settings.

In numerical terms economists project that a typical park can be expected to draw some 250,000 new visitors, adding over \$7 million in new retail and visitor expenditures to the local economy. In the "major" parks, such as New York City, annual visitation is expected to reach 450,000 new visitors, with expenditures reaching \$13 million annually.

To create these returns, the State will provide matching funds to local governments for the development of the parks, support for cultural events, technical assistance in management, and other services. Local governments will contribute funds from their Community Development Block Grant programs to meet their required match.

An example of just one park in this system is the City of Schenectady. This park will focus upon the theme of Labor and Industry. It will be organized around five major focal points: General Electric Overlook, Prospect Park, Riverside Park, the CBD and locations, and Vale Park. Ten interpretive nodes will be linked by a heritage trail. The park will be managed by a newly created Board of Directors. It is expected to draw 60,000 visitors,

with an increase in tourist expenditures of \$1.3 million annually.

Lowell National Historic Park

Lowell was founded in 1822 at a site on the Merrimack River about thirty miles north of Boston. The area had previously been characterized by Indian settlements, numerous family-owned farms, and small-scale manufacturing operations along the waterways. Raw materials for these operations had been delivered from New Hampshire via the Pawtucket and the Middlesex canals.

Lowell is one of the best examples of rapid urbanization in early 19th century America. Lowell grew from a rural area to a city of over 30,000 within twenty years. A large commercial district developed to support this population, bringing from Boston a wide variety of goods and services. By 1850, Lowell had become the second largest city in Massachusetts and the largest cotton textile center in the nation.

During the middle of the 20th century, however, Lowell struggled with its declining economy. "Modernization" and urban renewal threatened to destroy the city's historic districts. Late in the 1960's, a community based federal program, Model Cities, proposed to revitalize the city through the rediscovery of its heritage. The Lowell City Council adopted a resolution in response to this proposal, in 1972, which designated a "historical park concept" as the focal point of future urban development. Congress created the

Lowell Historic Canal District Commission in 1975, which prepared a plan for the "preservation, interpretation, development and use of the historic, cultural, and architectural resources of the Lowell Historic Canal District." Subsequent to congressional approval, President Carter signed the law establishing Lowell National Historical Park and the Lowell Historic Preservation District in June, 1978. The National Park Service administers the Park and, working in cooperation with the Commonwealth of Massachusetts, the City of Lowell, and other local and private organizations, is responsible for the preservation of certain historic structures and the interpretation of Lowell's history. The Congress also established a new 15-member Lowell Historic Preservation Commission within the Department of the Interior to preserve ten specific buildings within the National Park, to administer preservation and cultural programs in the Preservation District, and to serve as a bridge between public agencies and the private sector.

The National Historical Park and the Preservation District comprise a 500-acre area encompassing the downtown, portions of several residential neighborhoods, and a buffer zone along the entire city-wide canal system. The Preservation District contains buildings from each of the city's important growth periods, not just as isolated preserved landmarks, but as part of intact historical groupings interwoven with contemporary structures. An important feature of the park is the creation of a "cross-section of the 19th century

Lowell". In this area, restored settings will afford the visitor a strong sense of what the early city must have been like. The visitor center serves as a centerpiece and catalyst for an extensive commercial development within a recycled mill complex. Shops, restaurants and a moderately sized hotel will be privately developed within a strict set of guidelines to insure compatibility with the park. Train and barge rides carry people from the visitor center to other parts of the park, connecting various interpretive areas. Exhibits, employing a wide range of media, deal with four main themes: 1) Technology and Hydropower, 2) Free Enterprise and Capitalism, 3) Working and Living in an Industrial City, and 4) Immigration and the Settling of a City. The basic aim of the interpretive program is to show how industrialization influenced people's lives, and how it helped to create our modern society.

The most important event for the Lowell Historic Commission, and perhaps for Lowell, was the opening of Market Mills in June, 1982. The \$14 million complex contains the State and National Park Visitor Center, Melting Pot restaurant, A Brush with History artist studio, and apartment and retail space. The project successfully unites the Commission's goals of historic preservation, and cultural and economic development.

The Lowell Trolley project made headlines in 1982, locally and in Ida Grove, Iowa where the GOMACO Corporation began construction of the first cars for the system. Based on open style, Eastern Massachusetts Street Railway trol-

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leys that ran in Lowell at the turn of the century, the cars are being constructed according to original plans. Period running gear and fixtures will be used when available, with custom built wooden car bodies and interiors.

Each spring for the past three years, scholars from around the country have gathered in Lowell for the Lowell Conference on Industrial History. Every conference attracts a specialized audience. When first proposed, the conference was intended to make Lowell a focus for scholarly research and discussion in the field of industrial history. An international organization of experts on industrial heritage and archaeology selected Lowell as the site for its June, 1984 convention.

Over the last ten years, the successful cooperation and active collaboration between business leaders and government officials has resulted in a powerful financial picture for the City, highlighted by the following figures:

Close to \$16 million have been invested in the historic preservation and rehabilitation of some 70 buildings in Lowell.

Every public dollar invested in building rehabilitation has generated an additional \$14 in private investment.

The Federal Government has contributed over \$30 million to date for the development of the Lowell National Historical Park.

\$14 million in Urban Development Action Grants (UDAG's) have been secured.

Over \$40 million in Industrial Revenue Bonds have been invested in industrial expansion projects.

Over \$50 million have been committed to the construction of the Lowell Hilton Inn, the Wang Corporate Training Center, and the Smith Lot Parking Garage, representing a major public-private commitment to Lowell's downtown.

A review of the City's building permit data reveals that over \$323 million in new construction and rehabilitation have been generated since 1974 in Lowell.

Lowell's unemployment has decreased steadily from a high of 12.6% in 1975 to a record low for the City of 3.7% in May, 1984.*

*Note: These figures were supplied from a study by the Lowell Historic District Preservation Commission and the Lowell Development and Financial Corporation done in August, 1984.

Living History Exhibits

Sturbridge Village

Old Sturbridge Village is a living history museum that recreates a New England town of the 1830's. The museum, open year-round, covers over 200 acres with more than 40 restored buildings where people in historical dress demonstrate the life, work, and community celebrations of early 19th century New Englanders.

The museum began when Albert and Joel Wells opened their personal collection of Americana to interested visitors. Soon both the collections and the visitors outgrew the Wells Historical Museum. The family felt that their objects should be shown in a setting that would reveal how they were made and originally used, to make them more interesting and understandable. Thus, the idea of a museum village was born and the Sturbridge site was selected and developed in 1946.

Sturbridge depicts the distinctive features of a country town of the period with its center village, mill crossroads, and farming countryside. The Freeman Farm, a complete, working historical farm, represents one of the numerous farmsteads that once were scattered over the countryside. The importance of waterpower is demonstrated in the area of the Mill Neighborhood.

During the fall, many special historical events are re-created. One of these is Militia Day. The activities include muster and inspection of the troops, followed by the live target shoot. There is an afternoon drill and a mock battle at Freeman's Farm. There is a

craft fair in early November. Nearly one hundred exhibitors demonstrate their crafts as well as offer fine quality handcrafts for sale. Village historians are constantly restudying the past to make the exhibits and demonstrations more interesting and meaningful to visitors.

Sturbridge Village is the largest institution of its kind in the Northeast. It is an accredited, non-profit, educational museum whose daily operating expenses are met through admissions, sales and voluntary gifts. Admissions produce \$2.6 million annually. An additional \$4.3 million is contributed by members, Trustees, foundations, corporations, endowments and shop purchases.

Oconaluftee Indian Village, Cherokee, North Carolina

This "Living Village" is an authentic recreation of an 18th century Indian community. It is located in Cherokee, North Carolina, where Cherokee Indians have lived for centuries. Visitors are shown how Indians made dugout canoes, strings of beads, clay pots, water drums and many other crafts, tools and hunting implements. Inside the council house and at outdoor drama sites, tourists are told of Cherokee history, culture, social background and rituals which have been handed down from generation to generation.

Although this two-acre attraction is open only six months of the year and is fairly distant from any major cities, the annual attendance is nearly 150,000. Admission to the Village is \$4.50 for persons over twelve and \$2.50 for children under twelve.

TABLE 30 (continued)

Facilities and Attractions

173-acre re-creation of Colonial capital of Virginia. More than 150 restored or re-created buildings. Visitors mingle with people in 18th century attire. Craftsmen-demonstrators in more than 20 shops daily. Visitor information center with 35-minute film.

200-acre re-creation of early 1800's New England village, with a green and more than 40 old houses, shops and mills moved to the site. Personnel in authentic Federal period dress explain exhibits and work at various crafts. Working historical farm; special events, picnic area.

260-acre project including museum of American technology and decorative arts (14 acres) and a re-created "village" of over 80 historic buildings moved from all sections of the country and restored, including buildings associated with many famous Americans. Village craft center re-creates a neighborhood of the 1840's with craftsmen-demonstrators. Turn-of-the-century amusements are located in a park and picnic area.

25-acre "village" (in 2,600-acre site). A reconstruction of a South Jersey crossroads community of the early to mid-1800's, includes more than 30 restored homes, shops, churches; horse-drawn trolley and miniature train (75¢), swan boat ride on lake; petting farm; authentically dressed "residents" of the period perform chores and crafts of the period. Adjacent is a specialty shopping center in period motif with four restaurants and 27 shops in individual, restored buildings. Most buildings were moved to the site from elsewhere.

Themed amusement park developed around historic 1870 Ozark mining village; demonstrations of 28 frontier crafts; stage shows, amusement rides, cable railroad, gift shop, restaurants, picnic area.

TABLE 31 Characteristics of Selected Living History Attractions with Attendance Over 500,000 Annually (1982)

<u>Attraction</u>	<u>Admission Charge</u>	<u>Annual Attendance</u>
Connor Prairie Pioneer Settlement Noblesville, Indiana	\$4.50 Adults \$2.75 Children	123,000
Carroll County Farm Museum Westminster, Maryland	\$2.00 Adults \$1.00 Children	36,000
Living History Farms Des Moines, Iowa	\$5.00 Adults \$3.00 Children	100,000
Farmer's Museum and Village Crossroads, Cooperstown, New York	\$3.50 Adults \$1.50 Children	91,000
Ocunahuftee Indian Village Cherokee, North Carolina	\$5.00 Adult \$3.00 Children	179,657

TABLE 31 (continued)

Facilities and Attractions

55-acre (site has 600 acres total) re-created 1836 settlement contains 25 buildings including brick mansion built by William Connor, an interesting frontiersman. Staff of craftsmen-demonstrators and other "townspeople" does extensive character role-playing based on careful historical research. Visitors take 2 1/2-hour self-guided tours. Picnic shelter, cafeteria, gift shop.

140-acre farm with an 1850's farmhouse and 13 outbuildings (three were moved from other sites) decorated and equipped in keeping with the late 1800's. Barn, smokehouse, blacksmith shop, etc., antique machinery, tools, wagons and farm animals. Craftsmen demonstrate spinning, quilting, broom-making, etc.

600-acre project re-creating the progress of midwestern agriculture through: 1) Ioway Indian site of 1736; 2) pioneer farm of 1850 featuring log cabin and outbuildings, demonstrations of early farming methods; 3) the 1870's "town" of Walnut Hill including Flynn Mansion, schoolhouse, pottery, blacksmith and carpenter shops, general store; 4) horse-powered farm of 1900 depicting farm and household chores typical of period. Craft demonstrations.

20-acre project illustrating life in rural central New York during the period 1800-1850. Craft demonstrations, exhibits are displayed in the main museum building and further illustrated in the Village Crossroads, a group of 14 period buildings brought in from around central New York. In farmhouse, smithy, tavern, print shop and church, interpreters and craftspeople demonstrate farm family life in this re-created village. Farm animals and crops of period.

5-acre recreation of a 1750 Cherokee community. The village has 4 different kinds of Cherokee period houses including a replica of a council house where tribal leaders met and planned strategies and a square ground where ceremonies were held. Personnel in authentic Cherokee dress explain exhibits and perform various arts and crafts such as pottery, bread work, basketry, and webbon-making. The village is located only a 1/2 mile from the Museum of the Cherokee Indian which drew 82,700 in attendance for 1982. The Museum of the Cherokee Indian provides a chronological history of the Cherokee Indian.



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Historic photographs courtesy of Chattanooga/Hamilton County Bicentennial Library

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