Jean Klock Park Master Plan

Benton Harbor, Michigan

December 1990

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Jean Klock Park Master Plan,

Benton Harbor, Michigan

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The Troyer Group, Inc.

Goshen & Mishawaka, Indiana

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Project Team

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Executive Summary

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Executive Summary

The mission of Jean Klock Park is to serve as a place of leisure for the local community. Leisure shall mean both active and passive recreation taking advantage of the site's natural assets. Secondarily, in the process of accomplishing this, it is hoped that the Park will attract tourists from out of town.

Jean Klock Park has fallen into disrepair and is currently underused.

An analysis of existing conditions found:

- An archaeological site with artifacts from the time of the birth of Christ.
- Facilities are vandalized and in poor condition.
- Two sensitive ecological environments are in good condition.
- There is no clear idea of who uses the Park, when they use it, and if they pay.
- The entrance and image is depressing and foreboding.

The Park represents a significant potential asset for the community:

- It is Benton Harbor's only lakefront property.
- It contains more than 3000 feet of beachfront with a market value in the millions of dollars.
- It represents both an educational and recreational resource.

The community has two options:

1. Find a way to realize the economic value of this asset. (There are significant legal hurdles to be overcome.)

2. Develop and utilize the recreational / educational value of the Park.

Developing and utilizing the Park is to be done is phases:

Phase I — Physical development includes: beach enhancement, dunes restoration, upgrading facilities, security fencing, new picnic facilities, observation towers, utility and road improvements to bring the Park back to a functional state. Program improvements, major event planning, and administrative restructuring are also included in Phase I. *Phase I Total: $562,400.00.*

Phase II — Physical development includes: acquisition of wetland properties along the Paw Paw River, small boat launch along the Paw Paw River, an Interpretive Center at the current Jean Klock Park site, and the restoration of the railroad bridge at the confluence of the Paw Paw and St. Joseph Rivers. *Phase II Total: $ 2,284,200.00.*

Phase III — Physical development includes: a Conference and Retreat Center at the northernmost portion of the lakefront. *Phase III Total: $755,500.00.*

Phase IV — Physical development includes: a Great Lakes Aquarium on the current Jean Klock Park site. *Phase IV Total: $3,528,900.00.*

The success of this plan is based upon increased use of the Park by everyone. Increased use will not happen magically. It will happen through investment, hard work, and positive image. Without a change in image there is little chance that this dream, this plan, will ever become a reality.

Introduction

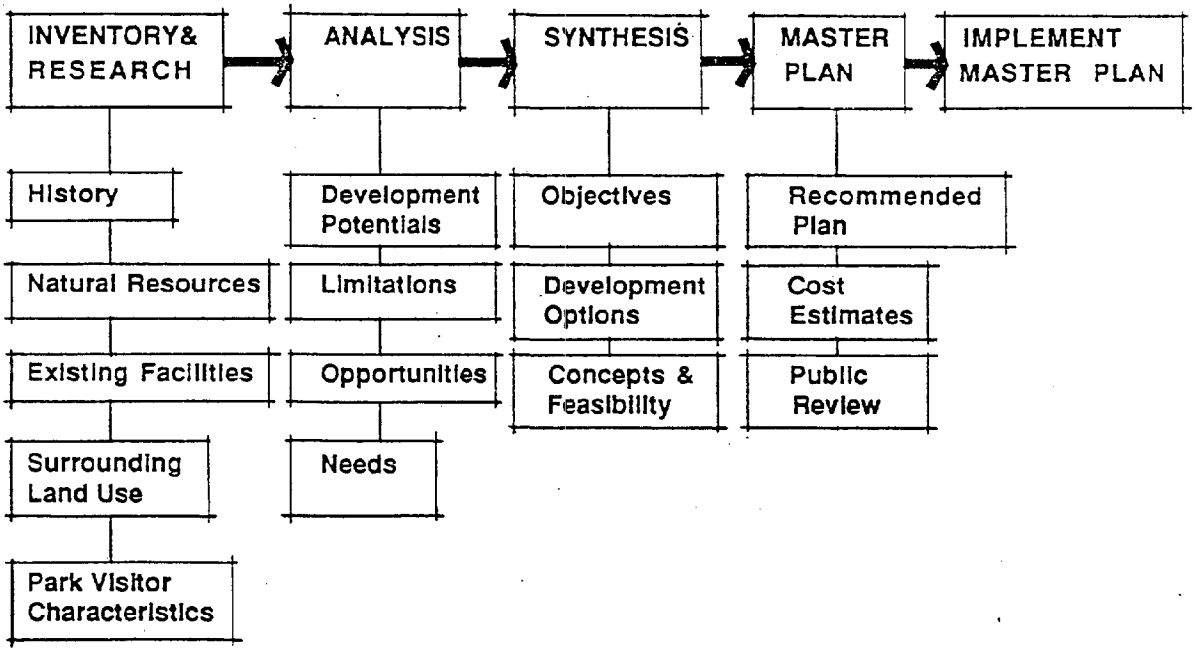
Purpose of the Master Plan

The Master Plan for Jean Klock Park has been undertaken in an effort to reassess existing facilities and set priorities for the future of this Park. A comprehensive review of this Park's natural resources, recreational facilities, and management concerns is necessary in order to address the varied issues affecting the current planning needs of the Park.

The Master Plan is to be used for several purposes. It will serve as a basis for decisions on resource management, and recreation development. The plan will also serve as a guide for long-range budgeting by documenting the costs of proposed improvements, new facilities, and other management needs. It will be used as an information base for future planning and will serve as a source of reference to the public.

Master Planning Process

The following chart represents the steps involved in the master planning process:



The planning process provides a rational approach to decision making and provides the format for the Master Plan document.

General Park Description

General Park Description

Jean Klock Park is located in southwestern lower Michigan in the City of Benton Harbor. The Park property was donated to the City in 1917 by the Klock family in remembrance of their daughter Jean who died before her first birthday. The Park is located in Berrien County Michigan, and the Park serves both Benton Harbor and St. Joseph, as well as the surrounding communities.

Jean Klock Park is a 76 acre property on Lake Michigan with approximately 3000 feet of beachfront, which makes this Park a significant community resource. There are open and wooded sand dunes, and wetlands on the property at an oxbow of the Paw Paw River. The dunes are in good condition and have recovered from overuse in past years. This Park is unique because the wetlands and dunes environments are in close proximity to each other. The property is quite valuable as an outdoor classroom and laboratory because of this.

The Park currently has a significant image problem. This is partly due to underfunding and maintenance practices that have not kept up with vandalism. The image problem has resulted in underutilization, with Park attendance between four and seven thousand for the entire season. For a resource of this significance, attendance in the hundreds of thousands would not be unreasonable. In some ways the Park appears to be abandoned.

Surrounding Land Uses

The land uses surrounding Jean Klock Park are significant when looking at what can be done, and how surrounding residents will be affected by its development. There is a residential subdivision to the North called Higman Park Subdivision, which is on a knoll overlooking the Park. There is also residential land use on Lake Michigan at the beachfront South of the Park and South of the Water Plant. A Michigan Highway #63 interchange forms the East boundary of the Park. Lake Michigan forms the West boundary of the Park. An abandoned industrial property formerly known as the Ausco Plant lies Southeast of the Park. This site is a suspected toxic waste dump.

Demographics and Market Information

The Benton Harbor Metropolitan Statistical Area is an important recreation and tourism center for the State of Michigan. Berrien County ranks 13th of Michigan's 83 counties in the the total dollar expenditures generated by travelers. Berrien County is also rated 8th of Michigan's 83 counties as a location for temporary residents in the state. The population in Berrien County is projected to rise by approximately eight percent in the next twenty years. The primary market for the Benton Harbor Metropolitan Statistical Area which includes Berrien County is 168,000. This is the local population from which repeat use of the Park would take place. The secondary market, or trade area, that is influenced by this resource has a population of 986,800. This population comes from a large area incorporating seven counties: Berrien, Cass, Kalamazoo, Van Buren counties in Michigan; LaPorte, Porter, and St. Joseph counties in Indiana. It is important to note that tourist dollars accounted for an impact of $120,000,000 in Berrien County in 1986. (See Supporting Documents for entire Economic Analysis).

Site Analysis and Existing Conditions

A thorough analysis of the existing environments, both natural and man-made is necessary to adequately program future uses and conserve and protect sensitive environmental areas. These significant natural resources are analyzed to uncover their potential for preservation, interpretation, and recreation development. These resources include topography, geology, soils, water, vegetation, and wildlife. Also, existing man-made elements are studied to identify their impact and potential as far as programming park usage.

The team assembled for the site analysis and the environmental analysis included archaeologists, wetlands biologists, botanists, environmental consultants, and landscape architects. In this way, pre-historic and historic features were analyzed. Sensitive environmental areas and threatened and endangered species were identified, and man-made elements were analyzed, as well as the human impact on this property.

Archaeological Review

A Phase I Archaeological Records Search, which included test digging was conducted by Dr. William Cremin of Western Michigan University. Although the Jean Klock Park site has had extensive alteration of natural landforms in historic times, one archaeologically significant site was discovered. Thirty-seven artifacts were located in a 60 meter square area near the City Pump Station, at the base of a bluff near what was once the edge of the Paw Paw River. These artifacts are thought to be of the Middle Woodland Period (100BC- 400AD). The site has been identified as Jean Klock Park Site (20BE413). See Dr. Cremin's full report in Supporting Documents. It is anticipated that a Phase II Archaeological dig will be conducted to further establish the significance of this site.

Biologists' Review

The biologists' analysis of this property identified natural systems present using a variety of tools . The Jean Klock Park site contains a number of ecosystems: the beach, open graminoid sand dunes, wooded dunes, upland areas, cattail marsh, marsh, wetlands, and old river channels. The Parks greatest asset other than the beach is the fact that a dunes ecosystem and a wetlands ecosystem are in very close proximity to each other. This asset makes this Park ideal for environmental education and an open-air laboratory and classroom. The great challenge on this Park property will always be protecting these sensitive environments while allowing for human use and controlling that use to minimize damage.

Two general areas comprising the majority of the site are particularly sensitive to human impact. The sand dunes and the wetlands on this property are of a level of quality that they require protection from overuse. Their importance as a resource cannot be overestimated. At the same time, the possibility of significant damage by overuse by humans must also be taken into account. The sand dunes in particular can suffer tremendous damage if human impact is not controlled. With enough foot traffic, the vegetative cover dies, and the dune is opened up to wind erosion. Significant scouring and blowholes develop, and the character of the Park is changed in a very short period of time. Also, there were three endangered and threatened plant species encountered on the Park property: Rose-pink (Sabatia angularia), Swamp Rosemallow (Hibiscus moscheutos), and the Trailing Wild Bean (Strophostyles helvola).

It is the opinion of the biologists that human interaction with these sensitive environments be controlled so that the resource is conserved and protected. At the same time, the possibility must exist for human interaction with these environments. To accomplish this goal, it will be important to minimize foot traffic by providing paved surfaces where possible, and elevated stairs and decks to keep foot traffic up off the sand dunes, so that it will be possible for people to reach the top of the dune to experience the panoramic views without damaging vegetation. Similarly, for people to interact and react with the wetlands environment, it will be important to construct a boardwalk of some sort that will allow people to penetrate the wetland without impacting it or damaging it.

By allowing Park visitors to experience these environments, the possibility for educating the public as to how sensitive these environments are, and why they are worth protecting is enhanced. The resource has a better chance of being preserved.

Landscape Architects' Review

Project landscape architects went to Jean Klock Park to review the man-made elements, and made an assessment in response to the future usage of these elements for park and recreation use.

Juvenile Play
The existing tot lot at the Park is at this time in poor condition, which does not facilitate its usage. Most of the play equipment is at least partially buried in the sand , making it unusable. This tot lot is located in what was once the foredune. It is important for opportunities for juvenile play to take place at the Park, but apparently this is not the best location for this equipment.

Hard Surface Sports
The Park has an existing tennis court which also functions as a half court for basketball.
The surface of this court is cracked and has had some settling. The playing surface is not level, which makes the court unsafe for play. The settling in particular increases the possibility for injury. There were no nets for either sport at this court. It appears that at one time there had been lighting, but there are no fixtures present at this time.

Water Sports
Water sports at Jean Klock Park appear to be limited to recreational swimming. Other water sport usage was not observed. There were some boaters in the area, but it was not apparent that they were using the Park to drop anchor and swim.

Participant Involvement
The activities observed mainly in site visits centered around swimming and sunbathing, and some people walking a dog. A number of people were observed using the Park in a passive way. Many sat in their cars to watch others swimming and sunbathing, or talking to each other, or reading. No other activity was observed.

Winter Activities
There is no evidence at this time of any facilities for winter activities at this Park site. It is important to note that the winter climate on this site would be particularly hostile with wind off the lake and lake-effect snows, making this Park difficult to use in the winter time.

Outdoor Education
No formal facilities such as a nature center or educational signage is evident. There are no obvious walking paths seen during site visits.

Unstructured Quiet Activities
Jean Klock Park has no apparent areas designated for unstructured quiet activities. There were no facilities such as picnic tables or pavilions which might invite these kinds of activities.

Outing, Sports, and Activities
Historically, large groups have used this park for family reunions and baptismal services. It is important to note that there is no formal gathering space for such a group to assemble.

Drinking Water
The only water fountains observed at this site occur at the bathhouse.

Sanitary Facilities
The existing bathhouse contains restrooms for public use. This building is in need of extensive repair. The roof needs repair or replacement, there are windows missing, and a number of the fixtures have been damaged or destroyed. It will be important in the future to maintain these facilities, and make sure repairs are made immediately for this Park to be successful.

Showers
There are showers located at the bathhouse. They don't appear to be in good condition. It was not known if these fixtures were operable.

Protection from Weather
There are no shelters other than the bathhouse existing in the Park. The bathhouse is not large enough to accommodate a large crowd in the event of a sudden storm.

Activity Lighting
Lighting for specific activities has not been observed. There is some security lighting along the boulevard along the beach.

Safety Supervision
Each time the Project Team visited the Park, there was no life guard on duty, and no sign posted "Swim at Your Own Risk". There is also no evidence of any sort of beach patrol or park management. In the future, safety supervision will become an increasingly important issue especially when Park usage increases.

Facility Maintenance
As stated before, the bathhouse is in desperate need of repair. There does not appear to be evidence of regularly scheduled maintenance. From discussions with the City Parks Department it is understood that there is an underfunding problem that makes this Department unable keep up with maintenance. The need for maintenance is increased due to vandalism which results from a lack of security.

Accessibility
Accessibility to Jean Klock Park appears to be limited to vehicles. The Park is located in such a way that pedestrian access particularly by children is not necessarily safe. It is apparent that public transportation to the site is not available.

Communications
Communications equipment such as telephones are lacking in the Park. Access to telephones in an emergency situation will need to be considered as the Park begins to develop.

Seating
A great number of the benches along the boulevard at the Park are missing backs and seats. This is another area where maintenance has not taken place. Once again this has been a funding issue, not necessarily a reflection on the ability of the Parks Department to maintain their facilities.

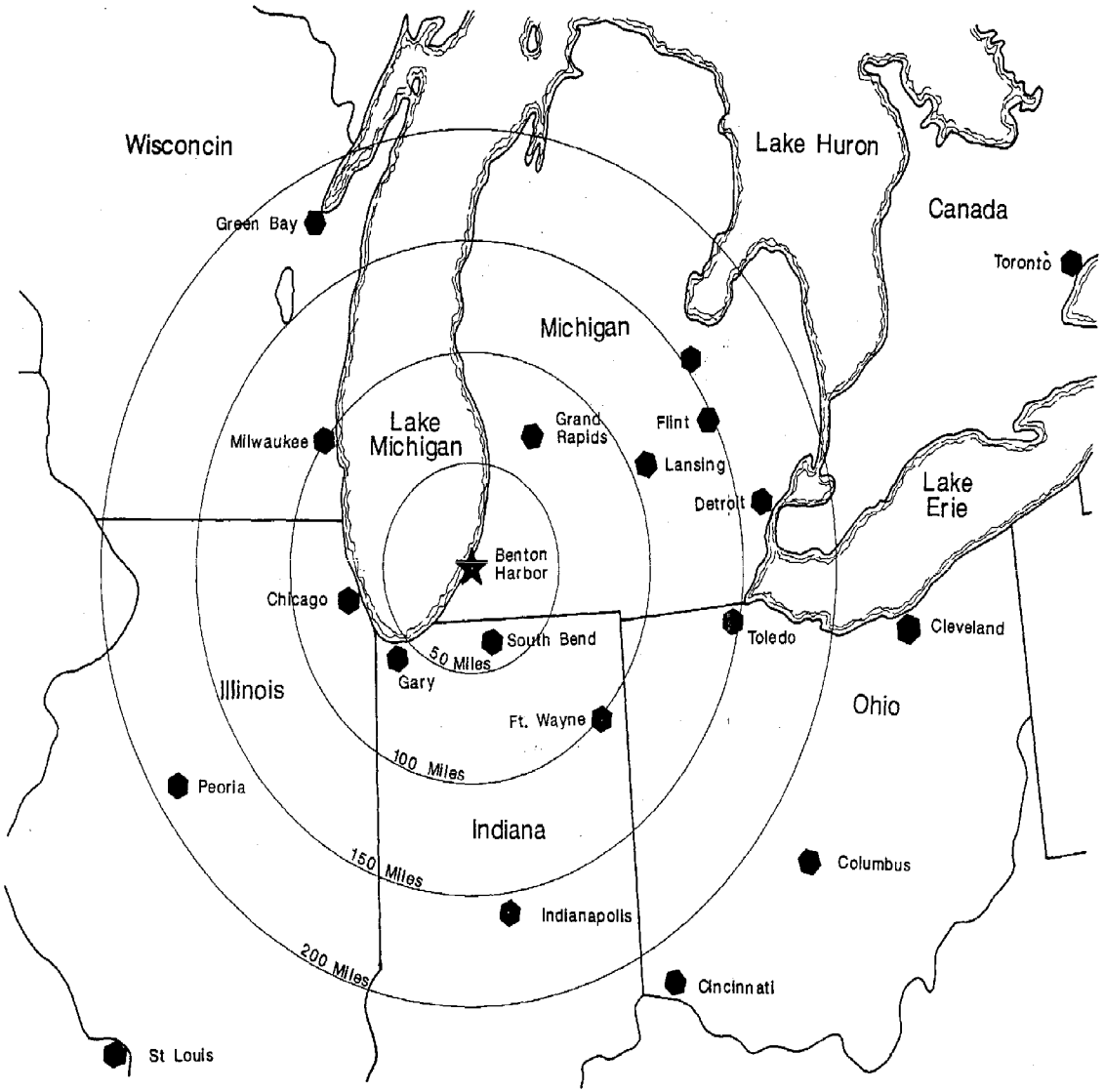
Electrical Lines
The electrical lines to the security lights along the boulevard have overhead wiring. This type of wiring is extremely unsafe, because it might be possible for someone to jump from the dune into the wiring, or fall into the wiring. It was also observed that some disconnected wiring loose on the ground. All wiring should be in underground conduit in public areas to minimize the possibility of injury or death.

Security
There is now no apparent way to secure this park property from the public after hours. Historically, this has meant vandalism and abusive use by people who enter the Park after 10pm and destroy benches and restroom facilities. It is impossible with the current funding situation for the City of Benton Harbor to continue to maintain facilities or replace items that have been destroyed if there is no means to secure this property. Park security will become an increasingly important issue as the number of Park users grows. Security fencing will be a first step in controlling access to this park. It may become apparent later on that security officers will be needed.

M-63 Interchange
This interchange, which forms the East boundary of the Park, is poorly maintained and contributes to the abandoned look of the area. The pavement and the guardrails are not maintained, and the mowing of the interchange is infrequent. This interchange is the "front door" of the Park, and will always contribute to the Park's image. The need for improved conditions in this area is clear.

In summary, the overall condition of this Park as far as man-made features are concerned causes one to wonder if this Park has been abandoned for a number of years. The dunes sand that has been removed from the roadway has been piled along the streets far from the beach, which makes visibility a problem. The difficulty in maintaining the man-made facilities also contributes to the appearance of the Park being abandoned. One of the greatest concerns after reviewing this Park is helping to improve the image of Jean Klock Park in such a way that people will be attracted to using this Park, and feel safe in doing that. In the same way, additional facilities are needed to increase use of the Park. Things like picnic shelters, tables, grills, and various elements that enhance the use of the beach in particular are needed.

Maps



Jean Klock Park

Location Map

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202 South Fifth Street Goshen, Indiana 46526 (219) 534-3612

Jean Klock Park

Park Boundaries

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Jean Klock Park

Natural Conditions

- **A** Beach
- **B** Open sand dune
- **C** Wooded dune
- **D** Parking lot
- **E** Upland area
- **Fa** Cattail Marsh
- **Fb** Marsh
- **OR** Old river channel

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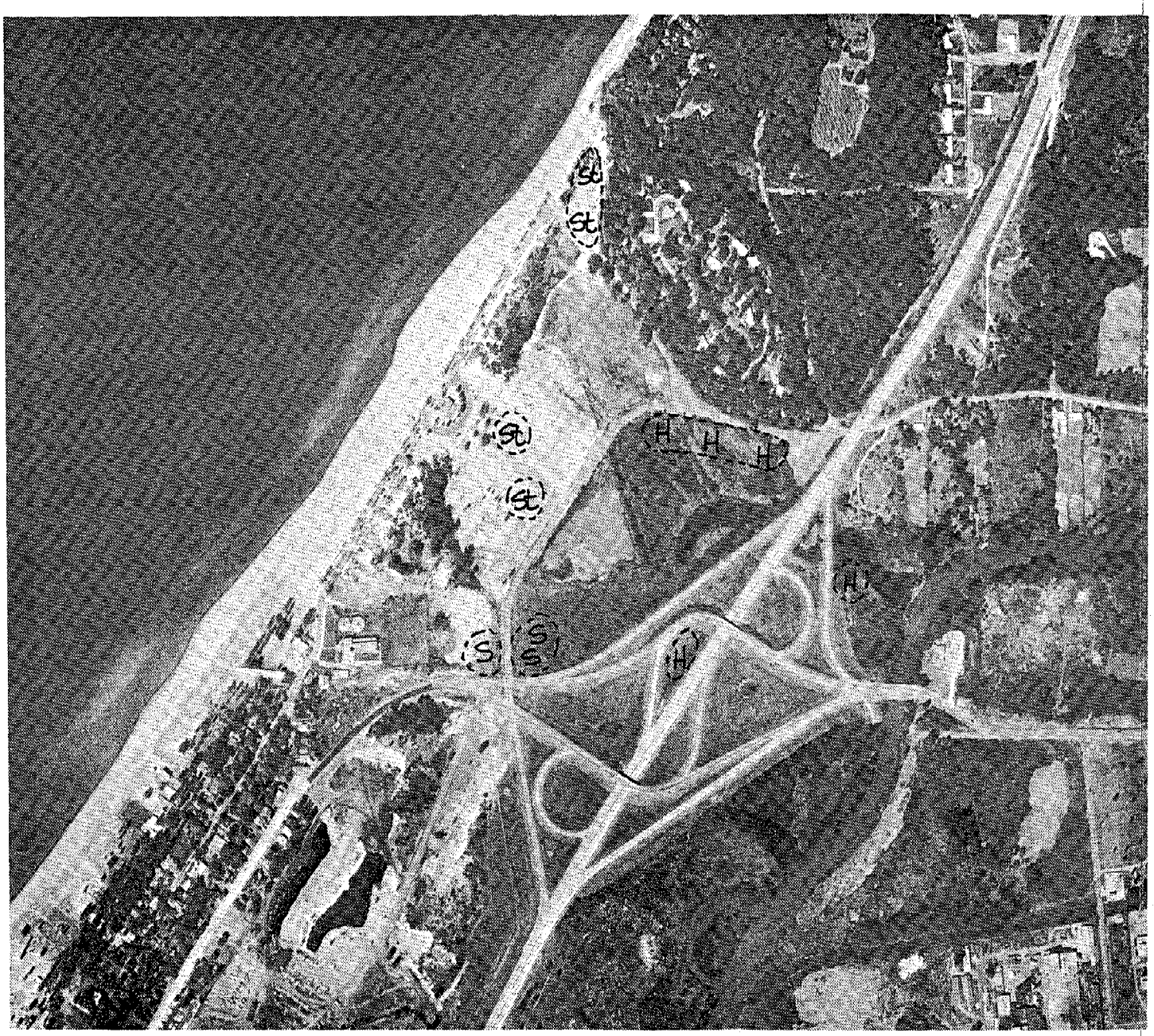

Jean Klock Park

Endangered and Threatened Species

H Hibiscus moscheutos (rare plant)

S Sabatia angularis (threatened plant)

St Strophostyles helvula (rare plant)

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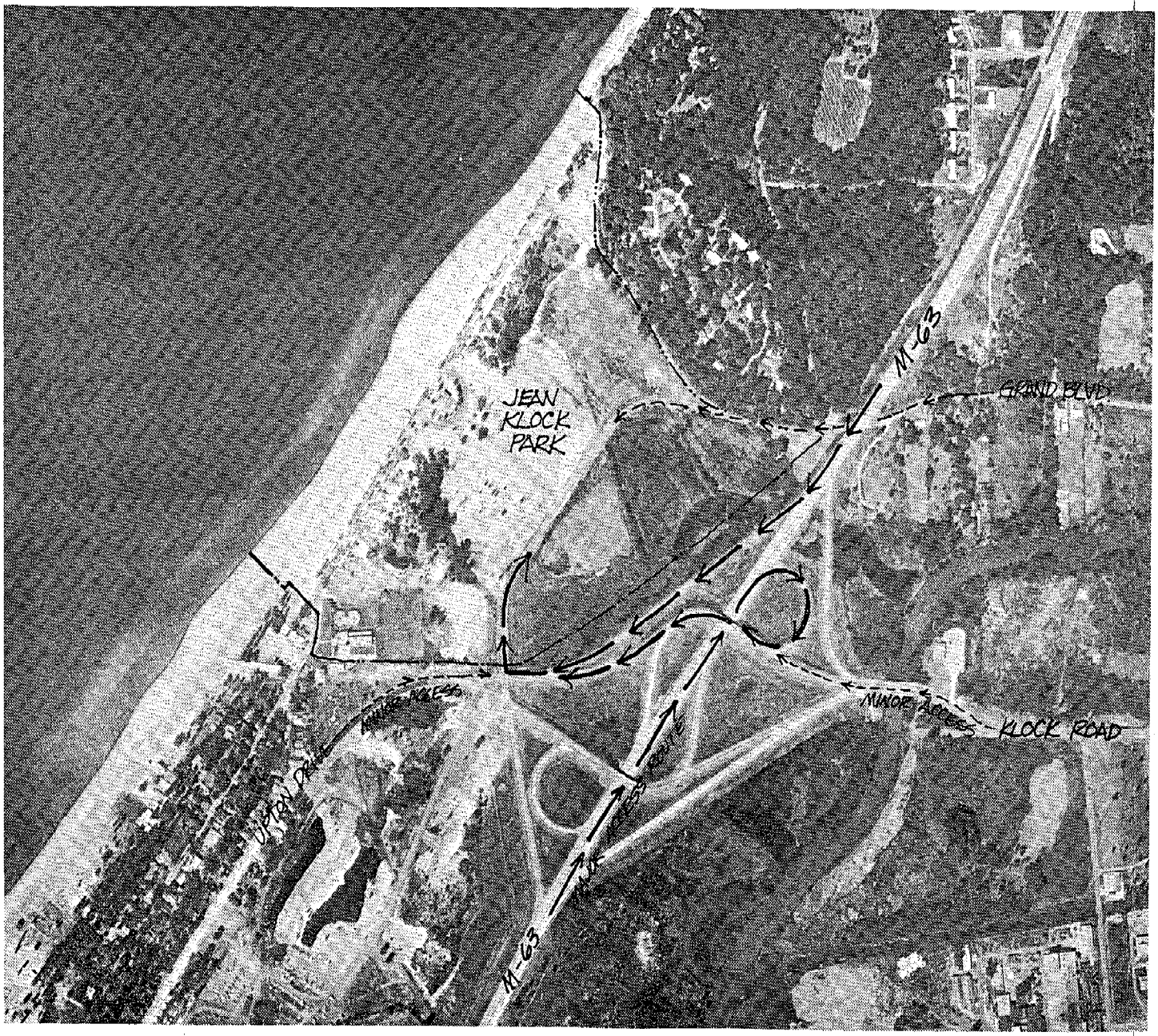

Jean Klock Park

Vehicular Circulation and Access

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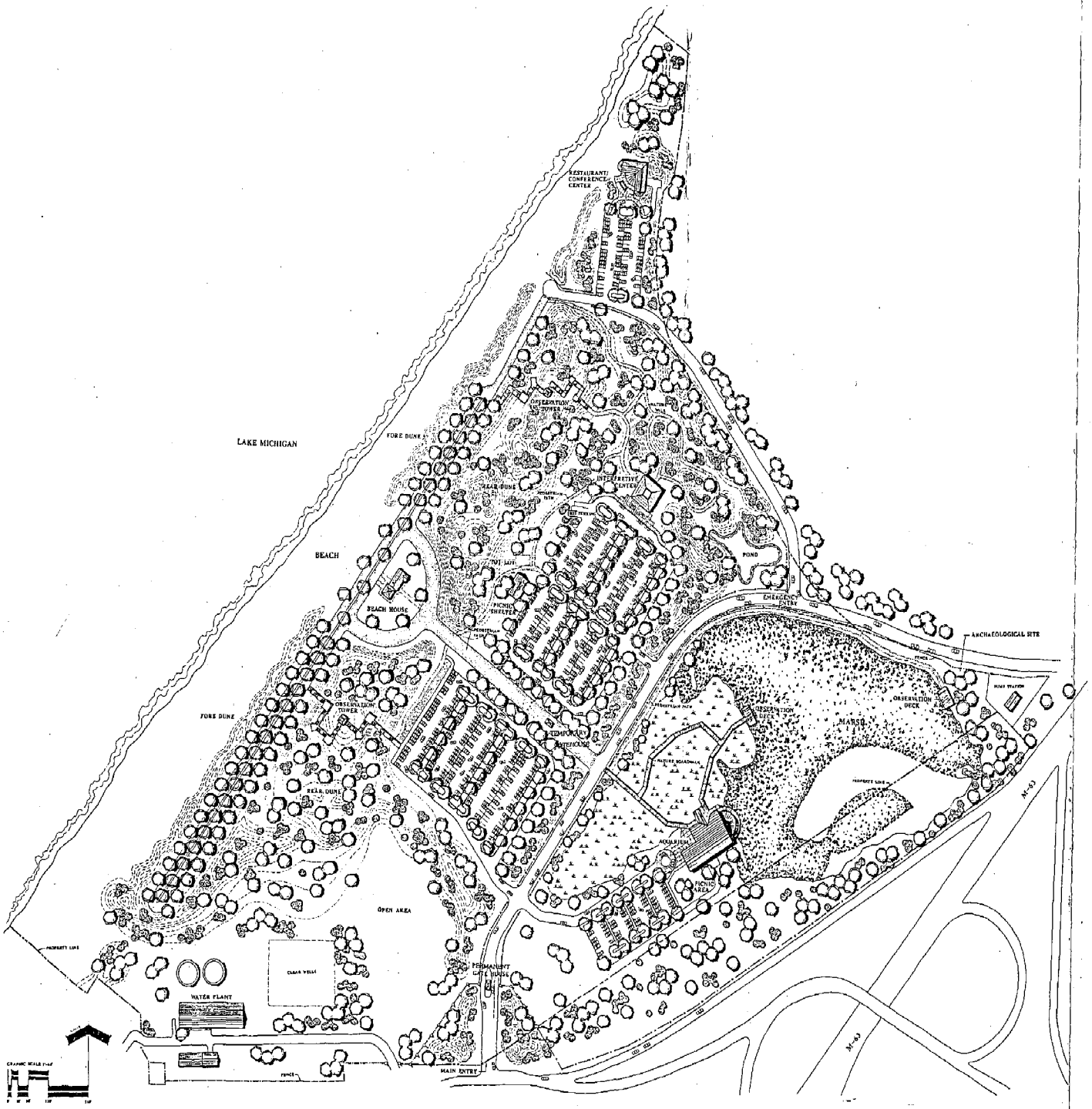

Jean Klock Park

Park Master Plan

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Program

Review of Past Development Plans

The Planning Team has reviewed plans for Jean Klock Park that were started as far back as 1935. Numerous uses have been suggested for this property. Everything from re-routing the Paw Paw River to flow directly to Lake Michigan through the Park, to different active recreation items like miniature golf, tennis, amphitheaters, and interpretive centers. A number of the plans have not paid close attention to environmental concerns, in fact some of them were relying on significant alteration of the site and the reestablishment of the vegetation to stabilize the dunes after they have been moved and altered. The thing that comes to mind in reviewing this park property is the fact that very little of this property is developable if the sand dunes, the beach and the wetlands are preserved. For that reason, a number of the past uses that have been proposed are most likely inappropriate for this site. In summary, a number of the former plans for the Park proposed considerable human impact on the environment, and the destruction of some of the sensitive environments on the site. This property will always require a generous amount of sensitivity in the use of the Park and maintaining the natural resources that are available.

Potential Attractions

Part of the program for the Master Plan process was researching potential regional attractions that would have a tendency to draw from the secondary market of a seven county area. This part of the study was done simultaneously with the environmental assessment. The team took a look at several options, including: zoos, aquariums, botanic gardens, theme parks, water parks, and outdoor drama. It is now the opinion of the team that a number of these uses would not be appropriate at the Jean Klock Park site as it stands today. Some of these regional attractions would require much larger areas than are available on this site. This does not mean that these attractions are not suitable for Benton Harbor. What it does mean is that if these attractions were to occur as part of Jean Klock Park, they would need to be located on property now outside of Park boundaries.

The fundability of these regional attractions has been a concern in view of the current financial status of the City of Benton Harbor. Attractions like theme parks, water parks, or outdoor drama would need to be financed by a developer, with the City leasing the property to the developer. In that respect, these are viable options, if more property were to become available. Zoos, aquariums, and botanic gardens can be combined quite easily. Financing this type of development will require a partnership between business, the public, as well as the City. These regional attractions require a great deal of aggressive fund raising, foundation and endowment creation, corporate sponsorship, environmental group sponsorship, special events, and public support in addition to gate receipts to reach a break-even status. Many of these facilities operate at a deficit, and for that reason this type of attraction is not recommended at this time.

Design Charette Results

On October 30, 1990, the Project Team along with representatives of the City of Benton Harbor met to discuss the mission and goal of Jean Klock Park. Consultants reviewed site conditions and observations, and received input from charette participants. Representatives from the Michigan Department of Natural Resources were in attendance; the Grants Division as well as members of the Coastal Zone Management group.

The Mission of Jean Klock Park

Local representatives from the community defined the mission of the Park:

The mission of Jean Klock Park is to serve as a place of leisure for the local community. Leisure shall mean both active and passive recreation taking advantage of the site's natural assets. Secondarily, in the process of accomplishing this, it is hoped that the Park will attract tourists from out of town.

Brainstorm Ideas:

There were a number of ideas brought forth in the charette, both from members of the community as well as the consultants present. The ideas presented were varied. They are listed below in random order:

The bathhouse and concession area need to be upgraded.
Picnic areas should be improved.
There should be a walking trail system that should have a certain amount of accessibility for the handicapped.
There should be an environmental nature center that will function as an outdoor classroom as well as a visitors center.
There needs to be a maintenance facility with storage for equipment.
There needs to enhancement of the wetlands and dunes ecology.
The existing playground equipment needs to be relocated and improved.
There needs to be a designated fishing area.
There should be the possibility of a small boat launch on the Paw Paw River.
There should be an option for a sailboat concession on the beach.
There should be improved maintenance on the interchange.
The Park needs a sense of arrival, a major entry gate feature to attract the public to the Park.
Vehicular access needs to be controlled within the Park so there is no damage to the fragile environment.
The foredune should be restored to control sand deposition.
Parking spaces should be improved with pavement.
Pedestrian access should be explored so that the handicapped have access to the beach, and the environment is protected at the same time.

The dunes should be protected from human impact. All natural assets should be protected.
There should be transportation for children to the beach.
Swimming lessons and recreation programs should be offered at the beach.
There should be access by bicycle or by walking from the City to the beach for children in particular.
Maintenance staff needs to be increased.
A security guard or patrolman will probably be needed.
There should be off-season activities at the Park.
Cross-country skiing should be an option in the wintertime.
Ice skating should be made available by filling & freezing one of the parking lots.
One of the pavilions should be winterized.
There should be a sense of positive attitude and positive ownership developed about Jean Klock Park.
The Parks Department should develop a canoe concession on the Paw Paw River, which is an untapped resource at this time.
Camping should be possible at the Park.
There should be an isolated area for people to beach boats so that they can dock at the park without injuring swimmers.
There should be a structure for open-air concerts.
There should be a Jean Klock Triathlon.
The Park should host regional competitions that would link the City of Benton Harbor with the Park. These require corporate sponsorships wherever appropriate.
Jean Klock Park should be advertised by its major events throughout the season.
The concessions should be money makers. Possibly lease to a concessionaire.
There should be a balance between the sensitive areas on the site with the people who want to use those areas.
The archaeological site should be fully researched by a university so there is no cost to the City.
Jean Klock Park should generate community involvement.
Improvements to the Park will be done in phases.
The first impact should be of the least cost and the easiest to accomplish.
There needs to be a balance between local and regional user needs.
There needs to be a balance between development and the maintenance required to maintain that facility.

Funding Brainstorm Ideas:

Yearly passes sold to the local community, and there should be a charge per car to enter the Park.
Future Trust Fund monies will be directly tied to the approved 5-year master plan.
There should be a recreation bond program developed.
The Parks Department must cultivate park patrons and corporate sponsors for improvements and special programs.
The City should seek fishing access grants for access on the Paw Paw River. It was discovered that the Paw Paw is a high quality river, and a significant resource to the community.
Round up utility bills for the Parks Department.
If the Park appears to be going under financially, then the Park should be turned over to the Michigan Department of Natural Resources or another similar entity. The consequence of this would cause Benton Harbor to lose all eligibility for grant monies permanently.
If the Park appears to be going under financially, sell the property to a developer. The funds would go to the City of Benton Harbor. The property is quite valuable with 3000+ feet of frontage on Lake Michigan. This option does have some snags--the current contract with MDNR does specify that the property would be permanently a part of Michigan's recreational resource. This scenario would require serious negotiations with MDNR.
The Park needs to reach the break-even point within 36 months of implementation of the current grant or the City will not be able to carry the Park.

Phase I Physical Development

The Phase I physical development for Jean Klock Park includes the restoration of the dunes, security fencing around the Park, repairing and upgrading the bathhouse, building a gatehouse, building some observation towers, creating picnic shelters with tables and grills, utility improvements, Grand Boulevard road improvements, and beach improvements. It was the feeling of the consultants from the Michigan Department of Natural Resources that the quality of the beach at Jean Klock Park should be a stand alone attraction for this property, and that this basic grant should restore this Park to a viable condition. Once attendance is up where it should be for this type of facility, which could go as high as 250,000 to 350,000 per season, user fees should be collected to offset expenses.

For this initial phase, there has been nothing suggested in the way of a park office, or a maintainence facility. There should be space made available nearby, possibly at the Water Plant. If this idea is not viable, similar facilities should be secured nearby.

Phase I development will begin to do many things for the Park. From the onset, the Park can be used as an outdoor classroom for the local school systems to explain to children how these sensitive environments in the dunes and the wetlands work: how the sand moves, how plants stabilize the dunes, how aquatic plants filter the water. Children can learn the benefits of these ecosystems and realize that they are surrounded by examples of these ecosystems. In doing so, an educated public will be prepared to preserve and enhance the special resources here at the Jean Klock Park site.

In continuation of current services, the Park is a logical place to offer swimming lessons. They should be well staffed with life guards and people who are qualified to teach. This is an important program in every community, and especially one like Benton Harbor with two rivers and a Great Lake within the city limits. It is also possible for sailing lessons to be made available through a concessionaire, using small craft rentals suitable for novices. There are fishing opportunities at the Park in the old river channel at the eastern edge of the Park. Picnicking is another activity that will be enhanced by the new facilities. It is necessary to increase the opportunity and the quality of that experience in the Park. Sunbathing will continue to be popular on the beach, and elsewhere in the Park as well.
This activity needs to controlled as to where this activity takes place within the Park so that the dunes environment is not damaged. The sunbathing also opens doors to selling sunbathing products at the concession stand. Food concessions will be available once again. It is suggested for financial viability that initially at least the food concessions should be handled as in theatres--a premium price for some of these concessions to generate operating funds.

Event planning will take on new significance as this Park is redeveloped. There is an image problem at Jean Klock Park now that needs to be overcome and a positive image enhanced. Major events like a Triathlon or Music in the Park will draw people to the Park who may not otherwise come, and help them realize that things are new and different, and that Jean Klock Park is a safe and fun place to go. The end result is that the general feeling about the Park is greatly enhanced, and this will boost attendance, and will increase financial viability. The citizens of Benton Harbor will benefit from the feeling of good will, and the spin-off economic benefits of tourism.

Administrative Restructuring

As Jean Klock Park is redeveloped and resurrected from its current condition, a number of administrative groups should be created to enhance this activity and revive this Park. The Jean Klock Park Foundation, Inc. needs to be created as a funding source for capital improvements and a permanent maintainence endowment. It is suggested that the core of this new foundation body be composed of key members of other local foundations. The importance of this new foundation cannot be overestimated for the long-term future of this Park.

At the grass-roots level, Friends of Jean Klock Park should be developed. This group would be made up of local people who desire to have a share in Park improvements and particularly in program enhancement. Local citizens purchase memberships for the group. In turn, they receive a Park pass for the season, and newsletters, and other schedules and publications.. They feel they have some ownership in Jean Klock Park and in what is going on in the Park, and they become very proactive supporters of the Parks system.

The user fees collected, as well as the profits collected from concessions and leases to concessionaires should be dedicated for operation and improvement of the Park.. The suggestion is a non-reverting capital fund that allows an accumulation of funds for major purchases and major capital improvements. This is not intended to cripple the City in collecting fees that might end up in the City General Fund, but helps create less burden on the City in the long run because the capital funds needed by the Park are generated by the Park. The Park has a better chance of becoming financially viable, as these funds are poured back into the physical plant.

The State of Michigan also allows the creation of a Jean Klock Park Commission which would become a governing body for the Park. This governing entity would be a free-standing body not attached in any way to any municipality, county, or state recreation organization. It will be important at some point in the future for the Park to be an autonomous entity that promotes the City of Benton Harbor without being a burden to the City. This governing body would also coordinate any land acquisition, major development in the future as well, and would also be backed by the Jean Klock Park Foundation, Inc. and Friends of Jean Klock Park. This Commission would set Park standards as to how the property would be maintained, control hiring and firing, coordinate development, and also create the opportunity for regionalization of area recreational resources.

Regionalization of recreational resources is clearly a trend of the future. Consolidation of recreational resources in a particular region allows for more cost effective management and elimination of duplication of services. A Conservancy Commission as a governing body might fill this function quite nicely. A fair amount of negotiation among existing recreational entities will be necessary to come to a consensus of regional recreational need and response to growth in the region.

Phase II Development

Phase II development includes a number of elements that go out beyond current property boundaries of Jean Klock Park. At this stage of development, a Conservancy District should be created that would acquire wetland properties along the Paw Paw River just East of the current property. The Paw Paw River is a high quality waterway. It is undeveloped due to extensive marsh areas lining both sides of the Paw Paw for miles. This river has a very high potential for recreational use, particularly for fishermen. These wetland areas along the Paw Paw are not developable, as the wetlands are federally protected. In addition to the acquisition of some of these wetlands, it is possible to develop a canoe concession and boat launch on an old right-of-way East of the interchange on M-63. This would greatly enhance access to this waterway, and increase the recreation base for the Park system. Access to the Paw Paw has been very limited due to the presence of extensive wetlands, and also because of a railroad bridge that is still in use with only 53 inches of clearance. This railroad bridge was once engineered to rotate for boating access, and the restoration of the mechanism is an essential part of this phase. The water-based recreation potential within the city limits of Benton Harbor cannot be overestimated. There should also be coordinated efforts with the Michigan Department of Natural Resources and various fishing clubs in seeing that the Paw Paw is stocked with game fish. This will allow for fishing contests, which will draw from the larger secondary market.

Also part of Phase II physical development of the current Jean Klock Park property is the construction of the Interpretive Center. At the onset, a strong theme will be defined for the facility. This building will allow for education and provide meeting space for other groups, such as corporate seminars, clubs, etc. This will allow for increased Park usage, and will enhance the Park's image from a public relations standpoint. This facility will become increasingly important for environmental education for area school children.

The funding for the Interpretive Center at Jean Klock Park will most likely come from a combination of private funds, corporate sponsorships, the general public, and grant monies from the Michigan Department of Natural Resources. This is an effort that will require a great deal of coordination, which should be done by the Jean Klock Park Foundation, Inc.

Phase III Development

Phase III development for Jean Klock Park includes construction of a Conference and Retreat Center on the site of the old Higman Park Dance Hall at the extreme northernmost point of the property. This portion of the property is owned by the City of Benton Harbor, but was not part of the original gift of the Klock family. This facility will expand upon the mission and goal of the Interpretive Center as far as providing quality gathering space for various types of groups. This facility is envisioned to provide overnight accommodations and meals for groups, along with flexible meeting rooms.

The funding of this facility may take two routes. As with the Interpretive Center, this facility may be funded by a combination of public, private, and state funds. The other possibility for funding this facility will be for the City to lease the land to a developer with restrictive covenants on use and architecture. This option will require further study for an implementation plan that is advantageous to the City.

Phase IV Development (Optional)

Phase IV development for Jean Klock Park entails construction of a Great Lakes Aquarium on the fill area at the wetlands on the original property. This facility is envisioned to greatly enhance the interpretive and educational aspects of programs in place by this time. This one of a kind facility will draw heavily from the secondary market, pulling tourists from a large regional area. The facility will feature Great Lakes ecosystems in a unique, state-of-the-art format adjacent to the wetlands ecosystems found at the Park. This phase of development assumes a very successful Jean Klock Park prior to this point, significant public support, and access to funding outside the community. This phase is very long-range, and will require a well-run park system, and a well-seasoned and active Jean Klock Park Foundation. Generally this type of facility requires continued subsidies for a portion of operating expenditures. This phase of development will be quite expensive; its estimated cost in 1990 dollars is close to $3,500,000, approximately 68% of the total development costs projected for this park.

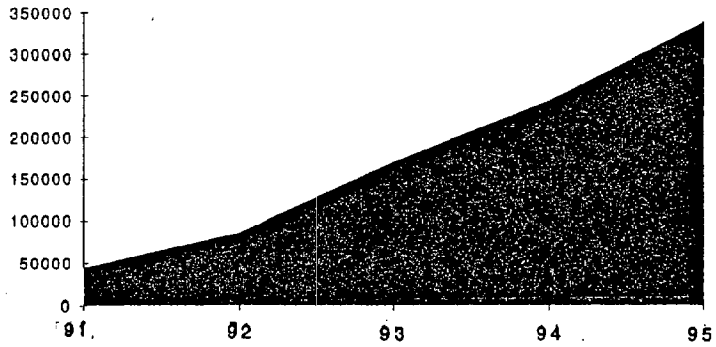
Attendance Goals:

As mentioned before, the current attendance at Jean Klock Park is far below the average for similar parks in other parts of southwestern lower Michigan. The current attendance is between 4,000 and 7,000 annually. The following park systems in southwestern lower Michigan that keep attendance statistics show the range of the number of park visitors in proportion to the amount of beachfront available. This information is useful in roughly predicting possible attendance figures for a renovated Jean Klock Park. The other factor that is a determinant in the number of beach users is the amount of parking available. The range of figures are illustrated in the chart below:

Park System	Attendance	beachfront (feet)
City of Holland	1,528,606	1600
Warren Dunes (State)	1,047,631	3500
Van Buren County	389,952	2927
City of Saugatuck	40,909	11,880
City of Bridgman	60,000	900
Ottawa County	137,964	N/A
Jean Klock Park	7,000	3,300

The maximum number of people that this park property could handle is somewhere in the neighborhood of 350,000 people in a year. It will take a great deal of time for attendance to come anywhere near that level. It would be completely reasonable to expect 100,000 to 150,000 within three years of implementation of this Master Plan. Below is a chart illustrating desired attendance growth:

POSSIBLE ATTENDANCE GROWTH



The anticipated attendance growth shown is dependent on the completion of Phase I development, and the aggressive promotion of the Park.

User Fees:

User fees should be charged for use of Jean Klock Park after Phase I improvements. User fees will generate revenues for a non-reverting capital fund, as well as operating expenses and a long-range maintenance endowment. It is suggested that there be a parking fee for every car entering the Park: $1.00 for local cars, $2.00 for Michigan residents and $3.00 for out-of-state vehicles. Fees should be collected seven days a week from May 15th to September 15th for at least the first few years. There needs to be a strong accountability system for Park employees who collect funds from the public to insure uniformity of services provided, and maximum collection. Food should be sold for profit as done in movie theaters, for instance.
Other concessions may be leased to concessionaires with lease fee and percentage of gross sales coming back to the Park. Other possible concessions for the Park would include: small sailboats, souvenirs, cabanas, umbrellas, tanning products and canoes.

Another source of user fees will be picnic shelter rentals for groups. Depending upon the size of the shelter, a fee of $75.00 to $100.00 per shelter may be collected for special gatherings. These rentals should be reserved in advance with a non-refundable deposit of $25.00 to hold the date. As Park usage increases, it may be possible to rent the shelters more than once a day.

As Phase I improvements are completed, it is important that this Park is operated like a responsible business with tight controls on how money is collected, handled, and spent with little room for abuses or mishandling of funds. A very high level of accountability will have to be achieved for all employees who are handling monies. The future of Jean Klock Park is very much dependent upon the prudent handling of funds. Any abuses in the collection or reporting of user fee collections will jeopardize Benton Harbor's ability to keep this Park financially viable, which will in turn permanently damage the relationship between the City and the Michigan Department of Natural Resources and exempt the City from future use of state funds.

Jean Klock Park Master Plan

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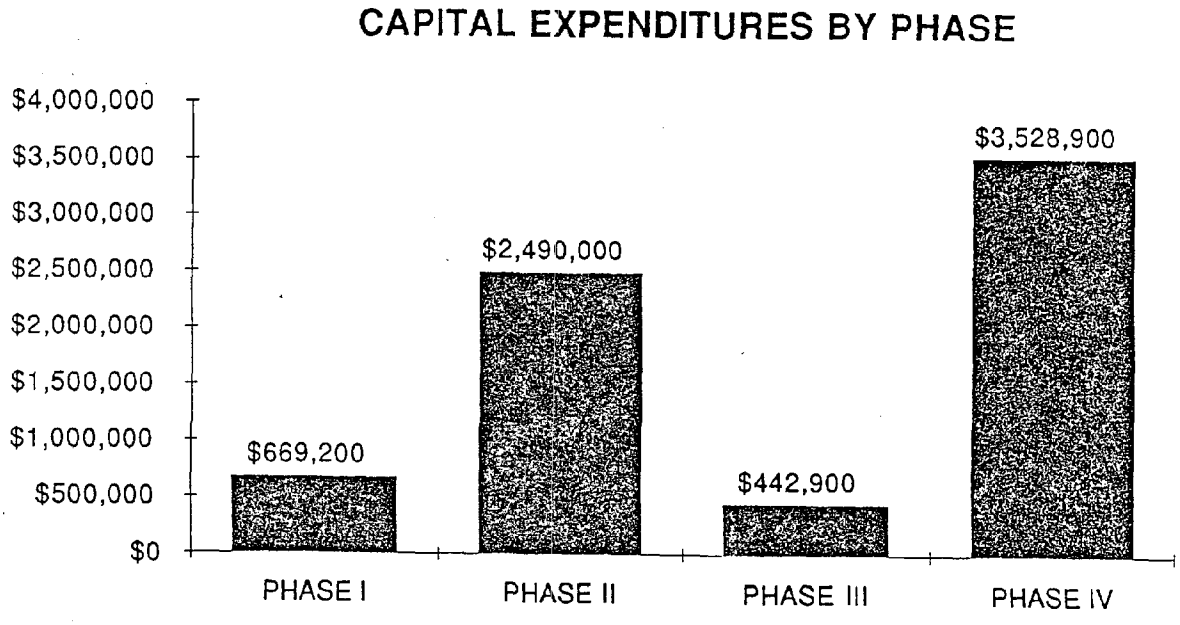
Construction Cost Estimates:

The chart below includes all constructed items shown on the Master Plan, and a tentative schedule for implementation. The schedule shows items in a possible sequence that shows the number of dollars needed for capital improvements corresponding with growing attendance. These figures are in 1990 dollars, and an inflation factor will need to be computed when the actual construction is implemented.

		PHASE	I	PHASE	II	PHASE III	PHASE IV
CAPITAL IMPROVEMENTS	TOTAL COST	1991	1992	1993	1994	1995	2010
AQUARIUM	$3,500,000						$3,500,000
BATHHOUSE IMPROVEMENTS	$19,400	$19,400					
BEACH GROOMING EQUIPMENT	$27,000		$27,000				
BEACH IMPROVEMENTS	$12,000	$12,000					
BENCHES	$30,000	$10,000		$10,000		$10,000	
BOARDWALK	$14,000				$14,000		
BUOYS & FLOATING LANE MARKERS	$6,700	$3,700			$3,000		
CONCESSIONS EQUIPMENT	$3,000	$1,000	$500	$500	$500	$500	
CONFERENCE CENTER	$385,000					$385,000	
DUNES RESTORATION	$110,000	$60,000	$10,000	$10,000	$10,000	$10,000	$10,000
EQUIPMENT BARN	$30,000		$30,000				
GRAND BOULEVARD IMPROVEMENTS	$15,000	$15,000					
GRILLS	$14,000	$7,000			$7,000		
INTERPRETIVE CENTER	$90,000				$90,000		
LAND ACQUISITION--PAW PAW	$1,000,000			$1,000,000			
LIGHTING STANDARDS	$92,500	$18,500	$18,500	$18,500	$18,500	$18,500	
LOADER AND DUMP	$40,000				$40,000		
OBSERVATION TOWER	$120,000	$60,000		$60,000			
OFFICES	$22,500			$22,500			
PAVING PARKING LOTS	$120,000	$120,000					
PEDESTRIAN PATHS (BITUMINOUS)	$23,800	$8,800	$8,000	$7,000			
PICKUP TRUCK	$22,000				$22,000		
PICNIC SHELTERS	$110,000	$30,000	$20,000	$20,000	$40,000		
PICNIC TABLES	$45,000	$20,000		$10,000	$15,000		
PLAYGROUND STRUCTURE	$5,600		$5,600				
PORTABLE BANDSHELL	$18,500				$18,500		
PORTABLE BLEACHERS	$15,600				$15,600		
PORTABLE STAGE	$12,000				$12,000		
PROFESSIONAL FEES	$45,000	$45,000					
PUBLIC ADDRESS SYSTEM	$1,200		$1,200				
RAILROAD BRIDGE IMPROVEMENTS	$1,000,000				$1,000,000		
SEALING PARKING LOTS	$42,300			$14,100		$14,100	$14,100
SECURITY FENCING	$65,000	$65,000					
SIGNAGE	$6,500	$4,500	$2,000				
STRIPING PARKING LOTS	$2,400			$800		$800	$800
SWEEPER ATTACHMENT-TRACTOR	$4,500		$4,500				
TRASH RECEPTACLES	$13,500	$8,500	$2,500		$2,500		
TREES	$24,000	$4,000	$4,000	$4,000	$4,000	$4,000	$4,000
UTILITY IMPROVEMENTS	$50,000	$50,000					
TOTALS:	$7,158,000	$562,400	$133,800	$1,177,400	$1,312,600	$442,900	$3,528,900

The following bar chart illustrates the cash flow for constructed items as shown in the chart on the previous page:



Development Process

Jean Klock Park Master Plan
Benton Harbor, Michigan
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Implementation Schedule

The following chart illustrates a tentative construction schedule. Capital Improvements are sequenced to correspond with increased Park use. Although specific years are shown on this chart, each group of improvements could be implemented on a much longer schedule. This chart is intended to illustrate an aggressive development program. Individual items on the chart are ones illustrated on the Master Plan, which maximize the use of the current Jean Klock Park site.

		PHASE	I	PHASE	II	PHASE III	PHASE IV
CAPITAL IMPROVEMENTS	TOTAL COST	1991	1992	1993	1994	1995	2010
AQUARIUM	$3,500,000						$3,500,000
BATHHOUSE IMPROVEMENTS	$19,400	$19,400					
BEACH GROOMING EQUIPMENT	$27,000		$27,000				
BEACH IMPROVEMENTS	$12,000	$12,000					
BENCHES	$30,000	$10,000		$10,000		$10,000	
BOARDWALK	$14,000				$14,000		
BUOYS & FLOATING LANE MARKERS	$6,700	$3,700			$3,000		
CONCESSIONS EQUIPMENT	$3,000	$1,000	$500	$500	$500	$500	
CONFERENCE CENTER	$385,000					$385,000	
DUNES RESTORATION	$110,000	$60,000	$10,000	$10,000	$10,000	$10,000	$10,000
EQUIPMENT BARN	$30,000		$30,000				
GRAND BOULEVARD IMPROVEMENTS	$15,000	$15,000					
GRILLS	$14,000	$7,000			$7,000		
INTERPRETIVE CENTER	$90,000				$90,000		
LAND ACQUISITION--PAW PAW	$1,000,000			$1,000,000			
LIGHTING STANDARDS	$92,500	$18,500	$18,500	$18,500	$18,500	$18,500	
LOADER AND DUMP	$40,000				$40,000		
OBSERVATION TOWER	$120,000	$60,000		$60,000			
OFFICES	$22,500			$22,500			
PAVING PARKING LOTS	$120,000	$120,000					
PEDESTRIAN PATHS (BITUMINOUS)	$23,800	$8,800	$8,000	$7,000			
PICKUP TRUCK	$22,000				$22,000		
PICNIC SHELTERS	$110,000	$30,000	$20,000	$20,000	$40,000		
PICNIC TABLES	$45,000	$20,000		$10,000	$15,000		
PLAYGROUND STRUCTURE	$5,600		$5,600				
PORTABLE BANDSHELL	$18,500				$18,500		
PORTABLE BLEACHERS	$15,600				$15,600		
PORTABLE STAGE	$12,000				$12,000		
PROFESSIONAL FEES	$45,000	$45,000					
PUBLIC ADDRESS SYSTEM	$1,200		$1,200				
RAILROAD BRIDGE IMPROVEMENTS	$1,000,000				$1,000,000		
SEALING PARKING LOTS	$42,300			$14,100		$14,100	$14,100
SECURITY FENCING	$65,000	$65,000					
SIGNAGE	$6,500	$4,500	$2,000				
STRIPING PARKING LOTS	$2,400			$800		$800	$800
SWEEPER ATTACHMENT-TRACTOR	$4,500		$4,500				
TRASH RECEPTACLES	$13,500	$8,500	$2,500		$2,500		
TREES	$24,000	$4,000	$4,000	$4,000	$4,000	$4,000	$4,000
UTILITY IMPROVEMENTS	$50,000	$50,000					
TOTALS:	$7,158,000	$562,400	$133,800	$1,177,400	$1,312,600	$442,900	$3,528,900

Funding Sources:

There are a number of options available to a parks system for securing funds for capital development projects. Public support for the projects is an essential first step. Nearly all grant programs require local matching funds, which are often the most difficult portion of a grant package to assemble. The exploration for new funding sources will always require consistent effort. Some major capital improvement projects may benefit from a professional fundraiser, although few parks development projects would justify this expense.

Below is a checklist of possible funding sources:

- Michigan Department of Natural Resources, Recreation Division
  - Michigan Natural Resources Trust Fund
  - Michigan Coastal Zone Management
- Michigan Department of Commerce
- Soil Conservation Service
- Local Foundations
- Corporate Sponsorships
- Community Development Block Grants
- Community Economic Development Corporation
- Conservation Groups
  - Sierra Club
  - Audobon Society
- Sportfishing Clubs
- Recreation Bonds
- Millage
- Private Donations
- City of Benton Harbor General Fund
- User Fees
- Jean Klock Park Foundation, Inc.
- The Friends of Jean Klock Park
- Round up Utility Bills for Parks
- In-Kind Services (for the local matching funds)
- Community Service Clubs

Management Plan

Management Structure

The City of Benton Harbor has a number of management options available to make Jean Klock Park successful once again. The refurbishing of the Park sets a new milestone in the Park's history, and administrative restructuring can easily take place at the same time and be well received by the public. The following management options exist:

1. Maintain the current system. Jean Klock Park would be operated and maintained by the City Parks and Recreation Department, and overseen by the Parks Director.

2. Create the Jean Klock Park Foundation, Inc. as a not-for-profit entity. The Foundation could function as operator of the Park, removing the burden from the City. This group would function as an interim step until a permanent governing body could be created. The primary function of the Foundation would be raising funds for capital improvements and the creation of a maintenance endowment, but it might temporarily function as operator of the Park.

3. Create the Jean Klock Park Commission as a legal entity for the purpose of the management of the Park. This group would relieve the City of management responsibilities and control hiring, firing, administrative tasks, construction administration, fee control and programming of activities. This entity has the greatest potential for responding to regionalization of the area parks systems.

4. Approach another recreation management group (County or State) to manage the Jean Klock Park site. The City of Benton Harbor would still own the property.

5. Release the property to the Michigan Department of Natural Resources.

Staffing Requirements

The following chart illustrates a probable staffing scenario with salaries projected for the first five years. As Park attendance increases dramatically, additional maintenance staff may be required. Note that in year three a Naturalist is added. This position is optional. Due to budget constraints, the staffing shown in the first year may have to be modified. User fees and concession sales will be a driving factor in staffing increases, and both are totally dependent on increased attendance. Salaried employees show a 5% pay increase yearly.

			PHASE I		PHASE II		PHASE III
STAFF	TIME	#STAFF	1991	1992	1993	1994	1995
PARK SUPERINTENDENT	FULL	1	$0	$27,500	$30,000	$32,500	$34,000
MAINTENANCE SUPERVISOR	FULL	1	$18,000	$19,000	$20,000	$21,000	$22,000
MAINTENANCE LABORER	FULL	2	$0	$14,000	$28,000	$30,000	$32,000
GATE ATTENDANT	PART	3	$6,048	$6,344	$6,720	$11,760	$12,348
SENIOR LIFE GUARD	PART	1	$0	$6,720	$7,056	$7,409	$7,780
LIFE GUARD	PART	6	$8,467	$11,290	$14,112	$16,670	$19,604
NATURALIST	FULL	1	$0	$0	$0	$19,500	$20,475
CLERICAL WORKER	PART	1	$0	$5,200	$5,460	$5,733	$6,019
CONCESSIONS WORKER	PART	3	$0	$0	$5,645	$5,927	$6,223
SECURITY	FULL	2	$8,000	$9,000	$16,500	$24,500	$29,400
	SUBTOTAL		$40,515	$99,054	$133,493	$174,999	$189,849
	X BENEFITS		X 27%	X 27%	X 27%	X 27%	X 27%
TOTAL SALARY EXPENDITURES:			**$51,454**	**$125,799**	**$169,536**	**$222,249**	**$241,108**

Operating Expenses

The chart below shows basic operating expenses projected for five years. These items are anticipated to be needed every year. A dramatic increase in the number of park users will create the need to modify these figures. This is an area where cost containment is essential, and must be balanced with high maintenance standards. New programs at the Park will alter the items listed. Operating expenses need to be analyzed annually.

	PHASE I		PHASE II		PHASE III
ANNUAL OPERATING COSTS	1991	1992	1993	1994	1995
PHONE	$750	$900	$1,080	$1,296	$1,555
OFFICE SUPPLIES	$750	$900	$1,080	$1,296	$1,555
GASOLINE & OIL	$1,850	$2,220	$2,664	$3,197	$3,836
PAINT	$350	$420	$504	$605	$726
CONCESSIONS EQUIPMENT	$350	$420	$504	$605	$726
HAND TOOLS	$150	$180	$216	$259	$311
TRASH BAGS	$560	$672	$806	$968	$1,161
TRASH SERVICE	$3,000	$3,600	$4,320	$5,184	$6,221
WINTERIZE BUILDINGS	$300	$360	$432	$518	$622
LIGHT BULBS	$250	$300	$360	$432	$518
FLOWERS	$200	$240	$288	$346	$415
SIGNAGE REPLACEMENT	$350	$420	$504	$605	$726
EXCELSIOR MATTING	$1,500	$1,800	$2,160	$2,592	$3,110
MARRAM GRASS	$1,000	$1,200	$1,440	$1,728	$2,074
SNOW FENCE	$250	$300	$360	$432	$518
CLEANING SUPPLIES	$650	$780	$936	$1,123	$1,348
EDUCATION SUPPLIES	$1,500	$1,800	$2,160	$2,592	$3,110
PUBLICITY	$2,500	$3,000	$3,600	$4,320	$5,184
PAMPHLETS	$1,500	$1,800	$2,160	$2,592	$3,110
PARKING STICKERS	$300	$360	$432	$518	$622
WINDOW REPLACEMENT	$150	$180	$216	$259	$311
ELECTRICITY	$1,800	$2,160	$2,592	$3,110	$3,732
HEATING	$800	$960	$1,152	$1,382	$1,659
VEHICLE MAINTENANCE	$1,000	$1,200	$1,440	$1,728	$2,074
FIXTURE REPLACEMENT	$600	$720	$864	$1,037	$1,244
TREES	$500	$600	$720	$864	$1,037
SUBTOTAL	$22,910	$27,492	$32,990	$39,588	$47,506

Jean Klock Park Master Plan

Benton Harbor, Michigan

December 1990

Capital Improvements

The chart below shows all Capital Improvements for Jean Klock Park as illustrated on the Master Plan, as well as a projected time frame for implementation. These items can be juggled according to what monies are available.

		PHASE	I	PHASE	II	PHASE III	PHASE IV
CAPITAL IMPROVEMENTS	TOTAL COST	1991	1992	1993	1994	1995	2010
AQUARIUM	$3,500,000						$3,500,000
BATHHOUSE IMPROVEMENTS	$19,400	$19,400					
BEACH GROOMING EQUIPMENT	$27,000		$27,000				
BEACH IMPROVEMENTS	$12,000	$12,000					
BENCHES	$30,000	$10,000		$10,000		$10,000	
BOARDWALK	$14,000				$14,000		
BUOYS & FLOATING LANE MARKERS	$6,700	$3,700			$3,000		
CONCESSIONS EQUIPMENT	$3,000	$1,000	$500	$500	$500	$500	
CONFERENCE CENTER	$385,000					$385,000	
DUNES RESTORATION	$110,000	$60,000	$10,000	$10,000	$10,000	$10,000	$10,000
EQUIPMENT BARN	$30,000		$30,000				
GRAND BOULEVARD IMPROVEMENTS	$15,000	$15,000					
GRILLS	$14,000	$7,000			$7,000		
INTERPRETIVE CENTER	$90,000				$90,000		
LAND ACQUISITION--PAW PAW	$1,000,000			$1,000,000			
LIGHTING STANDARDS	$92,500	$18,500	$18,500	$18,500	$18,500	$18,500	
LOADER AND DUMP	$40,000				$40,000		
OBSERVATION TOWER	$120,000	$60,000		$60,000			
OFFICES	$22,500			$22,500			
PAVING PARKING LOTS	$120,000	$120,000					
PEDESTRIAN PATHS (BITUMINOUS)	$23,800	$8,800	$8,000	$7,000			
PICKUP TRUCK	$22,000				$22,000		
PICNIC SHELTERS	$110,000	$30,000	$20,000	$20,000	$40,000		
PICNIC TABLES	$45,000	$20,000		$10,000	$15,000		
PLAYGROUND STRUCTURE	$5,600		$5,600				
PORTABLE BANDSHELL	$18,500				$18,500		
PORTABLE BLEACHERS	$15,600				$15,600		
PORTABLE STAGE	$12,000				$12,000		
PROFESSIONAL FEES	$45,000	$45,000					
PUBLIC ADDRESS SYSTEM	$1,200		$1,200				
RAILROAD BRIDGE IMPROVEMENTS	$1,000,000				$1,000,000		
SEALING PARKING LOTS	$42,300			$14,100		$14,100	$14,100
SECURITY FENCING	$65,000	$65,000					
SIGNAGE	$6,500	$4,500	$2,000				
STRIPING PARKING LOTS	$2,400			$800		$800	$800
SWEEPER ATTACHMENT-TRACTOR	$4,500		$4,500				
TRASH RECEPTACLES	$13,500	$8,500	$2,500		$2,500		
TREES	$24,000	$4,000	$4,000	$4,000	$4,000	$4,000	$4,000
UTILITY IMPROVEMENTS	$50,000	$50,000					
TOTALS:	$7,158,000	$562,400	$133,800	$1,177,400	$1,312,600	$442,900	$3,528,900

Non-Reverting Capital Fund

In order to keep Jean Klock Park viable, a non-reverting capital fund must be created. Monies generated at the Park need to be reinvested in the Park. Funds reverting back to the City General Fund will for the most part be lost for future development. This Fund is necessary for matching funds for grants programs for capital projects. It is also suggested that 10% of this fund be permanently conserved as a maintenance endowment in perpetuity to keep the Park from falling into disrepair.

Expenditures Summary

The chart below summarizes projected Capital Improvements, Salaries, and Operating Costs for a five year period. This is a possible scenario, and will require modification once implemented. It is intended to be a tool for visualizing the scope of the Master Plan if compressed into a five year period.

FIVE YEAR SUMMARY OF EXPENDITURES:

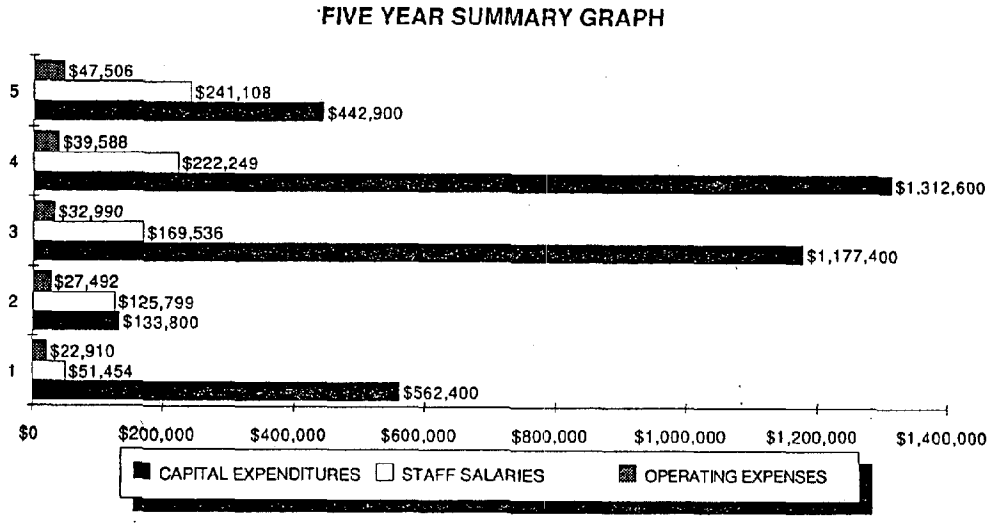
	PHASE I		PHASE II		PHASE III
ITEM	1991	1992	1993	1994	1995
CAPITAL EXPENDITURES	$562,400	$133,800	$1,177,400	$1,312,600	$442,900
STAFF SALARIES	$51,454	$125,799	$169,536	$222,249	$241,108
OPERATING EXPENSES	$22,910	$27,492	$32,990	$39,588	$47,506
(LESS GRANTS)	($500,000)	$0	($1,000,000)	($1,000,000)	$0
TOTALS:	**$136,764**	**$287,091**	**$379,926**	**$574,437**	**$731,514**

ESTIMATED # VISITORS	42,000	84,000	168,000	252,000	336,000
AVERAGE #VISITORS/DAY (PER 150 DAY SEASON)	280	560	1,120	1,680	2,240
COST PER VISITOR (FOR ALL PROGRAMS)	$3.26	$3.42	$2.26	$2.28	$2.18
SALARIES + OPERATING	$74,364	$153,291	$202,526	$261,837	$288,614
COST PER VISITOR (SALARIES + OPERATING)	$1.77	$1.82	$1.21	$1.04	$0.86
% LOCAL USERS	40	30	20	15	11
NO. LOCAL USERS	16,800	25,200	33,600	37,800	37,800
LOCAL PARKING FEE	$6,720	$10,080	$13,440	$15,120	$15,120
TOURIST PARKING FEE	$30,240	$70,560	$161,280	$257,040	$358,848
TOTAL PARKING FEES	$36,960	$80,640	$174,720	$272,160	$373,968
PARKING FEE/VISITOR	$0.88	$0.96	$1.04	$1.08	$1.11

Revenue Potential

The chart above illustrates the revenues needed for Jean Klock Park to reach a break-even stage. The estimated number of visitors has been plugged into the summary of expenditures in order to calculate the cost per visitor at various stages of development. Also, the cost per visitor has been calculated with capital improvements removed for costs for purely operations. Parking fees have been calculated as well. It appears that the break-even point for Jean Klock Park will be met when attendance reaches 150,000 to 175,000 people in a season, and figures assume concessions profits with parking fees would generate these funds.

The bar chart below further illustrates the Summary of Expenditures:



Maintenance Standards

A Maintenance Standards Manual for parks employees needs to be prepared and followed. In the future, maintenance standards must be much higher, and repairs must be made immediately for Jean Klock Park to be successful. The creation of a maintenance endowment should aid considerably in providing adequate funding for maintenance.

Accountability

For the Park to be successful, the park management must build accountability into the management scheme. Anyone who handles money needs to be accountable for the handling or mishandling of those funds. Leaving room for abuses will jeopardize the future of the Park. Financially resurrecting the Park is a difficult task to begin with, but abuses may prevent the Park from being viable within the 36 month time period allowed by the City.

Public Hearing

Jean Klock Park Master Plan

Benton Harbor, Michigan

December 1990

On December 17, 1990, the Jean Klock Park Master Plan was presented to the public. The current Master Plan for the property was well received by the public. The general feeling by the public was that they were anxious for any positive action at the Park to happen. Two concerns were voiced repeatedly:

1. Security. How will access to the Park be controlled after hours? Will there be security guards after hours? (There will be security fencing to secure the Park after hours, and a part-time independent security guard has been budgeted.)

2. Gentrification. Will the improvements to Jean Klock Park result in user fees that will prevent poorer local people from using the Park? (The Mission of Jean Klock Park, as described by residents of the community, was to first serve the local population. That issue has been at the core of the master planning process from the beginning.)

Jean Klock Park Master Plan
Benton Harbor, Michigan
December 1990

Supporting Documents

INDEX:

Economic Analysis
Archaeological Survey Report
Biologist's Vegetation Inventory

The Troyer Group, Inc.
Goshen & Mishawaka, Indiana

Jean Klock Park Master Plan
Benton Harbor, Michigan
December 1990

Economic Analysis

The Troyer Group, Inc.
Goshen & Mishawaka, Indiana

ECONOMIC ANALYSIS

JEAN KLOCK PARK MASTER PLAN

By:

John E. Peck, Ph.D.
Quantach Research Associates

September 26, 1990

ECONOMIC ANALYSIS

JEAN KLOCK PARK MASTER PLAN

1. Introduction. Jean Klock Park is located along the Lake Michigan shoreline in Benton Harbor, Michigan. Benton Harbor and its sister city, St. Joseph, are the principal cities of Berrien County, which also marks the boundaries of the Benton Harbor Metropolitan Statistical Area (MSA). The area's non-profit Community Economic Development Corporation (CEDC) comprises a geographic region consisting of seven separate but closely interrelated communities: the cities of Benton Harbor and St. Joseph; charter townships of Benton and St. Joseph; and, townships of Hagar, Lincoln and Royalton.

Jean Klock Park is one of a number of public recreation areas along the CEDC's 20 miles of lakefront -- the area's distinguishing recreational asset. The purpose of this section of the Jean Klock Park Master Plan is to report on available demographic and economic data for the project market area, and to determine the market potential for revenue producing attractions.

2. Demographic/Economic Data for the Project Market Area.

a. Population. As is noted in Table 1, the 1990 preliminary census results show a count for the CEDC service area and for Berrien County of 68,342 and 158,732, respectively. Applicable governmental units, like the majority of others throughout the midwestern states have appealed the count on the contention that numerous residents were omitted. If, following the appeal, the preliminary count should prove accurate, these decreases would represent 8.8 and 7.3 percent declines from the

Table 1.
POPULATION STATISTICS

	1960	1970	1980	1990*	2000*	2010*
CEDC Service Area	67,911	74,436	74,919	75,078	78,929	85,305
Berrien County	149,865	163,940	171,276	168,979	175,952	182,596
CEDC as a % of County	45%	45%	44%	44%	45%	47%

*Projections
Source: "Factbook", The Southwestern Michigan Commission

Note: The 1990 preliminary count came in as 68,342; 158,732; and, 43%. This count is being appealed on the basis that it is considered low.

1980 census. On the other hand, if following the appeal, it would be determined that the earlier projections were accurate, there would be growth from 1980 of 0.2 percent for the CEDC and a marginal decrease of 1.3 percent for Berrien County. It is also important to note that demographers have projected significant increases for both areas in the 2000 and 2010 censuses -- 5.1 and 8.1 percent for the CEDC, and 4.1 and 3.8 percent for Berrien County.

Population trends by age group are provided in Table 2. Decreases in the youngest age category (18-24) were offset by

Table 2.
POPULATION HISTORY BY AGE GROUP

Berrien Cty.	1982	1984	1986	1988
Ages 18-24	11.6%	10.9%	10.4%	9.7%
Ages 25-34	16.1%	16.4%	16.4%	16.5%
Ages 35-49	17.0%	17.9%	18.9%	19.9%
Ages 50+	26.1%	26.0%	26.0%	26.0%

Source: "Sales and Marketing Management", various issues 1983-89.

increases among persons aged 35 through 49. The other two categories were relatively constant during the reporting period, which is a pattern similar to that found in comparable State of Michigan and U.S. population statistics. The overall effect of these trends is an increasing median age of the population throughout the nation, although it is noted in Table 3 that the

Table 3.
MEDIAN AGE OF POPULATION

	1982	1984	1986	1988
Berrien County	30.7	31.3	31.9	32.5
Benton Harbor	21	22.4	23	23.4

Source: "Sales and Marketing Management", various issues 1983-89.

median age of a resident of Benton Harbor, 23.4 years, is nine years lower than that, 32.5 years, found in the County as a whole.

b. **Households**. As of 1988, there were 63,000 households in Berrien County. This represents 1.8 percent of the state's total of 4,423,100. As will be noted in Table 4, the

Table 4.
NUMBER OF HOUSEHOLDS (000)

	1982	1984	1986	1988
Berrien County	62.2	60.6	61.2	63.0
Benton Harbor	4.6	4.7	4.7	4.7

Source: "Sales and Marketing Management", various issues 1983-89

1988 count continued a reversal from the decline reported in 1984. The City of Benton Harbor consists of 4,700 households, a figure that has been constant in the six year period reported.

c. Income. Estimates of "effective buying income" (EBI) by state, county and major cities are published annually by Sales and Marketing Management magazine. Effective buying income is analogous to disposable income, that is, personal income less personal tax and nontax payments. Table 5 shows adjusted EBI for Berrien County amounting to $1.981 billion. Adjustment was made

Table 5.
EFFECTIVE BUYING INCOME - BERRIEN COUNTY (Billions)

1982	1984	1986	1988 Unadj.	1988 Adjusted
$1.511	$1.699	$1.893	[$1.785]	$1.981

Source: "Sales and Marketing Management", various issues 1983-89.

Note: S&MM magazine revised EBI calculation by an average of 11% beginning with 1988 figures. 1988 Adjusted adds 11% over unadjusted 1988 for comparison purposes.

to account for a change in methodology that averaged an 11 percent reduction from the previously used method. The adjustment was made in this report to permit comparison with estimates of prior years.

Table 6 provides estimates of median household EBI for Berrien County and the City of Benton Harbor. These estimates indicate that median household income increased in current dollar terms by 10.5 and 12.6 percent, respectively. The Consumer Price

Table 6.
MEDIAN HOUSEHOLD EFFECTIVE BUYING INCOME

	1982	1984	1986	1988 Unadj.	1988 Adjusted
Berrien county	21,743	25,100	23,557	[21,651]	24,033
Benton Harbor	12,704	14,959	14,101	[12,886]	14,304

Source: "Sales and Marketing Management", various issues 1983-89.

Note: S&MM magazine revised EBI calculation by an average of 11% beginning with 1988 figures. 1988 Adjusted adds 11% over unadjusted 1988 for comparison purposes.

Index for the nation as a whole rose 23.1 percent during the same period. Table 7 provides a breakdown of household EBI by various income categories exceeding $10,000.

Table 7.
PERCENT HOUSEHOLDS BY EFFECTIVE BUYING INCOME

Berrien Co. ($000)	1982	1984	1986	1988
10-19.9	25.5%	22.7%	23.6%	24.7%
20-34.9	32.6%	29.9%	27.6%	28.4%
35-49.9	15.7%	20.1%	17.3%	15.5%
50+	5.9%	10.6%	12.3%	9.6%

Source: "Sales and Marketing Management", various issues 1983-89.

d. **Trade Area Demographics**. The Community Economic Development Corporation has identified its trade area as encompassing Berrien, Cass, Kalamazoo, and Van Buren counties in Michigan, and LaPorte, Porter, and St. Joseph counties in bordering Indiana. Table 8 provides a summary of trade area

Table 8.
TRADE AREA DEMOGRAPHICS - 1988

	Population (000)	Median Age	No. Households (000)	Median Household EBI $
MICHIGAN COUNTIES				
Berrien	167.9	32.5	63.0	$21,651
Cass	50.1	33.3	18.5	$23,438
Kalamazoo	221.1	30.4	83.5	$27,354
Van Buren	71.0	32.6	26.0	$18,622
INDIANA COUNTIES				
LaPorte	107.0	32.7	37.5	$23,391
Porter	128.2	30.0	44.0	$30,050
St. Joseph	241.5	32.8	90.6	$23,641

Source: "Sales and Marketing Management", 1989.

demographics wherein 1988 population, median age, number of households, and median household EBI are listed by trade area counties.

Table 9 provides five year projections (1988-1993) of population, total retail sales, and total effective buying income for the seven county trade area. For comparative purposes, population is projected to increase in all of Michigan's metropolitan counties over the 5 year period on average by 0.1 percent, and by 4.6 percent for the U.S. as a whole. Total retail sales are projected to increase by 48.3 and 50.6 percent, respectively, in each of these larger geographical areas, and total EBI is expected to rise by 47.7 percent in the metropolitan counties of the state and by 51.4 percent across the nation.

e. **Employment and Compensation.** It can be observed in

Table 9.
TRADE AREA MARKET POTENTIAL - 1988 AND 1993 PROJECTIONS

	Population (000)			Total Retail Sales ($000)			Total EBI ($000)		
	1988	1993	% Chg.	1988	1993	% Chg.	1988	1993	% Chg.
MICHIGAN COUNTIES									
Berrien	167.9	164.9	-1.8	914.5	1,297.3	41.9	1,785.1	2,585.1	44.8
Cass	50.1	50.4	0.5	115.5	170.6	47.7	548.2	811.9	48.1
Kalamazoo	222.1	226.5	2.0	1,648.6	2,474.0	50.1	2,969.8	4,469.0	50.5
Van Buren	71.0	71.4	0.5	269.5	398.1	47.7	626.5	927.9	48.1
INDIANA COUNTIES									
LaPorte	107.0	107.6	0.6	590.1	876.9	48.6	1,080.0	1,621.1	50.1
Porter	128.2	131.5	2.6	588.9	894.8	52.0	1,528.4	2,340.6	53.1
St. Joseph	241.5	239.2	-1.0	1,748.7	2,585.0	47.8	2,737.6	4,041.1	47.6

Source: "Sales and Marketing Management", 1989

Note: In computing projected values, average increases state-wide were applied to Cass, Van Buren, and LaPorte counties. Others are county-specific estimates.

Table 10 that through the first six months of 1990, there was an average of 78,100 persons in the Benton Harbor MSA labor force. Of these, 72,000 were employed and 6,100 were unemployed. The

Table 10.
LABOR MARKET TREND - BENTON HARBOR MSA

	1982	1984	1986	1988	1990*
Civ. Labor Force	71,500	71,600	73,000	79,000	78,100
Employment	60,000	62,800	68,200	73,600	72,000
Unemployment	11,500	8,800	6,800	5,400	6,100
Unemp. Rate	16.1%	12.3%	9.0%	6.8%	7.8%

*Average through June 1990.

Source: Michigan Employment Security Commission

number of persons employed represented a decrease of 2.2 percent from the comparable 1988 monthly average. (The 1989 average also dropped from 1988 by seven-tenths of a percentage point). These decreases can be attributed principally to softness in the U.S. economy over the past twelve months -- particularly in the

Table 11.
PERCENT EMPLOYMENT BY INDUSTRY GROUP
Benton Harbor MSA, July 1990

	Employees	% of Total
Manufacturing	20,800	30.8%
Services	15,500	23.0%
Retail Trede	12,500	18.5%
Government	8,400	12.4%
Wholesale Trade	2,900	4.3%
Finance, Insurance & Real Estate	2,800	4.1%
Trans., Comm., & Utilities	2,700	4.0%
Construction	1,900	2.8%

Source: Michigan Employment Security Commission

manufacturing sector. The trend in Berrien County had been substantially upward as is demonstrated by a 22.7 percent gain in employment in the 1982-1988 period.

Table 11 provides a July 1990 breakdown by number of employees and percent of total for two-digit Standard Industrial Code (SIC) classifications in the Benton Harbor MSA. Unlike many of the area's neighboring counties in Michigan and Indiana, Berrien County has managed to retain more than 30 percent of its workforce in manufacturing, where export income creation is typically highest. Export income is a critical factor in the economic development of a region. It can be observed in Table 12 that the number of workers in manufacturing has also increased -- rising 19.3 percent from 1983 to 1987.

Table 12.
TREND - PRIVATE EMPLOYMENT BY SECTOR
Benton Harbor MSA

	1983	1985	1987	% Chg. 1983-87
Agriculture	128	141	129	0.8%
Mining	81	118	156	92.6%
Construction	1,018	1,389	1,504	47.7%
Manufacturing	18,255	19,741	21,782	19.3%
Transportation	1,439	1,460	1,585	10.1%
Wholesale Trade	2,272	2,516	2,771	22.0%
Retail Trade	9,036	9,943	11,092	22.8%
Fin., Ins., & R.E.	1,997	2,227	2,484	24.4%
Services	11,264	13,183	14,047	14.7%

Source: "County Business Patterns", 1983-87

Table 13 provides a breakdown of annual payroll dollars in 1987 by two-digit SIC. Again the predominance of manufacturing

is evident. Some 30 percent of the employed labor force accounts for the flow of more than 50 percent of the area's

Table 13.
PAYROLL BY INDUSTRY GROUP
Berrien County - 1987

	Annual ($000)
Manufacturing	551,801
Services	175,945
Retail Trade	108,073
Wholesale Trade	77,078
Fin., Ins., and R.E.	49,618
Transp. and other Public Util.	49,196
Contract Construction	33,371
Mining	3,082
Ag. Serv., Forestry, and Fish.	1,451
Unclassified Establishments	1,402
Total	1,051,017

Source: "County Business Patterns", 1987

payroll dollars. Average hourly earning in various Berrien County manufacturing industries are compared in Table 14 with

Table 14.
AVERAGE HOURLY EARNINGS IN MANUFACTURING

	Michigan		Berrien Cty.	
	1987	1988	1987	1988
Total Manufacturing	$12.97	$13.43	$9.87	$9.85
Total Durable Goods	13.53	14.06	10.06	10.23
Primary Metals	12.97	13.86	9.55	10.38
Fabricated Metal Products	12.83	10.23	10.44	11.05
Machinery - except Elect.	13.10	13.42	11.25	11.13
Ele. & Electronic Eqpt.	11.29	11.81	9.45	9.26
Transportation Equipment	15.17	15.98	12.16	11.72
Total Nondurable Goods	10.94	11.16	9.39	8.89
Food and Kindred Products	10.77	10.88	7.28	6.87
Paper and Allied Products	12.45	12.67	12.32	12.13
Printing & Publishing	10.42	10.47	10.97	10.58

Note: Figures based on annual averages.

those same industries in the State of Michigan; and, 1988 data are compared with 1987. It will be observed that 1 of the 11 state-wide rates listed dropped from 1987 to 1988, while 8 of 11 dropped in Berrien County. It might also be noted that Berrien County earnings in manufacturing tend to be lower than in Michigan as a whole, however, they are 55 percent higher than would typically be found in office related occupations like bookkeeping ($7.17) and secretarial work ($6.98).

3. Market Potential for Revenue Producing Attractions. Plans for specific revenue producing attractions that would be a part of the Jean Klock Park renovation have not as yet been definitized, however, it is possible to reach certain conclusions regarding revenue producing potential and the economic impact of recreational activities.

a. Market Potential. One can view the market potential of revenue producing activities in the Park from the standpoint of various user classifications.

1) The resident Market. The local market consists of local residents of the Benton Harbor MSA, or Berrien County. The primary market is the area identified as the Community Economic Development Corporation service area. Tables 1 through 7 provide detail with respect to the local and primary markets' population, numbers of households, and income. These tables are complemented by Tables 10 through 14, which provide economic information on employment and compensation of the resident market area's working population. The secondary market

has been identified by the area's economic development arm as comprising a seven county (4 in Michigan, 3 in Indiana) trade area. Tables 8 and 9 provide detail with respect to the secondary market's population, median age, numbers of households, income, and retail sales.

2) The Visitor Market. It is predictable that certain revenue producing attractions, like golf courses, marinas, lodges, nature displays and museums, etc., would attract visitors to the area, as well as provide activities for persons who were visiting the area for other reasons. This is particularly true in light of the fact that Berrien County ranks 13th among Michigan's 83 counties in terms of total dollar expenditures generated by travellers. The typical Michigan visitor is married, with a family, having education beyond high school, a homeowner, with income exceeding $30,000, and travelling from Great Lakes country. A study by the International Association of Convention and Visitor Bureaus indicates that the average daily expenditure of visitors was $114 in 1989. It might also be noted that Berrien County ranks 8th as a location of temporary residences in the state. A very large portion of the revenue generated from these temporary residents would be export income for the local community.

b. Economic Impact of Visitor Expenditure. Aside from producing revenues directly from visitors to the community, revenue producing attractions would also provide a significant flow of indirect income to support the further economic

development of the area. The visitor segment of the market, through visitor expenditures, draws income from outside the region -- export income -- that ultimately expands both local income and job opportunities through a multiplier or ripple effect. In 1988, a previous study was updated for the Michigan Travel Bureau by the U.S. Travel Data Center, wherein the economic impact of travel on each of Michigan's counties was computed. The Travel Economic Impact Model (TEIM) was utilized to provide estimates of total direct and multiplied impacts. Table 15 summarizes these impacts as they relate to Berrien County. Again, the county ranks 13th among the state's 83 counties in terms of travel impact.

Table 15.
IMPACT OF TRAVEL ON BERRIEN COUNTY

	1983	1986	% Chg. 1983-86
Total Travel Expenditures (000)	84,115	97,187	15.5%
Travel Generated Payroll (000)	15,134	17,621	16.4%
Travel Generated Employment (Jobs)	1,702	1,852	8.8%
State Tax Receipts (000)	3,533	4,362	23.5%
Local Tax Receipts (000)	744	833	12.0%

Source: "The Economic Impact of Travel on Michigan Counties", Michigan Travel Bureau, 1988.

4. Conclusion. Demographics and economic data clearly indicate that the Berrien County region encompasses a substantial market area. The assignment of the designation Benton Harbor Metropolitan Statistical Area is support, in itself, for that contention. In measures of effective buying income and total population, Sales and Marketing Management magazine ranks the area 211th and 213th, respectively, among 319 Metro Market areas that are tracked across the U.S.

It is also true that the county is a an important recreation and tourism center. It is the 13th largest contributing county to Michigan's total travel expenditures. And, while the area's manufacturing base, from which good export income is derived, remains significant -- it provides jobs for some 30 percent of the county's working population -- the further development of the county's recreational assets is prudent. The potential of attracting visitors from counties other than Berrien in the seven-county trade area as well as from further outlying localities, like Chicago and Grand Rapids, is considered to be great.

Depending upon the breadth of revenue producing attractions, the anticipated revenue flow could be expected to be quite large. The recreation and tourism industry is, like manufacturing but unlike many other service industries, a major provider of export income, since a high proportion of industry revenues flow from outside the region. As a result, the availability of export income, with an increasing proportion derived from the recreation

and tourism industry, becomes a decisive factor in the further economic development of the region and, therefore, to the economic well-being of the community as a whole.

Jean Klock Park Master Plan

Benton Harbor, Michigan

December 1990

Archaeological Survey Report

The Troyer Group, Inc.

Goshen & Mishawaka, Indiana

A Report of Research
Undertaken on Behalf of:

City of Benton Harbor,
Michigan 49022
Attention: Mr. Roland Klockow
City Engineer

and

The Troyer Group
415 Lincolnway East
Mishawaka, IN 46544
Attention: Mr. Gerald Phipps

INTRODUCTION:

Upon receipt of authorization from the City of Benton Harbor (dated 17 Sep 90) and The Troyer Group (dated 20 Sep 90) for a Phase I archaeological survey of Jean Klock Park in Benton Harbor, Michigan, the authors and their associates initiated a literature, documents, and site file search and on 24 Sep conducted on-site evaluation of the property in question to determine if landscape alteration associated with the Master Plan for the park would adversely impact potentially significant archaeological resources. There follows a report of our program of research, together with recommendations derived from our findings.

PROJECT PERSONNEL:

Principal Investigator - Dr. William M. Cremin, Professor of Anthropology, WMU and Owner, W. M. Cremin Consulting

Project Supervisor - Mr. Gregory R. Walz, M.A. Candidate in Anthropology, WMU

Field Assistants - Mr. Daniel Goatley, Graduate Student in Anthropology, WMU

- Mr. Lewis Wisser, M.A. Candidate in Anthropology, WMU

DESCRIPTION OF THE PROJECT AREA:

Jean Klock Park occupies some 90 acres (36.4 ha) in the NW 1/4 of Section 13, Benton Township (West Part), City of Benton Harbor, Michigan (Fig. 1). It extends from the lake shoreline on the west to the interchange of Red Arrow Highway on the east. In the late

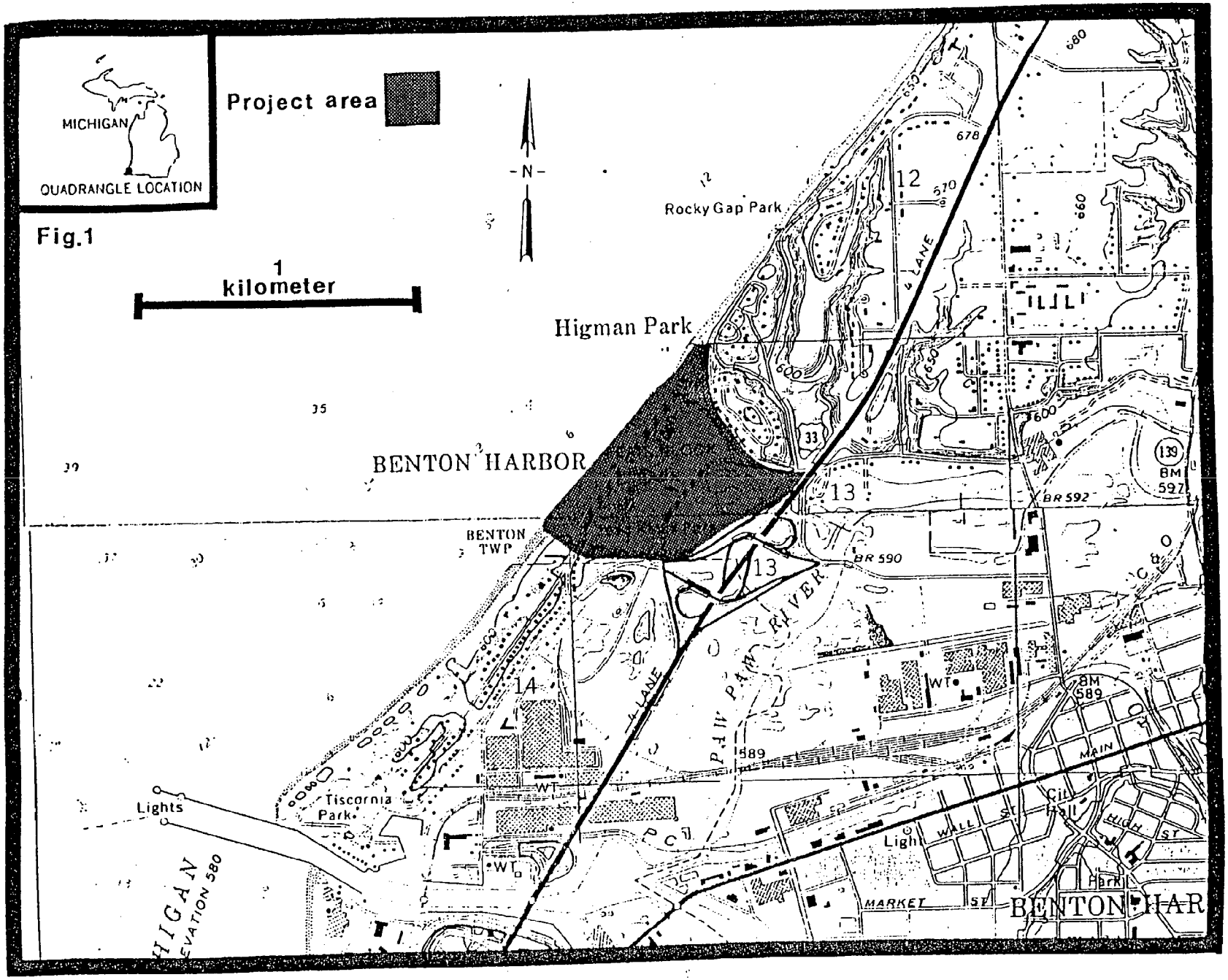

MICHIGAN
QUADRANGLE LOCATION
Project area
N
1
kilometer
Rocky Gap Park
Higman Park
BENTON HARBOR
BENTON TWP
12
13
13
14
4 LANE
4 LANE
PAW PAW RIVER
BR 590
BR 592
BM 597
BM 589
589
Tiscornia Park
Lights
HIGAN
EVATION 580
City Hall
MAIN
WALL ST
HIGH ST
MARKET ST
BENTON HAR

Fig.1

1950's, the channel of the Paw Paw River was filled to permit construction of this interchange, and the river was diverted to its present course which lies to the east and parallels the highway as it flows toward the St. Joseph River to the south.

The northern boundary of the project area conforms to the base of the bluff on which the residential neighborhood of Highman Park is situated. This bluff rises to an elevation of 192 m above sea level, or 15 m above the highest elevation (177 m ASL) recorded for the project near the base of the bluff.

On the south the project is bounded by a road that provides access to the beach area south of the park limits.

Upon the arrival of the survey team it was immediately apparent that a significant amount of landscape alteration had occurred over the years, both in the large expanse of marsh occupying the eastern portion of the project where the Paw Paw River had formerly flowed and on the dunes that separate the strip of beachfront from the remainder of the study area. The beachfront has been developed as a recreational area with a bathhouse, play areas, and parking lots, as well as a sidewalk running parallel to the beach and lake shoreline. It appeared that the area lying north of the bathhouse had been most impacted by road construction and dune alteration over the years. To the south of this structure, natural foredunes were carefully walked and visually inspected for evidence of cultural material, with nothing being observed. Here, surveyors noted that remnants of natural plant communities still existed, with mature poplars, smaller maples, and a dense undergrowth of grape vines, greenbriar, and numerous herbaceous species being present. Behind the foredunes, however, the topography suggested that much of the area had been leveled and scraped. This is especially true for

the City of Benton Harbor water facility and its surrounding parking lot occupying the extreme southwest portion of the project area.

East of the dunes and scraped areas, and separated from them by a road, lies the extensive marsh that flanked the former Paw Paw River channel. This area initially appeared to be relatively untouched by recent landscape alteration, but our program of shovel testing soon revealed otherwise. Much of what appeared to be marsh near the southern limits of the project area was found to constitute a fill consisting of foundry tailings, bricks, and cinders.

The slopes of the bluff that define the northern limits of our study area were found to be heavily wooded with climax species long common to the region. Mature tulip trees (Liriodendron tulipifera), red oaks, and maples formed the canopy, while the understory was comprised of smaller elms, maples, and poplars.

Finally, it is perhaps noteworthy that an old map of the area provided by the clients shows a "hairpin-shaped" feature extending from the old channel in a northwesterly direction through the marsh and below the bluff (Fig. 2). We wondered whether this might represent a former meander bend in the river long since cut off from the channel occupied by the river prior to construction of the interchange. However, while it was shown on the map, we were unable to observe this feature when on-site. Our curiosity was satisfied when a lifelong resident of the city, Mr. R.J. Burkholz, informed us that a canal had been excavated early in the century to bring river traffic to a commercial enterprise formerly located at the northeast corner of the project area.

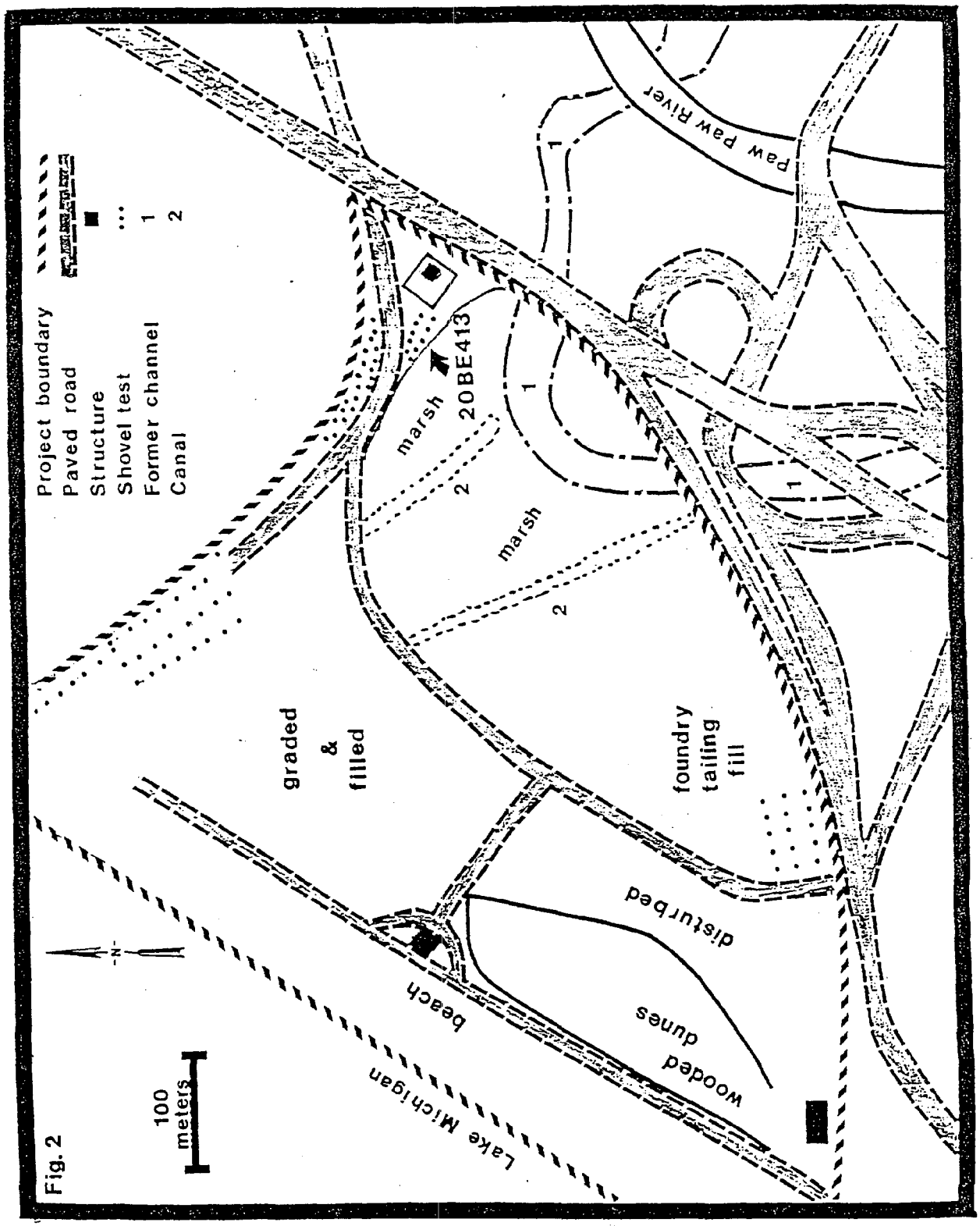

Project boundary
Paved road
Structure
Shovel test
Former channel
Canal
1
2
Paw Paw River
marsh
20BE413
marsh
graded & filled
foundry tailing fill
disturbed
beach
wooded dunes
Lake Michigan
100 meters
N

Fig. 2

ARCHAEOLOGICAL RESEARCH AND RESOURCES IN THE AREA:

A review of the literature and documents (Carney 1976; Cummingham 1961, 1967; Ellis 1880; Moulds 1963; Pender 1915; and Tucker 1942) and examination of the state site files strongly suggest an absence of archaeological sites and/or archaeological activity on the part of the professional community in the Paw Paw River Valley of Berrien County. While the nearby St. Joseph River Valley experienced a long history of human occupation and has been a "hotbed" of activity for those interested in both the prehistory and early history of southwest Michigan, our review has produced only a single reference relevant to our program of research. According to Pender (1915:31), a Potawatomi village was located on the Paw Paw Flats near the confluence of this river and the St. Joseph a short distance below the project area in the period of initial Euroamerican settlement. Perhaps the apparent absence of historic period Indian settlements of any consequence along this stream, when compared to the nearby St. Joseph River, reflects on the "tortuous" course of this river, with its low banks and very marshy adjacent land (Ellis 1880:187).

The state site files (Barbara Mead, personal communication) reference six (6) sites in the general area, the closest of which is loosely located in Section 14 to the southwest of the project area. This site, 20BE58, designates a prehistoric village located by Hinsdale in his Archaeological Atlas of Michigan (1931). A second Hinsdale listing, 20BE65, is recorded as an 18th century cemetery, but is located on the south side of the St. Joseph River very near to the favored location for LaSalle's Fort Miami (20BE213) in 1679 (Cummingham 1961; Ellis 1880). A third Hinsdale site, 20BE66, is also located in close proximity to the old French fort,

s identified as being prehistoric in age. Also purportedly
ted on the south bank of the St. Joseph River a short distance
ts mouth was a 17th century French mission (20BE215). How-
am unaware of any primary sources (documents) that firmly
lish the presence of a mission to the Miami in this part of
alley at such an early date.

Finally, the site files record 20BE144 at the mouth of the Paw
iver. We noted earlier that a historic Potawatomi village was
ated here during the period of establishment of Benton Harbor.
ver, when visited in 1948 by a University of Michigan survey
y, all that was noted was an extensive surface scatter of pre-
oric cultural debris. At least this observation, together with
previously cited historic refarence, serves to establish some
indian interest in this river. And perhaps this interest at
t in part reflects on the natural resource availability that we
associate with the extensive marshes that formerly flanked the
tuous" course of the Paw Paw River!

EY FIELD PROCEDURES:

Although it was originally anticipated that two field days
d be required to perform a systematic and intensive survey of
project area, the condition in which we found this 90 acre
el enabled surveyors to complete their task in one long day.
ey procedures employed consisted of visual inspection of the
n surface in those areas where beach and dunes prevailed and
ther areas where vegetative cover afforded a good look at the
n surface for evidence of cultural debris. Many of the areas
exing recent disturbance were initially probed to verify that
ee rigorous shovel testing was unnecessary. When all is said

and done, only three areas of limited spatial extent were determined to require shovel testing on the basis of extensive recent disturbance elsewhere in the study area.

Shovel testing along parallel transects was conducted along the base of the bluff forming the northern limits of the study area. On the western end of this area, three lines of survey 15 m apart were tested by means of placing probes well into the underlying subsoil at 15 m intervals. These transects were continued, with some deviation to compensate for roadways, to the northeastern corner of the project near a pumping station which occupies a high bank overlooking the wetlands dominating the central portion of the study area.

In addition to the shovel testing performed in the northeastern and northwestern corners below the bluff, surveyors also initiated shovel testing along transects in the south-central portion of the project area. Here, the program of shovel testing was terminated when surveyors determined that the entire area between two paved roads and south of the extant marsh had been filled with foundry tailings and other debris of recent origin. Figure 2 shows the approximate locations of 70 shovel tests excavated on this occasion.

RESULTS OF THE SURVEY PROGRAM:

While the bulk of the project area has been significantly disturbed so as to preclude recovery of archaeological material, the survey team did record the presence of one prehistoric site. Our discovery of the Jean Klock Park site (20BE413) was facilitated by Mr. Burkholz, who was curious as to our activities and came down from his house on the bluff top to visit with us. He informed surveyors that at some time in the past his daughter had collected

"arrowheads" from a location very near to the pumping station that sits on the bank above the wetlands in the northeastern corner of the project area (Fig. 2). He further informed the survey team that workmen had long ago recovered and removed from this location a partial human skeleton and that local historian, Wilbur Cunningham, had reported it to be the site of an Indian camp and associated cemetery. Unfortunately, the source of any report by Cunningham is unknown to us.

Upon the team's arrival at the location in question, now well maintained in lawn and partially fenced to limit access to the pumping station, visual inspection of the bank at the edge of the wetlands commenced. This bank, strongly sloping and rising between 2-2.5 m above the marsh, revealed a total of 32 pieces of lithic debitage, weighing 30.5 g, and a single rim sherd. The following cherts comprise the debitage: Lambrix -7; Wyandotte -3; Deerlick Creek -3; Burlington -2; Flint Ridge -1; Onondaga -1; and unidentified -15. In addition to the pieces of debitage collected from the bank, two of 10 shovel tests in the grassed area back from the edge of the wetlands produced four more lithic items, including two specimens of Deerlick Creek, one of Lambrix, and a piece of an unidentified chert. In aggregate, the lithic assemblage examined by Dan Goatley and reported herein comprises 36 excellent specimens weighing 50.5 g.

The single rimsherd collected from the bank was clearly associated with the lithic material. It is approximately 6 mm thick and has a dark, grit-tempered paste. Dr. Elizabeth Garland of Western Michigan University believes that this specimen is consistent with Middle Woodland period ceramics known from southwest Michigan (Garland, personal communication), and furthermore fits the temporal

placement suggested by the one diagnostic implement that Mr. Burkholz was able to produce from his daughter's collection from this site. The biface he showed us is a thin, well-made corner-notched point that falls within the Snyders Cluster (Justice 1987). The point was made on an unidentified greyish-white chert and exhibits use wear bilaterally on the distal end.

In summary, all of the above noted items were recovered from a limited area no more than perhaps 400 m^2 in area and primarily from the bank immediately above the marsh. Shovel tests in the grassed area revealed little subsurface disturbance, with the humus layer varying from 27 cm deep near the fence around the pumping station to less than 5 cm a mere 10 m from the fence. However, it is possible that some topsoil has been taken from the area as a result of establishment of the facility or subsequent maintenance of the surrounding area. Only additional examination will reveal the extent to which archaeological context in preserved at 20BE413.

RECOMMENDATIONS:

Having performed a systematic and intensive examination of the entire parcel, we are convinced that developments associated with the Master Plan for Jean Klock Park will have no impact on potentially significant archaeological resources over an area comprising perhaps 99.9% of the entire project. However, we must recommend that should development plans include the immediate area that we have herein identified as the Jean Klock Park site (20BE413), additional study of this resource should be considered prior to any landscape alteration. In this case a program of limited test excavation should serve to delimit site area and, more importantly, make it possible to determine if archaeological context in the form of midden deposits

and/or subsurface cultural features is preserved.

REFERENCES CITED:

Carney, J.T., editor
1976 Berrien Bicentennial. Tesar Printing Company, Stevensville.

Cunningham, W.M.
1961 Land of Four Flags: An Early History of the St. Joseph Valley. W.B. Eerdmans Publishing Company, Grand Rapids.

1967 Letter Book of William Burnett: Early Fur Trader in the in the Land of Four Flags. Fort Miami Heritage Society of Michigan, Inc.

Ellis, F.
1880 History of Berrien and Van Buren Counties, Michigan. D.W. Ensign and Company, Philadelphia.

Justice, N.D.
1987 Stone Age Spear and Arrow Points of the Midcontinental and Eastern United States. Indiana University Press, Bloomington.

Moulds, C.
1963 Chips Fell in the Valley. C. Moulds (private printing).

Pender, J.
1915 History of Benton Harbor and Tales of Village Days. The Braun Printing Company, Chicago.

Tucker, S.J., compiler
1942 Indian Villages of the Illinois Country. Illinois State Museum, Part 1, Atlas, Volume II. Springfield.

SITE FORM

The Jean Klock Park site (20BE413) encompasses an estimated 400 m^2 in the SE corner of the NE 1/4, NE 1/4, SE 1/4, NW 1/4 of Section 13, Benton Township (West Part), Berrien County, Michigan. It lies near the base of the bluff on the bank of a marsh flanking the former channel of the Paw Paw River immediately west of a City of Benton Harbor pumping station. The site was recorded with the help of a local informant who brought the survey crew to this location. A brief visual inspection of the sloping bank rising 2-2.5 m above the marsh produced cultural material, and subsequent shovel testing of the grassed area west of the pumping station and a short distance back from the edge of the bank also resulted in the recovery of cultural items. A Middle Woodland cultural affiliation is proposed on the basis of a single rimsherd collected by surveyors and a Snyders Cluster projectile point retrieved from the site by the daughter of our informant, Mr. Burkholz.

Inventory of Cultural Items (37 pieces)

1-rimsherd, 6 mm thick and exhibiting a dark, grit-tempered paste
8-pieces of Lambrix chert from Oceania County, Michigan
5-specimens from Deerlick Creek south of South Haven, Michigan
3-Flakes of Wyandotte chert from extreme southern Indiana
2-pieces of Burlington chert from west-central Illinois
1-Flake of Flint Ridge chert from central Ohio
1-specimen of Onondaga chert from New York
16-pieces of lithic debitage from sources unknown to us, but presumably representing local till material

Vegetation Inventory

JEAN KLOCK PARK BENTON HARBOR, MICHIGAN

VEGETATION INVENTORY 9/23/90

J.F. NEW & ASSOCIATES

A. BEACH

Ammophila breviligulata	marram grass
Artemisia caudata	beach wormwood
Cakile edentula	sea rocket
Calamovilfa longifolia	sand reed
Cycloloma atriplicifolium	pigweed
(a)Elymus arenaris	lyme grass

COMMENTS: Typical beach flora, no endangered or threatened species were located. Includes area from the lake shoreward to brick road running along beach.

B. OPEN, GRAMINOID SAND DUNES

Ambrosia artemisiifolia	common ragweed
Andropugon scoparius	little bluestem
Artemisia caudata	beach wormwood
Asclepias syriaca	milkweed
Calamovilfa longifolia	sand reed
(a)Centaurea maculosa	spotted knapweed
(a)Cirsium arvense	canada thistle
(a)Cirsium vulgare	bull thistle
Cornus stolonifera bailey	bailey's dogwood
(a)Daucus carota	wild carrot
Euphorbia polygonifolia	seaside spurge
Equisetum hyemale	rough horsetail
Frageria virginiana	wild strawberry
(a)Elaeagnus umbellata	autumn olive
(a)Hyperium perforatum	common St.John's wort
Lithospermum croceum	hairy puccoon
(a)Melilotus alba	white sweet clover
Monarda fistulosa	wild bergamot
Oenothera biennis	evening primrose
Panicum virgatum	switch grass

(a) = alien species

B. OPEN, GRAMINOID SAND DUNES (continued)

Poa sp.	bluegrass
Populus deltoides	cottonwood
(a)Plantago lanceolata	english plantain
Prunus virginiana	choke cherry
Prunus pumila	sand cherry
Toxicodendron	poison ivy
Rhus typhina	staghorn sumac
Salix interior	sandbar willow
Salix sp.	willow
(a)Saponaria officinalis	bouncing bet
Solidago altissima	tall goldenrod
Solidago racemosa gillmani	dune goldenrod
Strophostyles helvola	trailing wild bean
(a)Ulmus pumila	chinese elm
Vitis riparia	wild grape

COMMENTS: Characteristic dune flora. Number of weedy species probably indicates prior disturbance. One rare plant observed - Strophostyles (see discussion of Endangered, threatened plants).

C. WOODED DUNE

(a)Asparagus officinalis	wild asparagus
Celastrus scandens	climbing bittersweet
Cornus stolonifera baileyi	bailey's dogwood
(a)Berberis thunbergii	japanese barberry
Elymus canadensis	canada wild rye
Fraxinus sp.	ash
(a)Morus alba	white mulberry
Panicum virgutum	switchgrass
Parthenocissus quinquefolia	virginia creeper
Platanus occidentalis	american sycamore
Prunus virginiana	choke cherry
Ptlea trifoliata	wafer ash
Quercus rubra	red oak
Toxicodendron radicans	poison ivy
(a)Saponaria officinalis	bouncing bet
Smilax sp.	catbrier

(a) = alien species

C. WOODED DUNE (continued)

	Smilacina stellata	false solomon's seal
	Solanum dulcamara	bittersweet nightshade
	Solidago altissima	tall goldenrod
DOM.	Tilia americana	basswood
	(a)Ulmus pumila	chinese elm

COMMENTS: Typical species, somewhat disturbed based on the number of alien species. No endangered or threatened species were observed.

D. PARKING LOTS (AREA TOWARDS FILTRATION PLANT)

	Ammophila breviligulata	marram grass
	Andropogon scoparius	little bluestem
	Artemisia caudata	beach wormwood
	Calamovilfa longifolia	sand reed
	Cakile edentula	sea rocket
	(a)Centaurea maculosa	spotted knapweed
	(a)Cichorium intybus	wild chicory
	Coreopsis tripteris	tall coreopsis
	(a)Daucus carota	wild carrot
	(a)Elaeagnus umbellata	autumn oak
	Equisetum arvense	horsetail
	Equisetum hyemale	rough horsetail
	Erigeron strigosus	fleabane
	Euphorbia polygonifolia	seaside spurge
	(a)Hypericum perforatum	common St. John's wort
	(a)Melilotus alba	white sweetclover
	Monarda punctata	horse mint
	Oenothera biennis	evening primrose
	(a)Plantago lancelota	english plantain
	Populus deltoides	cottonwood
	Ptelea trifoliata	wafer ash
	Toxicodendron radicans	poison ivy
	(a)Saponaria officinalis	soapwort

(a) = alien species

D. PARKING LOTS (continued)

Salix exigua	sandbar willow
(a)Sedum sp.	stonecrop
Solidago altissima	tall goldenrod
Strophostyles helvola	trailing wild bean
(a)Taraxacum officinale	dandelion
(a)Trifolium pratense	red clover
(a)Verbascum thapsus	mullein
Vitis riparia	wild grape
(a)Xanthium strumarium	cocklebur
(a)Yucca filamentosa	yucca
SMALL SEPARATE WETLAND	
Juncus effusus	common rush
Panicum implicatum	panic grass
Sabatia anularis	rose gentian

COMMENTS: Two rare plants were located - Sabatia and Strophostyles (see discussion under Endangered and Threatened plants). This area shares many species in common with beach and foredune vegetation. Presence of many weedy species points to past disturbance. Would not call this area prarie, though parts are open, grassy sections. Includes the areas north of Jean Blvd. and south of the dunes area.

E. UPLAND AREA (BETWEEN JEAN BLVD.& KLOCK ROAD, WEST OF MARSH)

Andropogon scoparius	little bluestem
(a)Centaurea maculosa	spotted knapweed
Calamovilfa longifolia	sand reed
(a)Commelina communis	common day flower
(a)Daucus carota	wild carrot
Equisetum hyemale	scouring rush
Fragaria virginiana	wild strawberry
Gnaphalium obtusifolium	oldfield balsam
Hypericum kalmianum	kalm's St. John's wort
(a)Melilotus alba	white sweet clover
Monarda fistulosa	wild bergamot
Salix exigua	sandbar willow
Panicum imlicatum	panic grass

(a) = alien species

E. UPLAND AREA (continued)

(a)Saponaria officinalis	soapwort
Sabatia angularis	rose gentian
Solidago altissima	tall goldenrod
Rhus typhina	staghorn sumac
(a)Verbascum thapsus	mullein
Vitis riparia	wild grape

COMMENTS: I would not call this a prairie. It appears to be a successional community occurring on some type of fill. Sabatia occurs here in the hundreds (see discussion of Endangered species).

Fa. CATTAIL MARSH (SW CORNER OF MARSH, SOUTH OF JEAN BLVD.)

UPLAND FRINGE

Salix exigua	sandbar willow
Populus deltoides	cottonwood
Cornus stolonifera	red osier dogwood
Sambuccus canadensis	elderberry
Rhus typhina	staghorn sumac
Calamagrostis canadensis	blue-joint reedgrass
Haberaria hyperborea	northern green orchid

MARSH

DOM.	Typha angustifolia	narrow-leaved cattail

COMMENTS: This cattail marsh changes into more open marsh, dominated by Nuphar or Peltandra. An area of the cattail marsh is becoming dominated by Lythrum Salicaria, purple loosestrife.

Fb. MARSH

Alisma plantago-aquatica	broad-leaf water-plantain
Alnus rugosa	speckled alder
Asclepias incarnata	swamp milkweed
Carex comosa	bearded sedge
Calamagrostis canadensis	blue-joint reedgrass
Cephalanthus occidentalis	buttonbush
Chelone glabra	turtlehead

(a) = alien species

Fb. MARSH (continued)

Decodon verticillatus	hairy swamp loosestrife
Eupatoriadelphus maculatus	spotted joe-pye-weed
Hibiscus moscheutos	swamp rosemallow
Impatiens capensis	orange jewelweed
Juncus effusus	common rush
Juncus brachycephalus	short headed rush
Juncus torreyi	torrey's rush
Lycopus americanus	american bugleweed
Lobelia cardinalis	cardinal flower
(a)Lythrum salicaria	purple loosestrife
Mimulus ringens	monkey flower
Nuphar advena	yellow cow-lily
Peltandra virginica	arrow arum
Phragmites australis	common reed
Pontederia cordata	pickerel weed
Rumex orbiculatus	great water dock
Scirpus lineatus	red bulrush
Scirpus validus	great bulrush
Scutellaria epilobiifolia	marsh skullcap
Spiranthes cernua	ladies tress orchid
Typha angustifolia	narrow-leaf cattail
Utricularia vulgaris	great bladderwort
Verbena sp.	vervain

OR. OLD RIVER CHANNEL

Elodea canadensis	broad water-weed
Myriophyllum exalbescens	spiked water milfoil
Nymphaea tuberosa	white water-lily
Utricularia vulgaris	great bladderwort
Vallisneria americana	wild-celery

COMMENTS: The cattail marsh is not very diverse. The other part of the marsh is diverse and supports a good native flora. However, purple loosestrife (Lythrum salicaria) is present and will spread unless steps are taken to control it.

(a) = alien species

COMMENTS (MARSH - CATTAIL & OLD RIVER CHANNEL) continued:

A spring flows in the southwest corner of the cattail marsh and flows north and east until entering the old channel. It is along this spring run that purple loosestrife is the worst. Much sediment has been deposited in the cattail marsh.& the westernmost channel and is entering the more open marsh. Source of this sediment is unknown and as it accumulates, cattails will become more dominant.

One rare plant (Hibiscus moscheutos) was located scattered around the edge of the more open marsh. See discussion of Endangered plants.

Extensive marsh also occurs north and south of Klock Road. Many of the species are similiar to the marsh located north of M-63. One rare species (Hibiscus) was observed in the south marsh.

ENDANGERED AND THREATENED SPECIES

One threatened species - rose-pink (Sabatia angularia) was located during the vegetation survey. One plant was located in a small wetland area southeast of the water filtration plant. Hundreds of this plant were located on either side of a dirt trail leading to the old river channel north of M-63.

Two special concern species were found. The swamp rosemallow (Hibiscus moscheutos) was scattered along the fringes of the marsh located north of M-63, in one loop of the interchange and a few plants were located in the marsh south of Klock Rd. Trailing wild bean (Strophostyles helvola) was located in a dune situation and the edge of the north parking lot. A few plants were located in the sand disposal area and about a dozen plants were located in the extreme northeast corner of the park.

WETLANDS

There are numerous acres of wetland located in this park. The largest and best quality areas are located adjacent to the old river channel. Various amounts of fill and channelization have effected these areas,

WETLANDS (continued)

but for the most part, the vegetation is natural.

In between the various loops and ramps of the interchange are also a number of wetlands, based on the vegetation observed. These are in varying degrees of naturalness, due to the amount of fill deposited during road construction.

GENERAL COMMENTS

Based on this botanist's observations, it is suggested that boardwalks through the marsh are not advisable due to the soil conditions and possible adverse impacts. A preferable proposal would be the creation of look-out points around the periphery of the marsh. It is also noted that trails through the dunes need to be placed with extreme care due to the fragile soil conditions and possibility of severe erosion.

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