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**PLAN FOR THE
PHASED
DEVELOPMENT
OF
MCKINLEY MARINA,
MCKINLEY PARK
AND
VETERANS PARK**



PREPARED FOR:

**MILWAUKEE COUNTY
DEPARTMENT OF PARKS,
RECREATION AND
CULTURE
WAUWATOSA, WI**

May 31, 2000

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McKinley Marina, McKinley Park
and Veterans Park**

Prepared for:

**Milwaukee County
Department of Parks, Recreation and Culture**

Prepared by:

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May 31, 2000

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EXECUTIVE SUMMARY

Brief History and Public Outreach

A Plan for the Phased Development of McKinley Marina, McKinley Park and Veterans Park has been prepared. The Plan has been prepared through the collaborative effort of the Planning Team and Milwaukee County Department of Parks, Recreation and Culture and Milwaukee County Department of Public Works.

Preparation of the Plan is the final product of the first phase of a contract awarded six years ago by the County to W.F. Baird & Associates and its associate team members. The original scope of work included in Phase 1 of the Contract consisted of the following primary tasks:

- Planning and design of new breakwaters to improve the wave agitation levels within the marina basin;
- Planning and design of a new dockage system to replace 157 aging docks in the North Section of the marina;
- Conduct of a market study and financial feasibility analysis of the proposed improvements; and
- Preparation of a long-range plan for the future improvement and development of the remainder of the marina.

Major improvements to McKinley Marina have been implemented within the past six years. The market and economic feasibility study was completed in 1994. The construction of new breakwaters was completed in 1996, providing a proper environment in which to moor recreational craft. New floating docks have replaced the 157 slips of the original fixed dockage system in the North Section of the marina (Docks A through D). Construction of the new dockage system was completed in 1998. In total, approximately five million dollars of needed improvements have already been implemented.

Having completed the first three primary tasks, only the preparation of a long-range plan remained, and it is has now been completed. The Plan focuses upon improved public access to the lakefront and upon needed and proposed improvements to the aging infrastructure of the marina. It also addresses proposed improvements to the infrastructure of McKinley Park and Veterans Park, serving the general public as well as the recreational boater.

The Plan is the result of an intensive public outreach program, whereby boater and park visitor alike have had an opportunity to express their needs and desires for the marina and

the two parks. Private interviews with a broad cross-section of stakeholders were conducted. Over sixty interviews were conducted with individuals and representatives of boater organizations, tenant organizations and local neighborhood groups, as well as with representatives of the Milwaukee Department of City Development and the Greater Milwaukee Visitors Bureau. Two well publicized, open-house public information meetings were held at O'Donnell Park. Graphics of potential and proposed improvements were displayed and representatives of the consultant team, the Milwaukee County Department of Parks, Recreation and Culture, and the Department of Public Works were available to answer questions.

The McKinley Marina Planning Committee, consisting of representatives of County government, two County Board supervisors, a representative of the Department of Natural Resources, a representative of the County Executive's office, and representatives of the consultant team, met regularly throughout the course of the study and provided the necessary oversight required for a project of this scope.

Planning Guidelines and Principles

The Planning Team recognized early in the planning process, certain guidelines and principles that have influenced the conduct of the study throughout. Others became known as work progressed. The guidelines and principles that have influenced the outcome of the Plan are as follows:

- The lakefront is special to all Milwaukee County residents. Public access to the water's edge throughout McKinley Marina, McKinley Park and Veterans Park should be expanded to the fullest extent possible, constrained only by issues of security and public safety;
- Many of the opportunities that exist for improvement of the marina and park infrastructure, derive from the need to replace or repair much of the infrastructure due to its deterioration with age. Repair and replacement of the infrastructure, and the construction of new facilities, will afford an opportunity to improve marina management efficiency, slip tenant services, parking lot function and safety, other amenities within the marina and parks, and aesthetics;
- Improvements to the infrastructure of McKinley Marina, McKinley Park and Veterans Park will be extensive and costly. New revenues must be generated to partially offset the cost of the improvements proposed for McKinley Marina, McKinley Park and Veterans Park;
- To promote a sense of continuity throughout the parks, the design of all new and improved park elements should be responsive to an established park

design “theme.” A design theme may be as simple as a palette of colors and materials for the buildings, roofs, railings, signage, and other park elements; and

- New and exciting improvements are being made along the lakefront to the south of Veterans Park. McKinley and Bradford Beaches to the north of the project site also afford exceptional opportunities for recreation and access to the lakefront. To enhance the park visitor’s overall experience along the waterfront, any improvements proposed by this Plan must complement and build from those that are adjacent to McKinley and Veterans Parks.

The Primary Issues

As the planning process evolved, the expressed desires of the boaters and general public helped to define the issues that would become the focus of the Plan. Six primary issues were identified. They are as follows:

- Aging infrastructure;
- Public access;
- Barrier-free accessibility;
- Park use;
- Developments along other parts of the lakefront; and
- Economic and market feasibility.

The Plan addresses these issues.

Site Inventory and Opportunities and Constraints

The Marina and Marina Related Facilities

The infrastructure of McKinley Marina, including the dockage systems, restroom facilities, parking lots, basin edge promenades, fencing, etc., are best characterized as aging and deteriorating. Further, the restroom facilities serving the boaters do not provide an adequate number of toilet, sink, shower, and laundry services, particularly if the dockage systems are to be expanded as recommended by the Plan. Virtually all of the infrastructure of the marina, except the relatively new docks of the North Section, can be characterized as deteriorating with age.

Several of the buildings do not comply with the American Disabilities Act, requiring barrier-free access.

The marina management office (a single room), located in the Roundhouse at the far north end of McKinley Park, is spatially inadequate for managerial purposes and is inconveniently located relative to the Center and South Sections of the marina.

The dockage systems of the Center and South Sections of the marina are fixed docks whose deck surfaces today are more than eight feet above the water surface. The docks have also deteriorated extensively with age.

The Plan recommends that the dockage systems of the Center and South Sections of the marina be replaced with floating dockage systems, and that the number of boat slips be increased to increase marina revenues. New floating docks will offer a constant freeboard to the boater and added numbers of boat slips will bring new revenues to the marina. It is proposed that the number of slips be increased from the present 662 slips to a total of 915 slips, increasing proportionately the revenue generated by the slips.

The Plan also recommends that the restroom facilities in each of the three sections of the marina be either replaced or expanded. The North Section slip tenant restrooms need to be replaced. Construction of a new restroom building is the most cost effective means of expanding the facility. The Center and South Sections slip tenant restrooms can be improved by constructing additions to the existing buildings.

The Plan recommends that the enclosed concrete promenades in each of the three sections of the marina be replaced and opened to the general public. Replacement of the concrete decks of the promenades can be accomplished most cost effectively when the original promenades are razed for other purposes. The promenades will have to be razed to achieve the installation of utilities for the proposed new dockage systems and for the construction of the new or remodeled restroom facilities. Opening the promenades to the general public for fishing and other recreational uses, similar to what is presently done in the North Section of the marina, can be accomplished while at the same time providing an appropriate level of security to the slip tenants and their boats.

Barrier-free access to the buildings may be incorporated into the designs of the remodeled and newly constructed facilities. Barrier-free access to the floating dockage system may be accomplished by the provision of hinged access ramps or gangways.

Swing Moorings

Expansion of the dockage systems in the marina will reduce the area presently being used by boaters mooring their boats to anchored buoys in the center of the McKinley Marina basin. The swing-mooring occupants do not presently pay an annual fee for the privilege of mooring their vessels in the basin. By virtue of a State of Wisconsin Lakebed Grant to the County, and by virtue of the transfer of administrative control of the swing mooring area by the Milwaukee Harbor Commission to the County, Milwaukee County now has total control of the swing mooring area. While final design of the swing-mooring layout will determine exactly how many boats may be accommodated, virtually all of the existing vessels being moored in the center of the basin may still be accommodated. It is recommended, however, that the swing moorings be reorganized and that an annual fee be charged for their use.

Slip Tenant and Public Parking Lots

The parking lots serving the slip tenants, the general public, and leaseholders (the Milwaukee Yacht Club and Milwaukee Community Sailing Center) in all sections of the park are deteriorating with age and need to be rehabilitated or replaced in their entirety. At the time they are replaced, they may be better organized, having a positive impact upon pedestrian safety and possibly increasing the amount of green space within the parks.

Former Coast Guard Station

The existing former Coast Guard Station Building, boat well, and bulkhead wall have deteriorated extensively and have become a public safety concern. To date, no acceptable offer to lease, renovate or restore the facility has been made to the County. Such an offer would also have to conform to the State of Wisconsin, Department of Natural Resources' interpretation of the Public Trust Doctrine. In the absence of an acceptable offer, it is recommended that the building be demolished, the bulkhead wall repaired and the boat well filled to create new parkland. In conjunction with the future relocation of organized athletic activities to alternate sites, the removal of the former Coast Guard Station and boat well will allow the entire area to be devoted to passive park use. It is also recommended that a new open-air picnic shelter and public restrooms be constructed upon the site.

Park Use

With the exception of the expressed wishes of some stakeholders that the organized athletic activities presently being conducted at McKinley be relocated to alternate sites, most of the stakeholders interviewed expressed a strong desire that the present marina, McKinley Park and Veterans Park uses remain unchanged. The Plan, however, recommends that park infrastructure be rehabilitated or replaced. Similar to the marina infrastructure, the infrastructure of the parks is also deteriorating with age.

The Plan recommends that the existing asphalt promenades lining the harbor and marina edges of the parks and marina basin be replaced with new, decorative concrete promenades, upgrading the aesthetics of the park and making the park experience a more enjoyable and aesthetically attractive experience. Developments along Milwaukee's lakefront to the south of Veterans Park are introducing new and exciting experiences to the lakefront visitor. Improvements to the infrastructure of Veterans Park and McKinley Park can help to broaden the lakefront experience. It is the belief that implementation of the improvements proposed by this Plan will contribute to a synergism benefiting the marina slip tenants, all visitors to the lakefront, and citizens of the county.

McKinley Park and Veterans Park are used heavily by a variety of users, including strollers, joggers, roller bladers, picnickers, and kite flyers, as well as soccer, rugby and hurling organizations. The use of some areas of the two parks for organized athletic activities sometimes conflicts with passive uses. The Plan, therefore, recommends that the parks be dedicated exclusively to their present water-related uses and to passive uses and that all organized athletic activities currently taking place in the parks be relocated to alternate sites, provided that alternate sites for their activities can be found. In this manner, the areas being used for organized athletic activities may become areas for passive park use.

Recommended Improvements and Phasing

Because the infrastructure throughout the marina and the parks has deteriorated with age to the extent that it now needs to be replaced or rehabilitated, the improvements recommended by the Plan for McKinley Marina, McKinley Park and Veterans Park are extensive and the costs are significant. The Plan, therefore, prioritizes and distributes the implementation of the proposed improvements over a period of seven years.

Further, the Plan identifies certain improvements as desirable, but not justifiable for legal or monetary reasons. The ownership of the Flushing Tunnel Walls must be resolved before any improvements to the failing bulkhead walls can be implemented. Other potential improvements may require private sector participation before they can be implemented.

The probable cost of construction of each of the proposed improvements has been estimated. The estimated costs include a construction allowance and fees for professional services and County administration. All estimates of probable cost included in the discussions that follow, are shown first as present worth costs. The cost of construction for the year in which the proposed improvement is to be implemented is shown in parentheses. The reader is referred to the cost and prioritization spreadsheets included in Appendix B of the report.

The improvements recommended by the Plan, the estimated cost of each of the improvements, and the schedule recommended for their implementation are summarized and prioritized as follows:

The First Year of the Plan

- Demolition of the former Coast Guard Station Building, backfilling, grading and seeding – at an estimated cost of \$96,600 (\$99,500).
- Replacement of the Center Section dockage system, Docks E through K, with floating docks and increasing the number of boat slips from 245 to 400 and replacement of the existing concrete promenade, opening it to the general public during specified hours of the day – at an estimated cost of approximately \$6,083,000 (\$6,265,530).
- Expansion of the Center Section slip tenant restrooms – at an estimated cost of approximately \$345,000 (\$355,350).
- Structural rehabilitation of the Brady Street Bridge – at an estimated cost of approximately \$96,600 (\$99,500).
- The total cost of the improvements recommended in the first year of the Plan is estimated to be approximately \$6,621,200 (\$6,819,880).

The Second Year of the Plan

- Reorganization of the swing moorings and development of an annual fee schedule for the use of the swing moorings – at an estimated cost of approximately \$204,200 (\$216,680).
- Replacement of the South Section dockage system, Docks L through P, with floating docks and increasing the number of boat slips from 260 to 322 and replacement of the existing concrete promenade, opening it to the general public during specified hours of the day – at an estimated cost of approximately \$5,419,300 (\$5,749,295).

- Remodeling and expansion of the South Section slip tenant restrooms – at an estimated cost of approximately \$124,200 (\$131,765).
- The total cost of the improvements recommended in the second year of the Plan is estimated to be approximately \$5,747,700 (\$ 6,097,740).

The Third Year of the Plan

- Replacement and rehabilitation of the slip tenant, boat launch, Milwaukee Yacht Club and public parking lots, replacement of the public promenade, rehabilitation of the boat launch ramp, replacement of the existing chain link fencing with decorative fencing, and expansion of the boat storage facility in the North Section of McKinley Park – at an estimated cost of approximately \$4,052,500 (\$4,428,280).
- Replacement of the North Section slip tenant restrooms with a new building, including a public overlook, and replacement of the existing concrete promenade – at an estimated cost of approximately \$897,000 (\$980,175).
- Replacement and repair of the bulkhead wall of the former Coast Guard Station, closure of the open end of the boat well, filling the boat well, and constructing a new concrete promenade at the water's edge – at an estimated cost of approximately \$864,000 (\$944,135).
- The total cost of the improvements recommended in the third year of the Plan is estimated to be approximately \$5,813,500 (\$6,352,590).

The Fourth Year of the Plan

- Remodeling and expansion of the existing South Section public restrooms and open-air shelter – at an estimated cost of approximately \$138,000 (\$155,320).
- Construction of a new picnic shelter and public restrooms at the site of the former Coast Guard Station – at an estimated cost of approximately \$794,500 (\$894,250).
- The total cost of the improvements recommended in the fourth year of the Plan is estimated to be approximately \$932,500 (\$1,049,570).

The Fifth Year of the Plan

- Construction of a new facility, the McKinley Center, serving the marina and the general public, housing marina management offices, park maintenance facilities, meeting rooms, delicatessen, ship's store, slip tenant and public restrooms, observation tower, and a restaurant in accordance with the slip tenant survey and in accordance with comments received from the stakeholders.
- The County must work with the State Legislature to enact legislation specifically allowing a restaurant to be included in the proposed facility. Legislative action will take time to initiate and complete.
- The construction of McKinley Center is the only capital improvement project proposed for the fifth year – at an estimated cost of approximately \$6,334,200 (\$7,343,075).

The Sixth Year of the Plan

- Replacement and expansion of the Center Section parking lot, to serve the Center Section slip tenants and the public and to provide parking for the proposed McKinley Center, and the installation of landscape improvements – at an estimated cost of approximately \$834,500 (\$996,400).
- Replacement and expansion of the South Section parking lot and the installation of landscape improvements – at an estimated cost of approximately \$592,500 (\$707,500).
- Remodel and expand the Roundhouse and public restrooms – at an estimated cost of approximately \$876,300 (\$1,046,350).
- Expand the North Section dockage system, Docks A through D, increasing the number of boat slips from 157 to 193 and bringing new revenue to the marina – at an estimated cost of approximately \$372,600 (\$444,900).
- Repave and improve Lagoon Drive – at an estimated cost of approximately \$558,000 (\$666,340).
- The total cost of the improvements recommended in the sixth year of the Plan is estimated to be approximately \$3,233,900 (\$3,861,490).

The Seventh and Final Year of the Plan

- Replacement of the existing asphalt promenade along the harbor's edge of Veterans Park, around the perimeter of O'Donnell Point, and along the unimproved marina basin edges in McKinley Park. Items such as the rehabilitation of the public parking lot, turf restoration; the addition of new utilities for special events, the installation of flowerbeds, and the addition of wayfinding signage throughout the park have also been recommended at an estimated cost of approximately \$4,049,500 (\$4,980,335).

Other Potential Improvements Requiring Legal Resolution or Private Sector Participation

Lake Park East Improvements

It is proposed that the organized athletic activities be relocated to an alternate site or sites. Lake Park East, the site of the former gun club, has been suggested as one possible alternate site. To be used for athletic purposes, however, the site grades must be modified to reduce the side slopes of the playing field to 1% from their present 2% side slopes – at an estimated cost of approximately \$202,900.

Relocation of organized athletic activities is a matter requiring resolution by the County. Therefore, the required improvements to Lake Park East have not been included in the seven-year Plan for the Phased Development of McKinley Marina, McKinley Park and Veterans Park.

Flushing Tunnel Wall

The Plan recommends that the walls be replaced with steel sheet pile walls similar to those recommended for the former Coast Guard Station bulkhead wall – at an estimated cost approximately \$1,803,100. While it would be cost effective to perform the work simultaneously with that of the former Coast Guard Station bulkhead wall replacement, the ownership of the Flushing Tunnel intake channel bulkhead walls remains unresolved. Therefore, the rehabilitation of the Flushing Tunnel has not been included in the seven-year Plan.

Milwaukee Community Sailing Center

The Plan recommends improvements to the parking lot and fenced enclosure of the Milwaukee Community Sailing Center. The Plan also recommends other aesthetic

improvements for the water's edge, buildings and interior of the MCSC compound – at an estimated cost of approximately \$1,328,300. Because the terms and conditions of the lease agreement between the MCSC and the County impose constraints upon the County's ability to require capital improvements to the MCSC facilities at this time, the proposed improvements have not been included in the seven-year Plan.

The Brady Street Bridge

The Plan recommends that the Brady Street Bridge be improved architecturally with accent lighting and a lightweight kinetic sculpture, and that the Prospect Avenue entrance to the bridge be made safe and inviting – at an estimated cost of approximately \$345,000. In addition, plans to secure State and Federal funds—with a limited County match—for a connection to accommodate bikers between Brady Street and both the existing bike trail and the east side of Lincoln Memorial Drive should be pursued. It is the intent that these proposed improvements be accomplished with a combination of private sector, State and Federal funds, with County funds to be used only if necessary. Because of uncertainty regarding the utilization of State and/or Federal grants, County funding for the proposed improvements has not been included in the seven-year plan for McKinley.

Ice Fountain

The Plan envisions the incorporation of an “ice fountain” in the improvements to the lagoon in Veterans Park as a signature Milwaukee lakefront feature. The cost of an ice fountain, or any similar “sculpture” or artistic element, will be highly dependent upon the final design of the element, if one is introduced to the park. The County should not bear the initial cost of such an improvement. It is hoped that the concept will appeal to a potential benefactor. Its cost is not, therefore, included in the seven-year Plan for the Phased Development of McKinley Marina, McKinley Park and Veterans Park.

The County requires the integration of art into the design of capital improvement projects. The policy requires that one percent of the construction cost incurred in projects costing over \$1,000,000 be set aside for the integration of art into the design of the project. The intent is that art will become an integral part of the design, and not simply an “add-on” to the project. It may be possible to use a portion of this funding as the County's contribution to a private/public partnership to implement the future construction of a water feature in the lagoon.

Fiscal Analysis

A fiscal analysis was performed on the impact of the Master Plan. The reader is referred to Article 4.10, Table 4.1 and Appendix B of the report for a discussion of the analysis and supporting data.

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1.0 CHAPTER 1 - INTRODUCTION

1.1 Project Commission

A plan for the future of McKinley Marina, McKinley Park and Veterans Park has been prepared. The process by which the plan has been prepared has been a collaborative effort of the Milwaukee County Department of Parks, Recreation and Culture and Milwaukee County Department of Public Works.

In 1994, the County selected W. F. Baird and Associates and a team of sub-consultants, to perform professional services that included preparation of the Plan. The original scope of work included in the County's Request for Proposal consisted of the following primary tasks:

- Planning and design of new breakwaters to improve the wave agitation levels within the marina basin;
- Planning and design of a new dockage system to replace the aging dockage system (157 slips) in the North Section of the marina (Docks A through D);
- Preparation of a long-range plan for the future improvements and development of the remainder of the marina; and
- Performance of a market study and financial feasibility analysis of the proposed improvements.

Initially, it was the intent to proceed with the entire scope of work at one time. However, due to funding constraints existing at the time of contract award, the entire scope of work could not be authorized. It was already known at that time that wave agitation levels exceeded the generally accepted guidelines for recreational craft and dockage systems. Before any investment in new dockage systems could be made, the wave agitation levels within the basin had to be reduced to the generally accepted guidelines and the financial feasibility of improving and possibly expanding the marina needed to be better understood. Therefore, the task of planning and designing new breakwaters and of performing a market study and financial feasibility analysis was given first priority. Baird was authorized to proceed with that effort. The market study and feasibility analysis was performed in 1994 and is included in a report entitled, "Final Report, Breakwater and Economic Analysis, McKinley Harbor and Marina, Milwaukee, Wisconsin," dated November 23, 1994. Construction of a new entrance breakwater, a new interior breakwater, and a new fuel pier were completed in August of 1996.

As work progressed on the design of the new breakwaters, funding for the performance of additional work tasks became available. The physical condition of the dockage systems within McKinley Marina was slowly deteriorating. Docks A through D, located in the North Section of the marina basin, were in the most need of replacement and Baird was authorized to proceed with design. Replacement of the original 157 fixed boat slips with 157 new floating slips was completed in the spring of 1998.

Docks E through K, located in the Center Section of the marina, have deteriorated to such an extent that the County has decided to proceed with the planning and design of their replacement. This action is pursuant to the County's 1999 Capital Budget and has made replacement of Docks E through K the top priority of the Phased Development Plan.

Having completed three of the primary tasks included in the original Request for Proposal, Baird and its associate team members were authorized in the fall of 1998 to proceed with the preparation of a plan for the future phased development of the marina and surrounding parkland. The Plan for the Phased Development of McKinley Marina, McKinley Park and Veterans Park is now complete.

1.2 Planning Team

Throughout the entire design and planning process, W.F. Baird and Associates, Inc. has served as the Milwaukee County's prime consultant. Originally, the sub-consultant team consisted of:

- Wallace Roberts Todd, Philadelphia, PA - planning consultant;
- Trossen Associates Inc., McLean, VA - market and economic feasibility analyses;
- Pujara/Wirth/Torke, Wauwatosa, WI - architectural consultant;
- EMCS Design Group, Milwaukee, WI - general civil engineering;
- Larson Engineers, Milwaukee, WI - general civil engineering; and
- BRW - transportation consultants.

Shortly after the planning process began, it became evident that a much more comprehensive involvement by the general public in the planning process was necessary. HNTB Corporation, Milwaukee, WI, was added to the Planning Team in the spring of 1999 to facilitate the general public's involvement in the process.

1.3 Purpose

It is recognized that Milwaukee County government is constantly under pressure from its constituents to establish and maintain limited and practical capital improvement budgets. It is also recognized that Milwaukee County government has a much larger constituency than just the boating community. The fundamental purpose of this planning effort,

therefore, has been to prepare a plan for the continued development of the marina and surrounding park land that is both practical and one that will allow the capital expenditures necessary to be distributed over a period of time.

When the initial work tasks were authorized in 1994, the focus of the planning and design effort was upon McKinley Marina and the landside facilities directly serving the marina. Throughout the design process for the new breakwaters and North Section dockage system, public access to the water's edge and ADA access compliance emerged as two of the dominant issues. It became increasingly evident that the legitimate interests of the non-boating public were going to be impacted by potential improvements to the marina and water-related facilities. A larger segment of the general public, other than just the McKinley Marina slip tenants and water-based users of the McKinley Marina basin, has legitimate interests in the development of the marina and its impacts upon McKinley and Veterans Parks. The geographic boundaries of the study area were, therefore, established as follows: the north lease line of the War Memorial on the south; Lake Michigan on the east; N. Lincoln Memorial Drive on the west; and the south edge of McKinley Beach and the Federal Breakwater on the north. Please refer to Figure 1.1 below.

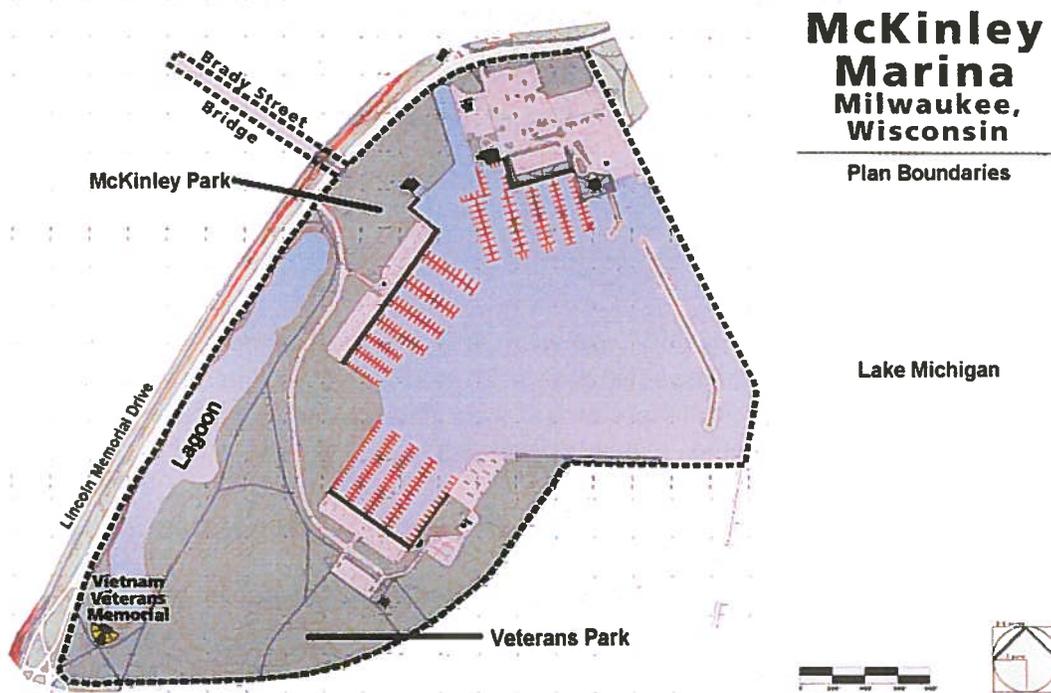


Figure 1.1 – Plan Boundaries

The planning process included: 1) a review of the current facilities; 2) a forecast of future needs; 3) the development of alternatives for improvement of the facilities; 4) a financial analysis to determine the feasibility of the considered alternative and the recommended improvements; and 5) implementation strategy

1.4 County Oversight

In 1994, a committee was formed to serve as an advisory body to the Department of Parks, Recreation and Culture, the Department of Public Works, and the Consultant performing the study. The McKinley Marina Planning Committee consisted of the following members:

- Supervisors, Sheila Aldrich and Penny Podell;
- Parks Department Director, Susan L. Baldwin, and selected Parks Department staff members;
- Public Works Director, William Heinemann, and selected DPW staff members;
- Representative of the County Executive's office;
- County Board Analyst;
- Corporation Counsel;
- Wisconsin Department of Natural Resources' Representative, Jim D'Antuono; and
- Members of the Consultant Team.

State Senator Rick Grobschmidt and State Assemblyman Jon Richards were also invited to attend meetings of the McKinley Marina Planning Committee, but did not participate.

1.5 Public Outreach

As part of the planning process, a public outreach program was initiated in the spring of 1999. In April of 1999, stakeholder interviews were held with approximately sixty individuals and organizations. Stakeholders that were interviewed included, but were not limited to the following individuals and organizations:

- Representatives of the McKinley Marina Boat Owners Association (McBoat);
- Representatives of the Milwaukee Yacht Club;
- Representatives of the Milwaukee Community Sailing Center;
- Representatives from the swing mooring community (not a formal organization);
- Representatives of the local soccer, rugby and hurling organizations;
- Representatives of the Brady Street Association;
- Representatives of special event sponsors utilizing Veterans Park;
- Representatives of the Great Lakes Futures organization;
- Representatives of the UW-Milwaukee and Marquette collegiate sailing clubs;
- Representatives of the local Chamber of Commerce;

- Representatives of the Great Lakes Shore Fishermen organization; and
- Representatives of the City of Milwaukee Department of Community Development.

The comments and concerns of the stakeholders were summarized and discussed with the McKinley Marina Planning Committee before the Planning Team began preparing concept alternatives for the improvement and development of McKinley Marina and the surrounding parkland. Many of the thoughts and suggestions of the stakeholders were directly incorporated into concept alternatives prepared for presentation to the general public at the first of two public information meetings. Public Information Meeting #1 was held on June 22, 1999 at the O'Donnell Park Shelter.

In addition to the public outreach program, the slip tenants of McKinley Marina responded to a Slip Tenant Survey prepared and administered by the Planning Team. Survey forms were sent to 607 slip tenants and approximately 325 (54%) of the surveys were returned. The results are included in Appendix A of the Plan.

Public and barrier-free access to the water's edge and to the dockage systems (conforming to ADA criteria) became two of several overriding issues addressed during the planning process. The landfill presently occupied by McKinley Marina, McKinley Park and Veterans Park was once lakebed. As such, the two parks and the marina are on public lakebed, falling under the jurisdiction of the State of Wisconsin. The State of Wisconsin has transferred limited control rights to Milwaukee County under the terms and conditions of a Lakebed Grant. Nonetheless, the State retains certain interest in the way in which the Lakebed Grant is administered and it is their purpose to reclaim as much public access to the water's edge as possible. Several of the graphic alternatives presented at Public Information Meeting #1 dealt with means by which both the rights of the public to lake-edge access and the rights of the marina slip tenants to safe and secure marina facilities could both be accommodated.

The Planning Team also addressed the potential for currently undefined future park improvements that could require the interruption of continuous access to the immediate water's edge. The park visitor's experience can be made more interesting by periodically directing the visitor away from the water's edge and later returning him or her back to the water's edge. Graphics prepared for the public information meetings depicted one such possible site. Please refer to Figure 3.15, entitled "Proposed Public Access," on page 101. While the improvement was purposefully left undefined, the feature was included in the graphic to represent possible future improvements requiring the interruption of access to the immediate water's edge.

Several of the concept graphics presented at the public information meeting addressed alternatives for the addition of boat slips to McKinley Marina. The future improvement

and development of the marina is dependent to a degree upon the ability of the County to increase its marina revenues by means other than by raising slip rental rates. Adding revenue-generating boat slips is a logical means of accomplishing that goal. Therefore, the concepts presented included approximately 250 new revenue-generating boats slips. The new slips were shown to be located on the east side of the marina basin, attached to the existing steel sheet pile wall of O'Donnell Point. The concepts had significant spatial impacts upon the Milwaukee Community Sailing Center and upon the swing moorings and created controversy between both stakeholders.

Alternatives or concepts addressing the shortage of boater services were also presented. In aggregate, the number of facilities such as sinks, toilets, showers, and laundry facilities fall considerably short of guidelines generally accepted as the norm for today's marinas. Concepts for the replacement of the toilet and shower facilities for the North Section of the marina were shown. Concepts for the expansion of the recently constructed Center Section toilet and shower facility and concepts for the remodeling of the South Section toilet and shower facility were also shown.

Following Public Information Meeting #1, refinements were made to several of the concept alternatives presented and a second public information meeting was held. Public Information Meeting #2 was held on October 5, 1999, again at the O'Donnell Park Shelter.

The refinements made following Public Information Meeting #1 addressed and partially resolved some, but not all, of the controversial issues known to exist. The legitimate, but conflicting interests of some of the stakeholders were addressed by the refined concepts presented at the second public information meeting. Several issues, however, require further analyses and may be resolved through the final design and the political processes that are a necessary and integral part of implementing a comprehensive plan of this nature. It must also be recognized that the legitimate, but sometimes conflicting interests of the diverse cross-section of stakeholders using the marina and surrounding park may never be resolved to the full satisfaction of all parties.

Public notices were published in area newspapers for both meetings. The meetings were held in an open house format. County staff and members of the Consultant Team were present to answer questions asked by those who attended. There were 52 people who signed in at the first meeting and 139 at the second. Both meetings generated print, radio and television coverage of the project.

1.6 Definitions and Clarifications

The Plan contains marina dockage related terminology and references to laws of the United States that warrant definition or clarification. For the reader's convenience, those terms and references are defined and clarified as follows.

1.6.1 Marina Related Terms

Bulkhead Wall – the perimeter wall of the marina basin, consisting of steel sheet piling. The term also refers to the lake edge perimeter wall of McKinley Park, Veterans Park and O'Donnell Point.

Dinghy – a small boat used to get from shore to boats moored on swing moorings.

Fixed Dockage – dockage that is supported upon the lake bottom by steel or timber piles. The free board of a fixed dockage system varies as the water level varies.

Finger Pier – that portion of the dockage system serving as the means of access to the individual boat slips and to which the boats are tied. Finger piers are often three and four feet in width. Generally, as an economic necessity, each finger pier serves two boats.

Floating Dockage – dockage that rises and falls with varying water levels. The free board of a floating dockage system remains constant under varying water levels.

Free Board – the distance between the deck surface of the dockage system and the surface of the water.

Gangway – an access ramp hinged at the bulkhead wall, serving as the means of access from land to the marginal walkway. Required if the dockage system is a floating dockage system, the gangway provides a means by which barrier-free access to the docks can be accomplished under varying water levels.

Headwalk – the portion of the dockage system that extends perpendicular to the marginal walkway, serving as the means of access from the marginal walkway to the finger piers. Headwalks are usually eight feet wide or wider.

Marginal Walkway – the portion of the dockage system running parallel to the steel sheet pile bulkhead wall, serving as the means of access to the headwalks.

Slip – the water space occupied by a moored boat. Usually, two slips share a finger pier.

Swing Moorings – moorings consisting of an anchor to which a surface buoy is connected using a chain or line. Boats are tied to the buoy with a line and allowed to swing with the wind 360° about the anchored buoy.

1.6.2 Laws of the United States

American with Disabilities Act (ADA) – a 1990 act of Congress prohibiting discrimination against those with disabilities. It is applied in the case of this Plan primarily to those with physical disabilities. Access to fishing opportunities, access to the dockage systems, and access to buildings are the primary concerns of this Plan.

Public Trust Doctrine – a legal precept that draws upon the Roman Law idea of common properties, and on certain provisions of the Magna Carta [1215]. It has been continually interpreted in modern times and under the United States Judicial System, to be an integral part of the Rule of Law. It is a historical and currently evolving concept relating to the ownership, protection and use of essential natural and cultural resources.

The Public Trust Doctrine declares that there are three things common to all mankind: air, running water, and the sea (including the shores of the sea). Title to these essential resources or the “common” are held by the State, as sovereign, in trust for the people. The purpose of the trust is to preserve resources in a manner that makes them available to the public for certain public uses.

There are two co-existing interests to trust lands: the *jus publicum*, which is the public's right to use and enjoy trust lands; and the *jus privatum*, which is the private property rights that may exist in the use and possession of trust lands. The State may convey the *jus privatum* to private owners, but this private interest is subservient to the *jus publicum*, which is the State's inalienable interest that it continues to hold in the trust land or water.

The Public Trust Doctrine became part of the English Common Law and the courts in the United States have applied the doctrine. Until recent decades the predominant commons recognized as subject to the Public Trust Doctrine were tidal and navigable waters. American cases have held that title to lands underlying tidal and/or navigable waters are held by the State in its sovereign capacity as trustee for the benefit of the citizens of the State who have the right to use the waters and adjacent land for navigation and to “fish, hunt, or bathe....”

The Constitution of the State of Wisconsin states that “the navigable waters leading into the Mississippi and St. Lawrence, and the carrying places between the same, shall be common highways and forever free, as well to the inhabitants of the state as to the citizens of the United States, without tax, impost or duty therefore.” Further, a decision of the Courts, *State v. Town of Linn*, 205 Wis. 2d 421, 556 N.W.2d 394 (Ct. App. 1996), determined that “It is appropriate to extend the public trust doctrine to include navigable waters and the shores appurtenant to ensure public access and free use of waters.”

1.6.3 Other Terms

ASCE Manual 50 – American Society of Civil Engineers publication entitled, *Planning and Design Guidelines for Small Craft Harbors*, Revised Edition, ASCE Manuals and Reports on Engineering Practice No. 50 (1994).

C.O.E – the U.S. Army Corps of Engineers.

Infrastructure – sewer, water and electric utilities, buildings, structures, pavements, dockage systems, and other man-made improvements to the site.

MCSC – Milwaukee Community Sailing Center.

MYC – Milwaukee Yacht Club.

Promenade – water's edge patio, walkway or pathway. In the case of McKinley Marina, McKinley Park and Veterans Park, the promenades have concrete or asphalt surfaces.

Wayfinding Signage – directional and informational signage placed throughout the project site.

WDNR – the State of Wisconsin Department of Natural Resources.

1.7 Planning Guidelines and Principles

The Planning Team recognized early in the planning process, certain guidelines and principles that have influenced the conduct of the study throughout. Others became known as work progressed. The guidelines and principles that have influenced the outcome of the Plan are as follows.

- The lakefront is special to all Milwaukee County residents. Public access to the water's edge throughout McKinley Marina, McKinley Park and Veterans Park should be expanded to the fullest extent possible, constrained only by issues of security and public safety.
- Many of the opportunities that exist for improvement of the marina and park infrastructure, derive from the need to replace or repair much of the infrastructure due to its deterioration with age. Repair and replacement of the infrastructure, and the construction of new facilities, will afford an opportunity to improve marina management efficiency, slip tenant services, parking lot function and safety, other amenities within the marina and parks, and aesthetics.

- Improvements to the infrastructure of McKinley Marina, McKinley Park and Veterans Park will be extensive and costly. New revenues must be generated to partially offset the cost of the improvements proposed for McKinley Marina, McKinley Park and Veterans Park.
- To promote a sense of continuity throughout the parks, the design of all new and improved park elements should be responsive to an established park design “theme.” A design theme may be as simple as a palette of colors and materials for the buildings, roofs, railings, signage, and other park elements.
- New and exciting improvements are being made along the lakefront to the south of Veterans Park. McKinley and Bradford Beaches to the north of the project site also afford exceptional opportunities for recreation and access to the lakefront. To enhance the park visitor’s overall experience along the waterfront, any improvements proposed by this Plan must complement and build from those that are adjacent to McKinley Park and Veterans Park.

1.8 Planning Issues

The planning process has been guided by the realities of the physical environment within the marina and surrounding park and by slip tenant and public input. The issues, addressed by the Plan, are viewed as follows.

1.8.1 Aging Infrastructure

A substantial amount of the infrastructure at McKinley Marina, McKinley Park and Veterans Park has aged and needs to be replaced or repaired. Due to the legitimate, but competing demand for County tax dollars, maintenance, repair and replacement of the park infrastructure have been deferred with respect to more pressing social and capital improvement needs.

The dockage systems of the Center and South Sections of the marina are deteriorating more and more with age and will soon need to be replaced. The dockage systems in the Center and South Sections of the marina are pile-supported, fixed docks having a fixed surface elevation. The water level of Lake Michigan, however, varies over time as much as 6 ft. The long-term average high lake level, usually occurring at the end of the boating season, is +2.0 ft Low Water Datum (LWD). The long-term average low lake level, usually occurring in early spring, is +1.0 ft LWD. Recently, the lake level has been lower than the long-term averages. Today the lake level stands at approximately –0.5 ft LWD. When the water level is low, the distance from the surface of the dock to the surface of the water is greater, making access from the dock to the vessels difficult and sometimes unsafe. In past years, the County has responded to the fluctuating water levels by

periodically raising or lowering the docks. The modification process is time consuming and is becoming increasingly more difficult because of the deteriorating condition of the docks.

The toilet and shower facilities serving the three sections of the marina vary in age. The restrooms serving Docks A through D are the oldest of the three facilities and is the least adequate in terms of the numbers of toilets, sinks, and showers provided. The toilet and shower facility serving the Center Section of the marina, Docks E through K, was constructed in 1993 and is the newest of the three facilities, but it also does not conform to the generally accepted guidelines for marinas in terms of the number of toilet, sink and shower fixtures provided. The facility serving the South Section of the marina, Docks L through P, is older than the Center Section building, but is adequate in terms of the services provided.

In addition to the marina dockage and restroom facilities: 1) the boat launch is deteriorating with age and will need to be repaired or replaced; 2) parking lot surfaces throughout the park are deteriorating badly with age; and 3) site utilities are deteriorating with age and do not have the required capacity to serve an expanding marina. In general, the single greatest challenge facing the County is to replace or repair aging infrastructure throughout the marina and surrounding park.

1.8.2 Public Access

In accordance with the Public Trust Doctrine, it is the policy of the Wisconsin Department of Natural Resources to require full public access to all navigable waters of the State of Wisconsin. McKinley Park and Veterans Park were created by filling the lakebed of Lake Michigan, and therefore, fall under the regulatory jurisdiction of the WDNR. The Planning Team embraces the ideal, but also believes that legitimate waterside and water-related uses do exist that require restriction of the public's access to the water's edge. Life safety and security issues must also be considered. It is upon this premise that this study has been conducted.

McKinley Marina and the landfill upon which McKinley Park and Veterans Park are now located was at one time lakebed. Because the area was once lakebed, it falls under the regulatory jurisdiction of the State of Wisconsin. The State of Wisconsin has granted title to the lakebed to Milwaukee County, but still retains certain regulatory responsibilities, one of which is the administration of the Public Trust Doctrine. Under the Public Trust Doctrine, the State is charged with maintaining the waters of Lake Michigan for purposes of commerce and navigation. The State of Wisconsin Department of Natural Resources, supported by the legal opinions of State Attorneys General, has interpreted the Public Trust Doctrine to prohibit the restriction of the public's access to the waters of Lake Michigan.

The opportunities for access to the immediate water's edge throughout much of the study area is already abundant. Nonetheless, expansion of public access to the water's edge throughout McKinley Marina, McKinley Park and Veterans Park has been one of the guiding principles by which this study has been conducted.

Portions of the water's edge along the perimeter of McKinley Marina basin are not presently accessible to the general public. Areas within the gated confines of the Center and South Sections of the marina, the Milwaukee Yacht Club and the Milwaukee Community Sailing Center do not presently allow the general public access to the immediate water's edge. Unlike the Center and South Sections of the marina, the general public is allowed access to the promenade of the North Section of the marina. A recent agreement between the Milwaukee County Department of Parks, Recreation and Culture and the WDNR has opened the promenade to the general public during daylight hours, but closes it during the late night and early morning hours to maintain a secure environment for the boaters and their vessels. With an increasing need to replace the dockage sections of the Center and South Sections of the marina, the County has the opportunity to affect a similar approach in those sections of the marina while maintaining the boater's legitimate right to a secure environment.

1.8.3 Barrier-free (ADA) Access

Not only is public access to the waters edge an important issue to many, so is the removal of barriers to those with physical disabilities to the waters edge and to the dockage systems. Presently, the dockage systems of the Center and South Sections of the marina prevent physically challenged individuals from land to a boat. This Plan addresses means by which barrier-free access to the dockage systems and to the waters edge can be accomplished.

1.8.4 Park Use

The lakefront is special to all Milwaukee County residents. The Milwaukee County Department of Parks, Recreation and Culture is examining the current uses of the existing park's facilities. Specifically, the Parks Department has looked at the growing demand for organized sporting events in the park area. Organized sporting events compete with the demand for passive or spontaneous use of the park. The Department has been developing policies for various parks within their jurisdiction regarding the type of uses appropriate for each park.

1.8.5 Other Developments on the Lakefront

The downtown areas of Milwaukee's lakefront are currently undergoing planning, design and implementation of several major improvement projects. Improvements to N. Lincoln Memorial Drive from Michigan Street to Lafayette Hill Road have been completed. Reconstruction of the northern end of the project to Kenwood Boulevard will be completed by the summer of 2000. The Port of Milwaukee has conducted a study of its North Harbor Tract for which several new improvements have been proposed. A newly designated State Park near the Summerfest grounds is planned for completion in the year 2002. The Summerfest Millennium project is currently being reviewed and improvements have been proposed for Municipal Pier scheduled for completion in 2002 or 2003. Improvements at Municipal Pier include the Schooner project, scheduled for completion in August 2000, and facilities for Great Lakes Future. The premier project currently under construction is the expansion of the Milwaukee Art Museum. The museum is scheduled for completion by January 31, 2001.

The improvements that are being constructed at the Art Museum, Municipal Pier, and Summerfest Grounds are significant contributions to the improvement of Milwaukee's lakefront. They will encourage an even greater public use of the lakefront than presently exists. The work to be done along that reach of the Lake Michigan shoreline presents a tremendous opportunity to create synergism between those improvements and the improvements proposed by this Plan for McKinley Marina, McKinley Park, and Veterans Park. This Plan fully endorses the underlying philosophy by which the improvements to the south have been studied, proposed, and recommended. It is a premise of this Plan that its recommended improvements, when implemented, be designed to complement and be compatible with the improvements being made along the lakefront.

1.8.6 Economic Feasibility

In 1994, Trossen Associates Inc. conducted a market and economic feasibility study focused upon the marina and the market potential for its expansion. The market and economic feasibility study results are included in a report prepared by W.F. Baird & Associates, entitled "Final Report, Breakwater and Economic Analysis, McKinley Harbor and Marina, Milwaukee, Wisconsin," dated November 23, 1994. Among the conclusions reached at that time was that the Milwaukee area market would support the addition of 250 new slips. It was also concluded that the new revenue gained from the additional slips would offset the cost of improvements being proposed at that time.

Since 1994, Wisconsin's economy has remained strong and has outperformed the national economy. A 1997 National Marine Manufacturers Association (NMMA) study documents an increase in boat registrations in the United States from 1972 to 1997. Boat registration data have also been obtained for 1998. Please refer to Appendix C containing copies of the study results. The 1997 study results are entitled "*1997 U.S. Boating Registration*

Statistics,” and excerpts from the 1998 NMMA study are entitled “*1998 Recreational Boat Registrations.*” Please refer also to the NMMA study, entitled “*U.S. Recreational Boating Domestic Shipment Statistics 1970 to 1998.*” The second study documents the fact that the number of boats shipped to dealers increased steadily between 1991 and 1995, and dropped slightly between 1995 and 1998. The number of boats shipped in 1998, however, was approximately the same as that in 1994.

Skipper Bud’s and Duchow’s Boat Center, two Milwaukee area boat dealers, reported record boat sales in 1999. Slip occupancy at McKinley Marina is high. A representative of Duchow’s Boat Center has indicated to the manager of the McKinley Marina that Duchow’s would be able to refer new boat owners to the marina as slip tenants, if the marina had slips available.

Based upon the maintenance of a strong economy between 1994 and the present, and based upon the results of the NMMA studies and the anecdotal evidence provided by the local boat dealers, it is the assumption of this Plan that the same market potential for expansion of the marina exists today as it did in 1994.

1.9 The Plan

The focus of the Plan for the Phased Development of McKinley Park and Veterans Park has evolved from that originally envisioned. Originally, it was the intent that the plan would address only the marina and marina related facilities. The effort has evolved to one that now addresses the marina and the entire McKinley and Veterans Parks sites.

2.0 CHAPTER 2 – SITE INVENTORY AND OPPORTUNITIES AND CONSTRAINTS

2.1 General Description of the Site Elements

The entire project site is approximately 240 acres in size. Of that total, hard-surface parking lots, roadways, walkways, buildings, and structures occupy approximately 26 acres, or about 11% of the entire site. The remaining 214 acres consist of water space (Veterans Park Lagoon and McKinley Marina Basin) and park green space.

The McKinley Marina basin serves the water-related uses of several different users and organizations, the largest of which is the county-owned McKinley Marina. McKinley Marina is made up of three geographically distinct sections of dockage, the North Section, the Center Section, and the South Section. The North Section, located northeast of the Flushing Tunnel, consists of headwalks A through D. The Center Section, located southwest of the Flushing Tunnel and just to the southeast of the former Coast Guard Station consists of headwalks E through K, and the South Section, located at the southern end of the basin, consists of headwalks L through P. Please refer to Figure 2.0 below.

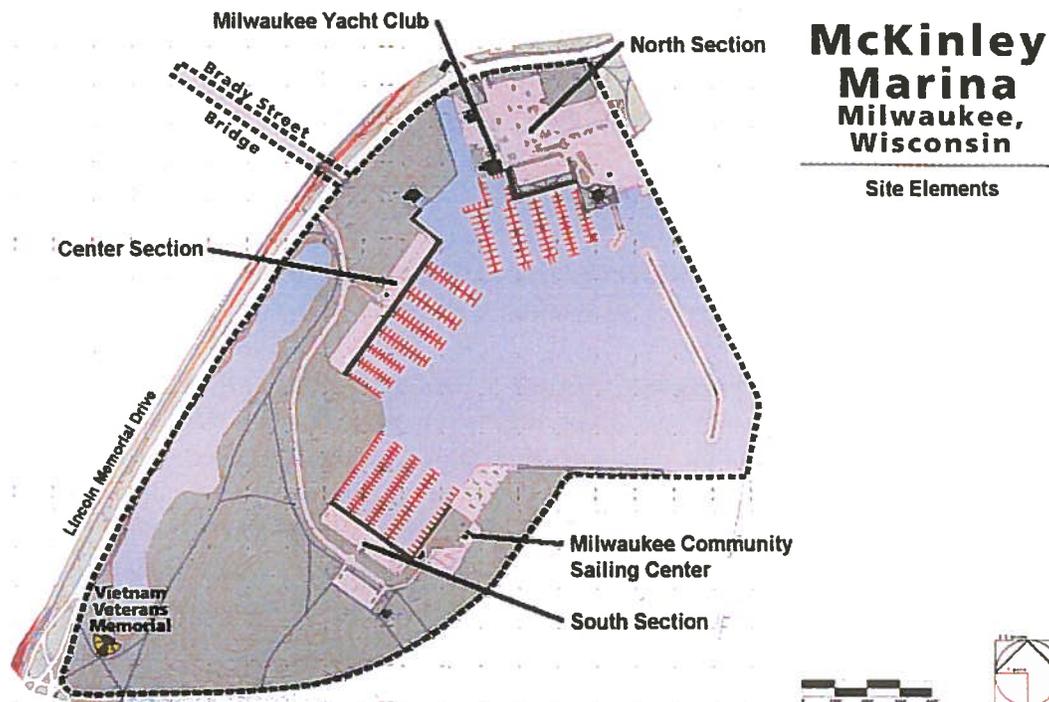


Figure 2.0 – Site Elements

The Milwaukee Yacht Club (MYC) and the Milwaukee Community Sailing Center (MCSC) occupy portions of the water space and land adjacent to the basin. The MYC also has about 65 “wet” slips located immediately to southwest of Docks A through D of McKinley Marina. The MCSC, located at the southeast corner of the basin, operates primarily from land and a section of dock located along O’Donnell Point. The MCSC also accommodates the University of Wisconsin - Milwaukee and Marquette University collegiate sailing clubs. The collegiate sailing clubs and MCSC also occupy several swing moorings at the center of the basin.

Approximately 110 to 115 individual swing moorings occupy the center of the McKinley Marina basin. Vessels in the swing mooring area are tied to individual anchors placed upon or embedded into the lake bottom. The MCSC, collegiate sailing clubs, and private boaters use the swing moorings. Jurisdiction over the swing moorings was transferred in 1999 from the Milwaukee Harbor Commission to Milwaukee County.

A boat launch facility, located at the north end of the study area, accommodates the launching of trailed boats. Anyone may launch a trailed boat upon payment of a nominal fee. The boat launch ramps are a source of revenue for McKinley Marina. The launch ramps also accommodate the launching and removal of boats that are dry-stored on land just to the west of the ramps. The dry-stored vessels are another source of revenue for the marina.

The Vietnam Veterans Memorial occupies the southern-most end of the project site and effectively serves as a transition to new lakefront improvements occurring or soon to occur to the south of the site.

The remainder of the site constituting McKinley and Veterans Parks is devoted to hard-surface parking lots, access roadways, pedestrian walkways, and green space.

The infrastructure at McKinley Marina, McKinley Park and Veterans Park can generally be described as deteriorating with age. Many of the opportunities that exist for improvement to the marina and the park infrastructure stem from the need to replace or repair much of the infrastructure strictly as a matter of long-term maintenance. As one example, the parking lots are deteriorating and will need to be replaced. At such time that the parking lot surfaces, curb and gutter, and associated landscape amenities need to be replaced, the lots can be reorganized and made to function more efficiently. This principle applies to virtually all of the site components.

Other opportunities stem from the need to provide additional services, such as additional water closets, showers, washers and dryers for the slip tenants. This is particularly true if the marina is to remain viable and competitive.

Inherent throughout the following discussions of each of the site elements is the opportunity to design each of the proposed improvements to an established park design “theme.” This is not to suggest that the elements must look exactly alike, but that features, such as roof lines and the color of the exterior finishes be coordinated with respect to the established theme.

2.2 Marina and Park Design Theme

Milwaukee is located in a large natural bay on the western shore of Lake Michigan, at the intersection of three rivers that join together and flow into the lake. In its early days, downtown Milwaukee was mainly tamarack swamps surrounded by high bluffs. Since the mid 1800’s, the swamps have been filled in, the bluffs lowered, and unique lake front parkland and a marina have been created. The ethnic groups that settled here constructed a City rich in architectural history, influenced by Tudor, Flemish, French and Germanic styles. One common material tied all of the architectural themes together, “Cream City Brick.”

References are made throughout the Plan, to the concept of a “marina and park design theme.” It is recommended that a design theme be developed and that the designs of the implemented improvements conform, to the extent possible, to the theme.

The design theme of McKinley Marina, McKinley Park and Veterans Park should be to explore and exploit the rich array of architectural detailing that can be created by Milwaukee’s masonry craftsman using cream city brick walls, piers, columns, and arched gateways to the waterfront. Railings should emulate the wrought iron grillwork and fencing that surrounded the elegant residences that lined Prospect Avenue, Milwaukee’s “Gold Coast.” Roof areas could be steeply pitched and covered with concrete tiles to simulate the state roofs so common to the finest of historic structures, or they could be standing seam roofs, matching the roof materials used on several of the existing marina buildings. Creative design efforts need to be applied to the McKinley Marina and park structures to develop varied and interesting rooflines. Modern concrete tiles provide an economical method to achieve this impact when selected in soft gray-greens and rich, deep reds. Selected elements at building entries and gateway arches could be highlighted with modern examples of stained glass window elements. These elements should emphasize the waterfront theme. A classic example to set this theme already exists adjacent to the McKinley Marina site in the 1888 Flushing Tunnel Pump House Building on N. Lincoln Memorial Drive.

2.3 McKinley Marina Dockage Systems

2.3.1 General Comments

The following is a discussion of the opportunities and constraints related to the dockage systems. The discussion is premised on the need to add new revenues to the marina revenue stream to partially offset the cost of the improvements recommended for McKinley Marina, McKinley Park and Veterans Park.

2.3.2 North Section – Docks A through D

The dockage system of the North Section of the McKinley Marina is the newest of three dockage sections in the marina. Prior to their replacement in 1998, Docks A through D were fixed docks similar to the existing docks of the Center and South Sections of the marina. The system was installed in the spring of 1998 and consists of four floating headwalks and approximately 80 individual finger piers, each serving a double berth. The new docks provide a total of 157 boat slips. Please refer to Photo 2.1 below.



Photo 2.1 – Existing North Section Dock A – Floating Dock

Each of the boat slips are provided with upgraded water and electrical service. Provisions were made during construction to accommodate the future addition of telephone and cable television service. Because they are floating docks, the dockage freeboard is constant, allowing a consistent means of getting into and out of a boat.



Photo 2.2 – Keyed Access Gate to Dock B

Each of the four headwalks has a keyed access gate and only the slip tenants and marina personnel have keys. Refer to Photo 2.2 above. Public access to the docks is allowed during the non-boating season. Under an agreement with the Great Lakes Shore Fishermen, fishermen are allowed out on the docks to fish only after all boats are removed from their slips at the end of the boating season.

Docks A through D have been in service for two complete boating seasons and have been fully occupied. Boaters occupying slips in the North Section have expressed their general approval of the floating system. The dockage system is in excellent condition and has a life expectancy, assuming that routine maintenance is performed, of thirty years or more.

The North Section docks do not require immediate improvement. An opportunity does exist, however, to add approximately 30 to 35 new finger piers to each of the headwalks. This may wait several years, but would generate additional revenue for the marina.

2.3.3 Yacht Club Dockage System

The Milwaukee Yacht Club leases and maintains a single headwalk with approximately 60 boat slips from the County. The headwalk is located in the North Section of the marina, but is separate from Docks A through D. The docks are fixed docks, similar to those of the Center and South Sections of McKinley Marina and are maintained as part of the Yacht Club's lease agreement with the County.

2.3.4 Center Section – Docks E through K

The Center Section docks, Docks L through P, have deteriorated with age and are now the oldest docks in the marina. There are currently 245 boat slips in the Center Section, with an occupancy rate of approximately 98%.

The Center Section dockage system is deficient in the following areas:

- The Center Section docks are in poor condition and in need of immediate replacement.
- The finger piers are excessively narrow and are not sturdy.
- The docks are fixed docks, subject to a varying freeboard with changing water levels. Under the present low water conditions, the dock surface is approximately eight feet above the water surface and access to and from the boats is becoming increasingly more difficult. The boaters are presently constructing ladders and stair sections to access their vessels. A varying freeboard renders the ladder and stair sections ineffective unless the fixed docks are raised or lowered in direct response to the changing lake levels. The process is very costly and is a process that the County cannot practically perform on an annual basis.
- Each of the boat slips have electrical and water services, but these services are also aging and are insufficient for today's modern recreational vessels.
- The level of maintenance required to keep the Center Section of the marina in service will eventually become increasingly more time consuming and the docks will eventually become unsafe and unmarketable.

Several boaters have, at their own expense, paid the local telephone service provider to run telephone lines from the steel sheet pile bulkhead wall to their boat slip.

Unlike the North Section, there is no keyed-gate access to each of the individual headwalks. Instead, access to all of the headwalks is gained directly from the concrete promenade. Refer to Photo 2.3 below. The promenade is protected with a gated, chain link fence enclosure. Only slip tenants and marina personnel have keys to the promenade.



Photo 2.3 – Fenced Promenade of Docks E Through K

The Center Section dockage system, Docks E through K, is deteriorating with age and will need to be replaced soon. Replacement of the docks would afford an opportunity to replace them with floating docks, alleviating the problem that exists with fluctuating water levels and variable free board.

An opportunity would also exist to add approximately 150 to 155 new finger piers to each of the headwalks. Expansion of the Center Section of docks will encroach upon the swing moorings. As discussed in Article 2.4, it is possible to accommodate most, if not all, of the swings moorings provided the swing moorings are better organized. The addition of new slips would also generate new revenue, and in accordance with the 1994 Trossen Associates market and economic feasibility study, upgrading the condition of the docks would warrant a slight increase in annual fees.

Inherent in the replacement of the docks is the opportunity to upgrade the electrical and water services provided to each boat slip.

2.3.5 South Section – Docks L through P

The South Section dockage system, Docks L through P, is now the second oldest system in the marina. Please refer to Photo 2.4 below. The deficiencies of the docks in the South Section are the same as those of the Center Section.

There are currently 260 boat slips in the South Section. The occupancy during the 1999 boating season was approximately 98%. Each of the boat slips is provided with water and electrical services similar to the slips in the Center Section. Similar to boaters in the Center Section, some of the boaters in the South Section have added their own telephone lines.



Photo 2.4 – Existing South Section Dock L

Like the Center Section, access to all of the headwalks is gained directly from the promenade. The promenade is protected with a gated, chain link fence enclosure. Only slip tenants and marina personnel have keys to the promenade.

The South Section docks are deteriorating with age and need to be replaced soon. Like the North Section docks, replacement of the docks would afford an opportunity to replace them with floating docks and to upgrade the utility services provided.

There is also an opportunity to add approximately 60 to 65 new boat slips and new revenue to the marina revenue stream. In this case, however, the addition of new slips would have no further impact upon the swing mooring area.

2.3.6 Transient Dockage

There is a need for transient dockage within McKinley Marina. Transient boaters arriving at the marina and wanting to stay overnight are frequently placed in the boat slip of a marina tenant whose boat is temporarily out of its slip. This condition exists because the marina is at full occupancy.

One of the comments heard several times throughout the public outreach process was that there were not enough "dedicated" transient boat slips. Many marinas have slips that are designated exclusively as transient slips. Transient slip rental generates revenue for the marina. With the potential addition of new boat slips to the marina, an opportunity exists to dedicate a percentage of the new slips to transient rental.

2.4 Swing Moorings

Approximately, 110 to 115 individual swing moorings presently occupy the center of the McKinley Marina basin.

The swing moorings are largely unregulated and there is currently no organized scheme for placement of the cans, or any control over the materials placed on the lakebed to anchor the moorings. There is presently no revenue received by the County for the swing moorings.

Until the summer of 1999, management of the swing mooring area was the responsibility of the Milwaukee Harbor Commission. Management of the swing moorings was not, however, well organized or consistently administered. Attempts were made by the Harbor Commission to maintain an inventory of the swing-mooring occupants. The latest list available was obtained in 1995 and contained the names of 257 vessel owners. The list did not, however, accurately represent the actual number of boats tied to swing moorings. Mooring counts obtained from a 1989 satellite photograph and from a more recent photograph, taken in late June of 1996, revealed that far less than 257 vessels were actually using the swing mooring area. Approximately 110 to 115 vessels were counted in the 1996 photograph.

Some, but not all, of those included in the Harbor Commission inventory paid a one-time fee of \$25.00 for the privilege of mooring their vessels in the marina basin. Other vessel owners presently occupying the "mooring cans" have not paid for their position in the

basin and continue to pay nothing. Reportedly, some vessel owners “own” more than a single mooring can and receive annual payments from other boaters who lease a “can” from them.

The existing swing moorings are not formally laid out. Independent contractors hired by the individual boat owner randomly place the swing mooring anchors in the area. Reasonable attempts are made each spring to reuse the existing anchors. It is unknown how many former and presently unused anchors occupy the bottom. They consist of everything from old automobile axles to blocks of concrete.

The swing mooring area was reduced in size in 1996 by the construction of the internal breakwater. However, all of the swing-mooring occupants previously holding positions within the impacted area were successfully relocated to other areas of the swing mooring community. Similarly, the construction of the floating docks (157 slips) in the North Section of the marina displaced about nine swing moorings. They were also successfully relocated to other areas of the basin.

In 1997, the State Legislature enacted Wisconsin Act 70, clarifying the use to which the lakebed within the limits of the Lakebed Grant may be put, and giving Milwaukee County powers similar to those of a harbor commission. In 1999, the Harbor Commission relinquished administrative control of the moorings to Milwaukee County. The County now has total administrative control of the lakebed within the limits of the Lakebed Grant. Presently, however, the moorings continue to function unregulated and without payment of any annual fees to the County.

If the County were to expand the number of boat slips within the marina, the surficial area of the existing swing mooring community would have to be reduced. There is the potential that some of the present occupants would have to be displaced.

While the replacement and expansion of the Center Section docks would require that the swing mooring area be reduced in size, it would afford an opportunity to reorganize the swing-mooring layout. Now that the swing moorings are under the administrative control of the County, it is time to better organize the mooring layout and to initiate an annual fee structure. Initiation of a fee structure would help to amortize the costs associated with reorganization, such as the cost of the mooring hardware and installation. Initiation of an annual fee structure may be an unpopular concept to those who had previously moored their boats free-of-charge, but is reasonable and necessary.

2.5 Landside Marina Related Infrastructure

The water’s edge and landside marina related facilities include: the basin perimeter steel sheet pile bulkhead wall, chain-link fenced enclosures for each section of dockage, and the

water's edge promenades located within the gated, chain-link fence enclosures of each section of McKinley Marina, boat storage facility, and public boat launch.

2.5.1 Marina Basin Perimeter Walls

The perimeter of the marina basin is lined by approximately 6000 lineal feet of steel sheet piling, forming the water's edge of the basin. Approximately 1400 lineal feet of pile-supported concrete walls line the remainder of the basin, including the Flushing Tunnel.

2.5.1.1 Steel Sheet Pile Bulkhead Walls

The steel sheet pile bulkhead wall forming the McKinley Marina basin was constructed in 1969. The steel sheet piles are rusting and in fair to good condition. The rusting is normal. Refer to Photo 2.5 on the next page. Steel pile bulkhead walls are usually constructed of unprotected steel, but with a greater steel cross section than is necessary for the structural loads they must carry. It is a way of introducing "sacrificial" steel cross section to the wall, increasing the life of the system. The observable steel cross section remains substantial.

With one observed exception, the wall appears to be fully functional. A section of the wall, approximately 30 feet in length, located along the northeast boundary of Docks A through D, is leaning approximately one foot toward the basin. The displacement of the top of the wall suggests that its structural tieback system may have failed. Prior to the construction of any new promenade sections along this portion of the wall, the earth behind the wall should be excavated to investigate further the cause of the displacement. If damaged, the tieback will have to be repaired. The wall can be pulled back into place at that time.

In the past, other sections of the sheet pile wall in the North Section have also required localized repairs. Repairs similar to those that have been made in the past will, from time to time, have to be made to other sections of the steel sheet pile bulkhead wall. The majority of the steel sheet pile bulkhead wall appears to be vertical and stable. We are not able, however, to accurately predict the life expectancy of the existing steel sheet piling and tieback systems.



Photo 2.5 – Steel Sheet Pile Typical of the Entire Marina Basin Perimeter

Although the steel sheet pile walls are corroding, they still have many years of remaining life. Replacement of the concrete promenades in the Center and South Sections will afford an opportunity to uncover the wall tiebacks in those areas and to make any repairs that are necessary, if any.

2.5.1.2 Pile Supported Concrete Walls

The Flushing Tunnel walls and the former Coast Guard Station bulkhead walls are concrete walls supported by timber piles. With the exception of portions of the wall on each side of the Flushing Tunnel intake channel near the intake, the walls are badly deteriorating, and in some sections, are failing. Refer to Photo 2.6 on the next page.

While the concrete portions of the bulkhead are also deteriorating, it is their timber pile foundations that are the most seriously failing. The failing tops of the timber piles are being crushed by the heavy concrete walls they support, allowing the concrete walls to settle or to collapse. Some sections of the bulkhead wall along the former Coast Guard Station shoreline have begun to visibly rotate toward the marina basin.

The cause of the deterioration of the timber piles is their exposure to the open air. Under normal lake levels, the timber piles are fully wetted. Fully wetted timber will last for years. The lake levels, however, vary both seasonally and over the long term. During periods of extreme low lake levels, the timber piles are exposed to the open air and subjected to dry rot conditions. The lake level today is about two feet below the long-term average and the tops of the timber piles can be observed. They have deteriorated very badly.



Photo 2.6 – Pile-supported Concrete Walls of the Flushing Tunnel

The Milwaukee Metropolitan Sewerage District, owners of Flushing Tunnel, recently repaired the intake to the Flushing Tunnel and short sections of the bulkhead walls on each side of the intake. The work was completed in 1999.

All the other sections of the timber pile supported bulkhead walls are so badly deteriorated that they must be repaired or replaced.

The ownership of the Flushing Tunnel's intake channel bulkhead walls is uncertain. This Plan does not attempt to determine that ownership. However, the Corporation Counsel for Milwaukee County is addressing the matter. This Plan addresses only the condition of the bulkhead walls.

The pile-supported concrete walls of the Flushing Tunnel and the pile-supported concrete walls along the former Coast Guard Station shoreline are badly deteriorated and are unsafe

to be near. The walls need to be replaced. However, until ownership of the Flushing Tunnel intake walls is determined, no action can be taken.

An opportunity does exist to demolish the former Coast Guard Station boat well and to construct a new wall across the face of the original opening to the basin and along the remainder of the former Coast Guard Station shoreline. The boat well could be filled and the area graded and seeded, offering a more attractive setting for the park visitors and increasing the amount of green space in the park.

2.5.2 Marina Promenades

Concrete promenades running landside and parallel to the steel sheet pile bulkhead walls, serve each of the three sections of dockage within the marina. The boaters use the promenades for purposes of access to the dockage systems, storing gear and barbecue grills, and as an area for socialization with other boaters. The concrete surfaces of the promenades are deteriorating with age, but are presently functional.



Photo 2.7 – Promenade of Docks A Through D

Each of the three marina promenades is located within a gated, chain link fence enclosure. In each case, the enclosure fully encompasses the concrete promenade. The chain link fences throughout the marina remain functional, but have rusted and deteriorated with age and are aesthetically unattractive.

The promenades of the Center and South Sections of the marina are restricted to the exclusive use of the slip tenants in those sections. The promenade in the North Section of the marina, however, is managed differently. Refer to Photo 2.7 on the previous page. Public access to the North Section promenade is allowed. When the improvements in the North Section were completed in 1998, an agreement between the WDNR and the County was reached that, for the first time, opened the promenade to the general public. Public access is allowed during specified hours throughout the boating season. From May 1st to November 1st, the general public is allowed access to the promenade from 7:00 o'clock in the morning to 7:00 o'clock in the evening. After hours, the promenade is closed to the general public, allowing the boaters to walk to the toilet and shower facilities on shore and back to their boats safely within gated and secure confines. As stated earlier, the general public is not allowed on any of the docks in any section of the marina.

The WDNR has voiced its objections to the restricted use of the promenades in the Center and South Sections of the marina and has requested that the County implement a system similar to that in the North Section.

Replacement of the docks in the Center and South Sections of the marina would require demolition of the existing concrete promenades to be able to uncover and upgrade the utilities serving the docks. Replacement of the concrete promenade would afford an opportunity to improve its aesthetic appearance. Further, if the promenade were to be managed in a manner similar to the North Section promenade, public access to the water's edge could be increased.

2.5.3 Boat Storage Area

The boat storage area, located in the North Section of the marina at the west end of the launch ramp parking lot, is enclosed with a gated, chain link fence topped with barbed wire. Refer to Photo 2.8 on the next page. The boat storage facility has had few, if any, security problems.

The boat storage enclosure is approximately 50,000 square feet in size (slightly over one acre). Boat storage generates revenues for the marina. During the non-boating season, the enclosed area accommodates 67 shrink-wrapped boats. In the summer, it is used as temporary storage for boats owned by day sailors, people who might otherwise trail their boats. During the boating season, when the boats stored for the winter months have been put back into the water, approximately 90 dry-sail vessels and their boat trailers are able to be stored within the enclosure. As a convenience to the dry sailor, the boats do not have to be towed to the site. Instead, the boater can simply come to the site, remove his or her boat from the storage area, and launch it at the nearby launch ramps.

Improvements to the parking lots of the North Section of the marina, if made, would create an opportunity to improve the existing boat storage enclosure, both in terms of its physical appearance and in terms of the revenues that could be generated if its capacity to store boats were increased.



Photo 2.8 – Boat Storage Enclosure

2.5.4 Boat Launch Ramp

An eight-lane boat launch ramp is located in the North Section of the marina at the northeast end of the project site, adjacent to McKinley Beach and the federal breakwater. Please refer to Photo 2.9 on the next page. The boat launch serves boaters who trail their boats and day sailors who store their boats in the enclosed boat storage area. Approximately 2,500 boats are launched throughout the boating season.

The sides of the launch ramp are constructed of steel sheet piling, similar to the bulkhead wall lining the marina basin. The steel sheet piling is fair to good condition. Typical of many sheet pile systems, the walls are intentionally left unpainted and left to rusting. The sheet pile walls of the launch ramp are rusting, but remain fully functional.

The floor of the launch ramp is a sloped concrete slab with a grooved surface for tire traction. The concrete surface is spalling (the surface is breaking up) and is in generally poor condition. The concrete slab will need to be replaced within the relatively near future.



Photo 2.9 – Boat Launch Ramp – North Section

The boat launch ramp is an important source of revenue to the marina. An attendant on duty collects the launch fee at the entry to the launch area. The attendant is not on duty during many hours of the day when boats are being launched. When the attendant is off duty, the marina depends upon an “honor system” by which the boater can pay the fee using a nearby “drop box.” The County also issues annual boat launch permits to boaters, alleviating the need for the boater to obtain a launch permit every time his or her boat is launched. It is known that many boaters do not honor the system. Sheriff’s Department Deputies patrolling the lot have, on an irregular basis, issued tickets to those who do not properly display proof that they paid the fee.

The boat launch ramp provides an adequate number of launch lanes, but the structure is in poor condition. The primary component of the structure is the concrete floor slab, which is in poor condition and will soon need to be replaced. Replacement of the concrete slab might occur conveniently at the time the North Section parking lots are revamped.

2.5.5 Fuel Pier

A boat fueling facility is located immediately to the west of the boat launch ramp. Refer to Photo 2.10 below. It is constructed of parallel steel sheet pile walls filled with stone and capped with a concrete deck. The fuel pier was constructed in 1995.



Photo 2.10 – Fuel Pier – North Section

Fuel and sanitary pump-out services are provided to all boaters in the marina basin, regardless of residency. Fueling and pump-out services can be provided from either side of the pier. A small fuel attendant's building is located on the pier at the southern end. It offers shelter to the park's staff and patrons while conducting sales transactions and during inclement weather. The transient boater can see the building as he or she enters the marina basin, effectively directing them to the marina management office for transient accommodations.

The fuel pier generates revenue for the marina. It is in excellent condition and does not require improvement or modification. No need exists at this time for improvements. An increase in the number of boat slips within the marina, however, may increase the fuel pier revenues.

2.6 Marina and Park Buildings

2.6.1 North Section Roundhouse and Public Restrooms

A fast food concession operates within the “Roundhouse,” located immediately to the west of the launch ramps in the North Section of the marina. Refer to Photo 2.11 below. The County operates the revenue generating concession.



Photo 2.11 – The Roundhouse

Referring to Photo 2.12 on the next page, approximately one half of the building is concession space. Public restrooms are also located within the Roundhouse and serve patrons of McKinley Beach, patrons of the boat launch facility, and the general public visiting the North Section. They are the only public restrooms in the North Section of the marina. The restrooms are generally not used heavily during the week, except during special events. The numbers of existing fixtures in the public restrooms are as follows.

	<u>Existing</u>	
▪ Men’s Room		
▪ Urinals	3	
▪ Water Closets	3	
▪ Lavatories	3	
▪ Showers	2	locked

- Women's Room
 - Water Closets 4
 - Lavatories 3
 - Showers 2 locked

The public restrooms do not comply with ADA accessibility requirements.

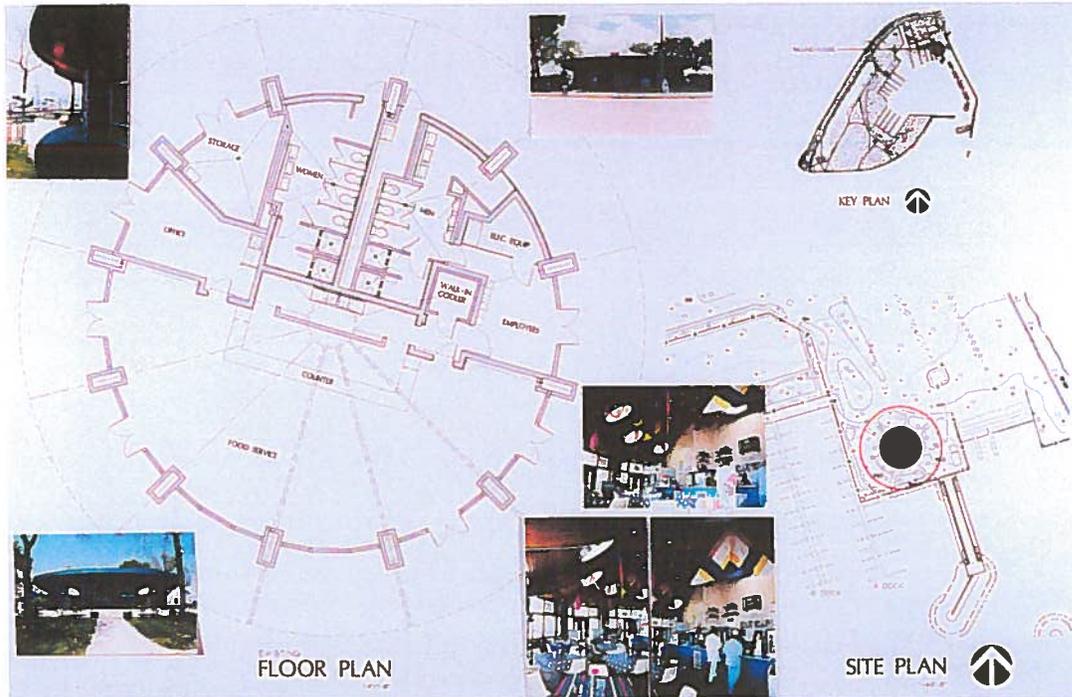


Photo 2.12 – Existing Roundhouse Floor Plan

The Roundhouse also includes a small, two-person office used as the McKinley Marina management office. The office serves as the only management facility on the site and it is remote from the Center and South Sections of the marina. Temporary seasonal staff frequently must enter the office to obtain work instructions and to report to the Marina Manager. The office is cramped for space and inadequate.

Should the County decide to construct new marina management facilities, as proposed by this Plan, additional space would become available in the Roundhouse. The Roundhouse is aging and nearing the time that remodeling will be required. The Roundhouse provides a useful service not only to McKinley Park visitors, but also to McKinley Beach users. The structural elements of the building are in reasonably good condition and the building has its own unique character and appearance. It is, therefore, desirable to keep, improve and maintain the facility. The potential exists to expand and improve both the existing concession facilities and the public restrooms in the process. Further, the building could be made more energy efficient by replacing the single-pane windows that make up a large share of the exterior shell of the building.

2.6.2 Fish Cleaning Station and Dinghy Storage

A fish cleaning station presently occupies a portion of the launch ramp parking lot, just to the north of the launch ramp. Refer to Photo 2.13 below. Its location is convenient for the fisherman coming off the lake with their daily catch, but contributes to an inefficient parking layout within the parking lot and disrupts travel patterns within the launch maneuvering area. It is available free-of-charge to the public.



Photo 2.13 – Fish Cleaning Station and Dinghy Storage Area

A small area of the parking lot located immediately at the north end of the fish cleaning station is used for dinghy storage. The dinghy storage area is also enclosed within a gated, chain link enclosure. The enclosure is aging and aesthetically unappealing.

Dinghy storage is a revenue generating service provided by the marina. Boaters who moor their boats in the swing mooring area of the marina basin use dinghies to get from shore to their boats. The enclosure provides a safe place to store the dinghies when the swing-mooring occupants are not using their boats.

The fish cleaning station and dinghy storage enclosures are deteriorating with age and will ultimately have to be replaced. Just as importantly, they both contribute to an inefficient parking layout within the launch ramp parking lot and they disrupt pedestrian and vehicular travel patterns within the launch ramp maneuvering area. A discussion of these impacts is included in greater detail in Article 2.8 of this report.

Rehabilitation of the North Section parking lot would provide an opportunity to reorganize the entire site layout and an opportunity to more attractively treat the enclosures to the fish cleaning station, the dinghy storage area, and the boat storage enclosure. The potential also exists that the three facilities may have to be relocated to achieve a more efficient layout of the site. The final disposition of the fish cleaning station and the dinghy storage facility would be determined during the parking lot redesign process.

2.6.3 North Section Utility Shed

A small utility shed located on the north side of the enclosed boat storage area serves as a marina and park maintenance facility. The shed is a simple wood frame building used for storage of maintenance equipment and supplies. It is aesthetically unappealing, but in good and functional condition.

The North Section utility shed is not a significant structure. It is, however, a necessary structure. It could be remodeled as part of the North Section parking lot rehabilitation effort or replaced in its entirety. Whether it is remodeled or replaced, an opportunity would exist to bring the appearance of the structure into conformance with a selected park design theme.

2.6.4 North Section Slip Tenant Restrooms

The North Section restroom facilities are located inside the enclosed promenade area of Docks A through D. Refer to Photo 2.14 on the next page.

The number of fixtures provided in the facility is as follows:

	<u>Existing</u>	<u>Recommended</u>
▪ Washers and Dryers	1 pair	3 or 4 pairs
▪ Men's Room		
▪ Urinals	1	2
▪ Water Closets	2	2
▪ Lavatories	2	3 or 4
▪ Showers	0	3 or 4
▪ Women's Room		
▪ Water Closets	3	3 or 4
▪ Lavatories	2	3 or 4
▪ Showers	0	3 or 4

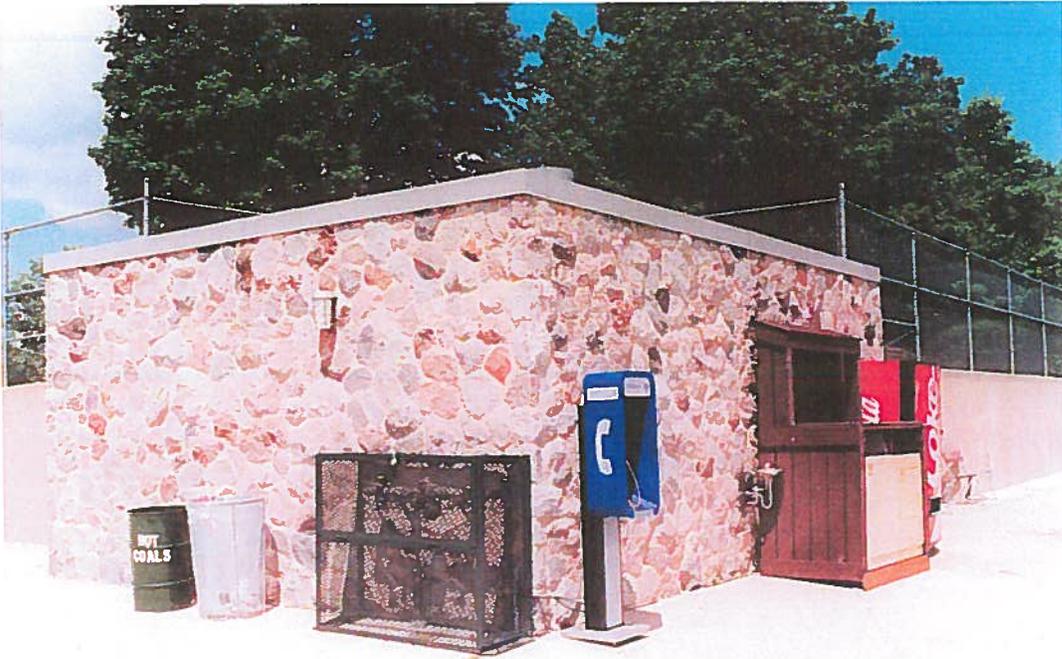


Photo 2.14 – North Section Slip Tenant Restrooms

The building is aging and too small for an appropriate number of toilet, sink, shower and laundry fixtures. According to the guidelines published by the American Society of Civil Engineers (ASCE), the number of fixtures is inadequate for the number of boats slips in the North Section of the marina. The laundry fixtures (one washer and one dryer) are located outside, but undercover during the boating season. They are stored inside during the winter months.

The building does not comply with ADA requirements for accessibility and is in poor condition. It should be replaced with a newer, larger and more adequate facility.

The North Section slip tenant restrooms do not provide an adequate number of services for the number of slips that exist in this section of the marina, and the building has deteriorated with age and needs to be replaced. The need and opportunity exists to expand the services provided in this section of the marina by replacing the existing building with a new restroom facility.

The existing building is located on the promenade serving Docks A through D. Its floor is at the elevation of the promenade and its roof is at the elevation of the top of the retaining wall located immediately at the back of the promenade, creating an opportunity to incorporate an overlook plaza into the design of a new building. The overlook plaza could be utilized by the general public as well as by the boaters.

2.6.5 Former Coast Guard Station

2.6.5.1 Former Coast Guard Station

Among the most controversial issues to be addressed by the Plan is that of the disposition of the former Coast Guard Station. Refer to Photo 2.15 below. The building is located immediately to the northeast of the Lagoon Drive entrance to the park and is listed on the National Register of Historic Places.

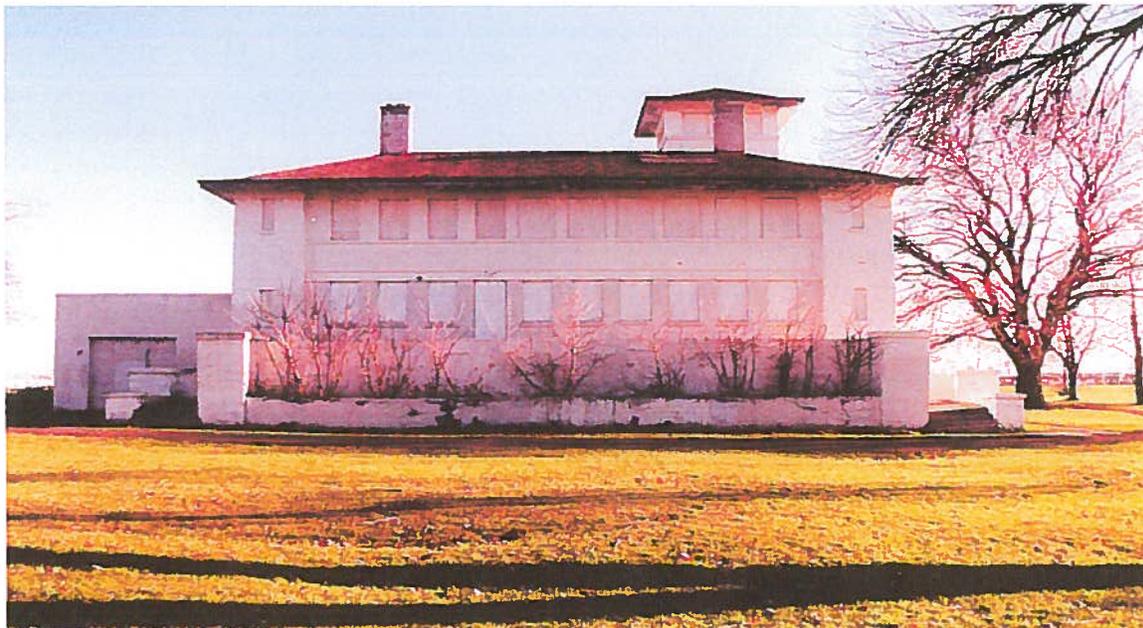


Photo 2.15 – Former Coast Guard Station

Over the years, several entities have discussed plans to utilize this structure, however, the County has not received any viable offer to lease the site and to perform the necessary work to repair and/or rebuild the building.

Some stakeholders believe that there should be a minimum number of structures anywhere along the lakefront and that the former Coast Guard Station Building should be razed and not replaced. Others feel that it is a significant building, worth saving and representative of a part of the heritage of the Great Lakes. Diversity in the waterfront uses and attractions on the shoreline greatly enhances the appeal of the lakefront to a greater cross section of the general population.

The former Coast Guard Station has deteriorated significantly with age and arsons have attempted to burn the building, leaving a large hole in the floor between the second and

third levels of the building. The electrical service to the building has been disconnected, the domestic water service has been shut off, and the building is unheated. Time and freeze-thaw cycles have devastated the remainder of the interior.

The stucco facade of the exterior is delaminating from the face of the clay block that serves as the primary structural element of the building exterior. Refer to Photo 2.16 on the next page. The stucco facade is unsafe. Sections of the stucco facade have fallen to the ground and other sections appear ready to do so.

The exact condition of the structural clay block is not fully known. However, in areas where the stucco facade has fallen from the face of the clay block, the clay block can be observed. In some instances the clay block has been damaged or has deteriorated extensively. It cannot be known to what extent that the structural block has deteriorated until the stucco facade is fully removed.

Rehabilitation or restoration of the building would be an extensive undertaking and would result in a building of questionable value and usability. The cost of restoration is estimated to be in excess of \$800,000. The cost of replicating (as opposed to restoring) the structure is estimated to be in excess of \$600,000. Having only 1,557 square feet of floor space per floor, and a total of 5,009 square feet, the usable square footage would be significantly reduced by the installation of code-complying stairways and an elevator (a barrier-free requirement).

A boathouse attached to the southeast side of the original Coast Guard building once housed Coast Guard vessels. Please refer to Photo 2.17 on page 41. The boathouse was an addition to the original former Coast Guard Station and does not contribute to the historical significance of the building.

The former Coast Guard Station and the boathouse are in extremely poor condition and are currently unsafe.

The former Coast Guard Station is a historic structure. It is reported to be one of only two Coast Guard structures of the Prairie Style of architecture. The Great Lakes Futures group has expressed a strong interest in restoring the building. They have acquired the services of an architect, who has provided them with estimates of the probable cost of restoration, and are in the process of assembling the necessary funds to implement the restoration. A specific plan for restoration and a final use for the building have not yet been presented to the County for approval, and matters of compliance with the Public Trust Doctrine have not yet been resolved. It is not known when a final proposal will be presented to the County.



Photo 2.16 – Delaminating Stucco

In the absence of a firm and accepted offer to restore the building, the only remaining option is to photographically document and demolish the building. Demolition of the building and filling the boat well, discussed in Article 2.6.5.2 on the next page, offers the opportunity to improve the safety of the park visitors and to expand the amount of green space within the park. The area is seen as a potential site for the construction of a park picnic shelter.



Photo 2.17 – Former Coast Guard Station Boat House and Boat Well

2.6.5.2 Former Coast Guard Station Boat Well

A boat well serving the boathouse has a concrete bottom and timber pile-supported concrete sidewalls. Refer to Photo 2.17 above. It is open to the marina basin and is full of debris. The boat well no longer serves a useful purpose and is an eyesore.

The concrete walls are deteriorating, but the condition of the timber piles is of even greater concern. At the present time, the lake level is nearing its all-time record low level. At several times over the past years, the timber piling has been exposed to wetting and drying conditions, causing the piles to deteriorate. The timber piles supporting the concrete walls are very likely deteriorating in the same manner that the timber piles supporting the Flushing Tunnel wall and the wall along the former Coast Guard Station shoreline are deteriorating.

2.6.6 Center Section Slip Tenant Restrooms

The Center Section restroom facilities are located inside the fence enclosed promenade area of Docks E through K. Refer to Photo 2.18 on the next page. Constructed in 1994, it is the most recently constructed restroom facility in the marina.

The number of fixtures in the boater restrooms is as follows:

	<u>Existing</u>	<u>Recommended</u>
▪ Washers and Dryers	1 pair	5 or 6 pairs
▪ Men's Room		
▪ Urinals	1	3
▪ Water Closets	1	3
▪ Lavatories	2	5
▪ Showers	2	5
▪ Women's Room		
▪ Water Closets	2	5
▪ Lavatories	2	5
▪ Showers	2	5

While the building is relatively new, the number of toilets, lavatories, showers and laundry fixtures do not comply with the current guidelines of ASCE. The laundry fixtures are located outside, but undercover during the boating season.

The building does comply with ADA requirements for accessibility and is in excellent condition. The need, however, exists for additional toilets, lavatories, showers, washers and dryers. Expansion of the dockage system will impose even greater demand on the facility.

If the County pursues expansion of the facility, and if the parking lot is rehabilitated as discussed in Article 2.8.3, an opportunity would exist to integrate new public restrooms into the new addition (keeping them separate from the boater facilities). Please refer also to Article 2.6.7 on the next page for a discussion of the existing Center Section public restrooms. The existing public restrooms could be demolished and removed from the site.

Removal of the existing public restrooms would remove a constraint upon the rehabilitation of the parking lot. Redesign of the parking lot might be made an easier task without the constraint imposed by the building.



Photo 2.18 – Center Section Slip Tenant Restrooms

2.6.7 Center Section Public Restrooms

The Center Section public restroom facility previously served exclusively as a boater facility. Refer to Photo 2.19 on the next page. Prior to the construction of the new boater’s facility, there were no public restrooms in the Center Section of the marina.

When the new Center Section boater’s facility was constructed, the original restrooms were kept as public restrooms.

The number of fixtures provided in the Center Section public restroom facility is as follows:

	<u>Existing</u>	
▪ Men’s Room		
▪ Urinals	1	
▪ Water Closets	1	
▪ Lavatories	1	
▪ Showers	1	locked
▪ Women’s Room		
▪ Water Closets	2	
▪ Lavatories	1	
▪ Showers	1	locked



Photo 2.19 – Center Section Public Restrooms

The building does not comply with ADA requirements for accessibility and is in fair condition. If the Center Section slip tenant restrooms are expanded, the public restrooms can be integrated into the new addition.

2.6.8 South Section Slip Tenant Restrooms

The South Section slip tenant restroom facilities are located inside the fence enclosed promenade area of Docks L through P. The building was constructed in 1986. Refer to Photo 2.20 on the next page.

The number of fixtures provided in the South Section slip tenant restrooms is as follows:

	<u>Existing</u>	<u>Recommended</u>
▪ Washers and Dryers	1 pair	5 or 6 pairs
▪ Men’s Room		
▪ Urinals	4	3
▪ Water Closets	3	3
▪ Lavatories	4	5
▪ Showers	4	5
▪ Women’s Room		
▪ Water Closets	3	5
▪ Lavatories	4	5
▪ Showers	2	5



Photo 2.20 – South Section Slip Tenant Restroom

The numbers of fixtures are slightly below the numbers suggested by ASCE, but are adequate. Similar to the North and Center Sections boater restrooms, the laundry fixtures are located outside, but undercover.

The South Section slip tenant restroom facility does comply with ADA requirements for accessibility and is in good condition.

If the South Section slip tenant restroom facilities are to be remodeled, the building could be expanded slightly, allowing the laundry facilities to be brought indoors and creating an opportunity to conform the building to a park and marina design theme.

2.6.9 South Section Open-air Picnic Shelter and Public Restrooms

An open-air picnic shelter, approximately 1000 square feet in size and housing public restrooms, is located to the southeast of the Docks L through P. Refer to Photo 2.21 on the next page.

The general public uses the structure as a sheltered picnic area on a first come-first serve basis. The facility can be reserved for special events, but picnic permits are not issued. Constructed in 1974, the building is a timber and wood frame structure. The structural elements of the building exhibit signs of deterioration. The laminated wood arches of the open-air shelter are delaminating and the steel base plates of some of the wood columns are badly rusted. The building is in fair condition.



Photo 2.21 – South Section Public Restrooms/Open-air Picnic Shelter

The number of fixtures provided in the restroom section of the structure is as follows:

	<u>Existing</u>
▪ Men's Room	
▪ Urinals	2
▪ Water Closets	2
▪ Lavatories	2
▪ Women's Room	
▪ Water Closets	3
▪ Lavatories	2

The facility requires structural repair and remodeling. Performing the necessary repairs and remodeling affords an opportunity to bring the building into conformance with a marina and park design theme.

2.6.10 Proposed McKinley Center Building

A need and an opportunity exist to improve the management facilities of the marina. The space in the existing Roundhouse, consisting of a single office, is not inadequate for a marina the size of McKinley and the facility is not centrally located. The area covered by

the marina is substantial. More centrally located management facilities would make communication with staff and travel to and from the marina offices more efficient.

The park and marina do not offer many of the services provided in other large marinas. As an example, Reefpoint Marina in Racine, Wisconsin, offers a centrally located facility in which the marina management offices are located. The building, however, provides more than just space for marina management purposes. It also houses the County Sheriff's Harbor Patrol Headquarters, yacht club facilities, a small delicatessen, specialty stores, a ship's store and a restaurant. In addition to those services, the building houses slip tenant restrooms, public restrooms, and park maintenance facilities. The same opportunity exists at McKinley. Please refer to Article 3.5.1 for a detailed discussion of the McKinley Center concept presented at the public information meetings.

2.6.11 Temporary Vendor Buildings

Three small, wood frame buildings, used by park service vendors, are located immediately to the southwest of Docks L through P. They are temporary structures and are leased by private businesses on an annual basis.

The structures are functional and in good condition, but are aesthetically unappealing. The vendor buildings could be brought into conformance with a park and marina design theme, using relatively simple measures such as painting and re-roofing the structures to conform to the theme.

2.7 The Milwaukee Yacht Club and Milwaukee Community Sailing Center

2.7.1 Milwaukee Yacht Club

The Milwaukee Yacht Club compound is located adjacent to the east wall of the Flushing Tunnel intake channel in the North Section of McKinley Park and occupies about two acres of land. The compound is enclosed within a gated, unappealing wood slat chain link fence enclosure. Facilities contained within the compound include the MYC clubhouse, maintenance facilities, a limited amount of boat storage space, and boat handling equipment. The compound, including the buildings, is leased from the County. The MYC maintains all of the facilities within the compound and the dockage system under the terms and conditions of the lease agreement with the County.

Boats are launched and retrieved from the water using jib cranes. The activity occurs along the Flushing Tunnel intake channel bulkhead wall. Parking for Yacht Club members is provided by the County in a portion of the North Section parking lot just east of the Yacht Club clubhouse.

The responsibility for maintaining the facilities located within the Milwaukee Yacht Club compound belongs to the Yacht Club. The buildings are in fair to good condition and do not require immediate remodeling.

The MYC lease agreement with the County, whereby the MYC has been made responsible for the maintenance of the facilities within the compound, is a constraint at this time. However, an opportunity will exist when it is time to renew the lease agreement, to incorporate conditions that will require conformance to a selected marina and park design theme. As an example, the wood slat, chain link fence enclosure is an eyesore. Replacement of the fence would make a dramatic improvement to the aesthetics of the entire North Section of the marina. When it is replaced, it can be designed to conform to a selected marina and park design theme.

2.7.2 Milwaukee Community Sailing Center

The Milwaukee Community Sailing Center compound is located along the southeast bulkhead wall of the South Section of the marina basin and occupies approximately 2.2 acres of land. The compound is surrounded by a gated, chain link fence enclosure. Refer to Photo 2.22 on the next page. Facilities contained within the compound include a small wood-clad office building, a three-stall garage, an asphalt-paved boat storage area, and boat handling equipment. The compound, including the buildings, is leased from the County. Under the terms and conditions of the lease agreement with the County, MCSC maintains all of their own facilities and equipment.

The UW-Milwaukee and Marquette University collegiate sailing clubs are presently leasing space from the MCSC within the compound. The collegiate sailing clubs had originally conducted their operations within the Yacht Club compound. The MYC bulkhead wall was declared by the County to be unsafe, forcing the collegiate sailing clubs to relocate to the MCSC site.

The boat storage area of the MCSC compound is used to store dry-sail boats that are launched and retrieved from the water using jib cranes. The area also serves as a winter boat storage area for vessels owned by club members.

Some MCSC vessels are moored on an unknown number of swing moorings. The UW-Milwaukee and Marquette Sailing Clubs lease space from the MCSC. Their members also occupy some of the swing moorings.



Photo 2.22 – Milwaukee Community Sailing Center

The office and garage buildings are wood-frame structures. There are no restroom facilities. Members of the MCSC use the South Section slip tenant restrooms.

The asphalt-paved storage and boat handling area is deteriorating with age and will ultimately need to be replaced.

The responsibility for maintaining the facilities located within the Milwaukee Community Sailing Center compound belongs to the Sailing Center. The buildings are in fair-to-good condition and do not require immediate remodeling or repainting.

The terms and conditions of the MCSC lease agreement with the County are a constraint upon the implementation of improvements at this time. An opportunity will exist when the time comes to renew the lease to incorporate conditions that will prompt improvements to the MCSC facilities.

The boat storage area is cluttered with materials and equipment and is unsightly. It could be better organized and cleaned up. The chain link fence surrounding the MCSC compound is aesthetically unattractive. It could be replaced with a decorative metal fence enclosure conforming to a marina and park design theme.

2.8 Boater and Public Parking

2.8.1 General Comments

Parking lots serving the slip tenants, day sailors, and boaters who use the launch ramp, are provided in each of the three sections of the marina and there are parking provisions for the general public associated with each of the three sections. Parking provisions have also been made for the Milwaukee Yacht Club members and one parking lot in the South Section of the marina serves the Milwaukee Community Sailing Center. In addition, parking is allowed along both sides of Lagoon Drive and along N. Lincoln Memorial Drive.

The physical layout of the parking lots in the North Section is inefficient. Boaters who launch their boats at the launch ramp must trail their boats through the public and Yacht Club parking lots to the launch ramp. Further, once they have arrived at the launch ramp, they must maneuver their boats in an area through which pedestrian traffic to and from McKinley Beach passes.

Comments received during the public outreach varied from “there’s not enough parking” to “there is too much parking and green space should be increased.” During special events on the waterfront, parking space in the paved lots and on the streets is difficult to find. Special events held at the waterfront require that parking occur on designated grassy areas within McKinley Park and Veterans Park, providing a source of revenue for the County. During the school year, students of the UW-Milwaukee park their cars in the public lots of the North and South Sections of the marina and along Lagoon Drive, making it more difficult for casual park visitors to find adequate parking space in parking lots.

Parking space dedicated to the marina slip tenants and to the boaters using the launch ramp is adequate, and can tolerate an expansion of the numbers of slips without having to expand the lots. During a substantial part of the year, parking for both the water-related user and the general public is adequate. This Plan’s treatment of the parking lots is, therefore, based upon the premise that the total area of the park devoted to hard surface parking lots should be maintained and preferably reduced in size. Further, the parking lots throughout the park should first serve the boaters, park users, and the general public. The parking needs of special interest groups can still be accommodated, but to increase the amount of green space in the park, the parking space devoted to their use should be reduced.

Consistent with other infrastructure in the park, the asphalt pavements and curb and gutter sections of all of the parking lots throughout McKinley Park and Veterans Park have deteriorated with age and are in need of rehabilitation or replacement. Rehabilitation of

the parking lots will, however, offer opportunities for other marina and park improvements. The following is a detailed assessment of the individual parking lots throughout McKinley Park and Veterans Park, and of the opportunities for parking along Lagoon Drive and N. Lincoln Memorial Drive.

2.8.2 North Section Parking Lots

The parking areas of the North Section consume most of the land area northeast of the Flushing Tunnel and are, for all practical purposes, one large parking lot. There are, however, areas dedicated to specific uses.

The North Section parking lots serve: 1) car/trailer parking used by boaters launching their boats at the boat launch ramps; 2) parking for the slip tenants of Docks A through D; 3) parking for members of the Milwaukee Yacht Club and the general public; and 4) overflow parking used for both car/trailer and Yacht Club overflow parking when required. The lot used by the Yacht Club and the general public is effectively divided into two parts, one for Yacht Club members and one for the general public.

The asphalt surfaces are severally cracked and crumbling and the curb sections are breaking apart.

The North Section parking lots have deteriorated extensively with age, to such an extent that they all need to be replaced. The need to rehabilitate the parking lots provides an opportunity to improve or correct many of the deficiencies that exist. An opportunity exists to better organize and control car and trailer parking and to get the boats on trailers to the launch ramps in a more efficient manner. An opportunity exists to guide pedestrian traffic along a clearly delineated and relatively safer pathway into and through the park. And an opportunity also exists to increase the amount of green space within the park. Public opposition to the loss of parking space, particularly from the UW-Milwaukee students who park at the site and from the University, may be a constraint.

The main entrance from N. Lincoln Memorial Drive into the North Section of the site occurs near the Flushing Tunnel opposite the LaFayette Hill intersection. The intersection is a signalized intersection, making it possible for vehicles leaving the site, with and without trailed boats, to make both left and right turns onto N. Lincoln Memorial Drive. The intersection is the only signalized intersection in this stretch of N. Lincoln Memorial Drive, making it the logical location for the main entrance to the North Section of the site. The entrance can, however, be aesthetically improved and possibly redirected to make site ingress and egress more efficient.

The opportunity would exist to delineate and improve pedestrian movement through the site, potentially reducing the opportunity for vehicular and pedestrian conflict. An

opportunity also exists to reduce the size of the lot dedicated to public parking, increasing the amount of green space in the park.

2.8.2.1 Launch Ramp Parking Lot

The launch ramp parking lot is located at the very northeast end of the project site and accommodates car/trailer maneuvering and parking for boaters using the launch ramp, fishermen using the federal breakwater, and the casual visitor who comes to walk the federal breakwater or to view the water.

The lot has 83 car/trailer parking spaces and 54 car-only parking spaces and is the site of chain link fence enclosures housing a boat storage facility, a fish cleaning station and a dinghy storage rack. The lot is inefficiently laid out. The presence of the fish cleaning station and dinghy storage enclosures disrupts boat-handling operations at the ramp and creates potential pedestrian and vehicular conflict.

Under most circumstances, the number of car and car/trailer parking spaces within the lot is acceptable. Occasionally, the lot is filled and additional space is required. An overflow lot has been designated for use on those occasions.

Pedestrian traffic to and from McKinley Beach passes randomly through the staging, maneuvering and parking areas of the lot without the benefit of marked, designated pathways. A redesign of the parking lot should include designated pathways through or around the lot.

The asphalt surface and curb sections are badly deteriorated with age and need to be replaced in their entirety. The fish cleaning station and dinghy storage facilities should be relocated to an area that will reduce the conflict between those using the cleaning station and dinghies and those trailing and maneuvering their boats at the launch ramp.

2.8.2.2 Slip Tenant Parking Lot

Located immediately to the west of the Roundhouse, the lot serving the slip tenants of Docks A through D is reasonably close to the promenade serving the docks. The parking has 137 spaces dedicated to slip tenant use only. According to commonly accepted ASCE guidelines, it presently has an adequate number of parking spaces for the 157 boat slips it serves. There are 0.88 parking spaces for every boat slip, slightly greater than the 0.75 ratio frequently recommended. If the number of slips is increased to approximately 193, as recommended by the Plan, and the area dedicated to tenant parking remains the same, the ratio of parking spaces to boat slips would be reduced to 0.7, slightly less than the recommended ratio.

The asphalt surface and curb sections are badly deteriorated with age and need to be replaced in their entirety.

2.8.2.3 Yacht Club Parking Lot

The parking area designated for the use of the Milwaukee Yacht Club members consists of 73 parking spaces. It is used primarily by Yacht Club Members, but is not a controlled or clearly marked lot, allowing the occasional encroachment of public parking upon the Yacht Club's parking area.

The Yacht Club parking area is adequate for the Yacht Club's purposes under most circumstances, but during special club events parking is allowed in the overflow parking lot. The County issues 100 passes annually to the Yacht Club for the use of the overflow parking lot during those occasions.

The asphalt surface and curb sections are badly deteriorated with age and need to be replaced in their entirety.

2.8.2.4 Public Parking Lot

The area of the lot used by the general public and by UW-Milwaukee students has 208 parking spaces. The parking lot is used by UW-Milwaukee students as a park and ride lot, helping to alleviate parking concerns around the UW-Milwaukee campus. The Department of Parks, Recreation and Culture and UW-Milwaukee officials work closely together to ensure the efficiency of this system.

The asphalt surface and curb sections are badly deteriorated with age and need to be replaced in their entirety.

2.8.2.5 Overflow Parking Lot

The overflow lot has 59 car/trailer parking spaces. Its use is controlled to provide overflow parking for boats and for overflow parking during special Yacht Club events. During the mid-week and during the non-boating season, the overflow lot is often unused.

The asphalt surface and curb sections are badly deteriorated with age and need to be replaced in their entirety.

2.8.3 Center Section Parking Lot

The Center Section parking lot, serving Docks E through K, is a single lot serving both public and marina tenant parking. The tenant and public parking areas are separated by a row of concrete bollards. The lot is accessed from Lagoon Drive and a traffic gate controls access to the slip tenant lot.

There are 288 spots in the slip tenant area of the lot. The tenant lot serves 245 existing boat slips. There are 1.2 parking spaces for every boat slip, exceeding the recommended ratio of 0.75. If the number of slips is increased to approximately 400, as recommended by the Plan, and if the area dedicated to tenant parking remains the same, the ratio of parking spaces to boat slips would be reduced to 0.7, slightly less than the recommended ratio, but greater than the recommended minimum ratio of 0.5. Under most circumstances, this is an adequate parking stall to boat slip ratio.

There are 84 parking spaces provided in the public section of the lot. The area dedicated to public parking may be expanded to accommodate the parking needs of the McKinley Center building.

The entire lot and its setting are aesthetically unappealing. There is no landscaping around the perimeter and there are no tree islands within the lot. The asphalt surface of the combined lot is badly deteriorated with age and needs to be replaced in its entirety.

The Center Section slip tenant and public parking lot needs to be replaced. Improvement of the lot, in conjunction with the expansion of the Center Section slip tenant restroom facility and the removal of the existing public restroom, would improve the appearance of the area and would provide better services to the boater and public alike.

2.8.4 South Section Parking Lots

Three separate and distinct parking lots serving the slip tenants of Docks L through P, the general public, and members of the Milwaukee Community Sailing Center exist in the South Section of the marina.

Similar to the parking lots in the North Section, the parking lots in the South Section are aging and are in generally very poor condition. The asphalt surfaces are severely cracked and crumbling and the curb sections are breaking apart. The parking lots need to be replaced.

The South Section parking slip tenant parking lot, the public parking lot, and the MCSC parking lot have deteriorated with age to such an extent that they need to be rehabilitated. The physical appearance of the area would be significantly improved if they were replaced.

2.8.4.1 Slip Tenant Parking Lot

The lot serving the slip tenants in the South Section of the marina is located immediately to the southwest of the concrete promenade serving Docks L through P. Access to the lot occurs at the end of Lagoon Drive.

The parking lot has 203 parking spaces dedicated exclusively to the 260 slip tenants of the South Section. According to commonly accepted ASCE guidelines, it presently has an adequate number of parking spaces. Like the tenant parking lot of the North Section, there are 0.88 parking spaces for every boat slip, slightly greater than the 0.75 ratio frequently recommended. If the number of slips is increased to approximately 322, as recommended by the Plan, and if the area dedicated to tenant parking remains the same, the ratio of parking spaces to boat slips would be reduced to approximately 0.6, less than the recommended ratio but greater than the recommended minimum of 0.5. Under most circumstances, 0.6 is an adequate ratio.

The asphalt surface and curb sections are badly deteriorated with age and need to be replaced in their entirety.

2.8.4.2 Public Parking Lot

The public parking serving Veterans Park is located immediately to the southwest of the South Section slip tenant parking lot and on the opposite side of Lagoon Drive. Access to the lot occurs at the end of Lagoon Drive.

The lot has 108 parking spaces. UW-Milwaukee students also use the lot as a park and ride lot.

The asphalt pavement and curb sections of the parking lot are deteriorating with age and will soon need to be repaired or replaced.

2.8.5 *Milwaukee Community Sailing Center Parking Lot*

The parking lot serving as the MCSC parking lot is located just to the east of the South Section tenant parking lot. The MCSC lot has 93 parking spaces. Access to the parking lot occurs at the end of Lagoon Drive.

The asphalt pavement and curb sections of the parking lot are deteriorating with age and will soon need to be repaired or replaced.

2.8.6 *Parking along Lagoon Drive*

There is parking available along Lagoon Drive. The parking is available during the hours that the park is open. Parking along the drive is restricted during special events.

2.8.7 *Parking along N. Lincoln Memorial Drive*

Improvements to N. Lincoln Memorial Drive from Michigan Street to Lafayette Hill Road have been completed. Reconstruction of the northern end of the project to Kenwood Boulevard will be completed by the summer of 2000. Parking opportunities along N. Lincoln Memorial Drive will remain unchanged.

2.8.8 *Special Event Grass Parking*

The Parks Department operates temporary grass lots for special event parking. Approximately 2300 vehicles can be accommodated on the turf areas in Veterans Park. Grass parking generates revenue for the County.

2.9 *Park Areas*

2.9.1 *Open Areas*

The open space of McKinley Park and Veterans Park include the areas currently occupied by the rugby/hurling field in the vicinity of the former Coast Guard Station and the area lying south and east of Lagoon Drive.

The open areas of the park lying to the south and east of Lagoon Drive are used by kite flyers, skateboarders, strollers and special events sponsors.

The turf in several areas has become uneven and worn and is in generally poor condition, particularly in areas used for special event parking. The ground surface in the area used

for rugby and hurling is uneven and a manhole lid and cover project above the ground surface, periodically requiring that the area around the manhole be filled and re-graded.

Public outreach has indicated a preference that the open areas of the park remain functioning as they presently do. An opportunity exists, however, to improve the open areas by filling the uneven areas and restoring the turf.

2.9.2 Harbor Edge Promenade and Walkways

The harbor edge of Veterans Park extends from the southern-most end of the project near the Vietnam Veterans Memorial in a northeasterly direction along the harbor edge, to and around O'Donnell Point. Refer to Photo 2.23. The promenade is in fair-to-good condition and is not in immediate need of repair or replacement. The promenade parallels a steel sheet pile bulkhead wall running the entire length of the promenade. The top of the sheet pile wall extends twelve to eighteen inches above the promenade grade and is functional, but aesthetically unappealing. The steel pile itself is rusting, but is not delaminating.

Large armor stone has been placed on the outside of the steel sheet pile wall along the outside of O'Donnell Point. A section of the steel sheet pile wall had failed, causing the top of the wall to bow toward the harbor. Presumably, the tiebacks had failed. The armor stone has stabilized the wall, but the bow in the wall is unsightly.



Photo 2.23 – Harbor’s Edge Promenade

Asphalt walkways meander throughout the parks and along the harbor edge. The park walkways and promenade offer interesting and varied experiences to all users. Joggers,

runners, roller bladers, and families out for a stroll use the walkways. Exercise and fitness stations are located at intervals along the walkway system and throughout the park, offering the fitness-minded visitor the opportunity to engage in a series of pre-programmed exercises.

The walkways and harbor edge promenade are in generally fair-to-good condition.

The harbor edge promenade provides the park visitor with a wonderful experience. The asphalt promenade is not visually appealing and the steel sheet pile projection above the promenade grade is unsightly. An opportunity exists to improve the aesthetics of the promenade and the steel sheet pile wall by replacing the promenade with a concrete walkway and capping the steel sheet pile wall with an integral concrete curb.

The walkways meandering through the park do not require immediate improvement. The asphalt walkways function nicely and require only periodic repaving. The opportunity envisioned for the walkways throughout the park is for the provision of additional directional and informational signage, intended to promote the synergistic use of all areas of the park, other sections of the Milwaukee lakefront, the downtown, and the Brady Street area.

2.9.3 *Picnic Areas*

The picnic area surrounding the open-air shelter and public restroom facility has picnic tables available for public use and are used heavily. The tables are aging and in poor condition.

This Plan envisions the creation of a new picnic area and the construction of a new picnic shelter at the site of the former Coast Guard Station.

2.9.4 *Veterans Park Lagoon*

The presence of the lagoon alongside Lincoln Drive is a tremendous asset to McKinley and Veterans Parks. It provides a pleasant contrast to the otherwise urban character of the City.

The lagoon meanders along the east side of N. Lincoln Memorial Drive from the Vietnam Veterans Memorial to the Lagoon Drive entrance to the Center and South Sections of the marina and park. The lagoon is used for fishing, paddle boating and simple enjoyment.

The lagoon is stocked annually with trout and is used for fishing and is enjoyed by strollers and passersby. Shoreline stabilization at the Paddle Boat Rentals facility is currently being evaluated, but is not a component of this Plan.

The lagoon is generally in good condition. The presence of the lagoon alongside N. Lincoln Memorial Drive affords an opportunity to incorporate art in the overall redevelopment of Veterans Park and McKinley Park. This Plan envisions the construction of an ice fountain, or similar artistic feature in the lagoon. Please refer to Article 3.8.4, Article 4.9 and Article 5.6.5 for detailed discussions of the ice fountain concept.

2.10 Park Roadways

2.10.1 Center and South Section Park Entrance and Lagoon Drive

Access to the North and South Sections of McKinley Park and Veterans Park occurs from N. Lincoln Memorial Drive. Because planning and design of the improvements to N. Lincoln Memorial Drive were included in a separate commission, it is technically outside the study area of this Plan.

The primary roadway within the limits of the study area is Lagoon Drive. The Lagoon Drive entrance to the park is regulated by a traffic signal at its intersection with N. Lincoln Memorial Drive. A wooden sign marks the entrance to the site.

The drive is approximately one half mile long and serves as the sole means of vehicular access to the Center and South Sections of the marina, to McKinley Park south of the Flushing Tunnel, and to Veterans Park. The general condition of the road is fair. Some sections of the curb and gutter have deteriorated and need to be repaired or replaced.

The road is owned and maintained by Milwaukee County except that, as part of a cooperative agreement between the County and UW-Milwaukee, the University plows and salts the roadway during the winter months.

Given that the Lagoon Drive entrance has been left in present location in the redesign effort, and given that it functions well, relocation of the entrance has not been given consideration in this Plan.

No improvements are envisioned for the Lagoon Drive entrance. New curb cuts are included in the improvements to N. Lincoln Memorial Drive. The entrance is already at its logical location.

Improvements to the drive itself are envisioned to consist of the future re-pavement of the drive and replacement of the curbs and gutters.

2.10.2 North Section Park Entrance

The main entrance to the North Section of the marina is regulated by a traffic signal where it intersects N. Lincoln Memorial Drive and the foot of Lafayette Hill Road. A wooden park logo sign marks the entrance. Given that the entrance is located at the only lighted intersection in this immediate reach of McKinley Park, it is the logical location for a main entrance. The entrance serves a vehicular roadway that parallels the fenced enclosure of the Milwaukee Yacht Club, leading to parking lots serving the general public, the Yacht Club, the slip tenants of Docks A through D, and boaters who launch their boats at the launch ramp. An asphalt pedestrian walkway lies between the roadway and the Yacht Club fence.

The features along the pedestrian walkway and site roadway are aesthetically unappealing. The asphalt surfaces of the walkway and site roadway are in poor condition. Deteriorating wood slats back the Yacht Club's chain link fence. Concrete bollards, that once had chain draped between them, now only weakly define the pedestrian walkway and barely separate the walkway from the site roadway.

The main entrance to the North Section of the Park is already at its logical location. The curb cut of the entrance will be improved as part of the N. Lincoln Memorial Drive improvements. The drive it serves, however, may need to be redirected on site as part of a redesign of the parking lots.

2.10.3 North Service Road

A service road to the North Section is located at the most northern end of the project site. It is usually blocked to vehicular traffic except during special events and used primarily for maintenance purposes. The road could potentially be incorporated into a re-designed North Section parking arrangement.

Like the parking lots throughout the park, the service road is in poor condition.

Redesign of the North Section parking lots could result in a greater role for the north service road. The main entrance to the site is heavily used and requires boaters trailing their boats to travel through the public and Yacht Club parking lots before arriving at the launch ramp and they must travel back through the lots when they leave the site. The potential exists for use of the north service road entrance as a northbound, right-turn only entrance to the site, affording a more direct access to the boat launch facility, and as a right-turn only exit from the site, decreasing the pressure placed upon the main entrance during times of high traffic volume on N. Lincoln Memorial Drive.

2.11 Organized Athletic Activities

Several organized athletic activities take place at McKinley Marina in the vicinity of the former Coast Guard Station, most notably soccer, rugby and hurling. These activities occupy a significant amount of park acreage. The Milwaukee County Department of Parks, Recreation and Culture has indicated that there is a deficiency in the amount of picnic area available at McKinley Marina. This type of park use is likely to appeal to many people and families and is likely to contribute to an increase in the number of park users.

In order to provide for a site use that will appeal to the broadest segment of the County's population, the Parks Department will seek an alternative site for the organized athletic activities that occur at McKinley Park. Removal of organized athletic activities from McKinley Park and Veterans Park will encourage even greater use of the parks by a broader cross section of the public.

An opportunity may exist to relocate some or all of the organized athletic activities from the park to Lake Park East, the site of the former gun club. Please refer to Article 3.10 for a detailed discussion of this alternative. When an alternative site is identified, the area now used for organized sports could be improved to serve picnicking and other passive outdoor activities.

2.12 Utilities

Sanitary sewer and water service mains run randomly throughout both the North Section of the site and McKinley and Veterans Parks. In the North Section, the sanitary sewer and water services enter the site from N. Lincoln Memorial Drive at the very northwestern corner of the site. The sanitary sewer is a gravity sewer, serving the Milwaukee Yacht Club clubhouse and the Roundhouse. Separate sanitary sewer and water services serve the auxiliary buildings of the MYC. The services enter the site from N. Lincoln Memorial Drive near the Flushing Tunnel. The sanitary sewer serving the auxiliary buildings is also a gravity sewer. With the exception of an occasional break in the water mains, the existing utilities are satisfactorily serving the North Section facilities well.

The water service serving Veterans and McKinley Parks, southwest of the Flushing Tunnel, is a looped main system, entering the site at two locations. The looped main connects to a water main in N. Lincoln Memorial Drive at its intersection with Lagoon Drive and to a main entering the site from the Art Museum. The looped main runs from the Art Museum in a northeasterly direction through the center of Veterans Park. It continues toward the South Section of the marina, and then to the mid-point of the Center Section, turning to the west toward its connection to the water main located at the intersection of Lagoon Drive and N. Lincoln Memorial Drive. Hydrants, serving the special events that take place in Veterans Park, are located at intervals along the looped-main. The water service is satisfactorily serving the present needs of the facilities and activities in Veterans Park and McKinley Park.

The sanitary sewer system serving Veterans Park and McKinley Park is a combination gravity and force-main sewer system.

The Milwaukee Community Sailing Center presently has no facilities requiring sanitary sewer service. The South Section slip tenant restroom facility does, however, require sanitary sewer service and is served by a duplex pump lift station. Sewage is pumped, under pressure, through a force main to a gravity sewer manhole. The manhole is located immediately to the southwest of the open-air picnic shelter. The sanitary building sewer serving the public restrooms and open-air picnic shelter also discharges by gravity into the same manhole.

The gravity sewer discharges into a second lift station located approximately 150 feet southwest of the Center Section promenade. The second lift station also contains duplex pumps. From the second lift station, sewage is pumped under pressure to a third lift station, located immediately to the west of the Center Section slip tenant restroom facility. From there, sewage is pumped to a gravity sewer manhole located at the west corner of the former Coast Guard Station. The gravity sewer carries sewage from the manhole, past the west corner of the Flushing Tunnel, to a connection with the Milwaukee Metropolitan Sewerage District main in N. Lincoln Memorial Drive.

While each of the three lift stations contains duplex pumps, the pumps are not grinder pumps capable of handling solid as well as liquid waste. Due to this fact, problems with the pumps failing have been experienced, particularly at times of very heavy marina and park use, i.e., during the July 4th weekend. Backups, due to the failure of one of the duplex pumps have occurred. The problem has occurred primarily with the pumps in the second lift station (southwest of the Center Section promenade). Because there are two pumps in the lift station, the failure of one of the pumps does not entirely incapacitate the system. The capacity of the lift station is, however, affected and backups do occur. The County has already obtained grinder pumps that will be used to replace the existing duplex pumps of the second lift station.

Parks Department maintenance staff have indicated that, in general, the piping systems of both the sanitary sewer and water systems are functioning well, but that the sanitary sewer system lift stations would perform better, if grinder pumps replaced the existing duplex pumps.

Expansion of services in the Center and South Sections of the marina and park, if implemented, may add sufficient load to the sanitary sewer system to require that the duplex pumps be replaced with pumps of greater capacity. It may also be necessary to increase the downstream gravity sewer pipe sizes.

The existing electrical services to the three sections of the marina, the Milwaukee Yacht Club and to the Milwaukee Community Sailing Center are presently functioning well.

However, sponsors of some of the special events held at Veterans Park have indicated a desire for additional service capacity. Further, as the marina expands and new facilities are added, there will be a need to increase the capacity of the electrical services provided.

2.13 Community Issues

2.13.1 Public Access

McKinley Park and Veterans Park were created by filling the lakebed of Lake Michigan, and therefore, fall under the regulatory jurisdiction of the WDNR. In accordance with the Public Trust Doctrine, it is the policy of the Wisconsin Department of Natural Resources to require full public access to all navigable waters of the State of Wisconsin. The Planning Team embraces the ideal, but also believes that legitimate waterside and water-related uses do exist that require restriction of the public's access to the water's edge. Life safety and security issues must also be considered. It is upon this premise that this study has been conducted.

Public access to the immediate water's edge of the basin and harbor is possible at most locations along the perimeter of the marina basin and park. Public access to the immediate water's edge is not presently allowed, however, within the confines of the Milwaukee Yacht Club, the Milwaukee Community Sailing Center, and the Center and South Sections of McKinley Marina. The needs of the slip tenants, major leaseholders of the marina, and users of other water-related services must be balanced with the rights and needs of the general public.

Excluding the Veterans Park Lagoon, to which the public has full access, there are 12,350 lineal feet (2.33 miles) of water's edge. Approximately 3,900 lineal feet (0.75 miles) of the water's edge within the gated, chain-link fence enclosures of McKinley Marina, the Milwaukee Yacht Club, and the Milwaukee Community Sailing Center are restricted to the use of slip tenants and members only. Fishing is also restricted in these areas. The remainder of the water's edge within the site (approximately 8,450 lineal feet) is publicly accessible.

The opportunities for access to the immediate water's edge throughout much of the study area is already abundant. Nonetheless, improvements to the dockage systems of the Center and South Sections of the marina offer an opportunity to increase public access to the immediate water's edge. Implementing a system similar to that implemented in the North Section of the marina, the public can be allowed to walk and fish along the promenade edge of the sections. Boater security can be maintained by the provision of gated access ramps to the docks. Closing off a portion of the promenade during specified hours can provide nighttime security.

2.13.2 Public Transit

The Milwaukee County Transit System operated a trolley route along N. Lincoln Memorial Drive prior to the start of reconstruction of the roadway in 1999. The reconstruction of the drive is scheduled for completion in 2000.

UW-Milwaukee operates buses for its students that stop at both the North Section and South Section public parking lots.

Getting visitors to the parks, and getting boaters from the park to other areas of Milwaukee's waterfront and downtown, is essential to the establishment of the synergistic relationships that are the intent of this Plan. Use of the park can be promoted by the provision of good public transit to and from the site. Bus service along N. Lincoln Memorial Drive and the restoration of the trolley service into the site upon completion of the N. Lincoln Memorial Drive improvements will contribute to the success of this Plan.

2.13.3 Brady Street Bridge

The existing Brady Street Bridge spans N. Lincoln Memorial Drive and provides a connection to Veterans Park, McKinley Park and McKinley Marina from the top of the lakeside bluff. Please refer to Photo 2.24 on the next page. It also serves reciprocally as a means of getting to the Brady Street area from the park. The bridge provides one of only a few means of pedestrian access to the lakefront for downtown Milwaukee residents and patrons of the Brady Street businesses.

Currently the bridge is a plain concrete structure, but is rather elegant in profile as it traverses the bluff and spans the drive. It presently has no special lighting or distinguishing features and is in need of structural and cosmetic repairs. The Milwaukee County Department of Public Works has investigated the cost of the necessary structural repairs, estimated to be approximately \$96,600.

An opportunity exists to improve and encourage pedestrian travel to and from the park via the Brady Street Bridge, promoting both the use of the park, the adjacent downtown and the Brady Street area. A light and care free aesthetic treatment of the bridge and the improvement to the Prospect Avenue entrance to the bridge could make the bridge a more inviting experience, not only to the pedestrian, but to automobile users on N. Lincoln Memorial Drive. An opportunity also exists to provide a much needed connection to Brady Street from the existing bike path and from the east side of N. Lincoln Memorial Drive. Bikers, as well as pedestrians, may then take advantage of Brady Street's many shopping, eating and entertainment opportunities.



Photo 2.24 – The Brady Street Bridge

2.13.4 *Wayfinding Signage*

Wayfinding signage throughout the marina and the park is minimal. Transient boaters arriving from other marinas on the Great Lakes and entering the marina are not given clear direction to the marina management facilities. There is more than one entrance that the transient boater may choose when entering McKinley Marina. The boater unfamiliar with the marina basin cannot clearly or quickly distinguish the marina management facilities. There is no signage giving the transient boater directions to the marina management offices.

There is no signage informing the park visitor of the services and attractions provided in the Brady Street area, and there is no signage informing the visitor of the attractions to the south and north of the park. More informational and directional signage is needed.

The entrance sign at the Lagoon Drive entrance to the park is an attractive wooden park logo structure, but can be easily missed from the northbound lanes of N. Lincoln Memorial Drive. The entrance sign to the North Section of the marina is also an attractive wooden sign. Both entrance signs are in good condition.

There is limited and inadequate directional and informational signage within the marina and park. Public comments have indicated a preference for additional wayfinding signage.

Improving the directional and informational signage throughout the marina and parks would make the area more inviting to visitors and transient boaters.

2.13.5 Vietnam Veterans Memorial

The south end of the park area is adjacent to the Vietnam Veterans Memorial. The memorial is in good condition and is not in need of improvement.

The Vietnam Veterans Memorial provides an almost spiritual experience and serves as a transition between the Art Museum, sections of Milwaukee's lakefront to the south, and Veterans Park. There have not been any public comments expressed suggesting that anything be done to improve the Vietnam Veterans Memorial.

2.13.6 Connections to the Milwaukee Art Museum and Other Lakefront Attractions

At the time that this Plan was being written, the final design of many of the elements of the improvements being made at the Milwaukee Art Museum, and sites south of the museum, were not available. An opportunity exists to improve further upon the relationship between the Milwaukee Art Museum, sections of Milwaukee's lakefront to the south, and Veterans Park. It is the vision of this Plan that the design of the proposed improvements to McKinley Marina, Veterans Park and McKinley Park will complement the designs of the other lakeshore improvements, and that they will have a positive synergistic impact upon the entire urban waterfront.

3.0 CHAPTER 3 – RECOMMENDED ALTERNATIVES AND IMPROVEMENTS

3.1 General

The following is a discussion of the alternatives and improvements given consideration during the public out reach and during the study. The discussion includes the specific recommendations of the Planning Team for implementation. The recommended improvements are presented in the order in which the individual elements of the site were presented in Chapter 2.0. A discussion of the cost of the improvements and recommendations for phasing the improvements follow in Chapter 4.0.

3.2 McKinley Marina Dockage Systems

The future improvement and development of the marina is dependent to a large degree upon the ability of the County to increase its marina revenues by means other than raising slip rental rates. Adding revenue-generating boat slips is a logical means of accomplishing that goal. Supported by the 1994 Trossen Associates market and economic feasibility study, which determined that the market in Milwaukee County could absorb as many as 250 new boat slips and that it was desirable to add that many to help offset the cost of improvements, the concepts presented at the Public Information Meeting #1 included 250 new revenue-generating boats slips.

The concept had significant spatial impacts upon the Milwaukee Community Sailing Center and upon the swing moorings. The impact to MCSC would have been the loss of a direct and open channel to the entrance of the marina. The MCSC conducts sailing lessons for novice sailors, who may have had difficulty sailing around the proposed new dockage system and through the swing mooring area to get to the marina entrance. Based upon the comments of the MCSC representatives present at the first public meeting, new concepts were prepared, showing a total of approximately 253 new boat slips added to the North, Center and South Sections of dockage. The plan now calls for the expansion of the Center Section of docks from 245 slips to 400 slips. The South Section of docks would be expanded from its current 260 slips to 322 slips, and the North Section would be expanded from 157 slips to 193 slips. Under the proposed alternative, the marina would be expanded from its present 662 slips to 915 slips. Please refer to Figure 3.2 on the next page.

McKinley Marina Milwaukee, Wisconsin

Proposed Marina Expansion

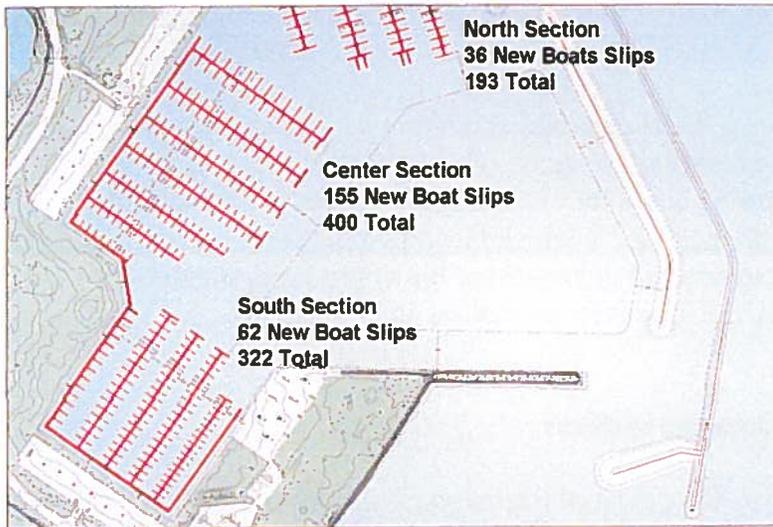


Figure 3.2 – Expansion of Dockage Systems

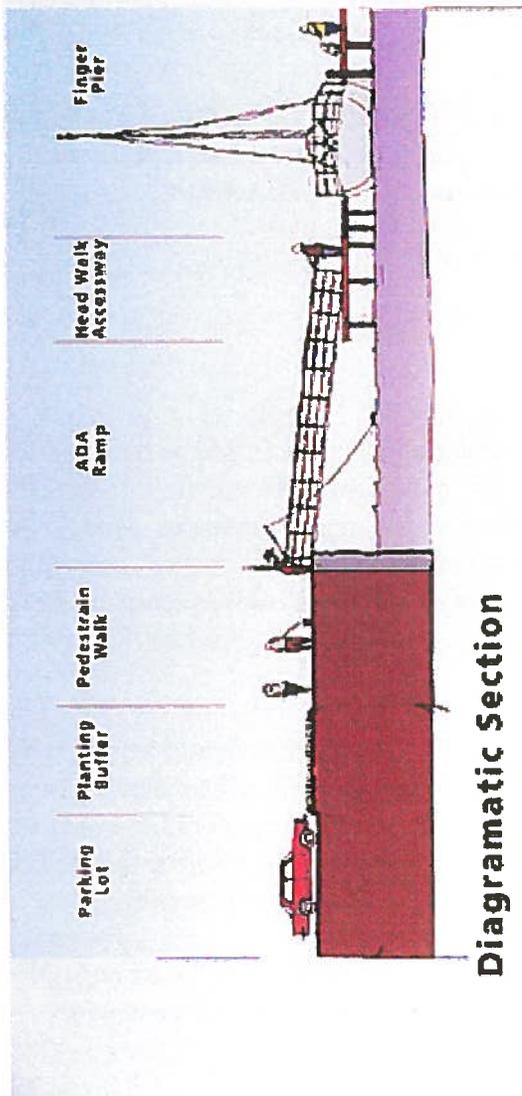
The modified expansion concept was presented at Public Information Meeting #2 and was acceptable to the MCSC representatives, but the impact to the swing mooring area still remains.

It is important to note that the concepts presented will be further refined during the design process. The number of slips reflected in the proposed alternative has been based upon an expansion of the marina using a slip size mix similar to the existing marina's slip size mix. It is likely that the final slip size mix will differ from that of the present alternative. It is, however, possible that the revenues generated from the final design mix will be as great or greater than that generated by the present alternative.

The promenades of the Center and South Sections of the marina are presently closed to the general public. Dockage access alternatives were explored, attempting to provide for the security of the boaters and their vessels while at the same time providing for increased public access to the immediate water's edge for the general public and fishermen. Please refer to Figure 3.3 on the next page. The graphic concepts depict three ways in which the promenades can be opened to the general public without compromising the legitimate security interests of the boaters. Of the three alternatives, the "common entry" concept answers most of the boater's concerns, particularly that of fishermen casting their lines from shore onto the vessels.

McKinley Marina Milwaukee, Wisconsin

Marina Edge Concept



Diagrammatic Section

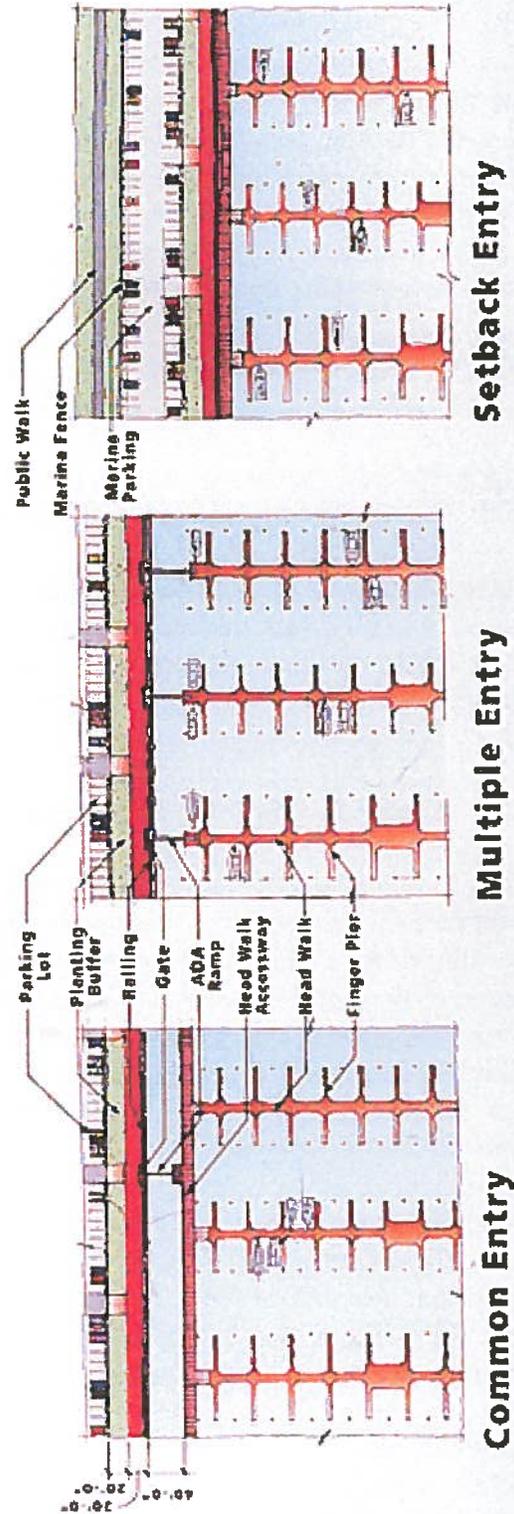


Figure 3.3 – Dockage Access Alternatives

The “common entry” concept calls for the installation of a marginal walkway, set away from and running parallel to the steel sheet pile bulkhead wall. A “moat” is created by the marginal walkway, separating the boats from the bulkhead. The marginal walkway requires fewer gated gangways than the other two alternatives. Gated access gangways are required in all cases, if public access is to be allowed to the immediate water’s edge. Public access to the docks themselves cannot be permitted for security reasons.

Each of the three alternative concepts easily accommodates compliance with ADA design requirements.

3.2.1 North Section – Dock A through D

It is recommended that consideration be given to the possibility of adding 30 to 40 new boat slips to the North Section dockage system. This is not as much a necessity as it is a discretionary measure intended to increase marina revenues. The addition of slips, if performed, can occur sometime in the future.

3.2.2 Center Section – Docks E through K

It is recommended that the Center Section dockage system be replaced immediately. It is further recommended that advantage be taken of the opportunity to add as many as 155 new slips to the system, increasing the total to 400 boat slips. The addition of slips in this section of the marina is intended to substantially increase marina revenues. The recommendation is in accordance with the 1994 Trossen Associates market and economic feasibility study, which concluded that the local market could absorb as many as 250 new slips. The Trossen study also concluded that the slip rental rates should be increased upon improvement of the docks.

A more in-depth study of the desirable boat mix within the section should be performed during the design phase of the recommended improvements. It may be desirable to modify the present mix of boat sizes. A different mix of boat sizes may result either in fewer or more slips. There is an excess of 25-foot slips in the marina. It is possible that with fewer, but larger boat slips the revenues generated by the marina could be increased.

It is recommended that the docks be floating docks similar to those of the existing North Section of dockage, eliminating the problem of variable free board and the need to periodically adjust the height of the docks.

It is also recommended that the dockage system be installed having marginal walkways, running several feet away from, and parallel to the steel sheet pile bulkhead wall. The

marginal walkway and the water space it creates between itself and the bulkhead wall will separate the boats from the public promenade. Fewer access gates will be required and fishing can occur from the promenade.

3.2.3 South Section – Docks L through P

It is also recommended that the South Section dockage system be replaced. It is further recommended that advantage be taken of the opportunity to add as many as 62 new slips to the system, increasing the total to 322 boat slips. Again, the addition of slips in this section of the marina is intended to substantially increase marina revenues. The recommendation is in accordance with the 1994 Trossen Study, which also concluded that the slip rental rates should be increased upon improvement of the docks.

Again, a more in-depth study of the desirable boat mix within the section should be performed during the design phase of the recommended improvements. It may be desirable to modify the present mix of boat sizes. A different mix of boat sizes may result in a different number of added slips.

Similar to the recommendation for the Center Section dockage system, it is recommended that the dockage system be a floating system and that it have marginal walkways along the bulkhead perimeter.

3.2.4 Transient Dockage

It is recommended that transient docks be included in the dockage improvement program. Transient docks may be efficiently incorporated within both of the expanded sections of the marina. They can also be designed to be separate docks, preferably located of the point of land adjacent to the site of the proposed McKinley Center, Article 3.5.11.

3.3 Swing Moorings

If a significant number of new boats are to be added to the marina, the swing mooring area will be impacted. Please refer to Figure 3.4 on the next page. The boundaries of the swing mooring area will be impacted primarily by the expansion of the Center Section docks, and to a lesser degree, by the expansion of the South Section and North Section docks.

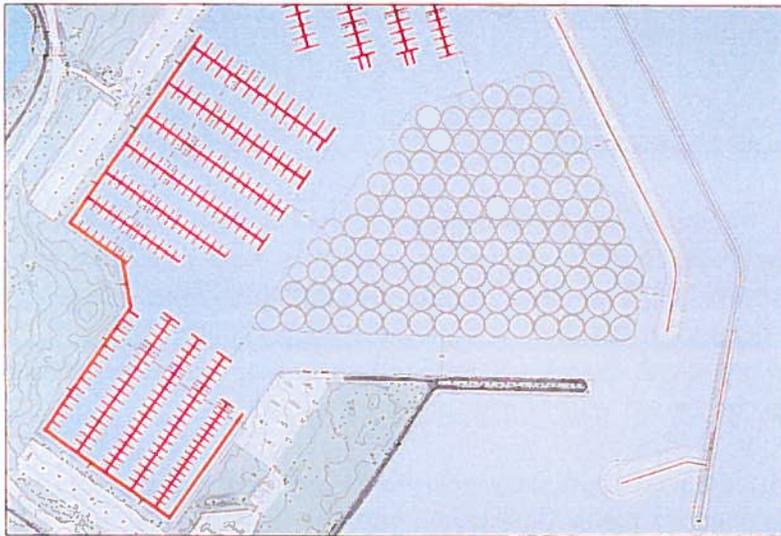


Figure 3.4 – Swing Moorings at the Center of the Basin

Based upon counts obtained from aerial photographs, there is estimated to be approximately 110 to 115 occupied swing moorings in the basin at the present time. The proposed dockage layout alternative reduces the swing mooring area to an area capable of accommodating approximately 100 vessels, based upon an average boat length of 27 feet. The actual number may be more or less, dependent upon the exact mix of vessels in the basin. It may be possible to accommodate all of the existing vessels. The final layout of the swing-mooring basin will be determined during the final design phase of the implementation process.

Milwaukee County now has full jurisdiction over the swing mooring area. The swing mooring area is presently unregulated and those boaters occupying moorings pay nothing for the privilege of being within a well-protected basin.

It is recommended that the swing area, which will be reduced in size when the Center Section of docks is expanded, be formally reorganized.

It is further recommended that the County implement an annual fee structure to be paid by the swing-mooring occupant for the privilege of mooring their vessel in the marina. The entire marina basin, including the swing mooring area, enjoys the benefits of a well-protected harbor. That protection is the result of the efforts of Milwaukee County to provide a safe environment for recreational craft and their owners. All users of the marina basin must, therefore, participate in its cost and maintenance. It is recommended that an annual fee of \$125 (in today's dollars) per swing mooring be charged for the privilege of mooring a boat in the marina.

The student members of the collegiate sailing clubs have limited discretionary funds. One-half of their annual budgets are paid as rent to the Milwaukee Community Sailing Center for the use of the MCSC facilities. They also occupy several of the swing moorings at no cost. To pay an annual fee for the swing moorings would further stress their already limited budgets. It is, therefore, the recommendation of this Plan that potential benefactors, such as McBoat, the Milwaukee Community Sailing Center and the Milwaukee Yacht Club, be approached with the proposal that they lease several swing moorings (the actual number may be established by the sponsors and the collegiate sailing clubs) strictly for the benefit of the collegiate sailing clubs.

3.4 Landside Marina Related Infrastructure

3.4.1 Marina Basin Perimeter Walls

3.4.1.1 Steel Sheet Pile Bulkhead Walls

It is the vision of this Plan that ultimately the entire perimeter of the marina basin will have a decorative concrete promenade similar to those proposed for each of the three sections of the marina. Modifications and improvements to the tops of the sheet pile walls may be integrated into the construction of new promenades in each of the three sections of the marina and along other sections of the basin perimeter.

Presently, the top of the sheet pile wall projects above the promenade level and above the ground level in areas where there is no concrete promenade. The top of steel sheet pile wall may be lowered and a decorative concrete promenade constructed. If constructed similarly to the concrete promenade of Docks A through D, the concrete promenade can be used to improve the stability of the top of the steel sheet pile wall.

The basin edge of the concrete promenade can be constructed with an integral concrete curb, which would serve also as a cap for the steel sheet piles. In this manner, the basin edge of the promenade will appear straight and the naturally wavy appearance of the uncapped steel sheet piles will be eliminated. The integral concrete curb can then be equipped with decorative steel railings in areas where they are appropriate.

3.4.1.2 Pile Supported Concrete Walls

The pile-supported concrete walls of the Flushing Tunnel intake channel and the former Coast Guard Station shoreline bulkhead wall must be replaced. The timber pilings that support the massive concrete walls are rotting and failing. Replicating the walls would be a prohibitively costly process. The only true alternative is to replace the walls in their entirety.

It is the vision of this Plan that the walls be replaced with a continuous steel sheet pile bulkhead wall, similar in exterior appearance to the existing steel sheet pile bulkhead walls. The steel sheet piling can be driven to the outside of the timber pilings without having to entirely remove the pilings. The tops of the pilings can be cut off below the waterline. The sheet pile can then be driven and the area behind the new wall filled to grade. The area behind the wall can then be seeded or a decorative concrete promenade, similar to that proposed in Article 3.4.2, can be constructed.

Recognizing that ownership of the walls remains unresolved, it is nonetheless recommended that they be demolished and that new sheet pile walls be constructed in their place. Steel sheet piling bulkhead walls are less costly than pile-supported concrete walls similar to those that presently exist. They also lend themselves well to integration with the promenade improvements recommended in this Plan.

3.4.2 Marina Promenades

The concrete promenades of the Center and South Sections of the marina are aging and unappealing. Expansion of the dockage systems in those sections will require that the promenades be removed to access the site utilities. It is the vision of this Plan that, when that happens, the promenades will be replaced with a waters-edge walkway, open to the public and boater alike.

The new promenade and the steel sheet pile bulkhead wall may be treated similar to the promenade edge discussed in Article 3.4.1.1. The top of the steel sheet pile bulkhead wall can be lowered and capped with a decorative concrete walkway and integral concrete curb.

When the North Section dockage system was replaced, the concrete promenade had to be removed to gain access to the site utilities. Because it was not known at that time exactly what was going to be done to improve the other site amenities, such as the tenant restrooms, the removed concrete was simply replaced. The top of the steel sheet pile wall was lowered, flush to the top of the concrete slab. Decorative metal railings were installed, but a concrete curb was not. Instead, it was the intent that when future modifications had to be made to the restrooms (when the promenade would again have to be removed) the existing promenade would be replaced with one similar to that now

proposed for the Center and South Sections. The existing decorative railings and headwalk access gates may be reused.

Potential improvements to the promenade accommodating public access are addressed in Article 3.12.1.

It is recommended that the existing marina promenades be replaced. The promenades of the Center and South Sections of the marina will have to be removed at the time that each of the dockage systems is replaced. It is recommended that the unappealing chain link fence enclosures be removed entirely and that new decorative metal railings be installed at the immediate water's edge, opening the promenades to the general public.

Similarly, when the concrete promenade of the North Section must be removed to accommodate the construction of the recommended slip tenant restroom facility in that section, it is recommended that it be replaced with a decorative concrete walkway and concrete pile cap. The existing concrete slab was intended only as a temporary slab until such time that the promenade would have to be removed for other work. The existing decorative metal railing and dock access gates can be reused.

It is recommended that access to the docks from the promenades should be protected with decorative metal gates, to which only the slip tenants and marina staff have keys. The boater's legitimate concerns for night time security can be accommodated by the installation of a pair of decorative metal gates across the promenade, connected to the slip tenant restrooms in a way that they can be closed during specified hours of the day to promenade pedestrian traffic, but still allow the slip tenants access to the restrooms. During the times that the promenade gates are closed, pedestrians and fishermen will have to walk around the outside of the restroom facility.

It is also recommended that, in time, the entire marina's edge have a public promenade similar to those of the North, Center, and South Sections of the marina.

3.4.3 Boat Storage Area

Comments have been made stating that the boat storage area, located in the North Section of the marina, is an eyesore. Motorists driving along the North Section of the park are able to see the storage area. In the stark realities of winter, they look upon the blue shrink-wrapped vessels stored in the enclosure. Therefore, the potential for rebuilding the storage area in a different area of the grounds, at a location near O'Donnell Point, far back from the roadway, was examined.

Leaving the storage area in its present location is also an alternative. The storage facility is located conveniently close to the launch ramp, making launch and retrieval of the boats

stored in the facility less time consuming than if the facility were relocated to a location near O'Donnell Point. The high visibility of the facility at its present location is an asset from a security perspective.

Relocation of the facility within the North Section may be necessary, dependent upon the final design of the parking lots of the North Section. Leaving the storage facility at its present location, or very nearby the launch ramp, is the preferred alternative.

Other potential improvements to the boat storage enclosure include expansion of the facility to gain additional revenue. Replacement of the chain link fence enclosure with a decorative gated fence and landscape plantings are also envisioned.

It is recommended that the boat storage enclosure remain relatively close to the boat launch ramp. It is appropriate that the storage enclosure be near the ramp because boats are regularly moved to and from the storage area and to and from the launch ramp. It is recommended that the enclosure be enlarged to accommodate more vessels, increasing the revenue generated from the service. The existing chain link fence should be demolished and replaced with a decorative, but secure metal fence enclosure.

3.4.4 Boat Launch Ramp

The boat launch ramp needs to be rehabilitated. Rehabilitation of the ramp can be accomplished by replacing the existing concrete floor of the ramp with a new concrete floor and replacing the existing "skidded" access piers with new floating access ramps. The steel sheet pile sidewalls of the ramp can be treated with a concrete cap poured integrally with a promenade walkway, similar to that discussed in Articles 3.4.1.1 and 3.4.2.

It is recommended that the concrete launch ramp be demolished and replaced. In the process, new floating boarding ramps should be installed. The work can be most efficiently performed in conjunction with other work, such as the rehabilitation of the North Section parking lots or the construction of new promenade along the Roundhouse shoreline perimeter.

3.4.5 Fuel Pier

No improvements to the fuel pier have been suggested and no recommendations are made.

3.5 Marina and Park Buildings

3.5.1 General Observations on the Marina and Park Buildings

The analyses of the marina and parks buildings have been based upon guidelines published by the American Society of Civil Engineers, entitled "*Planning and Design Guidelines for Small Craft Harbors*," Revised Edition, ASCE Manuals and Reports on Engineering Practice No. 50 (1994). The analyses have also been based upon slip tenant survey results and upon professional experience gained as a result of the design of other marinas on the Great Lakes.

The results of our analyses include the following fundamental tenants upon which we recommend the future development of McKinley Marina.

- A Small Craft Harbor is a business, whether publicly or privately owned. Its operation requires a headquarters building adequate and suitable for management and supervision of the marina and park functions.
- A restaurant is greatly appreciated by boaters in small craft harbors. At the small marina, food service can be provided by a one-person convenience store operation. Larger marinas have installed more than a single food-service facility. Full-service, deluxe public restaurants, coffee shops and delicatessens are often provided within short distances of one another. When the restaurant is available for general public use, it is frequently advantageous to have separate rooms that can be made available on a fee basis to various public and private club activities, public and community meetings, and slip tenant activities.
- A ship's store offering marine and miscellaneous hardware, food staples, and bait and tackle for sport fishing provides a real service to harbor users.
- General Store and Shops, particularly at a recreational center marina, general stores offering a large variety of merchandise and specialty shops handling boating clothes, souvenirs, and many other items are widely patronized by both the boating populace and visitors.
- The existing toilet, shower and laundry facilities are inadequate both in numbers of facilities available and condition of existing facilities.
- In Milwaukee, the success of a ship's store, general store and shops seem to be related not only to the type of products available, but also to the price of goods. To provide enough selection at competitive prices, it would appear necessary and wise to deal with vendors who have other major retail outlets in the Milwaukee area.

- Comments received throughout the public information gathering process indicate that the primary park needs within McKinley and Veterans Parks are for additional public toilet facilities. They have also indicated, as did the slip tenants, that a public restaurant is desired.
- Marina slip tenant toilet facilities should be provided within 1,000 feet of any boat slip. Marina patrons should be encouraged to use on-shore facilities by providing safe, secure, clean, well-lighted and adequate restroom facilities.
- Facilities recommended are as follows (ASCE guideline minimums):
 - Two to three washers and dryers for every 100 slips. A small laundry is typically provided as a convenience to boaters.
 - One water closet for men and one water closet for women for every 50 boats. Urinals may be substituted for some of the men's water closets.
 - Lavatories should be provided at a ratio of one for men and one for women for every 50 boats.
 - Showers should be provided at a ratio of one for men and one for women for every 50 boats.
 - Public facilities should be provided in addition to these suggested minimums. It is usually most efficient to include the public restrooms in the same buildings with the slip tenant facilities.

The facilities described below provide the recommended level of service to ensure that they will not only meet the existing needs, but that they will be adequate for the number of boat slips and swing moorings. The size of these facilities needs to be reviewed to allow for any desired expansion in the total count of boat slips and swing moorings.

We recommend that a palette of colors and material for the buildings, roofs, railings, signage, etc., be established. As renovations are performed and as new buildings are constructed this color/material palette should be followed to create a design theme to promote continuity to the marina and park.

It is important to note that the following design options are preliminary only. They are intended to only prompt discussions related to each facility so that concept designs can be prepared that will be sized properly to suit the long term needs of the McKinley Marina boaters and the public users. Conceptual Design, Design Development and Final Design Phases for each of the facilities are still ahead.

3.5.2 North Section Roundhouse and Public Restrooms

While the Roundhouse is aging and energy inefficient, it has its own unique style of architecture. It does not provide an adequate amount of space for marina management facilities, but it does provide the park with needed food service and public restrooms. The Roundhouse should remain a part of the park.

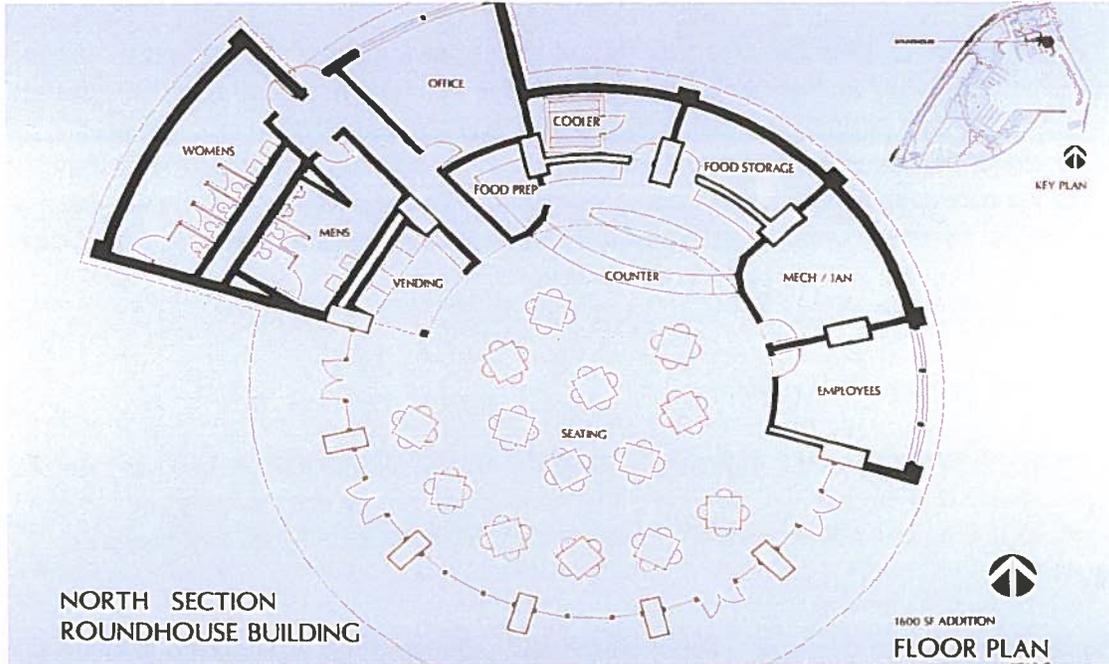


Figure 3.5 – Proposed Roundhouse Expansion

Concepts for the expansion and remodeling of the Roundhouse, located in the North Section of McKinley Park, were presented at both public meetings and were well received by those present. Please refer to Figure 3.5 above.

It is the recommendation of this Plan that the North Section Roundhouse and Public Restrooms be expanded and remodeled in accordance with the following:

- The facility could be up-graded to serve primarily the following users:
 - Boat Launch Users
 - Fuel Pier Users
 - Beach Users
- Renovate the food service areas;
- Renovate and up-grade the toilet facilities;
- Expand the building to allow the interior to be more open;
- Include a small ship's store; and
- Provide new exterior door and window treatments.

3.5.3 Fish Cleaning Station and Dinghy Storage

Concept graphics for potential improvements to the fish cleaning station and dinghy storage areas have not been prepared. Instead, improvements to those facilities are seen as incidental to the reorganization of the North Section parking lots. It is envisioned, however, that the two facilities can be dramatically improved by replacing the chain link fence enclosures with decorative fencing and landscape plantings.

It is recommended that the fish cleaning station be remodeled and that the dinghy storage facilities be remodeled and possibly relocated. While it is recommended that the redesign of the North Section parking lots strive to keep the fish cleaning station at its present location, relocation may be an option that will have to be considered during the design phase of the recommended parking lot improvements. The selected design theme (i.e., color/material palette) should be followed to promote design continuity within the marina and the park.

3.5.4 North Section Utility Shed

Concept graphics for potential improvements to the North Section utility shed have not been prepared. It is envisioned, however, that the facility can be dramatically improved either by replacing it, or by remodeling it to conform to the selected park and marina design theme.

It is recommended that the utility shed be relocated and remodeled or replaced in its entirety. Relocation may become necessary dependent upon the results of the parking reorganization. Whether the utility shed is relocated and remodeled or replaced, the selected design theme, i.e., color/material palette, should be followed.

3.5.5 North Section Slip Tenant Restrooms

Conceptual drawings, depicting what an improved restroom facility in the North Section of the marina could entail, were shown at both of the public information meetings. Please refer to Figure 3.6 and Figure 3.7 on the next page. Replacement of the North Section tenant restroom facility was well received. No one disagreed with the need to increase the services provided for Docks A through D. The concepts will require refinement during the design phase of implementation. The concepts shown include provision of the number of slip tenant services recommended by ASCE.

A concrete retaining wall exists at the back of the North Section promenade, accommodating a large difference in elevation between the promenade and parkland immediately behind the wall. The restrooms would be located at the level of the promenade and the roof of the facility would be at or very near the level of the adjacent

parkland. The concepts for the North Section slip tenant restrooms include an overlook plaza that can be accessed both from the park and from the promenade.

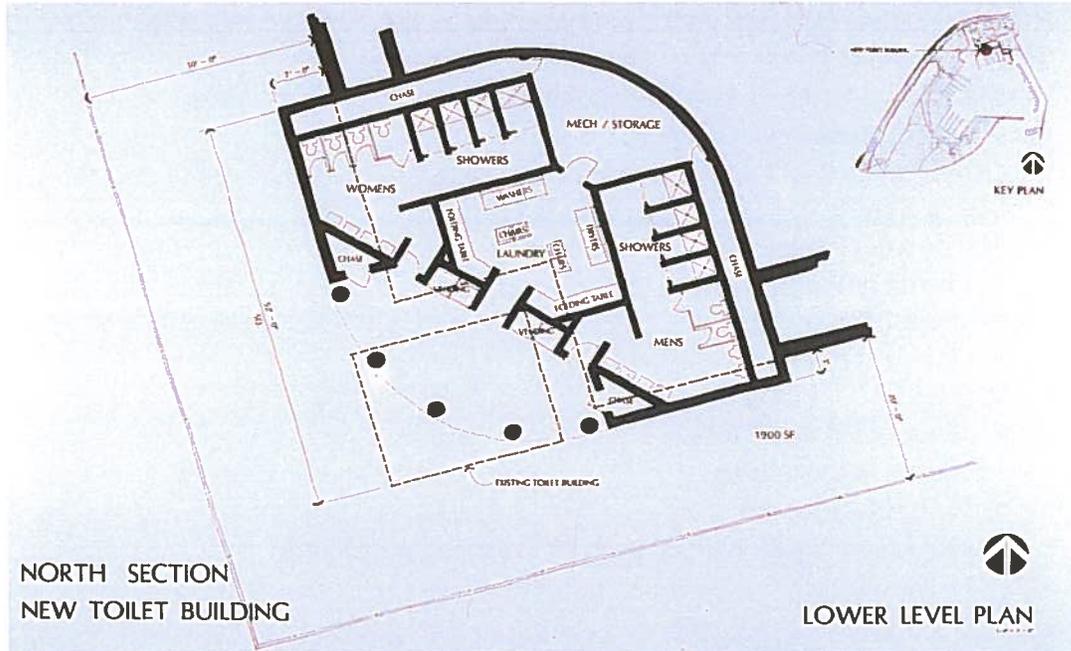


Figure 3.6 – Proposed North Section Slip Tenant Restrooms

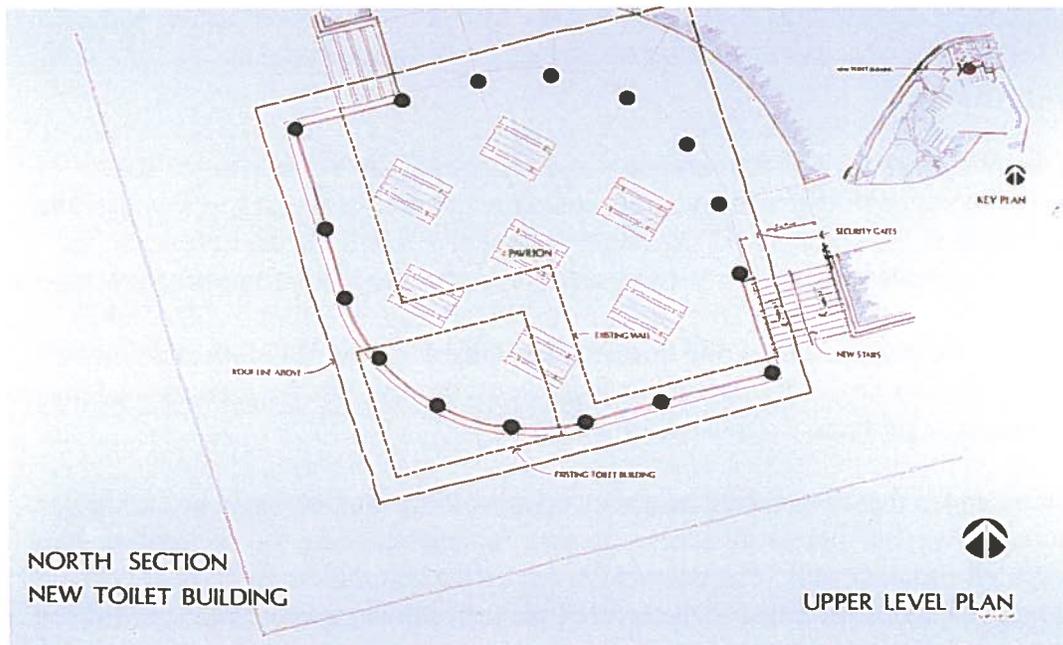


Figure 3.7 – Public Overlook – North Section Slip Tenant Restrooms

It is recommended that the existing North Section slip tenant restrooms be demolished and replaced with a new facility constructed in accordance with the following:

- Replace existing building with a new structure in the same general area.
- This will involve constructing a new concrete retaining wall.
- Consider an upper level, open-air shelter on the roof of this building.
- Facilities Suggested:
 - Men's Room
 - Two (2) Urinals
 - Two (2) Water Closets
 - Four (4) Lavatories
 - Four (4) Showers
 - Women's
 - Four (4) Water Closets
 - Four (4) Lavatories
 - Four (4) Showers
 - Laundry Room with two (2) pairs of Washers and Dryers

3.5.6 Former Coast Guard Station

Conceptual drawings have not been prepared for the reuse of the former Coast Guard Station and its boat well. It is envisioned that the former Coast Guard Station will be demolished and the area converted to green space, possibly becoming the site of a new open-air park shelter.

During the past several years the condition of the former Coast Guard Station has deteriorated to the point that it is no longer cost effective for the County to renovate the existing structure. The structure is no longer structurally sound. In the absence of an immediate and viable offer from a private-sector developer to restore the structure, an offer that is acceptable to the County and conforms to WDNR interpretations of the Public Trust Doctrine, it is recommended that the former Coast Guard Station Building and boat well be demolished, after proper photographic documentation, and that the grounds be finished and landscaped to promote passive use of the area.

It is recommended that the existing boat well opening to the marina basin be closed by constructing a new bulkhead wall across the opening and replacing the adjacent existing pile-supported concrete wall. The excavation left by the demolition of the boat well and the building site should be filled to the level of the surrounding grade, finish graded and seeded.

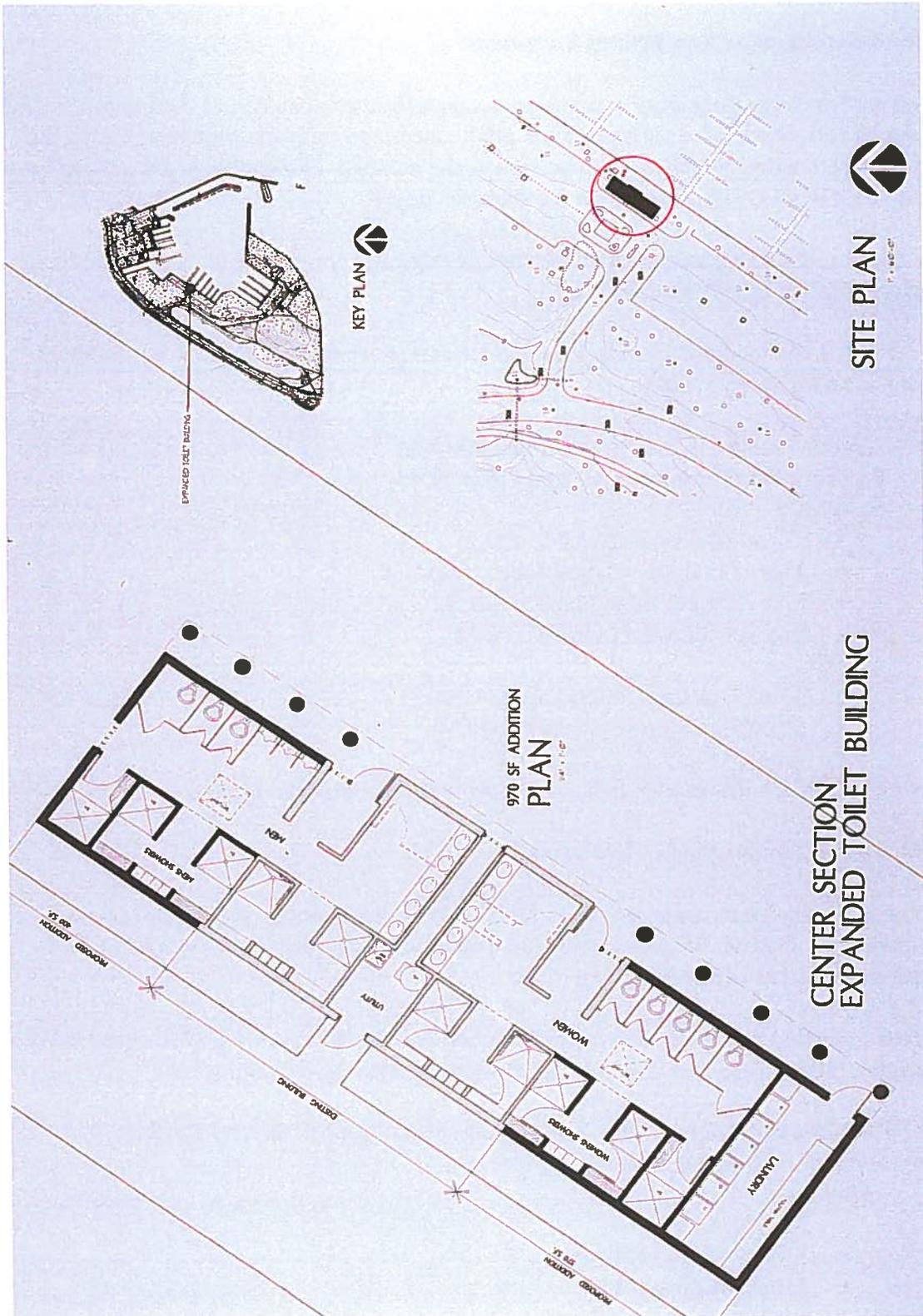


Figure 3.8 – Proposed Center Section Slip Tenant Restroom Expansion

3.5.7 Center Section Slip Tenant Restrooms

Conceptual drawings, depicting a potential concept for the expansion of the Center Section slip tenant restrooms, were shown at both public meetings and were well received by the boaters. The concept includes the provision of the numbers of fixtures recommended by ASCE. Please refer to Figure 3.8 on the previous page.

The drawings are conceptual only and do not necessarily represent what will be the final design should the facility be constructed.

It is recommended that the existing Center Section slip tenant restrooms be expanded in accordance with the following:

- Add new space on both ends of this building.
- Facilities Recommended: (Existing plus New)
 - Men's
 - Three (3) Urinals (need to add 2)
 - Three (3) Water Closets (need to add 2)
 - Five (5) Lavatories (need to add 3)
 - Five (5) Showers (need to add 3)
 - Women's
 - Five (5) Water Closets (need to add 3)
 - Five (5) Lavatories (need to add 3)
 - Five (5) Showers (need to add 3)
 - Laundry Room with two or three pairs of Washers and Dryers.

3.5.8 Center Section Public Restrooms

Graphic concepts for the improvement of the Center Section public restrooms have not been prepared. Instead, it is envisioned that public restrooms will be included in the proposed McKinley Center Building.

It is recommended that the existing South Section public restrooms, whether expanded or replaced in their entirety, be improved in accordance with the following:

- Consider expanding facility or replacing this building to expand services.
- Facilities Recommended:
 - Men's
 - Two (2) Urinals
 - Two (2) Water Closets
 - Three (3) Lavatories

- Women's
 - Four (4) Water Closets
 - Three (3) Lavatories
- See also comments on the McKinley Center Building, Article 3.5.11, which could entirely eliminate the need for this building.

3.5.9 South Section Slip Tenant Restrooms

Graphic concepts for remodeling the South Section slip tenants restrooms have been prepared and were shown at both of the public meetings. They also were well received. Please refer to Figure 3.9 on the next page. It is envisioned that the facility will be expanded slightly to accommodate an indoor laundry room and remodeled in conformance with a park and marina design theme.

The drawings are conceptual only and do not necessarily represent what will be the final design should the facility be constructed.

It is recommended that the existing Center Section slip tenant restrooms be expanded in accordance with the following:

- Add two or three showers for women; and
- Add a Laundry Room for two or three pairs of washers and dryers.

3.5.10 South Section Open-air Shelter and Public Restrooms

Graphic concepts for improvements to the South Section open-air shelter and public restrooms have not been prepared. Instead, it is envisioned that the roof will be replaced and the facility remodeled in conformance with a park and marina design theme.

It is recommended that the existing South Section open-air shelter and public restrooms be renovated in accordance with the following:

- Renovate the existing toilet rooms - adding new finishes;
- Consider additional plumbing fixtures; and
- Replace shelter structure with similar sized open-air shelter. Immediate repairs will extend the life of this structure.

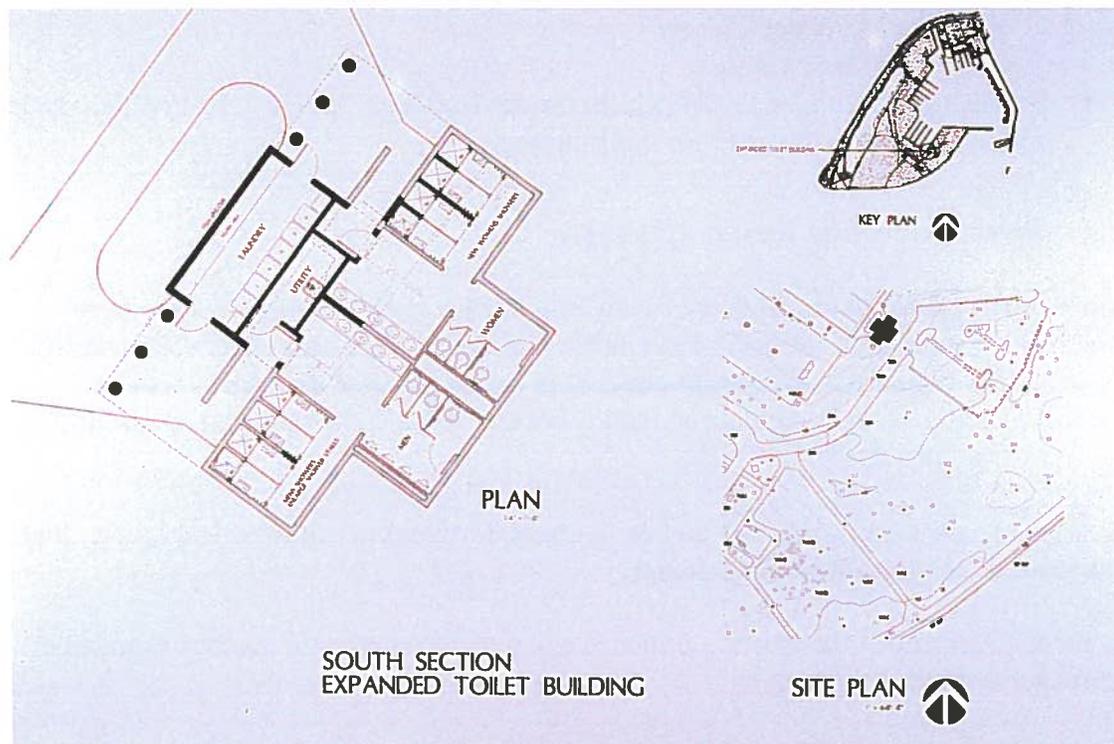


Figure 3.9 – Proposed South Section Slip Tenant Restroom Expansion

3.5.11 McKinley Center

The most exciting new concept for the improvement of McKinley Marina presented at the public information meetings, was that of a centrally located facility serving the needs of the marina slip tenants and general public alike. The concepts presented at the public information meetings are shown in Figures 3.10 through 3.12 on the following pages.

It is envisioned that McKinley Center will include:

- A convenience store;
- A large meeting room for slip tenant and public use;
- Public restrooms;
- Slip tenant toilet, shower and laundry facilities;
- Marina management offices;
- Marina maintenance facilities;
- Receiving and storage space; and
- A restaurant with indoor and outdoor seating.

McKinley Center is also envisioned to include outdoor seating under an upper deck, a reflecting pool between the building and the marina basin, and a feature observation tower with views of the City, the marina and Lake Michigan.

These are concepts only and a full design program must be conducted before McKinley Center can be constructed. Just as importantly, the County must address the matter of the legality of the inclusion of a restaurant in the building. Presently, it is the WDNR interpretation of the Public Trust Doctrine that one may not be allowed at McKinley Park or any other site occupying former lakebed. It is, nonetheless, the desire of many who attended the public information meetings, submitted written comments and responded to slip tenant surveys, that a full-service restaurant be constructed at the site. Seventy-eight percent of the respondents to the Slip Tenant Survey, Appendix A, indicated that they strongly agreed, or agreed, that a restaurant at McKinley Marina is a required amenity. McKinley Center is, therefore, a part of this Plan. Please refer to the Slip Tenant Survey Results in Appendix A.

It is recommended that a new multi-use facility be constructed and that it provide both the boater and the general public with services not presently offered, i.e., adequate marina and park management facilities, boater and public toilet facilities, meeting space, delicatessen, ship's store, restaurant, and public viewing deck.

While the Department of Natural Resources presently maintains a position that a restaurant may not be constructed upon the Lake Michigan lakebed or upon landfills occupying former lakebed, the boaters and the general public have expressed their strong support for construction of a restaurant at the site. It is recommended that the County pursue the appropriate legal measures necessary to include a restaurant in the proposed McKinley Center Building.

It is further recommended that such a facility be constructed at McKinley Marina in accordance with the following:

- Construct the building on the point of land between Center and South Sections of the marina.
- The following is a brief description of the elements that could be included in the conceptual design.

Note: All square foot areas and capacities are very conceptual and will need to be confirmed by a detailed needs assessment study.

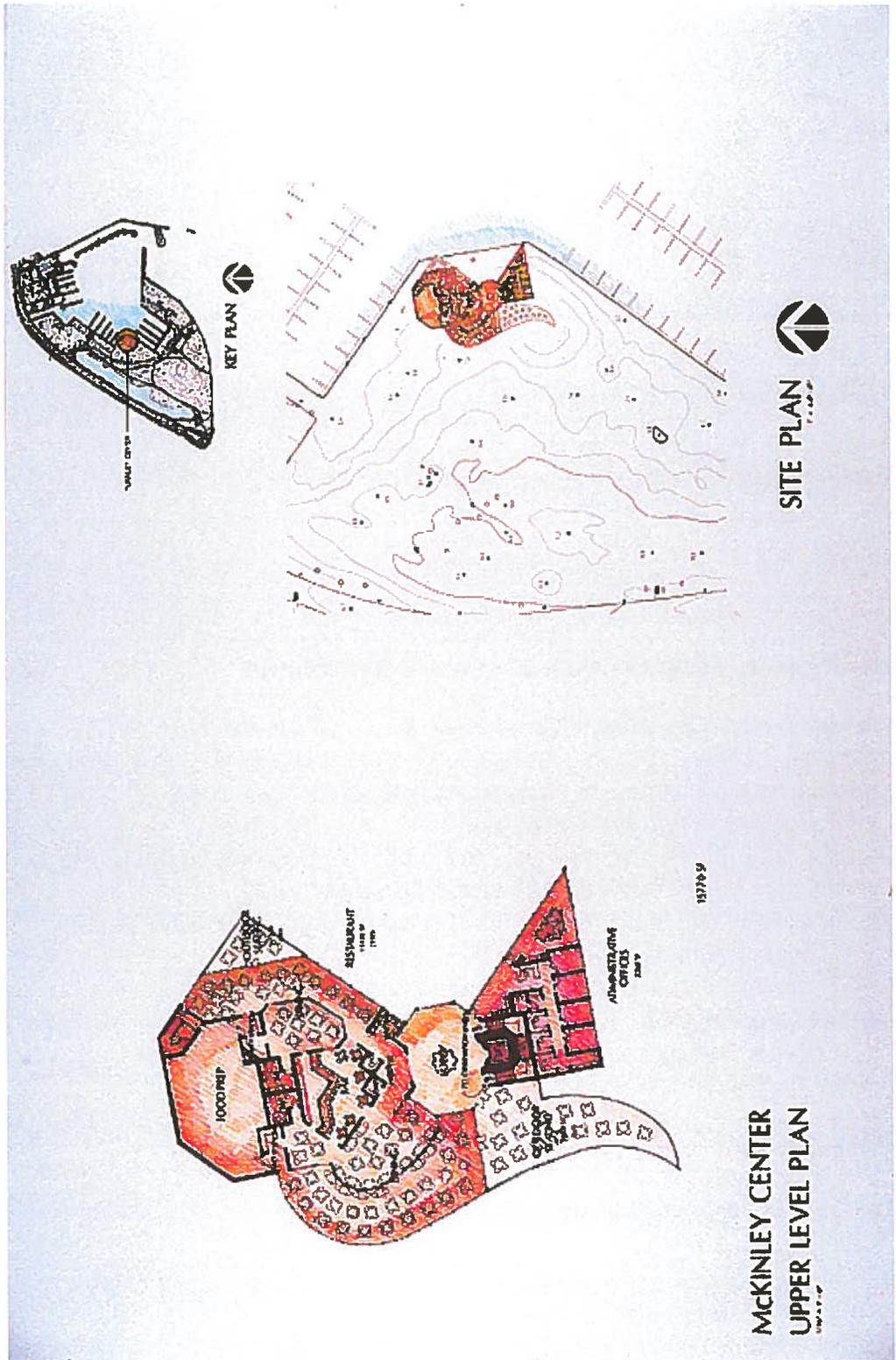


Figure 3.11 – Proposed McKinley Center – Upper Level

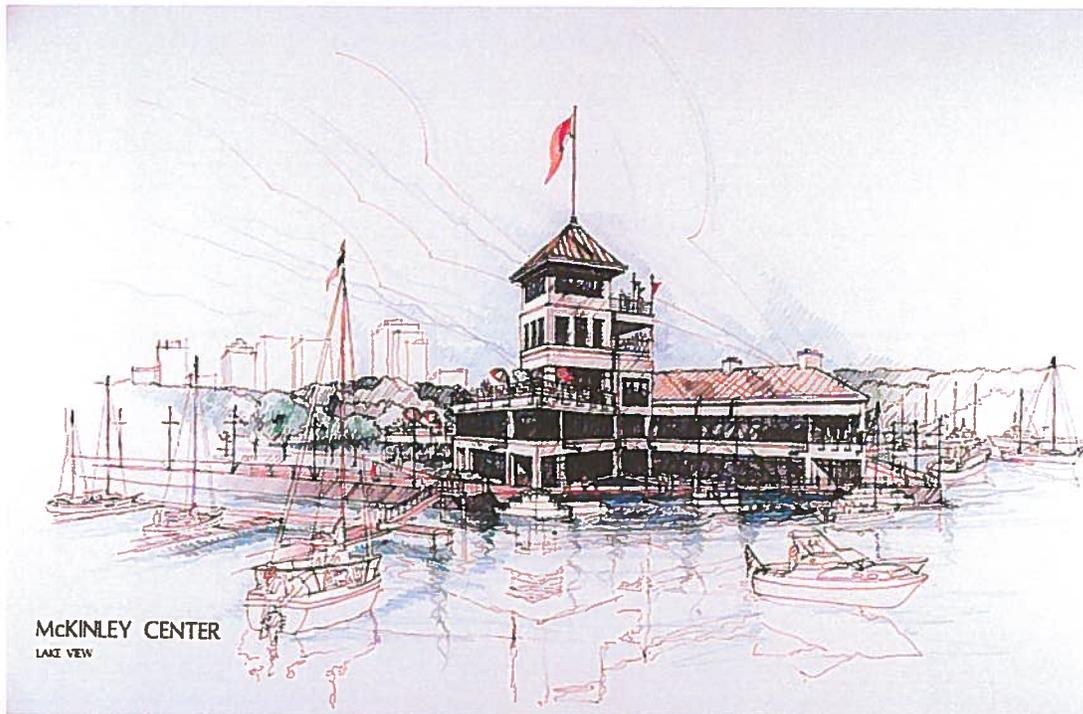


Figure 3.12 – Proposed McKinley Center – Viewed from Marina

- **Main Level – Approximate Gross Floor Area – 15,580 sq. ft.**
 - Main Lobby
 - Convenience Store (ship’s store) = 2,500 sq. ft.
 - Large Meeting Room (public use)
 - Public Toilet Facilities (replace the public restrooms of the Center Section)
 - Boaters Toilet, Shower and Laundry Facilities
 - Receiving and Storage Room for Restaurant and Convenience Store (with delicatessen) = 4,200 sq. ft.
 - Space for Marina Maintenance Facilities
 - Elevator and Stair
 - Outdoor Seating under Upper Deck
 - Reflecting Pool between Building and Harbor Edge

- **Upper Level – Approximate Gross Floor Area – 15,770 sq. ft.**
 - Main Lobby
 - Marina Management Offices = 2,260 sq. ft.
 - Restaurant
 - Indoor seating for approximately 300 (may be less - exact number to be determined at time of design)
 - Outdoor seating, lakeside for approximately 20
 - Outdoor seating, city side for approximately 64
 - Bar Area

- Kitchen, Food Preparation Area
 - Public Toilet Rooms
 - Elevator and Stairs
- **Feature Observation Tower** – overlooking the marina, the City skyline and Lake Michigan.

3.5.12 Temporary Vendor Buildings

The temporary vendor buildings are simple, functional building for which only remodeling in conformance with a park and marina design theme is believed necessary. Graphic concepts for their improvement have not been prepared.

It is recommended that the vendor buildings in Veterans Park be remodeled to follow the selected design theme.

3.6 The Milwaukee Yacht Club and Milwaukee Community Sailing Center

3.6.1 Milwaukee Yacht Club

Graphic concepts for improvements to the Milwaukee Yacht Club have not been prepared. The Yacht Club is responsible for the maintenance of all of the facilities within their gated compound. During the term of the lease agreement, the County is not responsible for making improvements to the facilities.

This Plan envisions the replacement of the unsightly wood-slat chain link fence that surrounds the compound and recommends that the chain link fence enclosure be replaced in its entirety with a decorative fence. The fence can be screened to achieve a barrier similar to that provided by the existing fence.

3.6.2 Milwaukee Community Sailing Center

Concepts and alternatives for the improvements to the Milwaukee Community Sailing Center have not been prepared. Like the Yacht Club, it is the Sailing Center's responsibility to maintain all of its facilities inside its gated compound.

The site is unkempt and should be cleaned up. It is recommended that the County carefully structure any future lease agreements with the MCSC to ensure that they invest properly in the site.

There are no restrooms facilities within the MCSC buildings. Members of the MCSC use the South Section slip tenant restrooms.

An alternative for the relocation of the collegiate sailing clubs from the MCSC site to a site of their own was explored. Consideration was given to the potential reuse of the former Coast Guard Station boat well by the collegiate sailing clubs. The option would require a substantial investment in capital improvements at the Coast Guard site. The area required would be approximately the size of the boat well and would need to be enclosed with fencing. The alternative to moving the collegiate sailing clubs is to allow them to remain within either the MCSC or MYC compounds.

Similar to the provisions of the lease agreement between Milwaukee County and the MYC, the MCSC maintains the facilities within the compound. It is recommended, however, that the chain link fence enclosure surrounding the MCSC be replaced with a decorative fence conforming to the selected marina and park theme, and it is recommended that the buildings on the site be remodeled or replaced to conform also to the selected marina and park theme. It is recommended that remodeling, if implemented, include the installation of restroom facilities for the MCSC.

3.7 Boater and Public Parking

3.7.1 General Comments

All of the parking lots throughout McKinley and Veterans Parks are deteriorating with age. They will need to be repaved or replaced in their entirety, either now or in the near future. When the time arrives to improve the parking lots, and when other improvements are made marina-related infrastructure, there will be an opportunity to improve not only the physical condition of the lots, but to make improvements to the ways in which the lots function. The following is a discussion of the alternatives and improvements recommended by the Plan.

3.7.2 North Section Parking Lots

Four graphic concepts for the reorganization of the North Section parking lots have been prepared. Only one was shown at the public information meetings. The actual layout and appearance of the North Section parking lots will be determined when they are entered into design. Please refer to Figure 3.13 on the next page. The general concept conveyed, however, is that the lots can be better organized and made to function more efficiently. The single concept shown at the public information meeting also depicted an increase in the amount of green space between N. Lincoln Memorial Drive and the paved parking lots.

It is envisioned that North Section parking lots be replaced in their entirety and reorganized to provide a more functionally efficient and visually appealing layout. It is also envisioned that the green space between Lincoln Memorial be increased by relocating or eliminating a portion of the public parking lot, and that the net area devoted to asphalt pavement be reduced, increasing the net amount of green space in the park.

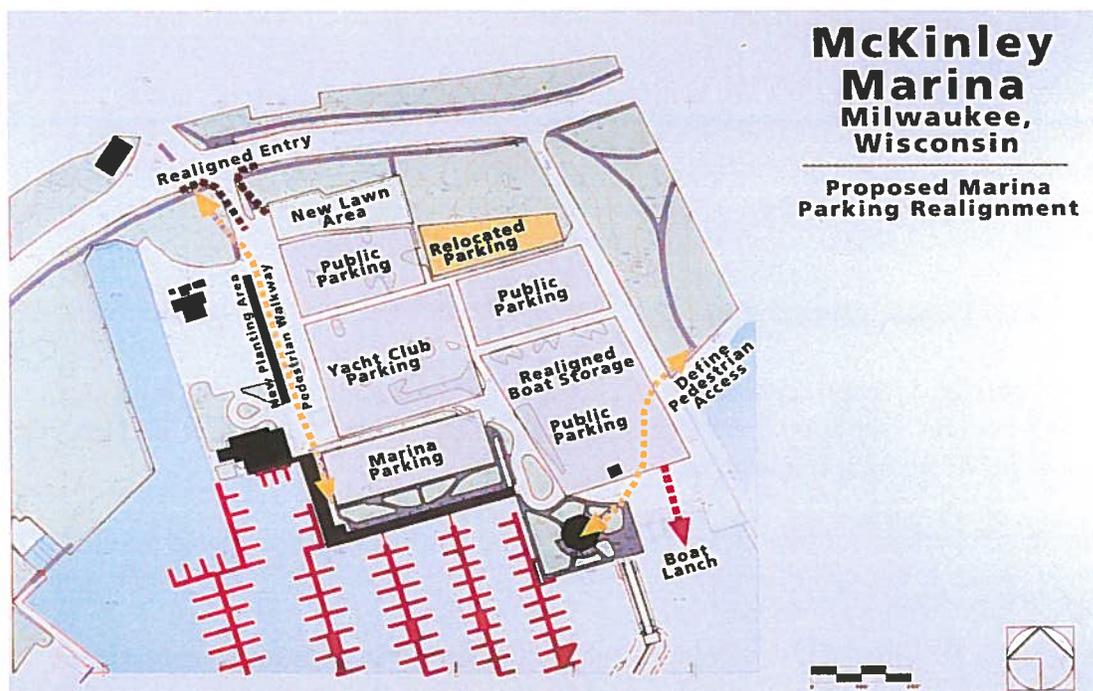


Figure 3.13 – North Section Parking Layout Schematic

It is recommended that the launch ramp, slip tenant, Yacht Club, overflow, and public parking lots be replaced, taking advantage of the opportunity to completely reorganize the lots within the North Section of the marina.

The existing lots provide adequate space for park visitors, Yacht Club members, slip tenants, and patrons using the water-related services offered at the park. It is recommended that the space for these users not be increased, but that the space dedicated to open public parking, including UW-Milwaukee student parking, be reduced in size. This may be found necessary anyway when reorganizing the lots, but is recommended as a goal even if reorganization does not require it.

3.7.3 Center Section Parking Lot

Graphic concepts and alternatives have not been prepared for the Center Section parking lot. It is simply envisioned that the existing and deteriorating lot be replaced, and in doing

so, designing the lot to accommodate its future expansion for the parking needs of the proposed McKinley Center Building.

It is recommended that the Center Section parking lot be rehabilitated, taking the advantage of the opportunity to improve its physical appearance. Dependent upon the disposition of the Center Section public restroom facility, see Article 3.58, the lot could be made to serve a greater number of vehicles. The existing number of spaces dedicated to slip tenants is acceptable, but slightly shy of the recommended guidelines. The number of public parking spaces is adequate.

If McKinley Center is constructed, additional parking spaces for its patrons will be required. It is recommended that parking space for the McKinley Center patrons be integrated into the Center Section parking lot, requiring that the parking lot be expanded in the direction of the new facility.

3.7.4 South Section Parking Lots

Similarly, graphic concepts have not been prepared for the South Section slip tenant and public parking lots. The need to replace them exists. The space they provide for both slip tenant and public parking is adequate.

The slip tenant parking lot provides an adequate number of parking spaces for the slip tenants of Docks L through P, even if the dockage system is expanded. The public parking lot of the South Section provides an adequate number of spaces for park users, under most circumstances. Neither lot needs to be expanded, but it is recommended that they both be rehabilitated.

3.7.5 Milwaukee Community Sailing Center Parking Lot

Graphic concepts for improvements to the MCSC parking lot have not been prepared. It is recommended, however, that the parking lot serving the Milwaukee Community Sailing Center be rehabilitated. The surface of the lot is deteriorating and will ultimately have to be replaced as a matter of routine maintenance.

3.7.6 Parking along Lagoon Drive

The Plan envisions no changes to the layout or function of Lagoon Drive, only that it will ultimately need to be repaved and sections of the curb and gutter repaired or replaced.

3.7.7 Parking along N. Lincoln Memorial Drive

Because plans for improvement to N. Lincoln Memorial Drive are complete and the work is being implemented, this Plan does not deal with N. Lincoln Memorial Drive other than to the extent that it addresses the two main entrances from the drive into McKinley Park and Veterans Park, and to the extent that it addresses the possibility of a second entrance at the northern-most end the project.

Parking along N. Lincoln Memorial Drive was restored upon completion of the first phase of the work in 1999.

3.7.8 Special Event Grass Parking

Specific alternatives for repairs needed to improve the turf areas used for grass parking during special events have not been prepared. Instead, it is envisioned that those areas can selectively be filled as required, finish graded, and reseeded.

It is recommended that the areas serving as special events parking be selectively filled and graded as required, top-dressed and reseeded.

3.8 Park Areas

3.8.1 Open Areas

In general, the open areas of McKinley Park and Veterans Park serve park visitors very well. It is recommended that the open areas of the park remain as picnic and passive use areas.

In select areas, the turf is in poor condition, having become uneven and worn. It is recommended that those areas be filled, if required, re-graded and reseeded.

3.8.2 Harbor Edge Promenade and Walkways

It is envisioned that a new decorative concrete promenade, with an integral concrete curb covering the steel sheet piling that now protrudes above the surface of the promenade, will replace the existing asphalt along the harbor's edge of Veterans Park.

It is recommended that the asphalt promenade along the harbor edge of Veterans Park be replaced with a decorative concrete walkway with an integral concrete curb along the outside edge of the promenade. The top of the steel sheet pile wall should be lowered and

the integral concrete curb should be placed over the top of the steel sheet piles. The visual experience along the harbor edge would be greatly enhanced.

It is recommended that the asphalt walkways meandering through the park be kept as asphalt and simply maintained as required.

3.8.3 Picnic Areas

It is the vision of this Plan that the existing picnic areas of the park be maintained, replacing the picnic tables as a matter of long-term maintenance. This Plan also proposes other improvements that will enhance picnic activities within the park.

No recommendations for improvement of the existing picnic areas are offered here. It is recommended that a new picnic shelter be constructed in the vicinity of the existing former Coast Guard Station and that picnic activities be promoted for the area of the park.

3.8.4 Veterans Park Lagoon

The presence of the lagoon alongside N. Lincoln Memorial Drive is an asset to McKinley and Veterans Parks and affords an opportunity to incorporate art in the overall development of the marina and the park. The lagoon provides an opportunity for introducing a new element of art to the park. This Plan envisions a significant water feature for the Veterans Park Lagoon – one that can be enjoyed both by patrons of the park and passersby. Please refer to Figure 3.14 below.



**McKinley
Marina
Milwaukee,
Wisconsin**

Lagoon
Ice Fountain
Concept Image

Figure 3.14 – Ice Fountain Concept

Since park activity is limited and the hours of daylight are fewer during the winter months, it is desirable to develop a lighted feature in the lagoon. For this reason, the Plan includes an "ice fountain" as a feature in the lagoon. The ice fountain would be designed to freeze in the winter and to be lighted with different or changing colored lights, providing a dynamic and ever-changing water feature.

Only a single concept was prepared and presented at the two public information meetings.

It is recognized that a water feature, such as an ice fountain, would be an expensive addition to the park and would require routine periodic maintenance. For these reasons, it may be necessary for a private benefactor to come forward to implement the improvement.

The County requires the integration of art into the design of capital improvement projects. The policy requires that one percent of the construction cost incurred in projects costing over \$1,000,000 be set aside for the integration of art into the design of the project. The intent is that art will become an integral part of the design, and not simply an "add-on" to the project. It may be possible to use this funding as the County's contribution to a private/public partnership to implement the future construction of a water feature in the lagoon.

In the absence of a private benefactor at this time, a water feature has not been given a high priority by the Plan and is not included in the analysis of the financial impacts to the County.

3.9 Park Roadways

Graphic concepts and alternatives have not been prepared for the roadways within McKinley Park and Veterans Park.

3.9.1 Center and South Section Park Entrance and Lagoon Drive

The asphalt surface of Lagoon Drive is deteriorating with age and the curb and gutter along some sections on both sides of the drive are crumbling or being broken by snowplows. It is recommended that the drive be repaved and the curb sections repaired. The curb cut at the entrance to the drive is being improved as part of the work on N. Lincoln Memorial Drive.

It is also recommended that color be introduced to the park in the form of flowerbeds. The flowerbeds could be used to highlight or accent the Lagoon Drive entrance to the park.

3.9.2 North Section Park Entrance

It is recommended that the North Section park entrance remain in its present location. It is also recommended that the drive into the site be improved, both aesthetically and functionally. Aesthetic improvement to the drive can occur through the use of landscape plantings and by replacing the unattractive existing wood slat, chain link fence bordering the Yacht Club compound with a decorative, but fully screened, metal fence. Flowerbeds used to highlight or accent the park entrance can be incorporated as recommended for the Lagoon Drive entrance.

The drive into the site may need to be realigned after it enters the site to improve the efficiency and safety of the site. The final disposition of the entrance to the North Section of the McKinley Park will be determined during the design phase of the proposed parking lot improvements.

3.9.3 North Service Road

It is recommended that, during the redesign of the North Section site, consideration be given to the potential reuse of the north service road entrance as a way of relieving the main entrance of some of the traffic it must handle. Only a northbound entry to the site and a right turn from the site will be possible now that N. Lincoln Memorial Drive will have a center median.

3.10 Organized Athletic Activities

The County Department of Parks, Recreation and Culture has indicated that there is a deficiency in the amount of picnic area available at McKinley Marina. This type of use is likely to appeal to many people and families and is likely to contribute to an increase in the number of park users.

This Plan envisions that all organized athletic activities will someday be relocated to alternate sites set aside for their specific purposes and that McKinley Park and Veterans Park will someday be devoted exclusively to their present water-related uses, picnicking, and its other passive outdoor activities. This does not preclude specifically permitted uses, such as special events of the lakefront.

It is recommended that McKinley Park and Veterans Park be devoted to its existing water-related uses and to family oriented passive and spontaneous uses. In order to provide for a site use that will appeal to the broadest segment of the County's population the Parks Department should seek an alternative site for the organized athletic activities that occur at McKinley Park. When an alternative site or sites are found, the area now used for

organized sports should be improved to serve picnicking and other passive outdoor activities.

The Lake Park East site, while it is not located within the boundaries of this study, has been suggested as an alternate site for organized athletics. However, concerns have been raised, objecting to the existing cross slope of the ground surface at Lake Park East as unacceptable for the purposes of rugby, hurling and soccer.

The Lake Park East site is the site of the former gun club. The original site was found to contain contaminated materials and has been capped in accordance with the requirements of the WDNR to protect the health and safety of those using the site for purposes of passive recreation. The site is sloped from the center of the cap to the sides at a two percent side slope. A two percent side slope would have a marked affect on play, particularly that of soccer. A recent opinion has been obtained by the Milwaukee County Department of Public Works from the WDNR, stating that a 1% slope would be acceptable for drainage. The WDNR has also stated that the existing cap must remain and cannot simply have topsoil removed to achieve the shallower slopes. Fill material will have to be added to the site and graded to achieve 1% side slopes. It is recommended that further study be performed to determine the feasibility of using the Lake Park East site for organized athletic activities.

3.11 Utilities

It is recommended that the duplex pumps in each of the three sanitary sewer lift stations in the Center and South Sections of the project site be replaced with duplex grinder pumps capable of handling waste solids as well as liquids. The County already has plans to replace the duplex pumps of the second lift station with duplex grinder pumps. It is recommended that the duplex pumps of the other two lift stations also be replaced.

The Plan addresses the potential for the expansion of the Center and South Section slip tenant restrooms, and it addresses the potential of the construction of a new multi-purpose recreational facility to be located between the Center and South Sections of the marina. The new facility may include a restaurant and restroom facilities for both the general public and the boaters. If implemented, the facility would increase the hydraulic load carried by the existing site sanitary sewer and water systems. The potential therefore exists that the capacity of the duplex pumps in the two downstream lift stations will have to be increased.

There is the potential that, during the design of the proposed McKinley Center, it will be determined that the capacity of the existing downstream gravity sewer (located adjacent to the former Coast guard Station) is inadequate for the hydraulic loads imposed upon the sewer. Should that potential be realized, the Plan has considered the installation of an

additional lift station at the site of the existing gravity manhole, located adjacent to the historic pump house on the north side of N. Lincoln Memorial Drive. In that event, the downstream section of gravity sewer (on site) would have to be abandoned and a new force main, running from the downstream on-site lift station to the new lift station, would have to be installed. A new force main would also have to be installed (possibly inside the existing gravity sewer) along the north side of N. Lincoln Memorial Drive, pumping sewage from the new lift station to the existing lift station at the tennis courts, before pumping it up to the top of Lafayette Hill.

The water distribution systems throughout the site are presently adequate. While the increase in the number of boats slips in the Center and South Sections of the proposed is substantial, the increase in the demand for water due to expansion of the number of slips is not significant. The demand placed upon the looped site main for water is not directly proportional to the number of slips. Instead, due to the diversity of use, the demand generated by the combination of the existing and added boat slips is only slightly greater than the demand generated by the existing slips. The increase in demand for water volume caused by the expansion of the number of slips may be accommodated by the replacement of the existing piping beneath the existing promenades.

The increase in the demand for water caused by the construction of the multi-use McKinley Center, if implemented, will require the installation of a new building lateral from the looped site main to the building.

An increase in the demand for electrical power created by the expansion of the dockage systems and by the construction of the proposed McKinley Center can be efficiently accommodated by the installation of a new primary electrical service at the time that the Center Section dockage system is replaced and expanded.

3.12 Community Issues

3.12.1 Public Access

Public access to the immediate water's edge already exists throughout most of the marina and McKinley and Veterans Parks. It is, however, envisioned that even more of the immediate water's edge be opened to the general public. Graphic concepts, showing alternative means by which that goal can be accomplished, were shown at both public information meetings. Please refer to Figure 3.3 on page 69 and to Figure 3.15 on the next page.

The promenades of the Center and South Sections of the marina are presently closed to the general public. The graphic concepts depict three ways in which the promenades can be opened to the general public without compromising the legitimate security interests of the

boaters. Of the three alternatives, the “common entry” concept answers most of the boater’s concerns, particularly that of fishermen casting their lines from shore onto the vessels.

The “common entry” concept calls for the installation of a marginal walkway, set away from and running parallel to the steel sheet pile bulkhead wall. A “moat” is created by the marginal walkway, separating the boats from the bulkhead. The marginal walkway requires fewer gated gangways than the other two alternatives. Gated access gangways are required in all cases, if public access is to be allowed to the immediate water’s edge. Public access to the docks themselves cannot be permitted for security reasons.

It is recommended that a compromise approach to public access, similar to that implemented in the North Section of the marina, be implemented in the Center and South Sections of the marina and that the promenades be opened to the general public and to fishermen. Opening the promenades to the general public, under conditions similar to those administered in the North Section of the marina, will add in excess of 2,500 lineal feet of publicly accessible waters edge to McKinley and Veterans Parks, reducing the restricted waters edge to only 1,400 lineal feet.

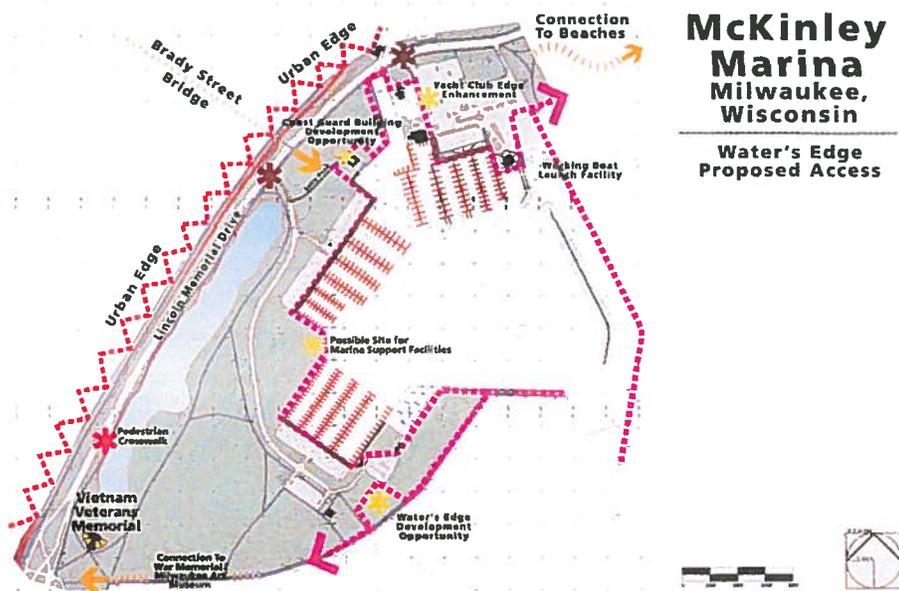


Figure 3.15 – Proposed Public Access

The Milwaukee Yacht Club and the Milwaukee Community Sailing Center conduct boat handling and repair operations within their fenced areas. Such operations are potentially unsafe. Further, boats representing a significant investment by the owner are stored within

the fenced compounds, requiring safe and secure protection. It is recommended that the present restrictions to public access within these areas be maintained.

3.12.2 Public Transit

It is recommended that trolley service be restored to N. Lincoln Memorial Drive, carrying it into McKinley Park and Veterans Park, upon completion of N. Lincoln Memorial Drive.

3.12.3 Brady Street Bridge

Figure 3.16 on the next page, represents a single concept of what might be done to improve the Brady Street Bridge. It is a lightweight structure added to the bridge to express movement to and from the Lake and to provide feature lighting in the evening. The lightweight structure should be sculptural and designed to vary the pedestrian experience through changing shadows, and perhaps colors, as the sun moves across the sky. This new structure must be designed in such a way that it does not add significant loading to the bridge, nor should it interfere with removal of snow from the bridge.

The Brady Street Bridge connects the marina and park to the local community. It has the potential to become one of the central features of this Plan.

At the Prospect Avenue entrance to the bridge, the Plan calls for creation of a “gateway” element to demarcate the approach to the bridge and to safely invite the public to McKinley Marina, McKinley Park and Veterans Park. This element should be scaled to complement the existing adjacent buildings and should relate to the design of the lightweight structure on the bridge. The gateway element should be supported with landscape plantings and features that help to announce the bridge. These features should be designed and illuminated in such a way as to create a safe pedestrian environment.

The structural repairs that have already been identified need to be made, whether or not the bridge is improved aesthetically, and it is recommended that they be made immediately.

It is further recommended that aesthetic modifications be made to the structure and to the gateway entrance at Prospect Avenue to “celebrate” the crossing of N. Lincoln Memorial Drive in a more substantial way and to encourage pedestrian movement between McKinley Park and the Brady Street community.

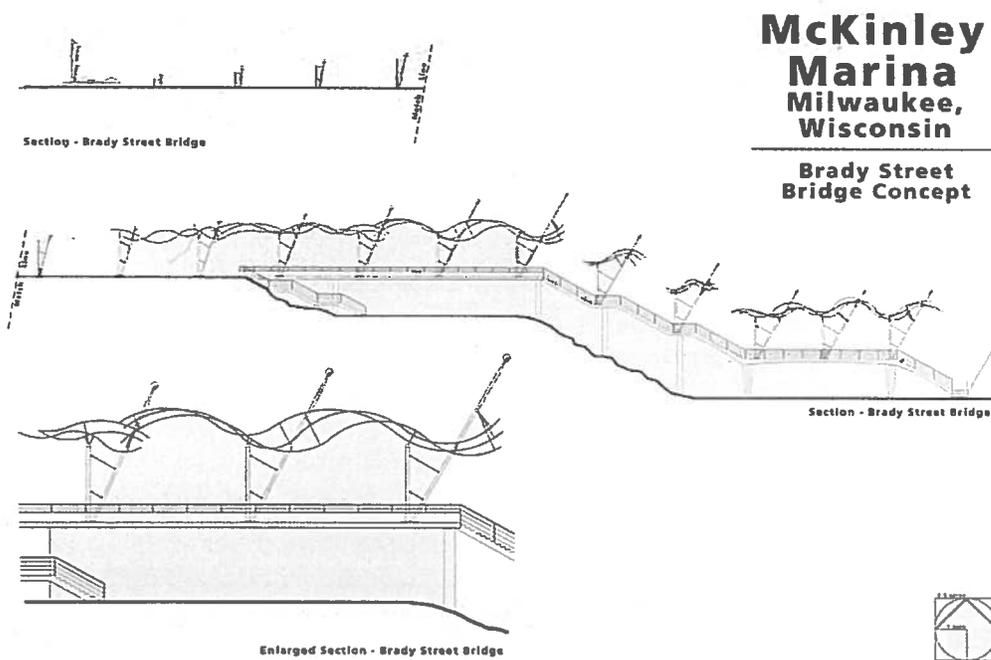


Figure 3.16 – Brady Street Bridge Concept

Finally, it is recommended that planning continue for a connection to accommodate bikers seeking to traverse between Brady Street and both the existing bike trail and the east side of N. Lincoln Memorial Drive. The existing bridge accommodates only pedestrians, but does not serve the multitudes of bikers who would desire and utilize access to Brady Street from the bike trail and lakefront parks.

3.12.4 Wayfinding Signage

Although the site currently has some signage, it is not adequate to direct persons who are not already acquainted with the site and the facilities. This is true both from land and from the water. The existence of the Brady Street Bridge and the access it provides to the park facilities is difficult to determine even when on Prospect Avenue at the top of the bluff. New signage is needed to assist the visitor in finding his or her way to the water and to the other area attractions.

Both the park and the marina basin require better signage to aid and inform people who are unfamiliar with the area. An example would be a “You are Here” display at the east end of the Brady Street Bridge with information on what Brady Street has to offer and where

visitors can find it. This alternative includes enhanced entrances to the park through the use of flowerbeds. (See discussion above).

It is recommended that a directional and informational signage plan for McKinley Marina, McKinley Park and Veterans Park be prepared and implemented. Transient visitors to the marina will benefit from signage that directs them to services offered by the marina. Park visitors will benefit from signage that directs them to other parts of the park and to the Brady Street area, Milwaukee's downtown, and other parts of the waterfront.

Concepts and alternatives for wayfinding signage have not been prepared. The matter is one for design. The signage should respect the marina and park as part of the County Park System and should also serve to provide an identity for this park and the unique location it has in the City and on the Lakefront.

3.12.5 Vietnam Veterans Memorial

The Vietnam Veterans Memorial does not require improvement and it is recommended that it remain as it is.

3.12.6 Connections to the Milwaukee Art Museum and Other Lakefront Attractions

It is implicit in each of the recommendations made by this Plan that one of the primary purposes of the Plan is to encourage and promote greater use of the parks and marina and to make use of the parks and marina a more enjoyable experience. It is also the intent of this Plan to create a synergistic effect between the parks and marina and the new developments that are occurring at the Art Museum, Municipal Pier, the new State Park, and other lakefront attractions to the south.

To promote the movement of pedestrian traffic between the lakefront sites, it is recommended that the existing harbor's edge promenade be improved, providing a degree of design continuity with the elements of the adjacent site. It is envisioned that the design of the individual elements of this Plan will complement and gain strength from the design elements of the Art Museum and other improvements being made to the lakefront south of Veterans Park.

Graphic concepts for tying the designs of the various site amenities of Veterans Park, such as lighting, concrete walkway details, curb and railing designs, have not been prepared. It is again, envisioned that the site amenities will be designed to build upon and gain strength from the designs of the improvements being made along the lakefront to the south of Veterans Park.

4.0 CHAPTER 4 – COSTS AND RECOMMENDED PHASING

4.1 General Comments

Estimates of the Probable Cost of Construction for each of the improvements recommended by this Plan have been prepared. The costs associated with the recommended improvements are substantial. The services provided by the Milwaukee County Department of Parks, Recreation and Culture are funded in large part by tax dollars generated by Milwaukee County. The County must, therefore, balance fiscal restraint demanded by the taxpayer with the need to improve and maintain McKinley Marina, McKinley Park and Veterans Park. The phasing plan presented below has been prepared, taking into account the County's need to balance the demands of a constituency that has broad, and often, conflicting needs.

The estimated costs include a construction allowance and fees for professional services and County administration. All estimates of probable cost included in the discussions that follow, are shown first as present worth costs. The cost of construction for the year in which the proposed improvement is to be implemented is shown in parentheses. The reader is referred to the cost and prioritization spreadsheets included in Appendix B of the report.

The discussions that follow present the Phasing Plan in the order in which we have recommended that the improvements be implemented. The Plan distributes the implementation of the recommended improvements over a seven-year timeframe.

4.2 The First Year of the Plan

4.2.1 Former Coast Guard Station

This Plan has recommended that, after proper photo documentation, the former Coast Guard Station be demolished and that any resulting voids or uneven ground be backfilled, graded and seeded. Given its present condition and the lack of an immediate and viable plan to restore the structure, the building should be demolished immediately.

This Plan has also recommended the replacement of the pile-supported concrete bulkhead wall of the Coast Guard shoreline, replacing it with a new steel sheet pile wall. It has also recommended that the boat well be demolished, closing its opening to the marina basin with a similar steel sheet pile wall, and filling the hole created by the removal of the boat well. It would be most efficient if all of the work could be performed simultaneously. However, the cost of performing the entire program at one time is substantial and is

estimated to be approximately \$864,000. It is therefore, recommended that only the building be demolished at this time and that the remainder of the work be postponed until the year 2003. The cost of demolishing only the building is estimated to be approximately \$96,600 (\$99,500).

4.2.2 Center Section – Docks E through K

It is recommended that the Center Section dockage, Docks E through K, be replaced immediately and it has recommended that the dockage system be made floating dockage rather than fixed dockage. The Plan also recommends that the existing promenade and its chain link fence enclosure be replaced with a new concrete promenade, opening the promenade to the general public, but providing a decorative railing and controlled dockage access gates located at the bulkhead wall.

The promenade will be extensively torn up to gain access to the site utilities just to install new dockage. It would be most efficient to replace the promenade as recommended at the same time that the dockage system is installed. It is, therefore, recommended that the promenade improvements be constructed at the same time that the docks are replaced. It is recommended that these improvements be made immediately.

The total cost for the recommended improvements to Docks A through D is estimated to be approximately \$6,083,000 (\$6,265,530).

4.2.3 Center Section Slip Tenant Restrooms

It is recommended that the Center Section slip tenant restrooms be expanded. It is further recommended that the expansion of the restrooms occur in the same year in which the dockage system is replaced and expanded.

The cost to expand the Center Section slip tenant restrooms is estimated to be approximately \$345,000 (\$355,350).

4.2.4 The Brady Street Bridge

The cost of making structural repairs to the Brady Street Bridge has been estimated to be approximately \$96,600 (\$99,500) and it has been recommended that the repairs be made immediately as part of the County maintenance program.

4.2.5 Total Cost in the First Year of the Plan

The total cost of the improvements proposed in the first year of the Plan is approximately \$6,621,200 (\$6,819,880).

4.3 The Second Year of the Plan

4.3.1 Swing Moorings

It is recommended that the Department of Parks, Recreation and Culture formally organize the swing moorings, adding two star docks, and that they initiate a fee program whereby the swing-mooring occupants pay an annual fee for their moorings. The swing mooring area will be reduced in size at the time that Docks E through K are replaced and expanded, making reorganization in the second year of the Plan necessary and cost effective.

It is estimated that the cost of the swing mooring equipment and installation will be approximately \$204,240 (\$216,680).

4.3.2 South Section – Docks L through P

It is recommended that the South Section dockage be replaced and expanded in the year following the improvements to the Center Section dockage system, and it is recommended that this dockage system be a floating system. The Plan also recommends that the existing promenade and its chain link fence enclosure be replaced with a new concrete promenade, opening the promenade to the general public, but providing a decorative railing and controlled dockage access gates.

Similar to the Center Section promenade, the South Section promenade will be removed to gain access to the site utilities just to install new dockage. It will be most cost effective to replace the promenade at the same time that the dockage system is installed. It is, therefore, recommended that the promenade improvements be constructed at the same time that the docks are replaced.

It is estimated that the cost of Docks E through K will be approximately \$5,419,300 (\$5,749,295).

4.3.3 South Section Slip Tenant Restrooms

It is recommended that the South Section slip tenant restrooms be remodeled. It is further recommended that the improvements occur in the same year in which the dockage system is replaced and expanded.

The cost to remodel the South Section slip tenant restrooms is estimated to be approximately \$124,200 (\$131,765).

4.3.4 Total Cost in the Second Year of the Plan

The total cost of the improvements proposed in the second year of the Plan is approximately \$5,747,700 (\$6,097,740).

4.4 The Third Year of the Plan

4.4.1 North Section Site Amenities

It is recommended that the North Section of the project site be entirely reorganized. It is also recommended that the asphalt promenades be replaced with decorative concrete promenades, that the existing chain link fencing be replaced with decorative fencing, and that the boat launch ramp be rehabilitated. It is also recommended that the boat storage facility be expanded, that the small maintenance shed located on the site be remodeled, and that the failed section of existing sheet pile bulkhead wall be repaired.

The North Section parking lots are in worse condition than any of the other parking lots in McKinley Park and Veterans Park. It is, therefore, recommended that the parking lot improvements be made in the third year of the Plan.

It is estimated that the cost of the North Section parking lot and associated improvements in the North Section is approximately \$4,052,500 (\$4,428,280).

4.4.2 North Section Slip Tenant Restrooms

This Plan documents the inadequacy of the North Section restrooms and has recommended its replacement. The existing restroom facility location is convenient to Docks A through D. It is recommended that it stay in its present location, but that it be expanded. When it is, the existing promenade will again have to be demolished, making it cost effective to replace the public promenade as well as the restroom facility. It is, therefore,

recommended that the North Section restroom be replaced at the same time that the parking lots and associated site amenities are rehabilitated.

The cost of replacing the North Section slip tenant restrooms is estimated to be approximately \$897,000 (\$980,175).

4.4.3 Former Coast Guard Station Site Amenities

It is recommended that the site of the former Coast Guard Station be improved in the third year. The boat well will have stood empty and open to the marina basin for two years from the date of the demolition of the building. It is, therefore, recommended that the work of replacing the existing pile-supported walls of the Coast Guard shoreline bulkhead wall and the work of closing the boat well opening be performed in the third year of the Plan.

The cost of this improvement is estimated to be approximately \$864,000 (\$944,135).

4.4.4 Total Cost in the Third Year of the Plan

The total cost of the improvements proposed for the third year of the Plan is approximately \$5,813,500 (\$6,352,590).

4.5 The Fourth Year of the Plan

4.5.1 South Section Public Restrooms and Open-air Shelter

The South Section public restrooms are in need of remodeling and the open-air picnic shelter is structurally deteriorating. It is recommended that the restrooms be remodeled and the open-air shelter replaced in the fourth year of the Plan.

It is estimated that the cost of the work will be approximately \$138,000 (\$155,320).

4.5.2 New Picnic Shelter and Public Restrooms

By the fourth year of the Plan, the demolition of the former Coast Guard Station, the repair of the bulkhead walls along the former Coast Guard Station shoreline, and the relocation of organized athletic activities to alternative sites will open up the former Coast Guard Station area to a broader cross-section of park users. It is recommended that a new open-air picnic shelter with public restrooms be constructed on the site.

It is estimated that the cost of the new facility will be approximately \$794,500 (\$894,250).

4.5.3 Total Cost in the Fourth Year of the Plan

The total cost of the improvements proposed for the fourth year of the Plan is estimated to be approximately \$932,500 (\$1,049,570).

4.6 The Fifth Year of the Plan

4.6.1 McKinley Center

The slip tenant survey results, Appendix A, and comments received from attendees of the public information meetings strongly support the concept of a restaurant at McKinley and a need exists for expanded marina management facilities. With the expansion of the Center and South Sections of the marina, additional slip tenant restroom facilities will be required. In response to the above needs and wishes, it is recommended that the facility be constructed. To be located between the Center and South Sections of the marina, McKinley Center will also include a delicatessen, a ship's store, meeting rooms (for public and slip tenant use), park maintenance space, covered outdoor seating and a feature observation tower, serving park visitors and boaters alike.

The County must work with the State Legislature to enact legislation specifically allowing a restaurant to be included in the proposed facility. Legislative action will take some time to initiate and complete. It is, therefore, recommended that the McKinley Center facility be scheduled for implementation in the fifth year of the Plan.

4.6.2 Total Cost in the Fifth Year of the Plan

The construction of McKinley Center is the only capital improvement project proposed for the fifth year. The cost of the improvements proposed for the fifth year of the Plan is approximately \$6,334,200 (\$7,343,075).

4.7 The Sixth Year of the Plan

4.7.1 Center Section Site Amenities

It is recommended that Center Section parking lot be rehabilitated and that landscape improvements be made in conjunction with the work. The inclusion of picnic tables,

benches, signage and landscaping is also recommended. It was also recommended that consideration be given to expanding the lot or integrating it with parking facilities for the future McKinley Center. It is recommended that the Center Section site amenities be improved in the sixth year of the Plan.

The cost of rehabilitating the parking lot and making the proposed landscape improvements in the Center Section is estimated to be approximately \$834,500 (\$996,400).

4.7.2 South Section Site Amenities

It is recommended that South Section parking lot be rehabilitated and that landscape improvements be made in conjunction with the work. The inclusion of picnic tables, benches, signage and landscaping is also recommended. It is cost effective to perform the work in the same year that the Center Section amenities are constructed.

The cost of the South Section site amenities is estimated to be approximately \$592,500 (\$707,500).

4.7.3 Roundhouse

It is recommended that after the marina management offices have been moved to new headquarters, that the food concession at the Roundhouse be expanded and that the public restrooms at the Roundhouse be remodeled. It is recommended that the work be performed in the sixth year of the Plan.

It is estimated that the cost of the work will be approximately \$876,300 (\$1,046,350).

4.7.4 Expansion of the North Section Dockage System

It is recommended that Docks A through D be expanded. This improvement is recommended primarily to increase marina revenues and is considered discretionary. If expansion of Docks A through D is to occur, it is recommended that it occur after more pressing marina needs and public services are provided. It is recommended, therefore, that expansion of Docks A through D be performed in the sixth year of the Plan.

It is estimated that the cost of the additional docks will be approximately \$372,600 (\$444,900).

4.7.5 Lagoon Drive

By the end of the fifth year of the Plan, much of the construction work in the Center and South Sections of McKinley Marina and McKinley Park will be complete, and during the sixth year of the Plan, the parking lots and site amenities will be under construction. Construction traffic and continued aging of Lagoon Drive will cause further deterioration of the drive and it will likely be ready for rehabilitation. It is recommended that Lagoon Drive be the last improvement made in the sixth year of the Plan.

The cost of rehabilitating Lagoon Drive is estimated to be approximately \$558,000 (\$666,340).

4.7.6 Total Cost in the Sixth Year of the Plan

The total cost of the improvements proposed for the sixth year of the Plan is estimated to be approximately \$3,233,900 (\$3,861,490).

4.8 The Seventh and Final Year of the Plan

4.8.1 Veterans and McKinley Park

It is recommended that the promenade along the harbor's edge of Veterans Park be replaced with a decorative concrete promenade with integral curb section, eliminating the visual impact of the existing steel sheet pile wall and providing one means of achieving continuity with the design of shoreline improvements occurring to the south of Veterans Park. Further, existing amenities within the McKinley and Veterans Parks require upgrading and improvement. Items such as the rehabilitation of the public parking lot, turf restoration; the addition of new utilities for special events, the installation of flowerbeds, and the addition of wayfinding signage throughout the park have been recommended. It is recommended that these improvements be made in the seventh and final year of the Plan.

4.8.2 Total Cost in the Seventh and Final Year of the Plan

The total cost of the improvements proposed for the seventh and final year of the Plan is estimated to be approximately \$4,049,500 (\$4,980,335).

4.9 Improvements Requiring Legal Resolution and Private Sector Involvement

4.9.1 General Comments

Several of the improvements proposed for the McKinley Marina, McKinley Park and Veterans Park have constraints requiring, for different reasons, that they not be included in the seven-year Plan for the Phased Development of McKinley Marina, McKinley Park and Veterans Park. The following discussions explain why the improvements have not been included. The costs of each of the potential improvements have been estimated and are presented in the following discussions.

4.9.2 Lake Park East Improvements

It is proposed that the organized athletic activities be relocated to an alternate site or sites. Lake Park East, the site of the former gun club, has been suggested as one possible alternate site. To be used for athletic purposes, however, the site grades must be modified to reduce the side slopes of the playing field to 1% from their present 2% side slopes. The estimated cost of proposed improvements is estimated to be approximately \$202,900.

Relocation of organized athletic activities is a matter requiring resolution by the County. Therefore, the required improvements to Lake Park East have not been included in the seven-year Plan for the Phased Development of McKinley Marina, McKinley Park and Veterans Park.

4.9.3 Flushing Tunnel Wall

The Flushing Tunnel intake channel bulkhead walls are in much the same condition as the former Coast Guard Station walls. It has been recommended that the walls be replaced with steel sheet pile walls similar to those recommended for the former Coast Guard Station bulkhead wall. The work is estimated to cost approximately \$1,803,100.

It would be cost effective to perform the work simultaneously with that of the former Coast Guard Station bulkhead wall replacement. The ownership of the Flushing Tunnel intake channel bulkhead walls remains, however, unresolved. Therefore, the rehabilitation of the Flushing Tunnel is not included in the seven-year Plan.

4.9.4 Milwaukee Community Sailing Center

The Plan has recommended improvements to the parking lot and fenced enclosure of the Milwaukee Community Sailing Center. It has also recommended other aesthetic improvements for the water's edge, buildings and interior of the MCSC compound. The cost of the recommended improvements is estimated to be approximately \$1,328,300.

Because conditions of the lease agreement between the MCSC and the County impose constraints upon the County's ability to require capital improvements to the MCSC facilities, the proposed improvements have not been included in the seven-year Plan.

4.9.5 The Brady Street Bridge

It has been recommended that the structural repairs required for the Brady Street Bridge be performed immediately. The structural repairs have been included in the first year of the Plan. It has also been recommended that the bridge be improved architecturally with accent lighting and a lightweight kinetic sculpture and that the Prospect Avenue entrance to the bridge be made safe and inviting. It is estimated that cost of the recommended improvements to the bridge will be approximately \$345,000.

In addition, plans to secure State and Federal funds—with a limited County match—for a connection to accommodate bikers between Brady Street and both the existing bike trail and the east side of Lincoln Memorial Drive should be pursued. It is the intent that these proposed improvements be accomplished with a combination of private sector, State and Federal funds, with County funds to be used only if necessary. Because of uncertainty regarding the utilization of State and/or Federal grants, County funding for the proposed improvements has not been included in the seven-year plan for McKinley.

4.9.6 Ice Fountain

The cost of an ice fountain, or any similar "sculpture" or artistic element, will be highly dependent upon the final design of the element, if one is introduced to the park (preferably in or around the Veterans Park Lagoon). The County should not bear the initial cost of such an improvement. It is hoped that the concept will appeal to potential benefactors. An ice fountain has not been included in the seven-year Plan for McKinley.

The County requires the integration of art into the design of capital improvement projects. The policy requires that one percent of the construction cost incurred in projects costing over \$1,000,000 be set aside for the integration of art into the design of the project. The intent is that art will become an integral part of the design, and not simply an “add-on” to the project. It may be possible to use a portion of this funding as the County’s contribution to a private/public partnership to implement the future construction of a water feature in the lagoon.

4.10 Fiscal Analysis

A fiscal analysis was performed on the impact of the Master Plan. Please refer to Table 4.1 on page 117. The table summarizes the results of the analysis.

In order to show the impact logically, the table is broken out into two sections. The top section deals with the McKinley Marina area proper. This includes the aspects that deal most directly with boat launching, slip rental and support services. This is the area that has been traditionally identified in computing the costs of “McKinley Marina.”

This section of the table shows operating costs, existing dept service, depreciation, interest on existing bonds and also revenue. The expenditures include direct costs, including fringe benefits. The revenue section includes existing revenue, revenue related to upgraded slips and also revenue from new slips. The upper section views the operation from a business or enterprise standpoint. The revenues do not take into consideration potential non-county sources of revenue. Grant monies from State agencies such as the State of Wisconsin Waterways Commission and the State of Wisconsin Department of Transportation may be available to help offset the cost of some of the improvements.

However, it is important to also note that the costs and revenue shown for the Marina include services to the general public, including people fishing, restaurant operation, casual users of the area, the public parking lot and other users.

The following assumptions were used for the McKinley Marina calculation:

1. The base increase in both expenditures and revenues is based on three percent inflation, which may actually be higher or lower.
2. The upgraded slips will be priced similarly to the upgraded A-D slips.

3. Somewhat higher operating costs will be needed for additional slips and this cost has been included in the year that the additional slips would come on line, which is the same year that revenue would be received from those slips.
4. Revenue from the rental from new slips is based on the conservative assumption that 50% will be rented the first year and 75% will be rented the second year. In future years, the general occupancy rate was used.
5. The McKinley Center was not included in McKinley Marina section only because the operating costs and revenues could not be calculated since the features are still being developed. Accordingly, the McKinley Center is shown in the lower section as a stand-alone project without any costs or revenue.

The lower section includes just the capital improvement costs of the individual projects that are listed. The "Total Project Cost" column shows the estimated cost in the year that the project will be done in but does not include the interest cost. The total debt service, including the project cost and interest is shown in the extreme right hand column. Interest was based on 5.6% and a 15-year bond issue. Operating costs and revenues have not been calculated since most of the items are repairs or improvements to generally non-revenue producing areas. It also appeared that operating costs would not be significantly effected by the projects. The projects listed in year eight are potential projects that could occur in any year, and the cost shown is the cost if the projects were done in year one. The cost will need to be recalculated to reflect the year that the project is actually begun in.

Detailed tables and supporting data, showing how the revenue was calculated, are included in Appendix B.

5.0 CHAPTER 5 – SUMMARY

5.1 Brief History and Public Outreach

A Plan for the Phased Development of McKinley Marina, McKinley Park and Veterans Park has been prepared. The Plan has been prepared through the collaborative effort of the Planning Team and Milwaukee County Department of Parks, Recreation and Culture and Milwaukee County Department of Public Works.

Preparation of the Plan is the final product of the first phase of a contract awarded six years ago by the County to W.F. Baird & Associates and its associate team members. The original scope of work included in Phase 1 of the Contract consisted of the following primary tasks:

- Planning and design of new breakwaters to improve the wave agitation levels within the marina basin;
- Planning and design of a new dockage system to replace aging dockage system (157 slips) in the North Section of the marina;
- Performance of a market study and financial feasibility analysis of the proposed improvements; and
- Preparation of a long-range plan for the future improvement and development of the remainder of the marina.

Major improvements to McKinley Marina have been implemented within the past six years. The market and economic feasibility study was performed in 1964 and new breakwaters have been constructed, providing a proper environment in which to moor recreational craft. New floating docks have replaced the 157 slips of the original fixed dockage system in the North Section of the marina (Docks A through D). Approximately five million dollars of needed improvements have already been implemented.

The Plan focuses upon needed and proposed improvements to the aging infrastructure of the marina, but also addresses improvements to the infrastructure of McKinley Park and Veterans Park, serving the general public, as well as the recreational boater.

The Plan is the result of an intensive public outreach program, whereby boater and park visitor alike have had an opportunity to express their needs and desires for the marina and the two parks. Private interviews with a broad cross-section of stakeholders were conducted. Over sixty interviews were conducted with individuals and representatives of boater organizations, tenant organizations and local neighborhood groups, as well as with representatives of the Milwaukee Department of City Development and the Greater

Milwaukee Visitors Bureau. Two well publicized, open-house public information meetings were held at O'Donnell Park. Graphics of potential and proposed improvements were displayed and representatives of the Consultant Team, the Milwaukee County Department of Parks, Recreation and Culture, and the Department of Public Works were available to answer questions.

The McKinley Marina Planning Committee, consisting of representatives of County government, two County Board Supervisors, a representative of the Department of Natural Resources, a representative of the County Executive's office, and representatives of the Consultant Team, met regularly throughout the course of the study and provided the necessary oversight required for a project of this scope.

5.2 Planning Guidelines and Principles

The Planning Team recognized early in the planning process, certain guidelines and principles that have influenced the performance of the study throughout. Others became known as work progressed. The guidelines and principles that have influenced the outcome of the Plan are as follows.

- The lakefront is special to all Milwaukee County residents. Public access to the water's edge throughout McKinley Marina, McKinley Park and Veterans Park should be expanded to the fullest extent possible, constrained only by issues of security and public safety.
- Many of the opportunities that exist for improvement of the marina and park infrastructure, derive from the need to replace or repair much of the infrastructure due to its deterioration with age. Repair and replacement of the infrastructure, and the construction of new facilities, will afford an opportunity to improve marina management efficiency, slip tenant services, parking lot function and safety, other amenities within the marina and parks, and aesthetics.
- Improvements to the infrastructure of McKinley Marina, McKinley Park and Veterans Park will be extensive and costly. New revenues must be generated to partially offset the cost of the improvements proposed for McKinley Marina, McKinley Park and Veterans Park.
- To promote a sense of continuity throughout the parks, the design of all new and improved park elements should be responsive to an established park design "theme." Such a design theme may be as simple as a palette of colors and materials for the buildings, roofs, railings, signage, and other park elements.

- New and exciting improvements are being made along the lakefront to the south of Veterans Park. McKinley and Bradford Beaches to the north of the project site also afford exceptional opportunities for recreation and access to the lakefront. To enhance the park visitor's overall experience along the waterfront, any improvements proposed by this Plan must complement and build from those that are adjacent to McKinley Park and Veterans Park.

5.3 The Primary Issues

As the planning process evolved, the expressed desires of the boaters and general public helped to define the issues that would become the focus of the Plan. Six primary issues were identified. They are as follows:

- Aging infrastructure;
- Public access;
- Barrier-free accessibility;
- Park use;
- Developments along other parts of the lakefront; and
- Economic and market feasibility.

The Plan addresses these issues.

5.4 Site Inventory and Opportunities and Constraints

5.4.1 The Marina and Marina Related Facilities

The infrastructure of McKinley Marina, including the dockage systems, restroom facilities, parking lots, basin edge promenades, fencing, etc., are best characterized as aging and deteriorating. Further, the restroom facilities serving the boaters do not provide an adequate number of toilet, sink, shower, and laundry services, particularly if the dockage systems are to be expanded as recommended by the Plan. Virtually all of the infrastructure of the marina, except the relatively new docks of the North Section, can be characterized as deteriorating with age.

Several of the buildings do not comply with the American Disabilities Act, requiring barrier-free access.

The marina management office (a single room), located in the Roundhouse at the far north end of McKinley Park, is spatially inadequate for managerial purposes and is inconveniently located relative to the Center and South Sections of the marina.

The dockage systems of the Center and South Sections of the marina are fixed docks whose deck surfaces today are more than eight feet above the water surface. The docks have also deteriorated extensively with age.

The Plan recommends that the dockage systems of the Center and South Sections of the marina be replaced with floating dockage systems, and that the number of boats slips be increased to increase marina revenues. New floating docks will offer a constant freeboard to the boater and added numbers of boat slips will bring new revenues to the marina. It is proposed that the number of slips be increased from the present 662 slips to a total of 915 slips, increasing proportionately the revenue generated by the slips.

The Plan also recommends that the restroom facilities in each of the three sections of the marina be either replaced or expanded. The North Section slip tenant restrooms need to be replaced. Construction of a new restroom building is the most cost effective means of expanding the facility. The center and South Section slip tenant restrooms can be improved by constructing additions to the existing buildings.

The Plan recommends that the enclosed concrete promenades in each of the three sections of the marina be replaced and opened to the general public. Replacement of the concrete decks of the promenades can be accomplished most cost effectively when the original promenades are razed for other purposes. The promenades will have to be razed to achieve the installation of utilities for the proposed new dockage systems and for the construction of the new or remodeled restroom facilities. Opening the promenades to the general public, similar to what is presently done in the North Section of the marina, can be accomplished while at the same time providing an appropriate level of security to the slip tenants and their boats.

Barrier-free access to the buildings may be incorporated into the designs of the remodeled and newly constructed facilities. Barrier-free access to the floating dockage system may be accomplished by the provision of hinged access ramps or gangways.

5.4.2 Swing Moorings

Expansion of the dockage systems in the marina will reduce the area presently being used by boaters mooring their boats to anchored buoys in the center of the McKinley Marina basin. The swing-mooring occupants do not presently pay an annual fee for the privilege of mooring their vessels in the basin. By virtue of a State of Wisconsin Lakebed Grant to the County, and by virtue of the transfer of administrative control of the swing mooring

area by the Milwaukee Harbor Commission to the County, Milwaukee County now has total control of the swing mooring area. While final design of the swing-mooring layout will determine exactly how many boats may be accommodated, virtually all of the existing vessels being moored in the center of the basin may still be accommodated. It is recommended, however, that the swing moorings be reorganized and that an annual fee be charged for their use.

5.4.3 Slip Tenant and Public Parking Lots

The parking lots serving the slip tenants, the general public, and leaseholders (the Milwaukee Yacht Club and Milwaukee Community Sailing Center) in all sections of the park are deteriorating with age and need to be rehabilitated or replaced in their entirety. At the time they are replaced, they may be better organized, having a positive impact upon pedestrian safety and possibly increasing the amount of green space within the parks.

5.4.4 Former Coast Guard Station

The existing former Coast Guard Station Building, boat well, and bulkhead wall have deteriorated extensively and have become a public safety concern. To date, no acceptable offer to lease, renovate or restore the facility has been made to the County. Such an offer would also have to conform to the State of Wisconsin, Department of Natural Resources' interpretation of the Public Trust Doctrine. In the absence of an acceptable offer, it is recommended that, after proper photo documentation, the building be demolished, the bulkhead wall repaired and the boat well filled to create new parkland. In conjunction with the future relocation of organized athletic activities to alternate sites, the removal of the former Coast Guard Station and boat well will allow the entire area to be devoted to passive park use. It is also recommended that a new open-air picnic shelter and public restrooms be constructed upon the site.

5.4.5 Park Use

With the exception of the expressed wishes of some stakeholders that the organized athletic activities presently being conducted at McKinley be relocated to alternate sites, most of the stakeholders interviewed expressed a strong desire that the present marina, McKinley Park and Veterans Park uses remain unchanged. The Plan, however, recommends that park infrastructure be rehabilitated or replaced. Similar to the marina infrastructure, the infrastructure of the parks is also deteriorating with age.

The Plan recommends that the existing asphalt promenades lining the harbor and marina edges of the parks and marina basin be replaced with new, decorative concrete promenades, upgrading the aesthetics of the park and making the park experience a more

enjoyable and aesthetically attractive experience. Developments along Milwaukee's lakefront to the south of Veterans Park are introducing new and exciting experiences to the lakefront visitor. Improvements to the infrastructure of Veterans Park and McKinley Park can help to broaden the lakefront experience. It is the belief that implementation of the improvements proposed by this Plan will contribute to a synergism benefiting the marina slip tenants, all visitors to the lakefront, and citizens of the county.

McKinley Park and Veterans Park are used heavily by a variety of users, including strollers, joggers, roller bladers, picnickers, and kite flyers, as well as soccer, rugby and hurling organizations. The use of some areas of the two parks for organized athletic activities sometimes conflicts with passive uses. The Plan, therefore, recommends that the parks be dedicated exclusively to their present water-related uses and to passive uses and that all organized athletic activities currently taking place in the parks be relocated to alternate sites, provided that alternate sites for their activities can be found. In this manner, the areas being used for organized athletic activities may become areas for passive park use.

5.5 Summary of the Recommended Improvements and Phasing

Because the infrastructure throughout the marina and parks has deteriorated with age to the extent that it now needs to be replaced or rehabilitated, the improvements recommended by the Plan for McKinley Marina, McKinley Park and Veterans Park are extensive and the costs are significant. The Plan, therefore, prioritizes and distributes the implementation of the proposed improvements over a period of seven years.

Further, the Plan identifies certain improvements as desirable, but not justifiable for legal or monetary reasons. The ownership of the Flushing Tunnel Walls must be resolved before any improvements to the failing bulkhead walls can be implemented. Other potential improvements may require private sector participation before they can be implemented.

The probable cost of construction of each of the proposed improvements has been estimated. The estimated costs include a construction allowance and fees for professional services and County administration. All estimates of probable cost included in the discussions that follow, are shown first as present worth costs. The cost of construction for the year in which the proposed improvement is to be implemented is shown in parentheses. The reader is referred to the cost and prioritization spreadsheets included in Appendix B of the report.

The improvements recommended by the Plan, the estimated cost of each of the improvements, and the schedule recommended for their implementation are summarized and prioritized as follows.

5.5.1 The First Year of the Plan

- Demolition of the former Coast Guard Station Building, backfilling, grading and seeding – at an estimated cost of \$96,600 (\$99,500).
- Replacement of the Center Section dockage system, Docks E through K, with floating docks and increasing the number of boat slips from 245 to 400 and replacement of the existing concrete promenade, opening it to the general public during specified hours of the day – at an estimated cost of approximately \$6,083,000 (\$6,265,530).
- Expansion of the Center Section slip tenant restrooms – at an estimated cost of approximately \$345,000 (\$355,350).
- Structural rehabilitation of the Brady Street Bridge – at an estimated cost of approximately \$96,600 (\$99,500).
- The total cost of the improvements recommended in the first year of the Plan is estimated to be approximately \$6,621,200 (\$6,819,880).

5.5.2 The Second Year of the Plan

- Reorganization of the swing moorings and development of an annual fee schedule for the use of the swing moorings – at an estimated cost of approximately \$204,200 (\$216,680).
- Replacement of the South Section dockage system, Docks L through P, with floating docks and increasing the number of boat slips from 260 to 322 and replacement of the existing concrete promenade, opening it to the general public during specified hours of the day – at an estimated cost of approximately \$5,419,300 (\$5,749,295).
- Remodeling and expansion of the South Section slip tenant restrooms – at an estimated cost of approximately \$124,200 (\$131,765).
- The total cost of the improvements recommended in the second year of the Plan is estimated to be approximately \$5,747,700 (\$ 6,097,740).

5.5.3 The Third Year of the Plan

- Replacement and rehabilitation of the slip tenant, boat launch, Milwaukee Yacht Club and public parking lots, replacement of the public promenade,

rehabilitation of the boat launch ramp, replacement of the existing chain link fencing with decorative fencing, and expansion of the boat storage facility in the North Section of McKinley Park – at an estimated cost of approximately \$4,052,500 (\$4,428,280).

- Replacement of the North Section slip tenant restrooms with a new building, including a public overlook, and replacement of the existing concrete promenade – at an estimated cost of approximately \$897,000 (\$980,175).
- Replacement and repair of the bulkhead wall of the former Coast Guard Station, closure of the open end of the boat well, filling the boat well, and constructing a new concrete promenade at the water's edge – at an estimated cost of approximately \$864,000 (\$944,135).
- The total cost of the improvements recommended in the third year of the Plan is estimated to be approximately \$5,813,500 (\$6,352,590).

5.5.4 The Fourth Year of the Plan

- Remodeling and expansion of the existing South Section public restrooms and open-air shelter – at an estimated cost of approximately \$138,000 (\$155,320).
- Construction of a new picnic shelter and public restrooms at the site of the former Coast Guard Station – at an estimated cost of approximately \$794,500 (\$894,250).
- The total cost of the improvements recommended in the fourth year of the Plan is estimated to be approximately \$932,500 (\$1,049,570).

5.5.5 The Fifth Year of the Plan

- Construction of a new facility, the McKinley Center, serving the marina and the general public, housing marina management offices, park maintenance facilities, meeting rooms, delicatessen, ship's store, slip tenant and public restrooms, observation tower, and a restaurant in accordance with the slip tenant survey and in accordance with comments received from the stakeholders.
- The County must work with the State Legislature to enact legislation specifically allowing a restaurant to be included in the proposed facility. Legislative action will take time to initiate and complete.

- The construction of McKinley Center is the only capital improvement project proposed for the fifth year – at an estimated cost of approximately \$6,334,200 (\$7,343,075).

5.5.6 *The Sixth Year of the Plan*

- Replacement and expansion of the Center Section parking lot, to serve the Center Section slip tenants and the public and to provide parking for the proposed McKinley Center, and the installation of landscape improvements – at an estimated cost of approximately \$834,500 (\$996,400).
- Replacement and expansion of the South Section parking lot and the installation of landscape improvements – at an estimated cost of approximately \$592,500 (\$707,500).
- Remodel and expand the Roundhouse and public restrooms – at an estimated cost of approximately \$876,300 (\$1,046,350).
- Expand the North Section dockage system, Docks A through D, increasing the number of boat slips from 157 to 193 and bringing new revenue to the marina – at an estimated cost of approximately \$372,600 (\$444,900).
- Repave and improve Lagoon Drive – at an estimated cost of approximately \$558,000 (\$666,340).
- The total cost of the improvements recommended in the sixth year of the Plan is estimated to be approximately \$3,233,900 (\$3,861,490).

5.5.7 *The Seventh and Final Year of the Plan*

- Replacement of the existing asphalt promenade along the harbor’s edge of Veterans Park, around the perimeter of O’Donnell Point, and along the unimproved marina basin edges in McKinley Park. Items such as the rehabilitation of the public parking lot, turf restoration; the addition of new utilities for special events, the installation of flowerbeds, and the addition of wayfinding signage throughout the park have also been recommended at an estimated cost of approximately \$4,049,500 (\$4,980,335).

5.6 Other Potential Improvements Requiring Legal Resolution or Private Sector Participation

5.6.1 Lake Park East Improvements

It is proposed that the organized athletic activities be relocated to an alternate site or sites. Lake Park East, the site of the former gun club, has been suggested as one possible alternate site. To be used for athletic purposes, however, the site grades must be modified to reduce the side slopes of the playing field to 1% from their present 2% side slopes – at an estimated cost of approximately \$202,900.

Relocation of organized athletic activities is a matter requiring resolution by the County. Therefore, the required improvements to Lake Park East have not been included in the seven-year Plan for the Phased Development of McKinley Marina, McKinley Park and Veterans Park.

5.6.2 Flushing Tunnel Wall

The Plan recommends that the walls be replaced with steel sheet pile walls similar to those recommended for the former Coast Guard Station bulkhead wall – at an estimated cost of approximately \$1,803,100. While it would be cost effective to perform the work simultaneously with that of the former Coast Guard Station bulkhead wall replacement, the ownership of the Flushing Tunnel intake channel bulkhead walls remains unresolved. Therefore, the rehabilitation of the Flushing Tunnel has not been included in the seven-year Plan.

5.6.3 Milwaukee Community Sailing Center

The Plan recommends improvements to the parking lot and fenced enclosure of the Milwaukee Community Sailing Center. The Plan also recommends other aesthetic improvements for the water's edge, buildings and interior of the MCSC compound – at an estimated cost of approximately \$1,328,300. Because conditions of the lease agreement between the MCSC and the County impose constraints upon the County's ability to require capital improvements to the MCSC facilities, the proposed improvements have not been included in the seven-year Plan.

5.6.4 The Brady Street Bridge

The Plan recommends that the Brady Street Bridge be improved architecturally with accent lighting and a lightweight kinetic sculpture, and that the Prospect Avenue entrance to the

bridge be made safe and inviting – at an estimated cost of approximately \$345,000. In addition, plans to secure State and Federal funds—with a limited County match—for a connection to accommodate bikers between Brady Street and both the existing bike trail and the east side of Lincoln Memorial Drive should be pursued. It is the intent that these proposed improvements be accomplished with a combination of private sector, State and Federal funds, with County funds to be used only if necessary. Because of uncertainty regarding the utilization of State and/or Federal grants, County funding for the proposed improvements has not been included in the seven-year plan for McKinley.

5.6.5 *Ice Fountain*

The Plan envisions the incorporation of an “ice fountain” in the improvements to the lagoon in Veterans Park as a signature Milwaukee lakefront feature. The cost of an ice fountain, or any similar “sculpture” or artistic element, will be highly dependent upon the final design of the element, if one is introduced to the park. The County should not bear the initial cost of such an improvement. It is hoped that the concept will appeal to a potential benefactor. A cost for the proposed improvement has not, therefore, been included in the seven-year Plan for the Phased Development of McKinley Marina, McKinley Park and Veterans Park.

The County requires the integration of art into the design of capital improvement projects. The policy requires that one percent of the construction cost incurred in projects costing over \$1,000,000 be set aside for the integration of art into the design of the project. The intent is that art will become an integral part of the design, and not simply an “add-on” to the project. It may be possible to use a portion of this funding as the County’s contribution to a private/public partnership to implement the future construction of a water feature in the lagoon.

5.7 Fiscal Analysis

A fiscal analysis was performed on the impact of the Master Plan. The reader is referred to Article 4.10, Table 4.1 and Appendix B of the report for a discussion of the analysis and supporting data.



**APPENDIX A - SLIP TENANT
SURVEY RESULTS**



Marina Slip Tenant Survey Results

January 8, 1998

- Notes: 1. Survey Results Sorted in the Order in Which the Questions Were Asked
 2. 607 Survey forms were sent out to slip tenants- Approximately 54% had responded by January 8, 1999

McKinley Marina requires: Please check the appropriate box

Landside Facilities

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	Total Responses
1 Additional Administrative Facilities	10	35	150	74	50	319
2 Meeting Space	11	42	140	79	39	311
3 Additional Toilets	127	90	55	39	10	321
4 Additional Lavatories (Sinks)	105	69	85	44	9	312
5 Additional Showers	111	71	92	38	13	325
6 Additional Laundry Facilities	39	51	154	49	18	311
7 Ship's Store	73	123	74	28	14	312
8 Restaurant	156	74	55	25	12	322
9 Delicatessen	130	97	63	18	12	320
10 Trash Dumpster Sites	29	64	129	58	16	296
11 Additional Tenant Parking	23	41	137	95	15	311
12 Picnic Tables	72	97	102	24	11	306
13 Barbecue Grills (Fixed)	73	106	83	39	18	319
14 Dog Walking Areas	59	58	136	47	24	324
15 Swimming Pool	60	48	72	56	81	317
16 Workout Room/Exercise Club	26	42	78	70	93	309
17 Playground Facilities	31	50	94	69	60	304
18 Day Care Facilities	4	8	105	84	115	316
19 Jacuzzi/Whirlpool	67	40	59	64	80	310

Dockside Facilities

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	Total Responses
20 Telephone (hard-wired)	59	61	108	43	31	302
21 Cable TV	77	59	102	41	36	315
22 Additional Pumpout Facilities	66	63	126	34	12	301
23 Dock Boxes	66	84	116	19	12	297
24 Center Mooring Piles	139	45	81	15	8	288
25 Trash Receptacles	65	101	101	24	9	300
26 Fixed Docks	31	30	132	52	48	293

Marina Slip Tenant Survey Results

Notes: 1. Survey Results Sorted in Descending Order of Agreement
 2. 607 Survey forms were sent out to slip tenants- Approximately 54% had responded by January 8, 1999

McKinley Marina requires: Please check the appropriate box

Landside Facilities	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	Total Responses
7 Ship's Store	73 23.40%	123 39.42%	74 23.72%	28 8.97%	14 4.49%	312
13 Barbecue Grills (Fixed)	73 22.88%	106 33.23%	83 26.02%	39 12.23%	18 5.64%	319
12 Picnic Tables	72 23.53%	97 31.70%	102 33.33%	24 7.84%	11 3.59%	306
9 Delicatessen	130 40.63%	97 30.31%	63 19.69%	18 5.63%	12 3.75%	320
3 Additional Toilets	127 39.56%	90 28.04%	55 17.13%	39 12.15%	10 3.12%	321
8 Restaurant	156 48.45%	74 22.98%	55 17.08%	25 7.76%	12 3.73%	322
4 Additional Lavatories (Sinks)	105 33.65%	69 22.12%	85 27.24%	44 14.10%	9 2.88%	312
5 Additional Showers	111 34.15%	71 21.85%	92 28.31%	38 11.69%	13 4.00%	325
10 Trash Dumpster Sites	29 9.80%	64 21.62%	129 43.58%	58 19.59%	16 5.41%	296
14 Dog Walking Areas	59 18.21%	58 17.90%	136 41.98%	47 14.51%	24 7.41%	324
17 Playground Facilities	31 10.20%	50 16.45%	94 30.92%	69 22.70%	60 19.74%	304
6 Additional Laundry Facilities	39 12.54%	51 16.40%	154 49.52%	49 15.76%	18 5.79%	311
15 Swimming Pool	60 18.93%	48 15.14%	72 22.71%	56 17.67%	81 25.55%	317
16 Workout Room/Exercise Club	26 8.41%	42 13.59%	78 25.24%	70 22.65%	93 30.10%	309
2 Meeting Space	11 3.54%	42 13.50%	140 45.02%	79 25.40%	39 12.54%	311
11 Additional Tenant Parking	23 7.40%	41 13.18%	137 44.05%	95 30.55%	15 4.82%	311
19 Jacuzzi/Whirlpool	67 21.61%	40 12.90%	59 19.03%	64 20.65%	80 25.81%	310
1 Additional Administrative Facilities	10 3.13%	35 10.97%	150 47.02%	74 23.20%	50 15.67%	319
18 Day Care Facilities	4 1.27%	8 2.53%	105 33.23%	84 26.58%	115 36.39%	316

Dockside Facilities	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	Total Responses
25 Trash Receptacles	65 21.67%	101 33.67%	101 33.67%	24 8.00%	9 3.00%	300
23 Dock Boxes	66 22.22%	84 28.28%	116 39.06%	19 6.40%	12 4.04%	297
22 Additional Pumpout Facilities	66 21.93%	63 20.93%	126 41.86%	34 11.30%	12 3.99%	301
20 Telephone (hard-wired)	59 19.54%	61 20.20%	108 35.76%	43 14.24%	31 10.26%	302
21 Cable TV	77 24.44%	59 18.73%	102 32.38%	41 13.02%	36 11.43%	315
24 Center Mooring Piles	139 48.26%	45 15.63%	81 28.13%	15 5.21%	8 2.78%	288
26 Fixed Docks	31 10.58%	30 10.24%	132 45.05%	52 17.75%	48 16.38%	293

**APPENDIX B – COST,
PRIORITIZATION AND FINANCIAL
ANALYSES SPREADSHEETS**



Plan for the Phased Development of McKinley Marina, McKinley Park and Veterans Park

ESTIMATE OF PROBABLE CONSTRUCTION COSTS AND PRIORITIZATION - ALL IMPROVEMENTS

ITEM	UNIT	QUANTITY	UNIT PRICE	EXTENDED PRICE	CONSTRUCTION ALLOWANCE	SUB TOTAL	ADMIN. AND PROF. COSTS	GRAND TOTALS	PRESENT WORTH COST - YEAR 2000	FUTURE COST YEAR OF CONSTR.	YEAR	FUTURE COST YEAR OF CONSTR.	YEAR	POTENTIAL GRANT MONEY - PRESENT WORTH DOLLARS		
														ELIGIBLE PORTION	ELIGIBLE SHARE	JUSTIFICATION
COAST GUARD STATION																
DEMOLISH COAST GUARD STATION	LS	1	\$70,000	\$70,000	\$10,500	\$80,500	\$16,100	\$96,600	\$96,600	\$99,498	2001					
CENTER SECTION DOCKAGE SYSTEM																
EXPAND FROM 245 SLIPS TO 400 SLIPS	SLIP	400	\$7,500	\$3,000,000	\$450,000	\$3,450,000	\$690,000	\$4,140,000			2001					
DEMOLITION OF EXISTING DOCKAGE	SLIP	245	\$3,200	\$784,000	\$117,600	\$901,600	\$180,320	\$1,081,920			2001					
WATERS EDGE PROMENADE W/ RAILINGS AND GATES	L.F.	1,560	\$400	\$624,000	\$93,600	\$717,600	\$143,520	\$861,120	\$6,083,040	\$6,265,531	2001	\$861,120	\$430,560	Public Access		
CENTER SECTION SLIP TENANT RESTROOMS																
BUILDING EXPANSION	LS	1	\$250,000	\$250,000	\$37,500	\$287,500	\$57,500	\$345,000	\$345,000	\$355,350	2001					
BRADY STREET BRIDGE STRUCTURAL REPAIRS																
ABUTMENT ANCHORAGE	LS	1	\$70,000	\$70,000	\$10,500	\$80,500	\$16,100	\$96,600	\$96,600	\$99,498	2001					
SWING MOORINGS	SLIP	88	\$1,000	\$88,000	\$13,200	\$101,200	\$20,240	\$121,440	\$121,440	\$128,836	2002					
100 NEW SWING MOORING ANCHORS	SLIP	12	\$5,000	\$60,000	\$9,000	\$69,000	\$13,800	\$82,800	\$82,800	\$87,843	2002					
TWO - SIX VESSEL STAR DOCKS	SLIP	322	\$7,500	\$2,415,000	\$362,250	\$2,777,250	\$555,450	\$3,332,700			2002					
SOUTH SECTION DOCKAGE SYSTEM																
EXPAND FROM 260 SLIPS TO 322 SLIPS	SLIP	260	\$3,200	\$832,000	\$124,800	\$956,800	\$191,360	\$1,148,160			2002					
DEMOLITION OF EXISTING DOCKAGE	L.F.	1,700	\$400	\$680,000	\$102,000	\$782,000	\$156,400	\$938,400	\$5,419,260	\$5,749,293	2002	\$938,400	\$469,200	Public Access		
WATERS EDGE PROMENADE W/ RAILINGS AND GATES	LS	1	\$90,000	\$90,000	\$13,500	\$103,500	\$20,700	\$124,200	\$124,200	\$131,764	2002					
SOUTH SECTION SLIP TENANT RESTROOMS																
BUILDING EXPANSION	L.F.	1,550	\$400	\$620,000	\$93,000	\$713,000	\$142,600	\$855,600			2003					
WATERS EDGE PROMENADE W/ RAILINGS AND GATES	S.Y.	51,600	\$27	\$1,386,492	\$207,974	\$1,594,466	\$318,893	\$1,913,359			2003	600	\$120,000	Public Access		
ASPHALT PARKING	L.F.	4,400	\$15	\$66,000	\$9,900	\$75,900	\$15,180	\$91,080			2003	17,845	\$479,495	Launch Ramp Parking		
CURB & GUTTER	ACRE	5	\$40,000	\$200,000	\$30,000	\$230,000	\$46,000	\$276,000			2003	1,522	\$22,825	Launch Ramp Parking		
GREEN SPACE / LANDSCAPING	LS	1	\$50,000	\$50,000	\$7,500	\$57,500	\$11,500	\$69,000			2003					
UTILITIES (WATER, STORM & SANITARY)	L.F.	200	\$200	\$40,000	\$6,000	\$46,000	\$9,200	\$55,200			2003					
DECORATIVE FENCING - FISH CLEANING /DINGHY STORAGE	L.F.	100	\$200	\$20,000	\$3,000	\$23,000	\$4,600	\$27,600			2003					
DECORATIVE FENCING - BOAT STORAGE	L.F.	500	\$200	\$100,000	\$15,000	\$115,000	\$23,000	\$138,000			2003					
DECORATIVE FENCING - RETAINING WALL	LANE	8	\$20,000	\$160,000	\$24,000	\$184,000	\$36,800	\$220,800			2003					
BOAT LAUNCH REPAIRS	LS	1	\$100,000	\$100,000	\$15,000	\$115,000	\$23,000	\$138,000			2003					
MAINTENANCE BUILDING	LS	10	\$1,000	\$10,000	\$1,500	\$11,500	\$2,300	\$13,800			2003					
PARK BENCHES AND PICNIC TABLES	LS	1	\$35,000	\$35,000	\$5,250	\$40,250	\$8,050	\$48,300			2003					
SIGNAGE - WATERSIDE AND LANDSIDE	S.Y.	4,700	\$23	\$110,356	\$16,553	\$126,909	\$25,382	\$152,291			2003					
ASPHALT WALK	L.F.	75	\$250	\$18,750	\$2,813	\$21,563	\$4,313	\$25,875			2003					
BULKHEAD WALL REPAIR	LS	1	\$20,000	\$20,000	\$3,000	\$23,000	\$4,600	\$27,600			2003					
MOBILIZATION	LS	1	\$40,000	\$40,000	\$6,000	\$46,000	\$9,200	\$55,200			2003					
DEMOLITION	LS	1	\$650,000	\$650,000	\$97,500	\$747,500	\$149,500	\$897,000	\$4,052,505	\$4,428,282	2003	\$220,800	\$110,400	Boat Launch		
NORTH SECTION SLIP TENANT RESTROOMS																
BUILDING WITH PUBLIC OVERLOOK	LS	1	\$650,000	\$650,000	\$97,500	\$747,500	\$149,500	\$897,000	\$897,000	\$980,176	2003					
COAST GUARD STATION																
DEMOLISH BRIDGE AND BOATWELL	LS	1	\$40,000	\$40,000	\$6,000	\$46,000	\$9,200	\$55,200			2003					
DEMOLISH CONCRETE BULKHEAD WALL	L.F.	400	\$100	\$40,000	\$6,000	\$46,000	\$9,200	\$55,200			2003					
NEW SHEET PILE WALL	L.F.	400	\$1,250	\$500,000	\$75,000	\$575,000	\$115,000	\$690,000			2003					
FILL BOAT WELL	C.Y.	3,000	\$10	\$30,000	\$4,500	\$34,500	\$6,900	\$41,400			2003					
TOP SOIL, GRADE AND SEED	S.Y.	3,500	\$5	\$16,100	\$2,415	\$18,515	\$3,703	\$22,218			2003					
WATERS EDGE PROMENADE WITH RAILING	L.F.	400	\$400	\$160,000	\$24,000	\$184,000	\$36,800	\$220,800	\$864,018	\$944,136	2003					
SOUTH SECTION PUBLIC RESTROOMS AND OPEN-AIR PAVILION																
REMODEL BUILDING	LS	1	\$100,000	\$100,000	\$15,000	\$115,000	\$23,000	\$138,000	\$138,000	\$155,320	2004					
NEW PICNIC SHELTER AND PUBLIC RESTROOMS																
PICNIC SHELTER AND RESTROOM BUILDING	LS	1	\$350,000	\$350,000	\$52,500	\$402,500	\$80,500	\$483,000			2004					
GREEN SPACE / LANDSCAPING	ACRE	5	\$15,000	\$75,000	\$11,250	\$86,250	\$17,250	\$103,500			2004					
ASPHALT WALK	S.Y.	2,800	\$23	\$65,744	\$9,862	\$75,606	\$15,121	\$90,727			2004					
UTILITIES (WATER, STORM & SANITARY)	LS	1	\$25,000	\$25,000	\$3,750	\$28,750	\$5,750	\$34,500			2004					
GENERAL SITE DEMOLITION	LS	1	\$10,000	\$10,000	\$1,500	\$11,500	\$2,300	\$13,800			2004					
MOBILIZATION	LS	1	\$50,000	\$50,000	\$7,500	\$57,500	\$11,500	\$69,000	\$794,527	\$894,247	2004					
MCKINLEY CENTER																
BUILDING WITH RESTAURANT	LS	1	\$4,300,000	\$4,300,000	\$645,000	\$4,945,000	\$989,000	\$5,934,000			2005					
UTILITIES (WATER, STORM & SANITARY)	LS	1	\$200,000	\$200,000	\$30,000	\$230,000	\$46,000	\$276,000			2005					
GREEN SPACE / LANDSCAPING	ACRE	3	\$30,000	\$90,000	\$13,500	\$103,500	\$20,700	\$124,200	\$6,334,200	\$7,343,074	2005	\$6,334,200	\$633,420	Public Restrooms		

Plan for the Phased Development of McKinley Marina, McKinley Park and Veterans Park

UNIT	QUANTITY	UNIT PRICE	EXTENDED PRICE	CONSTRUCTION ALLOWANCE	SUB TOTAL	ADMIN. AND PROF. COSTS	GRAND TOTALS	PRESENT WORTH COST - YEAR 2000	FUTURE COST YEAR OF CONSTR.	YEAR	ELIGIBLE PORTION	ELIGIBLE	WATERWAYS SHARE	JUSTIFICATION
CENTER SECTION SITE AMENITIES														
S.Y.	15,000	\$27	\$403,050	\$60,458	\$463,508	\$92,702	\$556,209			2006				
L.F.	3,300	\$15	\$49,500	\$7,425	\$56,925	\$11,385	\$68,310			2006				
ACRE	1	\$15,000	\$15,000	\$2,250	\$17,250	\$3,450	\$20,700			2006				
LS	1	\$25,000	\$25,000	\$3,750	\$28,750	\$5,750	\$34,500			2006				
ACRE	1	\$15,000	\$14,790	\$2,218	\$17,008	\$3,402	\$20,410			2006				
LS	10	\$10,000	\$10,000	\$1,500	\$11,500	\$2,300	\$13,800			2006				
LS	1	\$20,000	\$20,000	\$3,000	\$23,000	\$4,600	\$27,600			2006				
S.Y.	100	\$23	\$2,300	\$352	\$2,652	\$540	\$3,192			2006				
LS	1	\$15,000	\$15,000	\$2,250	\$17,250	\$3,450	\$20,700	\$996,400		2006				
LS	1	\$50,000	\$50,000	\$7,500	\$57,500	\$11,500	\$69,000			2006				
SOUTH SECTION SITE AMENITIES														
S.Y.	9,300	\$27	\$249,891	\$37,484	\$287,375	\$57,475	\$344,850			2006				
L.F.	2,100	\$15	\$31,500	\$4,725	\$36,225	\$7,245	\$43,470			2006				
ACRE	1	\$15,000	\$8,623	\$1,293	\$9,916	\$1,983	\$11,899			2006				
LS	1	\$25,000	\$25,000	\$3,750	\$28,750	\$5,750	\$34,500			2006				
S.Y.	1,250	\$23	\$29,350	\$4,403	\$33,753	\$6,751	\$40,503			2006				
LS	1	\$20,000	\$20,000	\$3,000	\$23,000	\$4,600	\$27,600			2006				
LS	1	\$15,000	\$15,000	\$2,250	\$17,250	\$3,450	\$20,700	\$707,502		2006				
LS	1	\$50,000	\$50,000	\$7,500	\$57,500	\$11,500	\$69,000			2006				
ROUNDHOUSE														
LF	1	\$600,000	\$600,000	\$90,000	\$690,000	\$138,000	\$828,000			2006				
LS	1	\$20,000	\$20,000	\$3,000	\$23,000	\$4,600	\$27,600			2006				
ACRE	3	\$5,000	\$15,000	\$2,250	\$17,250	\$3,450	\$20,700	\$1,046,348		2006	\$219,075	\$109,538	Public Restrooms	
NORTH SECTION DOCKAGE SYSTEM														
SLIP	36	\$7,500	\$270,000	\$40,500	\$310,500	\$62,100	\$372,600			2006				
S.Y.	12,010	\$27	\$322,709	\$48,406	\$371,115	\$74,223	\$445,338			2006				
L.F.	5,445	\$15	\$81,675	\$12,251	\$93,926	\$18,785	\$112,712			2006				
LAGOON DRIVE														
ACRE	81	\$5,000	\$405,000	\$60,750	\$465,750	\$93,150	\$558,900			2007				
L.F.	5,200	\$300	\$1,560,000	\$234,000	\$1,794,000	\$358,800	\$2,152,800			2007				
S.Y.	4,870	\$27	\$130,857	\$19,629	\$150,485	\$30,097	\$180,583			2007				
L.F.	725	\$15	\$10,875	\$1,631	\$12,506	\$2,501	\$15,008			2007				
S.Y.	22,260	\$23	\$522,665	\$78,400	\$601,065	\$120,213	\$721,277			2007				
LS	1	\$25,000	\$25,000	\$3,750	\$28,750	\$5,750	\$34,500			2007				
LS	1	\$20,000	\$20,000	\$3,000	\$23,000	\$4,600	\$27,600			2007				
LS	1	\$100,000	\$100,000	\$15,000	\$115,000	\$23,000	\$138,000			2007				
LS	1	\$100,000	\$100,000	\$15,000	\$115,000	\$23,000	\$138,000			2007				
LS	1	\$35,000	\$35,000	\$5,250	\$40,250	\$8,050	\$48,300			2007				
LS	1	\$25,000	\$25,000	\$3,750	\$28,750	\$5,750	\$34,500			2007				
TOTAL COST - PW														
								\$32,732,598	TOTAL COST - FW				\$2,193,278	
									TOTAL COST - PW				\$36,504,675	
									TOTAL COST - FW	7			\$4,980,334	
									TOTAL COST - PW				\$3,861,494	
									TOTAL COST - FW	6			\$666,340	
									TOTAL COST - PW				\$444,904	
									TOTAL COST - FW				\$558,050	
									TOTAL COST - PW				\$372,600	
									TOTAL COST - FW				\$74,223	
									TOTAL COST - PW				\$18,785	
									TOTAL COST - FW				\$74,223	
									TOTAL COST - PW				\$112,712	
									TOTAL COST - FW				\$445,338	
									TOTAL COST - PW				\$372,600	
									TOTAL COST - FW				\$666,340	
									TOTAL COST - PW				\$444,904	
									TOTAL COST - FW				\$558,050	
									TOTAL COST - PW				\$372,600	
									TOTAL COST - FW				\$74,223	
									TOTAL COST - PW				\$18,785	
									TOTAL COST - FW				\$74,223	
									TOTAL COST - PW				\$112,712	
									TOTAL COST - FW				\$445,338	
									TOTAL COST - PW				\$372,600	
									TOTAL COST - FW				\$666,340	
									TOTAL COST - PW				\$444,904	
									TOTAL COST - FW				\$558,050	
									TOTAL COST - PW				\$372,600	
									TOTAL COST - FW				\$74,223	
									TOTAL COST - PW				\$18,785	
									TOTAL COST - FW				\$74,223	
									TOTAL COST - PW				\$112,712	
									TOTAL COST - FW				\$445,338	
									TOTAL COST - PW				\$372,600	
									TOTAL COST - FW				\$666,340	
									TOTAL COST - PW				\$444,904	
									TOTAL COST - FW				\$558,050	
									TOTAL COST - PW				\$372,600	
									TOTAL COST - FW				\$74,223	
									TOTAL COST - PW				\$18,785	
									TOTAL COST - FW				\$74,223	
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									TOTAL COST - FW				\$445,338	
									TOTAL COST - PW				\$372,600	
									TOTAL COST - FW				\$666,340	
									TOTAL COST - PW				\$444,904	
									TOTAL COST - FW				\$558,050	
									TOTAL COST - PW				\$372,600	
									TOTAL COST - FW				\$74,223	
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									TOTAL COST - FW				\$74,223	
									TOTAL COST - PW				\$112,712	
									TOTAL COST - FW				\$445,338	
									TOTAL COST - PW				\$372,600	
									TOTAL COST - FW				\$666,340	
									TOTAL COST - PW				\$444,904	
									TOTAL COST - FW				\$558,050	
									TOTAL COST - PW				\$372,600	
									TOTAL COST - FW				\$74,223	
									TOTAL COST - PW				\$18,785	
									TOTAL COST - FW				\$74,223	
									TOTAL COST - PW				\$112,712	
									TOTAL COST - FW				\$445,338	
									TOTAL COST - PW				\$372,600	
									TOTAL COST - FW				\$666,340	
									TOTAL COST - PW				\$444,904	
									TOTAL COST - FW				\$558,050	
									TOTAL COST - PW				\$372,600	
									TOTAL COST - FW				\$74,223	
									TOTAL COST - PW				\$18,785	
									TOTAL COST - FW				\$74,223	
									TOTAL COST - PW				\$112,712	
									TOTAL COST - FW				\$445,338	
									TOTAL COST - PW				\$372,600	
									TOTAL COST - FW				\$666,340	
									TOTAL COST - PW				\$444,904	
									TOTAL COST - FW				\$558,050	
									TOTAL COST - PW				\$372,600	
									TOTAL COST - FW				\$74,223	
									TOTAL COST - PW				\$18,785	
									TOTAL COST - FW				\$74,223	
									TOTAL COST - PW				\$112,712	
									TOTAL COST - FW				\$445,338	
									TOTAL COST - PW				\$372,600	
									TOTAL COST - FW				\$666,340	
									TOTAL COST - PW				\$444,904	
									TOTAL COST - FW				\$558,050	
									TOTAL COST - PW				\$372,600	
									TOTAL COST - FW				\$74,223	
									TOTAL COST - PW				\$18,785	
									TOTAL COST - FW				\$74,223	
									TOTAL COST - PW				\$112,712	
									TOTAL COST - FW				\$445,338	
									TOTAL COST - PW				\$372,600	
									TOTAL COST - FW				\$666,340	
									TOTAL COST - PW				\$444,904	
									TOTAL COST - FW				\$558,050	
									TOTAL COST - PW				\$372,600	
									TOTAL COST - FW				\$74,223	
									TOTAL COST - PW				\$18,785	
									TOTAL COST - FW				\$74,223	
									TOTAL COST - PW				\$112,712	
									TOTAL COST - FW				\$445,338	
									TOTAL COST - PW				\$372,600	
									TOTAL COST - FW				\$666,340	
									TOTAL COST - PW				\$444,904	
									TOTAL COST - FW				\$558,050	
									TOTAL COST - PW				\$372,600	
									TOTAL COST - FW				\$74,223	
									TOTAL COST - PW				\$18,785	
									TOTAL COST - FW				\$74,223	

Plan for the Phased Development of McKinley Marina, McKinley Park and Veterans Park

UNIT	QUANTITY	UNIT PRICE	EXTENDED PRICE	CONSTRUCTION ALLOWANCE	SUB TOTAL	ADMIN. AND PROF. COSTS	GRAND TOTALS	PRESENT WORTH COST - YEAR 2000	FUTURE COST YEAR OF CONSTR.	YEAR	ELIGIBLE PORTION	ELIGIBLE	WATERWAYS SHARE	JUSTIFICATION
LAKE PARK EAST SITE REGRADING														
C.Y.	5,500	\$10	\$55,000	\$8,250	\$63,250	\$12,650	\$75,900							*
S.Y.	23,000	\$4	\$92,000	\$13,800	\$105,800	\$21,160	\$126,960	\$202,860	\$202,860					*
TOP SOIL, GRADE AND SEED														
FLUSHING TUNNEL INTAKE CHANNEL BULKHEAD WALLS														
L.F.	930	\$100	\$93,000	\$13,950	\$106,950	\$21,390	\$128,340							*
L.F.	930	\$1,250	\$1,162,500	\$174,375	\$1,336,875	\$267,375	\$1,604,250							*
C.Y.	3,500	\$10	\$35,000	\$5,250	\$40,250	\$8,050	\$48,300							*
S.Y.	3,500	\$5	\$16,100	\$2,415	\$18,515	\$3,703	\$22,218	\$1,803,108	\$1,803,108					*
MILWAUKEE COMMUNITY SAILING CENTER														
L.F.	550	\$250	\$137,500	\$20,625	\$158,125	\$31,625	\$189,750							*
S.Y.	13,850	\$27	\$372,150	\$55,822	\$427,972	\$85,594	\$513,566							*
L.F.	735	\$15	\$11,025	\$1,654	\$12,679	\$2,536	\$15,215							*
L.F.	1,950	\$200	\$390,000	\$58,500	\$448,500	\$89,700	\$538,200							*
S.Y.	80	\$23	\$1,878	\$282	\$2,160	\$432	\$2,592							*
LS	1	\$15,000	\$15,000	\$2,250	\$17,250	\$3,450	\$20,700							*
LS	1	\$10,000	\$10,000	\$1,500	\$11,500	\$2,300	\$13,800							*
LS	1	\$25,000	\$25,000	\$3,750	\$28,750	\$5,750	\$34,500							*
LS	1	\$250,000	\$250,000	\$37,500	\$287,500	\$57,500	\$345,000							*
ICE FOUNTAIN														
LS	1							\$1,328,323	\$1,328,323					*
BRADY STREET BRIDGE														
LS	1							\$345,000	\$345,000					*
COST DETERMINED BY BENEFACTOR														

Plan for the Phased Development of McKinley Marina, McKinley Park and Veterans Park

AMORTIZATION SPREADSHEET - ALL IMPROVEMENTS

Variables	Amount
Interest	5.6%
Periods (Years)	15
Inflation	3.0%

Annual Amortization Costs

Year	Plan Year	Present Value ¹	Construction		2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
			Cost ²	Cost ²	1	2	3	4	5	6	7	8	9	9	9
2001	1	\$6,621,240	\$6,819,877	-\$683,957	-\$683,957	-\$683,957	-\$683,957	-\$683,957	-\$683,957	-\$683,957	-\$683,957	-\$683,957	-\$683,957	-\$683,957	-\$683,957
2002	2	\$5,747,700	\$6,097,735	-\$611,534	-\$611,534	-\$611,534	-\$611,534	-\$611,534	-\$611,534	-\$611,534	-\$611,534	-\$611,534	-\$611,534	-\$611,534	-\$611,534
2003	3	\$5,813,523	\$6,352,594	-\$637,094	-\$637,094	-\$637,094	-\$637,094	-\$637,094	-\$637,094	-\$637,094	-\$637,094	-\$637,094	-\$637,094	-\$637,094	-\$637,094
2004	4	\$932,527	\$1,049,567	-\$105,260	-\$105,260	-\$105,260	-\$105,260	-\$105,260	-\$105,260	-\$105,260	-\$105,260	-\$105,260	-\$105,260	-\$105,260	-\$105,260
2005	5	\$6,334,200	\$7,343,074	-\$736,428	-\$736,428	-\$736,428	-\$736,428	-\$736,428	-\$736,428	-\$736,428	-\$736,428	-\$736,428	-\$736,428	-\$736,428	-\$736,428
2006	6	\$3,233,941	\$3,861,494	-\$387,264	-\$387,264	-\$387,264	-\$387,264	-\$387,264	-\$387,264	-\$387,264	-\$387,264	-\$387,264	-\$387,264	-\$387,264	-\$387,264
2007	7	\$4,049,467	\$4,980,334	-\$499,472	-\$499,472	-\$499,472	-\$499,472	-\$499,472	-\$499,472	-\$499,472	-\$499,472	-\$499,472	-\$499,472	-\$499,472	-\$499,472
2008	8	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2009	9	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2010	10	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
				Cummulative Amortized Costs	-\$683,957	-\$1,295,491	-\$1,932,585	-\$2,037,845	-\$2,774,272	-\$3,161,537	-\$3,661,008	-\$3,661,008	-\$3,661,008	-\$3,661,008	-\$3,661,008
					-\$683,957	-\$1,979,448	-\$3,912,033	-\$5,949,878	-\$8,724,150	-\$11,885,687	-\$15,546,696	-\$19,207,704	-\$22,868,712	-\$26,529,721	-\$30,190,729

Annual Amortization Costs

2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
11	12	13	15	16	17	18	19	20	21	22	23	24	25	26
-\$683,957	-\$683,957	-\$683,957	-\$683,957	-\$611,534	-\$637,094	-\$105,260	-\$736,428	-\$387,264	-\$499,472	-\$499,472	-\$499,472	-\$499,472	-\$499,472	-\$499,472
-\$611,534	-\$611,534	-\$611,534	-\$611,534	-\$637,094	-\$637,094	-\$105,260	-\$736,428	-\$387,264	-\$499,472	-\$499,472	-\$499,472	-\$499,472	-\$499,472	-\$499,472
-\$637,094	-\$637,094	-\$637,094	-\$637,094	-\$637,094	-\$637,094	-\$105,260	-\$736,428	-\$387,264	-\$499,472	-\$499,472	-\$499,472	-\$499,472	-\$499,472	-\$499,472
-\$105,260	-\$105,260	-\$105,260	-\$105,260	-\$105,260	-\$105,260	-\$105,260	-\$736,428	-\$387,264	-\$499,472	-\$499,472	-\$499,472	-\$499,472	-\$499,472	-\$499,472
-\$736,428	-\$736,428	-\$736,428	-\$736,428	-\$736,428	-\$736,428	-\$736,428	-\$736,428	-\$387,264	-\$499,472	-\$499,472	-\$499,472	-\$499,472	-\$499,472	-\$499,472
-\$387,264	-\$387,264	-\$387,264	-\$387,264	-\$387,264	-\$387,264	-\$387,264	-\$387,264	-\$387,264	-\$499,472	-\$499,472	-\$499,472	-\$499,472	-\$499,472	-\$499,472
-\$499,472	-\$499,472	-\$499,472	-\$499,472	-\$499,472	-\$499,472	-\$499,472	-\$499,472	-\$499,472	-\$499,472	-\$499,472	-\$499,472	-\$499,472	-\$499,472	-\$499,472
\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
-\$3,661,008	-\$3,661,008	-\$3,661,008	-\$3,661,008	-\$2,977,051	-\$2,365,517	-\$1,728,423	-\$1,623,164	-\$886,736	-\$499,472	-\$499,472	-\$499,472	-\$499,472	-\$499,472	-\$499,472

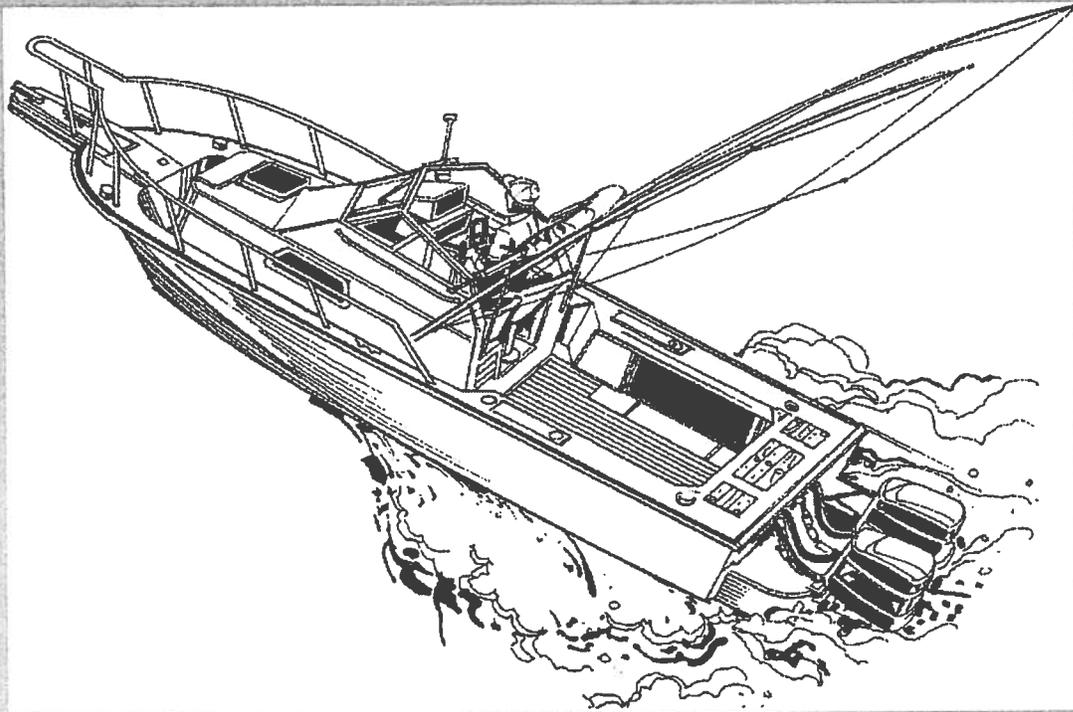
¹Present Value is the value of the work in Year 2000 dollars

²Construction Cost is the cost of the improvements in the year in which the work is performed

3%	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
NOTES	BUDGET	PROJ																						
	57,240	58,957	87,071	101,126	113,888	116,995	120,505	124,120	127,844	131,679	135,630	139,699	143,890	148,206	152,652	157,232	161,949	166,807	171,812	176,966	182,275	187,743	193,376	199,177
2	27,000	27,810	41,425	48,248	54,293	55,922	57,599	59,327	61,107	62,940	64,828	66,773	68,777	70,840	72,965	75,154	77,409	79,731	82,123	84,586	87,124	89,738	92,430	95,203
	45,730	47,102	64,003	73,771	82,451	84,925	87,472	90,097	92,800	95,584	98,451	101,405	104,447	107,580	110,807	114,132	117,556	121,082	124,715	128,456	132,310	136,279	140,368	144,579
9	15,620	16,089	21,720	25,271	28,419	29,271	30,150	31,054	31,986	32,945	33,934	34,952	36,000	37,080	38,193	39,338	40,519	41,734	42,986	44,276	45,604	46,972	48,381	49,833
	64,620	66,559	94,569	109,451	122,659	126,339	130,129	134,033	138,054	142,195	146,461	150,855	155,381	160,042	164,843	169,789	174,882	180,129	185,533	191,099	196,832	202,737	208,819	215,083
9	47,625	49,054	71,226	82,255	92,050	94,812	97,656	100,586	103,603	106,712	109,913	113,210	116,607	120,105	123,708	127,419	131,242	135,179	139,234	143,411	147,714	152,145	156,710	161,411
4	30,825	31,750	39,581	45,565	50,884	52,411	53,983	55,603	57,271	58,989	60,758	62,581	64,459	66,392	68,384	70,436	72,549	74,725	76,967	79,276	81,654	84,104	86,627	89,226
	45,885	47,262	66,841	76,496	85,094	87,647	90,277	92,985	95,774	98,648	101,607	104,655	107,795	111,029	114,360	117,791	121,324	124,964	128,713	132,574	136,551	140,648	144,867	149,213
	27,840	28,675	38,114	43,996	49,219	50,696	52,217	53,783	55,397	57,059	58,771	60,534	62,350	64,220	66,147	68,131	70,175	72,280	74,449	76,682	78,983	81,352	83,793	86,307
1	21,960	22,619	29,027	33,458	37,394	38,516	39,672	40,862	42,088	43,350	44,651	45,990	47,370	48,791	50,255	51,762	53,315	54,915	56,562	58,259	60,007	61,807	63,661	65,571
	15,740	16,212	22,292	25,257	27,906	28,743	29,606	30,494	31,409	32,351	33,321	34,321	35,351	36,411	37,504	38,629	39,788	40,981	42,211	43,477	44,781	46,125	47,508	48,934
9	12,480	12,854	11,783	13,350	14,751	15,193	15,649	16,119	16,602	17,100	17,613	18,142	18,686	19,247	19,824	20,419	21,031	21,662	22,312	22,981	23,671	24,381	25,112	25,866
0	\$412,565	\$424,942	\$587,653	\$678,243	\$758,709	\$781,471	\$804,915	\$829,062	\$853,934	\$879,552	\$905,939	\$933,117	\$961,110	\$989,944	\$1,019,642	\$1,050,231	\$1,081,738	\$1,114,190	\$1,147,616	\$1,182,045	\$1,217,506	\$1,254,031	\$1,291,652	\$1,330,402
	6,360	6,551	6,747	7,422	7,645	7,874	8,110	8,354	8,604	8,862	9,128	9,402	9,684	9,975	10,274	10,582	10,900	11,227	11,563	11,910	12,268	12,636	13,015	13,405
5	31,500	32,445	33,418	37,417	38,877	40,322	41,532	42,778	44,061	45,383	46,744	48,147	49,591	51,079	52,611	54,189	55,815	57,490	59,214	60,991	62,820	64,705	66,646	68,646
	123,740	127,452	131,276	147,543	154,394	161,024	165,855	170,830	175,955	181,234	186,671	192,271	198,039	203,980	210,100	216,403	222,895	229,582	236,469	243,563	250,970	258,796	266,148	274,132
7	68,160	70,205	72,311	97,770	110,091	121,129	124,763	128,506	132,361	136,332	140,422	144,635	148,974	153,443	158,046	162,788	167,671	172,701	177,882	183,219	188,715	194,377	200,208	206,214
	53,850	55,466	57,129	74,364	82,578	89,893	92,590	95,367	98,228	101,175	104,210	107,337	110,557	113,873	117,290	120,808	124,433	128,166	132,011	135,971	140,050	144,251	148,579	153,036
5	49,530	51,016	52,546	66,693	73,274	79,246	81,623	84,072	86,594	89,192	91,868	94,624	97,462	100,386	103,398	106,500	109,695	112,985	116,375	119,866	123,462	127,166	130,981	134,911
	26,715	27,516	28,342	34,773	40,139	44,905	46,253	47,640	49,069	50,541	52,058	53,619	55,228	56,885	58,591	60,349	62,160	64,024	65,945	67,923	69,961	72,060	74,222	76,448
4	30,590	31,508	32,453	36,973	40,052	42,877	44,163	45,488	46,853	48,258	49,706	51,197	52,733	54,315	55,944	57,623	59,352	61,132	62,966	64,855	66,801	68,805	70,869	72,995
	4,160	4,285	4,413	9,184	14,190	18,513	19,068	19,640	20,229	20,836	21,461	22,105	22,768	23,451	24,155	24,880	25,626	26,395	27,187	28,002	28,842	29,707	30,599	31,517
1-25 Health Dept	\$394,605	\$406,443	\$418,636	\$512,139	\$561,190	\$605,783	\$623,956	\$642,675	\$661,955	\$681,814	\$702,268	\$723,336	\$745,036	\$767,387	\$790,409	\$814,121	\$838,545	\$863,701	\$889,612	\$916,301	\$943,790	\$972,103	\$1,001,266	\$1,031,304
8	19,740	20,332	20,942	21,570	22,218	22,884	23,571	26,879	29,025	30,999	31,929	32,887	33,874	34,890	35,937	37,015	38,125	39,269	40,447	41,661	42,910	44,198	45,524	46,889
	13,365	13,766	14,179	14,604	15,042	15,494	15,959	16,264	16,752	17,210	17,753	18,240	18,770	19,340	19,844	20,384	20,959	21,570	22,218	22,905	23,630	24,394	25,198	26,042
11	63,920	65,838	67,813	69,847	71,943	74,101	76,324	78,618	81,000	83,479	86,054	88,724	91,487	94,344	97,296	100,344	103,488	106,728	110,064	113,496	117,024	120,648	124,368	128,184
	27,930	28,768	29,631	30,520	31,435	32,379	33,350	34,358	35,394	36,457	37,548	38,666	39,811	40,983	42,184	43,414	44,673	45,961	47,278	48,624	49,999	51,404	52,839	54,304
12	56,030	57,711	59,442	61,225	63,062	64,954	66,903	68,908	70,969	73,087	75,262	77,495	79,786	82,134	84,539	87,001	89,520	92,097	94,732	97,425	100,176	102,985	105,852	108,776
	34,275	35,303	36,362	37,453	38,577	39,734	40,926	42,154	43,418	44,708	46,034	47,396	48,788	50,211	51,665	53,149	54,663	56,207	57,781	59,385	61,019	62,683	64,376	66,098
15	33,950	34,969	36,018	37,098	38,211	39,357	40,538	46,228	49,919	53,315	54,914	56,562	58,258	60,006	61,806	63,660	65,570	67,537	69,564	71,650	73,800	76,014	78,294	80,643
	38,400	39,552	40,739	41,961	43,220	44,516	45,852	47,229	48,647	49,999	51,386	52,808	54,265	55,757	57,284	58,846	60,443	62,076	63,745	65,449	67,188	68,961	70,768	72,609
8	6,590	6,788	6,991	7,201	7,417	7,640	7,869	8,105	8,348	8,598	8,856	9,122	9,396	9,678	9,968	10,267	10,575	10,892	11,219	11,556	11,902	12,259	12,627	13,006
	17,500	18,025	18,566	19,123	19,696	20,287	20,896	23,675	25,494	27,172	27,987	28,827	29,691	30,582	31,500	32,445	33,418	34,421	35,453	36,517	37,612	38,741	39,903	41,100
5 1-27-1-30-3-38 SLIPS	8,000	8,240																						
19	\$319,700	\$329,291	\$330,683	\$340,603	\$350,821	\$361,346	\$372,186	\$429,337	\$465,899	\$499,390	\$514,372	\$529,803	\$545,697	\$562,068	\$578,930	\$596,298	\$614,187	\$632,613	\$651,591	\$671,139	\$691,273	\$712,011	\$733,371	\$755,372
	\$1,148,070	\$1,182,512	\$1,359,463	\$1,571,979	\$1,712,944	\$1,792,089	\$1,845,852	\$1,947,213	\$2,029,311	\$2,109,705	\$2,172,996	\$2,238,186	\$2,305,331	\$2,374,491	\$2,445,726	\$2,519,098	\$2,594,671	\$2,672,511	\$2,752,686	\$2,835,267	\$2,920,325	\$3,007,935	\$3,098,173	\$3,191,118
1	(34,425)	(35,458)	(36,521)	(37,617)	(38,746)	(39,908)	(41,105)	(42,338)	(43,609)	(44,917)	(46,264)	(47,652)	(49,082)	(50,554)	(52,071)	(53,633)	(55,242)	(56,899)	(58,609)	(60,366)	(62,175)	(64,041)	(65,962)	(67,941)
	\$1,113,645	\$1,147,054	\$1,322,942	\$1,534,362	\$1,674,198	\$1,752,181	\$1,804,747	\$1,904,874	\$1,985,703	\$2,064,788	\$2,126,732	\$2,190,534	\$2,256,250	\$2,323,937	\$2,393,655	\$2,465,465	\$2,539,429	\$2,615,612	\$2,694,080	\$2,774,902	\$2,858,149	\$2,943,894	\$3,032,211	\$3,123,177
Annual Increase	\$33,409	\$175,887	\$211,420	\$139,836	\$77,983	\$52,565	\$100,127	\$80,828	\$79,085	\$61,944	\$63,802	\$55,716	\$67,687	\$73,964	\$76,183</									

**APPENDIX C – BOAT
REGISTRATION AND SHIPMENT
STATISTICS**





1997 U.S. BOATING REGISTRATION STATISTICS

National Marine Manufacturers Association
Market Statistics Department
Suite 5100
200 East Randolph Drive
Chicago, IL 60601-6528

Summary of 1997 U.S. Boat Registration Statistics

In its just released *1997 U.S. Boat Registration Statistics Report*, the U.S. Coast Guard (USCG) reports 12.3 million boat registrations, an increase of two percent over 1996. Moreover, the figures indicate a steady, long-term upward trend in boat registrations nationwide. Power boat registrations (excluding powered sail) were up nine percent, led by the 26-40' segment, which showed an increase of nearly 22 percent.

Boat registration statistics serve as a basis for dividing federal recreational boating dollars among states each year. NMMA uses the registration data to estimate state dollar sales of new boats, motors, trailers and marine accessories. That information is available in the annual year-end review of the market.

"TOP 20"

In 1997, the year for which the most current statistics are available, the top 20 states in boat registrations account for 9.1 million – or nearly three-quarters – of all registered boats in the U.S. The top 10 states for boat registrations account for a full half of all registered boats. As a group, the top 20 states experienced a 1.6 percent increase in boat registrations last year.

There was some movement between the rankings (Florida edged out Minnesota to become the number three state for registered boats) but no state fell out of the top 20 for boat registrations between 1996 and 1997. States with above average growth include New York (up 12 percent), Florida (up six percent), Missouri (up

Among the top 20 states, those losing registrations include South Carolina (down 10 percent) and Louisiana (down three percent). Big swings in the numbers generally indicate changes in state registration requirements or procedures.

According to NMMA statistics manager Jim Petru, the steady, long-term trend in increasing boat registrations is good news for new product manufacturers. "The long-term track for boat registrations shows a steady two-percent gain since 1972," Petru says. It's consistent with production activity on the manufacturing side, and translates to sales growth in marine engines, accessories and support services."

NMMA's Publications Department is making available the 56-page Summary and Detail Boat Registration Statistics by boat segments, size, power and hull material. Regional summaries include population/income and shoreline/inland water data. It is also available as an Excel spreadsheet which can be downloaded via e-mail. Cost of the 1997 U.S. Boating Registration Statistics - Data Tables is \$50 for NMMA members; \$150 for non-members. Contact the Publications Department in Chicago (312) 946-6218.

Introduction

Boating registration is the responsibility of the individual states in the United States. The states registered 12.3 million boats in 1997 which is up 2.1% over 1996 numbers. Although boat registration requirements vary by state, all states require owners of motorboats and auxiliary power sailboats to register their boats. Some states register non-powered sailboats over a specific length, while other states register all types of watercraft. It should be noted that about half of the states register PWC's as inboard boats. It is NMMA's estimates that there are 1.1 to 1.2 million PWC in operation.

Source for the registration data is the U.S. Coast Guard.
Source for In-land water is the U.S. Bureau of Census, *Areas of the U.S., 1980 State Area Management Print-out*.
Source for Coastal Shoreline is the U.S. Oceanic and Atmospheric Administration, *The Coastline of the U.S., 1975*.

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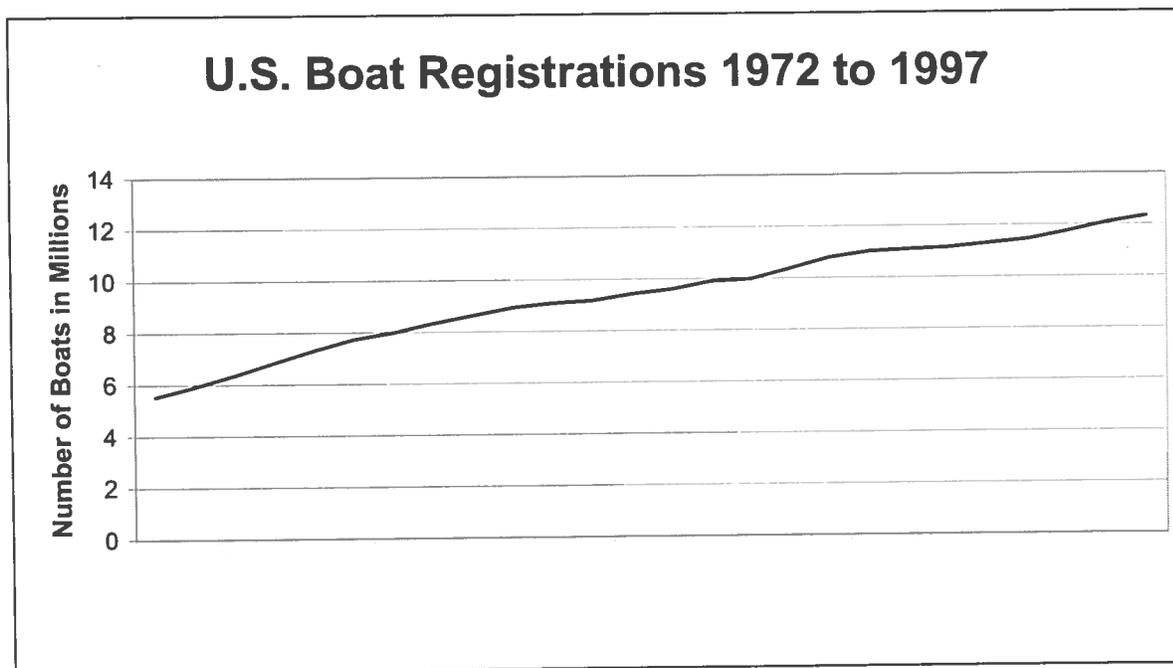
**1997 Boating Registration Statistics
State Registration Requirements**

State	Registration Requirements
Alabama	All Power Boats, Sailboats, and Rental Boats
Alaska	All Power Boats Use on Federal Waters
Arizona	All Watercraft Except Inflatables 12' or less
Arkansas	All Power Boats
California	All Power Boats, All Sailboats over 8'
Colorado	All Power Boats and Sailboats
Connecticut	All Power Boats and Sailboats 19'.6" or greater
Delaware	All Power Boats
Dist. of Columbia	All Watercraft
Florida	All Power Boats
Georgia	All Power Boats and Sailboats 12' or greater
Hawaii	All Power Boats, All Sailboats over 8'
Idaho	All Power Boats and Sailboats
Illinois	All Watercraft Except Canoes and Kayaks
Indiana	All Power Boats
Iowa	All Watercraft with Exceptions
Kansas	All Power Boats and Sailboats
Kentucky	All Power Boats Except Electric Motors under 1HP
Louisiana	All Power Boats, All Sailboats over 12'
Maine	All Power Boats
Maryland	All Power Boats
Massachusetts	All Power Boats
Michigan	All Watercraft with Exceptions
Minnesota	All Watercraft with Exceptions
Mississippi	All Power Boats and Sailboats
Missouri	All Power Boats, All Sailboats over 12'
Montana	All Power Boats, All Sailboats 12' or Greater
Nebraska	All Power Boats
Nevada	All Power Boats
New Hampshire	All Power Boats, All Sailboats 20' or Greater
New Jersey	All Watercraft with Exceptions
New Mexico	All Power Boats and Sailboats
New York	All Power Boats
North Carolina	All Power Boats, All Sailboats 14' or Greater
North Dakota	All Power Boats
Ohio	All Watercraft
Oklahoma	All Watercraft Except Jonboats under 10HP
Oregon	All Power Boats, All Sailboats 12' or Greater
Pennsylvania	All Power Boats
Rhode Island	All Power Boats, All Sailboats, All Rowboats over 12'
South Carolina	All Power Boats
South Dakota	All Power Boats, All Other Boats over 12'
Tennessee	All Power Boats and Sailboats
Texas	All Power Boats and Sailboats
Utah	All Power Boats and Sailboats
Vermont	All Power Boats
Virginia	All Power Boats
Washington	All Power Boats, All Sailboats 16' or Greater
West Virginia	All Power Boats
Wisconsin	All Power Boats, All Sailboats over 12'
Wyoming	All Power Boats

Source: U.S.C.G.

**1997 Boating Registration Statistics
Registration History**

<u>Year</u>	<u>Boat Registrations</u>	<u>Boat Registrations</u>	<u>Percent Change</u>
Dec 72	5,510	5.51	
Dec 73	5,911	5.91	7.3
Dec 74	6,340	6.34	7.3
Dec 75	6,831	6.83	7.7
Dec 76	7,303	7.30	6.9
Dec 77	7,721	7.72	5.7
Dec 78	7,976	7.98	3.3
Dec 79	8,311	8.31	4.2
Dec 80	8,616	8.62	3.7
Dec 81	8,905	8.91	3.4
Dec 82	9,074	9.07	1.9
Dec 83	9,165	9.17	1.0
Dec 84	9,415	9.42	2.7
Dec 85	9,584	9.58	1.8
Dec 86	9,876	9.88	3.1
Dec 87	9,964	9.96	0.9
Dec 88	10,363	10.36	4.0
Dec 89	10,777	10.78	4.0
Dec 90	10,996	11.00	2.0
Dec 91	11,068	11.07	0.7
Dec 92	11,132	11.13	0.6
Dec 93	11,283	11.28	1.4
Dec 94	11,430	11.43	1.3
Dec 95	11,735	11.73	2.7
Dec 96	12,057	12.06	2.7
Dec 97	12,310	12.31	2.1



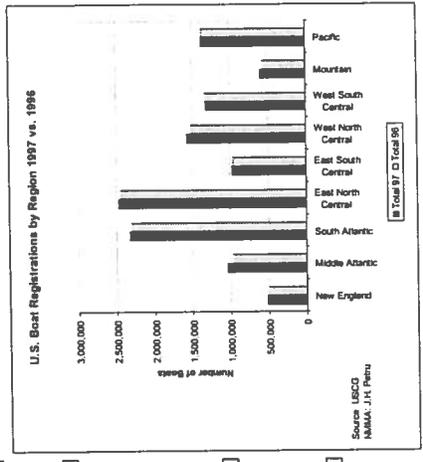
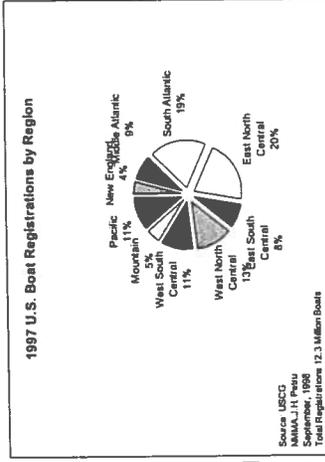
Source: U.S.C.G.

**1997 Boating Registration Statistics
State Rankings**

States	1997	1996	1997 Ranking Rank	1996 Ranking U.S.	Percent Change	Percent of Total	Cumulative Total
Michigan	957,105	945,817	1	1	1.2%	7.8%	7.8%
California	894,347	881,092	2	2	1.5%	7.3%	15.0%
Florida	796,662	749,323	3	4	6.3%	6.5%	21.5%
Minnesota	768,555	758,541	4	3	1.3%	6.2%	27.8%
Texas	615,438	611,374	5	5	0.7%	5.0%	32.8%
Wisconsin	543,034	543,305	6	6	0.0%	4.4%	37.2%
New York	512,430	458,092	7	7	11.9%	4.2%	41.3%
Ohio	399,888	398,388	8	9	0.4%	3.2%	44.6%
South Carolina	376,201	416,085	9	8	-9.6%	3.1%	47.6%
Illinois	368,513	366,378	10	10	0.6%	3.0%	50.6%
Pennsylvania	340,394	335,480	11	11	1.5%	2.8%	53.4%
North Carolina	328,594	321,114	12	12	2.3%	2.7%	56.1%
Missouri	321,707	307,082	13	14	4.8%	2.6%	58.7%
Louisiana	310,281	320,941	14	13	-3.3%	2.5%	61.2%
Georgia	309,606	302,874	15	15	2.2%	2.5%	63.7%
Tennessee	306,215	297,719	16	16	2.9%	2.5%	66.2%
Alabama	264,436	261,351	17	17	1.2%	2.1%	68.3%
Mississippi	252,767	244,279	18	19	3.5%	2.1%	70.4%
Washington	245,962	246,174	19	18	-0.1%	2.0%	72.4%
Virginia	229,629	229,233	20	20	0.2%	1.9%	74.3%
Oklahoma	223,979	220,667	21	21	1.5%	1.8%	76.1%
Iowa	219,888	201,436	22	23	9.2%	1.8%	77.9%
Indiana	210,007	203,948	23	22	3.0%	1.7%	79.6%
Oregon	197,315	195,080	21	24	1.1%	1.6%	81.2%
New Jersey	196,584	183,204	25	26	7.3%	1.6%	82.8%
Maryland	189,052	194,266	26	25	-2.7%	1.5%	84.3%
Arkansas	172,930	178,185	27	27	-2.9%	1.4%	85.7%
Kentucky	160,075	156,666	28	28	2.2%	1.3%	87.0%
Arizona	155,010	150,107	29	29	3.3%	1.3%	88.3%
Massachusetts	141,129	137,484	30	30	2.7%	1.1%	89.4%
Maine	124,122	115,895	31	31	7.1%	1.0%	90.4%
Kansas	100,641	100,180	32	32	0.5%	0.8%	91.2%
Connecticut	98,494	98,228	33	33	0.3%	0.8%	92.0%
Colorado	95,924	95,140	34	34	0.8%	0.8%	92.8%
New Hampshire	95,179	87,866	35	35	8.3%	0.8%	93.6%
Idaho	80,945	80,682	36	36	0.3%	0.7%	94.3%
Utah	74,228	71,688	37	37	3.5%	0.6%	94.9%
Nebraska	72,333	70,458	38	38	2.7%	0.6%	95.4%
New Mexico	64,613	55,615	39	39	16.2%	0.5%	96.0%
Nevada	58,053	55,483	40	40	4.6%	0.5%	96.4%
West Virginia	57,135	52,314	41	41	9.2%	0.5%	96.9%
U.S. Territories	54,557	45,412	42	44	20.1%	0.4%	97.4%
Montana	47,102	46,474	42	43	1.4%	0.4%	97.7%
South Dakota	46,113	46,575	44	42	-1.0%	0.4%	98.1%
North Dakota	43,865	37,938	45	47	15.6%	0.4%	98.5%
Delaware	43,461	42,856	46	45	1.4%	0.4%	98.8%
Vermont	38,369	38,932	47	46	-1.4%	0.3%	99.1%
Rhode Island	33,950	32,443	48	48	4.6%	0.3%	99.4%
Alaska	25,819	26,957	49	49	-4.2%	0.2%	99.6%
Wyoming	25,304	24,081	50	50	5.1%	0.2%	99.8%
Hawaii	15,163	15,177	51	51	-0.1%	0.1%	99.9%
Dist. of Columbia	6,621	1,190	52	52	456.4%	0.1%	100.0%
Total U.S.	12,309,724	12,057,269	-	-	2.1%		

Source: U.S.C.G.

1997 U.S. Recreational Marine Boat Registrations
Regional Summary



Region	State	1997		Percent Change	Population	Persons per Boat	Inland Water	Miles	1997 est.		1994 HH		
		Total '97	Total '96						HH Median	HH (000) > \$20M (000)	HH Median	HH (000) > \$20M (000)	
New England	New England	33,486	510,946	-93.8%	10,337,810	369	3,130	6,130	30,716	4,578	14,085	3,331	
	Connecticut	861	98,228	-99.1%	3,270,371	698	618	36,283	32,855	1222	10,220	1020	
	Maine	881	115,865	-99.2%	1,242,400	452	3,478	22,076	33,883	474	345	345	
	Massachusetts	27,767	137,484	-79.8%	6,117,220	2,717	1,519	31,524	40,895	2,865	1,780	1,780	
	New Hampshire	4,574	87,896	-94.9%	1,173,254	362	131	28,047	39,010	424	348	348	
	Rhode Island	0	32,443	-100.0%	987,400	500	384	25,760	35,730	274	279	279	
	Vermont	274	36,932	-99.3%	589,248	366	-	23,401	35,028	420	420	420	
	Total New England	33,486	510,946	-93.4%	13,378,396.4	9186	6,130	30,716	35,028	420	3,331	3,331	
	Middle Atlantic	New Jersey	14,679	183,204	-92.0%	8,053,548.8	1,303	1,792	33,654	45,817	2,845	2,389	2,389
		New York	8,290	458,092	-98.2%	18,137,217.8	723	1,898	30,752	34,395	6,669	5,059	5,059
Pennsylvania		23,030	335,480	-93.1%	12,020,321.9	1,528	1,898	26,058	34,797	4,551	3,401	3,401	
Total Middle Atlantic		45,999	976,776	-95.3%	38,210,886.7	9793	3,731	28,876	34,797	14,085	10,848	10,848	
South Atlantic		Delaware	0	42,856	-100.0%	732,400	535	381	29,022	37,748	284	208	208
		District of Columbia	629	740,330	-99.1%	529,841.0	7	7	35,852	32,835	237	175	175
		Florida	20,681	302,874	-93.2%	14,654,551.0	11,761	8,428	25,255	30,759	5,458	3,984	3,984
		Georgia	4,182	194,266	-97.9%	7,486,362.0	1,522	2,344	24,061	33,639	2,581	1,673	1,673
		Illinois	6,940	321,114	-97.2%	5,084,1223.9	2,633	3,190	28,969	42,582	1,631	1,504	1,504
		Indiana	22,431	416,085	-94.6%	7,425,830.5	5,103	3,375	23,345	33,469	2,019	1,820	1,820
	Michigan	5,227	229,233	-97.7%	3,780,187.8	1,896	2,876	20,755	38,787	2,039	1,891	1,891	
	North Carolina	8,537	59,314	-85.7%	8,318,212.7	145	3,515	18,957	25,270	705	434	434	
	Virginia	98,879	2,399,255	-95.9%	48,230,497.8	28,773	23,907	24,919	38,630	3,352	3,352	3,352	
	Total South Atlantic	35,098	366,378	-90.4%	11,898,338.9	2,324	2,324	26,202	38,630	4,308	3,084	3,084	
East North Central	Illinois	6,713	202,917	-96.6%	9,774,400.0	550	4,001	23,604	33,004	2,161	1,608	1,608	
	Indiana	85,212	398,388	-78.5%	5,170,487.9	11,990	24,475	24,661	34,589	4,190	3,084	3,084	
	Michigan	10,597	543,305	-98.0%	43,680,318.8	57,940	0	25,658	39,677	1,690	1,457	1,457	
	Wisconsin	137,620	2,457,836	-94.4%	8,438,818.8	1,873	607	20,842	28,618	1,593	1,041	1,041	
	Total East North Central	244,279	4,402,446	-94.4%	67,074,000.0	1,873	607	20,842	28,618	1,593	1,041	1,041	
	East South Central	Alabama	2,441	261,351	-99.1%	4,318,178.4	1,873	607	20,842	28,618	1,593	1,041	1,041
		Kentucky	7,886	156,668	-95.0%	3,908,495.0	1,579	359	20,857	30,420	1,440	946	946
		Mississippi	420	244,279	-99.8%	2,730,600.0	1,579	359	18,272	26,963	949	578	578
		Tennessee	10,747	980,015	-98.9%	5,358,410.0	926	848	23,018	30,327	1,866	1,381	1,381
		Total East South Central	10,747	980,015	-98.9%	15,223,1518.0	4,794	848	23,018	30,327	5,938	3,823	3,823
West North Central		Iowa	35,544	201,188	-82.4%	2,852,80.2	401	-	21,102	34,933	1,082	805	805
		Kansas	182,223	758,541	-74.7%	2,852,80.2	459	-	24,379	31,269	966	716	716
		Minnesota	3,479	307,082	-98.8%	5,402,1552.7	811	-	24,001	34,027	2,008	1,456	1,456
		Nebraska	2,235	70,458	-96.8%	1,657,741.4	481	-	23,903	33,859	614	459	459
		North Dakota	912	37,938	-97.6%	641,702.9	1,710	-	20,271	30,452	541	200	200
	South Dakota	3,670	46,575	-92.3%	738,208.7	1,224	-	21,487	30,452	541	200	200	
	Total West North Central	243,389	1,532,210	-84.0%	18,570,763.3	12,412	0	24,379	31,269	6,887	5,126	5,126	
	West South Central	Arkansas	15,571	178,185	-91.3%	2,523,193.0	1,107	-	19,585	28,922	927	610	610
		Louisiana	0	320,941	-100.0%	3,317,400.0	8,277	7,721	20,556	27,770	1,236	786	786
		Oklahoma	0	220,697	-100.0%	3,317,400.0	1,224	-	20,556	27,770	1,236	786	786
Texas		8,648	1,131,167	-98.4%	19,439,1974.5	6,687	3,359	23,658	32,872	8,539	4,721	4,721	
Total West South Central		25,616	1,531,167	-98.4%	28,631,1165.6	17,285	11,080	22,525	32,872	10,245	7,130	7,130	
Mountain		Arizona	21,773	150,107	-85.5%	4,555,209.2	364	-	22,364	32,180	1,461	1,062	1,062
		Colorado	5,223	95,140	-94.5%	3,893,745.4	371	-	20,478	33,912	395	301	301
		Idaho	3,593	80,662	-95.6%	1,210,337.7	823	-	20,046	31,860	532	447	447
		Montana	502	46,474	-98.9%	1,879,1751.0	1,480	-	19,587	26,778	577	401	401
		Nevada	748	55,483	-98.7%	1,730,818.4	724	-	19,587	26,778	577	401	401
	Nevada	2,114	55,615	-96.2%	2,059,1660.3	2,736	-	20,432	37,469	565	465	465	
	New Mexico	1,240	71,688	-98.3%	2,059,1660.3	2,736	-	20,432	37,469	565	465	465	
	Total Mountain	21,773	150,107	-85.5%	17,285,209.2	364	-	22,364	32,180	1,461	1,062	1,062	

Source: USCO, U.S. Bureau of Census; Bureau of Economic Analysis; NOAA

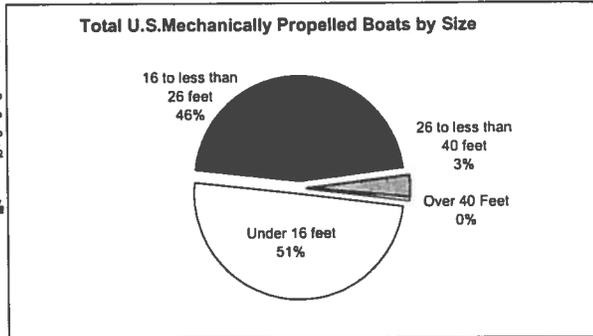
1987 U.S. Recreational Marine Boat Registrations
Regional Summary

Wyoming	309	24,081	50	-98.7%	0.0%	480	1,553.4	7.13	\$ 22,648	\$ 32,833	176	134
Total Mountain	35,492	578,270	50	-93.5%	0.3%	16,483	484.4	7.492	0	23,135	5,433	4,155
Pacific												
Alaska	1,604	26,957	49	-94.0%	0.0%	609	379.7	88,050	33,904	25,305	50,060	208
California	81,174	881,052	2	-99.8%	0.7%	32,288	397.5	7,734	3,427	26,570	38,106	10,850
Hawaii	987	15,177	51	-93.5%	0.0%	1,187	1202.8	4,908	1,052	24,394	35,411	1,195
Oregon	2,359	195,080	24	-98.8%	0.0%	1,243	1377.8	4,233	3,038	26,218	38,265	2,042
Washington	0	248,174	18	-100.0%	0.0%	5,810	4037.0	4,220	3,038	26,218	38,265	2,042
Total Pacific	86,124	1,364,480	18	-93.7%	0.7%	42,917	4892.3	105,395	42,819	25,382	14,876	14,876
U.S. Territories	54,557	48,412	42	20.1%	0.5%							
Total U.S.	769,899	12,057,269	102	-93.6%	0.4%	287,834	347.7	251,064	88,633	25,598	95,603	60,185

**1997 U.S. Boating Registration Statistics
For U.S. Summary**

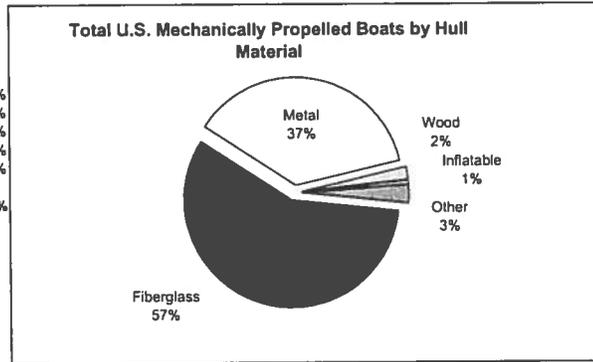
Total U.S. Mechanically Propelled Boats by Size

	<u>Total 1997</u>	<u>Total 1996</u>	<u>Percent Change</u>
Under 16 feet	5,767,114	5,073,753	13.7%
16 to less than 26 feet	5,380,784	5,006,527	7.5%
26 to less than 40 feet	388,471	317,082	22.5%
<u>Over 40 Feet</u>	<u>54,794</u>	<u>47,039</u>	<u>16.5%</u>
Total	11,591,163	10,444,401	11.0%



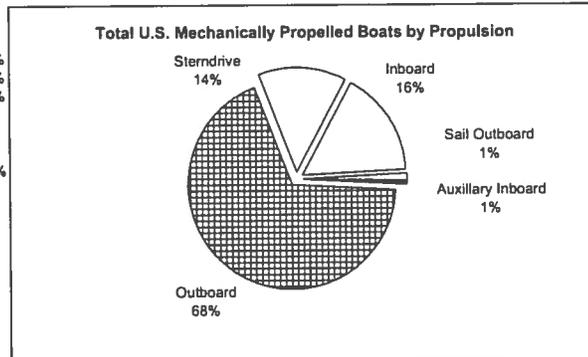
Total U.S. Mechanically Propelled Boats by Hull Material

Fiberglass	6,672,770	5,795,144	15.1%
Metal	4,311,515	4,074,740	5.8%
Wood	207,059	196,225	5.5%
Inflatable	93,419	68,953	35.5%
<u>Other</u>	<u>306,400</u>	<u>309,339</u>	<u>-1.0%</u>
Total	11,591,163	10,444,401	11.0%



Total U.S. Mechanically Propelled Boats by Propulsion

Outboard	7,924,740	7,222,742	9.7%
Stern drive	1,582,034	1,491,490	6.1%
Inboard	1,906,792	1,730,169	10.2%
Auxiliary Inboard	97,985	N/A	
<u>Sail Outboard</u>	<u>79,612</u>	<u>N/A</u>	
Total	11,591,163	10,444,401	11.0%



**1997 U.S. Boating Registration Statistics
for Total U.S.**

TOTAL Recreational Boat Numbers: 1997

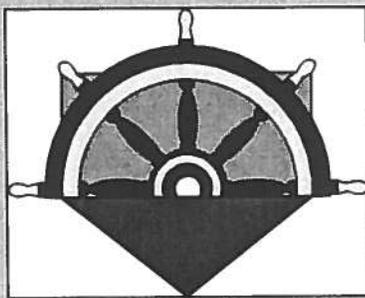
	Hull Material		Power		Personal Auxiliary		Sail	Total
	Inboard	Outboard	Sterndrive	Watercraft	Inboard	Outboard		
UNDER 16 FEET								
Wood	4,380	87,226	799	177	952	1,217		94,751
Fiberglass	504,326	1,476,076	153,003	478,348	24,496	13,727		2,649,976
Metal	16,493	2,592,975	79,368	696	1,678	1,559		2,692,769
Inflatable	1,396	68,455	5,041	290	2,079	344		77,605
Other	15,039	221,320	10,690	1,763	643	2,558		252,013
Total	541,634	4,446,052	248,901	481,274	29,848	19,405		5,767,114
16 TO LESS THAN 26 FEET								
Wood	24,568	46,695	4,648	0	1,204	968		78,083
Fiberglass	618,381	1,851,042	1,142,138	0	27,626	44,202		3,683,389
Metal	38,521	1,453,546	59,763	0	374	687		1,552,891
Inflatable	440	4,265	9,449	0	1,156	68		15,378
Other	3,274	40,564	6,630	0	223	352		51,043
Total	685,184	3,396,112	1,222,628	0	30,583	46,277		5,380,784
26 TO LESS THAN 40 FEET								
Wood	19,900	2,728	3,908	0	1,386	444		28,366
Fiberglass	139,838	33,646	88,982	0	32,355	12,342		307,163
Metal	8,027	36,458	5,527	0	223	93		50,328
Inflatable	60	157	50	0	14	5		286
Other	644	977	374	0	290	43		2,328
Total	168,469	73,966	98,841	0	34,268	12,927		388,471
40 TO 65 FEET								
Wood	3,604	633	1,001	0	353	76		5,667
Fiberglass	18,466	1,037	4,686	0	2,618	802		27,609
Metal	4,293	5,118	4,089	0	160	73		13,733
Inflatable	19	8	2	0	0	0		29
Other	220	185	148	0	80	24		657
Total	26,602	6,981	9,926	0	3,211	975		47,695
OVER 65 FEET								
Wood	86	53	32	0	19	2		192
Fiberglass	2,775	726	1,087	0	34	11		4,633
Metal	628	539	603	0	18	6		1,794
Inflatable	33	81	2	0	0	5		121
Other	107	230	14	0	4	4		359
Total	3,629	1,629	1,738	0	75	28		7,099
TOTAL MECHANICALLY PROPELLED								
Wood	52,538	137,335	10,388	177	3,914	2,707		207,059
Fiberglass	1,283,786	3,362,527	1,389,896	478,348	87,129	71,084		6,672,770
Metal	67,962	4,088,636	149,350	696	2,453	2,418		4,311,515
Inflatable	1,948	72,966	14,544	290	3,249	422		93,419
Other	19,284	263,276	17,856	1,763	1,240	2,981		306,400
Total	1,425,518	7,924,740	1,582,034	481,274	97,985	79,612		11,591,163

Commercial*	Total*
Passenger	16,379
Fishing	68,675
Other	31,520
	116,574
*Not Included in Boat Totals	

	OTHER BOATS				TOTAL OTHER BOATS
	Row boats	Sail boats	Canoes/Kayaks	Other Boats	
Wood	6,489	4,937	6,654	5,667	23,747
Fiberglass	20,070	127,928	80,874	103,944	332,816
Metal	52,521	3,396	130,405	74,245	260,567
Inflatable	1,251	558	2,337	7,784	11,930
Other	3,178	3,093	13,114	70,116	89,501
Total	83,509	139,912	233,384	261,756	718,561

TOTAL BOATS
230,806
7,005,586
4,572,082
105,349
395,901
12,309,724

U.S. Recreational Boating



Domestic Shipment Statistics
1970 to 1998



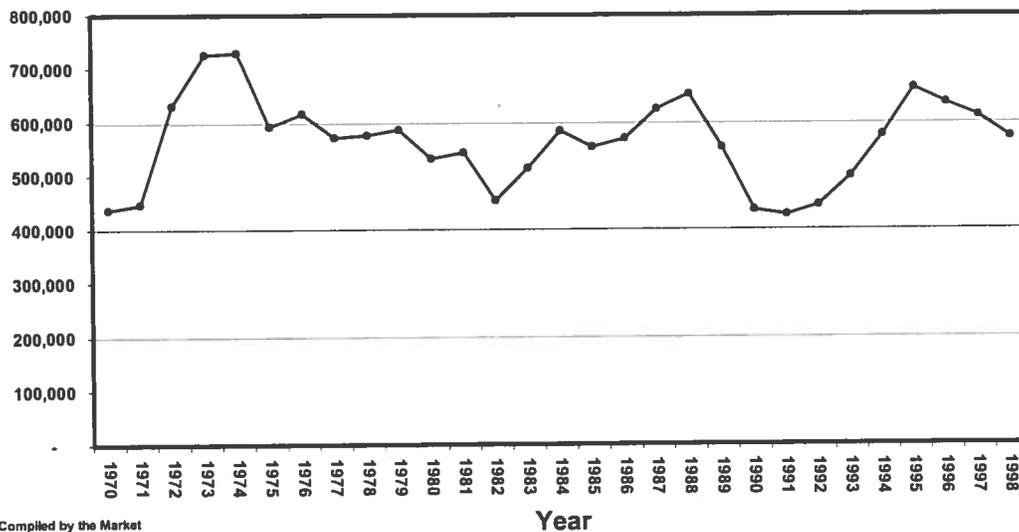
Compiled by the
Market Statistics Department
National Marine Manufacturers Association

U.S. Recreational Boating Domestic Boat Unit Shipment Statistics 1970 to 1998

Year	Total Boats	Outboard Boats	Inboard Boats Runabouts	Inboard Boats Cruisers	Sterndrive Boats	Sailboats	Canoes	Personal Water Craft	Jet Boats
1970	436,500	276,000	13,250	13,250	43,000	51,000	40,000	-	-
1971	447,500	278,000	11,250	11,250	44,000	59,000	44,000	-	-
1972	631,000	375,000	11,500	11,500	63,000	114,000	56,000	-	-
1973	726,000	448,000	3,200	8,800	78,000	120,000	68,000	-	-
1974	729,000	425,000	3,200	7,800	70,000	143,000	80,000	-	-
1975	592,050	328,000	3,700	6,500	70,000	107,850	78,000	-	-
1976	615,850	341,000	4,950	6,050	80,000	107,850	78,000	-	-
1977	571,800	336,000	3,430	8,370	84,000	59,000	82,000	-	-
1978	576,300	331,000	3,730	8,370	90,000	63,200	80,000	-	-
1979	585,500	322,000	4,050	8,550	89,000	71,900	90,000	-	-
1980	532,300	290,000	2,900	5,300	58,000	73,100	105,000	-	-
1981	543,500	281,000	2,950	5,450	51,000	77,100	128,000	-	-
1982	453,725	238,000	3,200	5,125	55,000	53,400	101,000	-	-
1983	514,125	273,000	3,900	7,485	79,000	43,740	107,000	-	-
1984	584,030	317,000	4,500	10,780	108,000	40,750	103,000	-	-
1985	553,300	305,000	4,500	12,200	115,000	37,800	78,800	-	-
1986	569,400	314,000	5,300	12,700	120,000	37,200	80,200	-	-
1987	624,500	342,000	6,600	13,100	144,000	33,500	85,300	-	-
1988	651,820	355,000	7,400	13,500	148,000	38,120	89,800	-	-
1989	552,700	291,000	9,100	12,300	133,000	27,200	80,100	-	-
1990	435,500	227,000	7,500	7,500	97,000	21,200	75,300	-	-
1991	428,800	195,000	6,200	3,600	73,000	8,700	72,300	68,000	-
1992	444,550	192,000	6,400	3,550	75,000	10,600	78,000	79,000	-
1993	498,775	205,000	6,800	3,375	75,000	11,900	89,700	107,000	-
1994	576,200	220,000	7,200	4,200	80,000	13,000	99,800	142,000	-
1995	663,760	231,000	6,900	5,460	93,600	14,300	97,800	200,000	14,700
1996	634,750	215,000	6,000	5,350	94,500	15,900	92,900	191,000	14,100
1997	610,100	200,000	6,100	6,300	92,000	14,400	103,600	176,000	11,700
1998	571,100	200,900	6,900	6,600	91,000	19,400	107,800	130,000	8,500

Compiled by the
Market Statistics Department
National Marine Manufacturers Association
January, 1999

U.S. Recreational Boating 1970 to 1998 Unit Boat Shipments



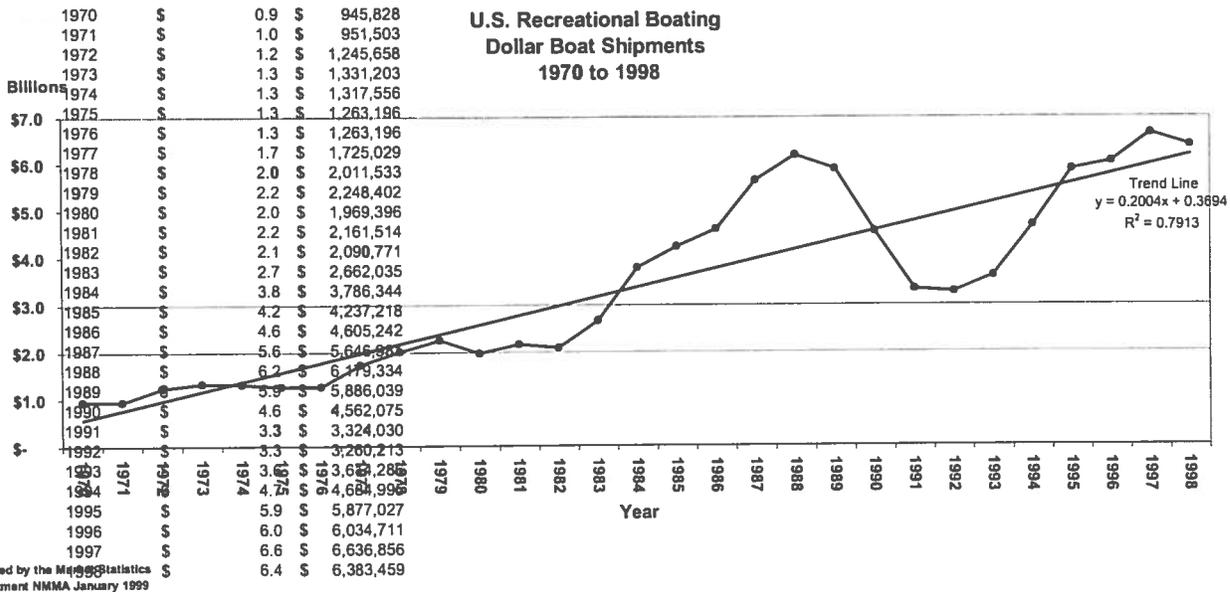
Compiled by the Market
Statistics Department NMMA
January 1999



U.S. Recreational Boating Domestic Boat Dollar Shipment Statistics 1970 to 1998

Year	Total Boats (000)	Outboard Boats (000)	Inboard Boat Runabouts (000)	Inboard Boat Cruisers (000)	Starndrive Boats (000)	Sailboats (000)	Canoes (000)	Personal Water Craft (000)	Jet Boats (000)
1970	\$ 945,828	\$ 177,192	\$ 110,240	\$ 385,045	\$ 182,449	\$ 83,302	\$ 7,600		
1971	\$ 951,503	\$ 189,040	\$ 118,237	\$ 338,082	\$ 200,728	\$ 96,724	\$ 8,712		
1972	\$ 1,245,658	\$ 287,750	\$ 94,300	\$ 412,985	\$ 307,755	\$ 151,912	\$ 10,976		
1973	\$ 1,331,203	\$ 325,248	\$ 19,857	\$ 352,816	\$ 410,358	\$ 209,710	\$ 13,214		
1974	\$ 1,317,558	\$ 310,250	\$ 21,092	\$ 319,800	\$ 386,680	\$ 264,814	\$ 15,120		
1975	\$ 1,263,196	\$ 262,728	\$ 26,325	\$ 255,807	\$ 420,000	\$ 282,452	\$ 15,884		
1976	\$ 1,263,196	\$ 262,728	\$ 26,325	\$ 255,807	\$ 420,000	\$ 282,452	\$ 15,884		
1977	\$ 1,725,029	\$ 391,440	\$ 28,871	\$ 378,409	\$ 672,000	\$ 234,383	\$ 19,926		
1978	\$ 2,011,533	\$ 430,300	\$ 32,395	\$ 446,685	\$ 819,000	\$ 263,653	\$ 19,520		
1979	\$ 2,248,402	\$ 469,476	\$ 35,154	\$ 520,610	\$ 827,200	\$ 372,112	\$ 23,850		
1980	\$ 1,969,396	\$ 408,320	\$ 29,769	\$ 457,284	\$ 618,000	\$ 422,407	\$ 35,616		
1981	\$ 2,161,514	\$ 431,335	\$ 34,633	\$ 534,372	\$ 652,545	\$ 463,395	\$ 45,234		
1982	\$ 2,090,771	\$ 408,752	\$ 41,600	\$ 583,750	\$ 685,850	\$ 350,520	\$ 40,299		
1983	\$ 2,662,035	\$ 501,501	\$ 49,140	\$ 731,883	\$ 974,880	\$ 362,707	\$ 41,944		
1984	\$ 3,786,344	\$ 708,178	\$ 60,156	\$ 1,138,907	\$ 1,442,018	\$ 393,312	\$ 43,775		
1985	\$ 4,237,218	\$ 759,450	\$ 68,256	\$ 1,340,780	\$ 1,683,360	\$ 370,385	\$ 34,987		
1986	\$ 4,605,242	\$ 834,800	\$ 85,473	\$ 1,421,130	\$ 1,860,860	\$ 365,946	\$ 37,133		
1987	\$ 5,646,961	\$ 1,001,003	\$ 107,362	\$ 1,665,860	\$ 2,450,160	\$ 382,315	\$ 40,261		
1988	\$ 6,179,334	\$ 1,224,750	\$ 130,610	\$ 1,884,600	\$ 2,584,672	\$ 311,329	\$ 43,373		
1989	\$ 5,886,039	\$ 1,134,027	\$ 179,152	\$ 1,908,960	\$ 2,354,100	\$ 270,910	\$ 38,890		
1990	\$ 4,562,075	\$ 978,143	\$ 132,600	\$ 1,383,015	\$ 1,794,306	\$ 235,458	\$ 38,553		
1991	\$ 3,324,030	\$ 871,260	\$ 116,442	\$ 668,412	\$ 1,292,903	\$ -	\$ 39,909	\$ 335,104	
1992	\$ 3,260,213	\$ 839,040	\$ 116,249	\$ 621,029	\$ 1,239,375	\$ -	\$ 44,148	\$ 400,372	
1993	\$ 3,814,286	\$ 914,095	\$ 133,300	\$ 655,020	\$ 1,243,500	\$ -	\$ 50,232	\$ 618,139	
1994	\$ 4,684,995	\$ 1,122,440	\$ 142,776	\$ 890,681	\$ 1,668,780	\$ -	\$ 55,888	\$ 804,430	
1995	\$ 5,877,027	\$ 1,428,420	\$ 147,660	\$ 1,169,500	\$ 1,781,310	\$ -	\$ 55,941	\$ 1,144,400	\$ 141,796
1996	\$ 6,034,711	\$ 1,362,240	\$ 126,234	\$ 1,215,268	\$ 1,925,248	\$ -	\$ 53,789	\$ 1,208,648	\$ 143,284
1997	\$ 6,636,856	\$ 1,421,400	\$ 136,408	\$ 1,669,103	\$ 2,068,528	\$ -	\$ 61,124	\$ 1,135,904	\$ 144,389
1998	\$ 6,383,459	\$ 1,361,098	\$ 160,378	\$ 1,680,672	\$ 2,108,158	\$ -	\$ 64,077	\$ 868,499	\$ 140,577

Compiled by the Market Statistics Department National Marine Manufacturers Association January, 1999



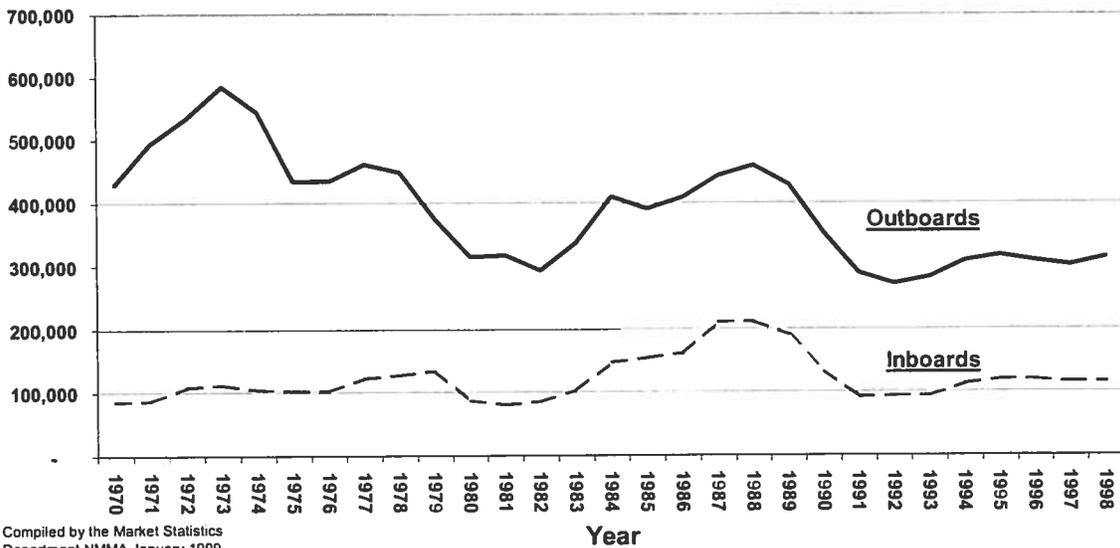


**U.S. Recreational Boating Domestic
Engine and Trailer Unit Shipment Statistics
1970 to 1998**

<u>Year</u>	<u>Outboard Engines</u>	<u>Inboard Engines</u>	<u>Total Engines</u>	<u>Trailers</u>
1970	430,000	86,000	516,000	213,000
1971	495,000	88,000	583,000	220,000
1972	535,000	109,000	644,000	265,000
1973	585,000	113,000	698,000	330,000
1974	545,000	105,000	650,000	325,000
1975	435,000	103,000	538,000	255,000
1976	435,000	103,000	538,000	255,000
1977	482,000	123,000	585,000	278,000
1978	450,000	128,000	578,000	280,000
1979	375,000	135,000	510,000	278,000
1980	315,000	87,750	402,750	178,000
1981	318,000	81,500	399,500	190,000
1982	293,000	85,850	378,850	160,000
1983	337,000	104,125	441,125	184,000
1984	411,000	148,000	559,000	200,000
1985	392,000	155,000	547,000	192,000
1986	410,000	161,900	571,900	194,000
1987	444,000	210,800	654,800	216,000
1988	460,000	211,900	671,900	223,000
1989	430,000	190,700	620,700	209,000
1990	352,000	134,100	486,100	165,000
1991	289,000	92,400	381,400	133,000
1992	272,000	94,600	366,600	147,000
1993	283,000	94,700	377,700	163,000
1994	308,000	114,000	422,000	176,000
1995	317,000	120,000	437,000	207,000
1996	308,000	120,000	428,000	194,000
1997	302,000	116,100	418,100	181,000
1998	314,000	116,900	430,900	174,000

Compiled by the
Market Statistics Department
National Marine Manufacturers Association
January, 1999

**U.S. Recreational Boating
Engine Unit Shipments
1970 to 1998**

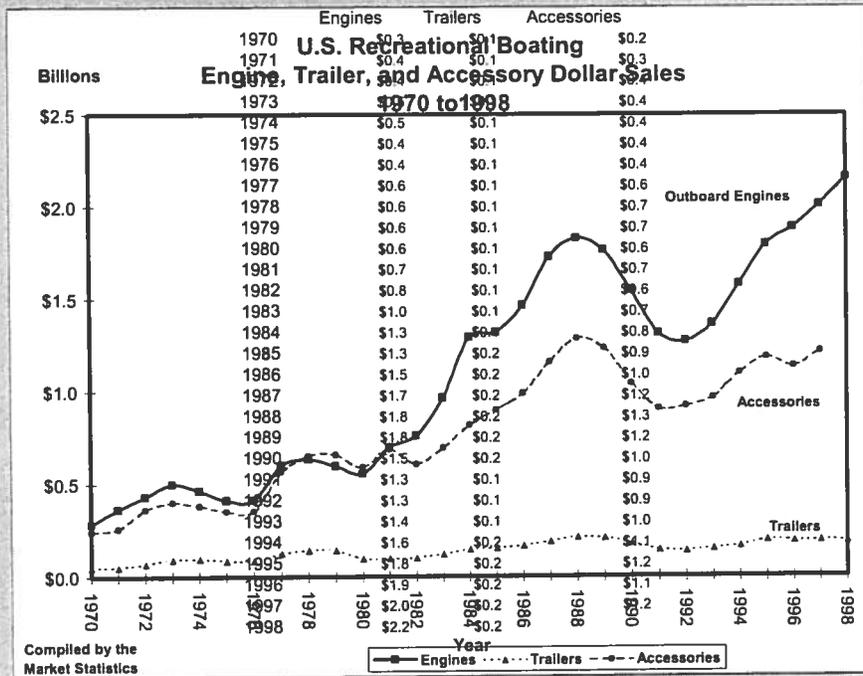


Compiled by the Market Statistics
Department NMMMA January 1999



U.S. Recreational Boating Engine, Trailer, and Accessory Dollar Sales 1970 to 1998

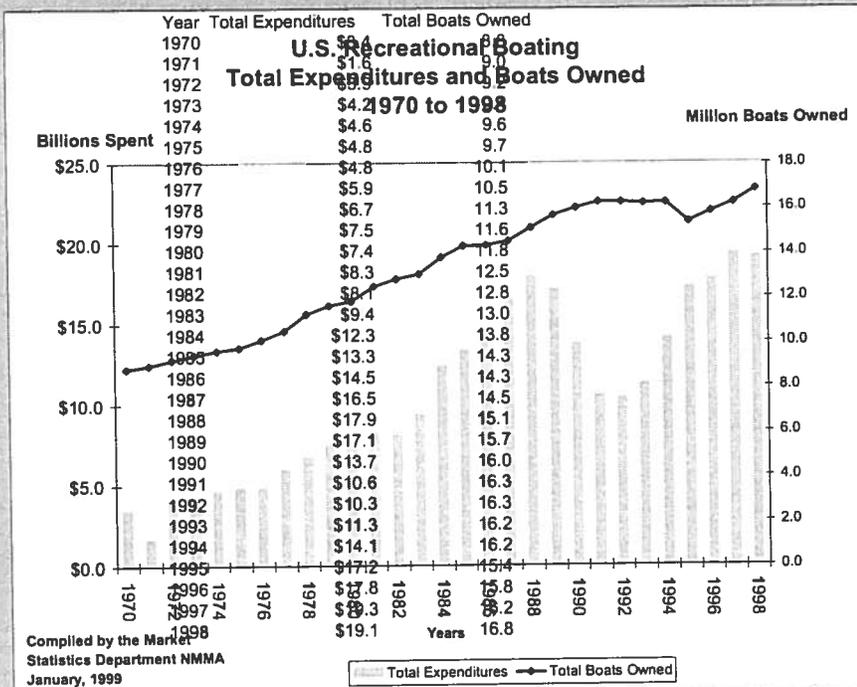
Year	Outboard Engines (000)	Trailers (000)	Accessories (000)
1970	\$281,200	\$50,500	\$ 242,600
1971	\$362,300	\$53,200	\$ 260,900
1972	\$432,300	\$72,100	\$ 362,400
1973	\$501,300	\$94,400	\$ 402,700
1974	\$463,300	\$98,100	\$ 382,800
1975	\$411,100	\$87,700	\$ 355,400
1976	\$411,100	\$87,700	\$ 355,400
1977	\$600,600	\$125,600	\$ 566,900
1978	\$634,600	\$141,400	\$ 653,100
1979	\$596,600	\$144,200	\$ 658,400
1980	\$554,400	\$96,448	\$ 591,900
1981	\$698,010	\$98,990	\$ 689,584
1982	\$758,870	\$99,360	\$ 606,816
1983	\$963,820	\$121,824	\$ 695,804
1984	\$1,293,828	\$146,800	\$ 818,265
1985	\$1,319,080	\$151,680	\$ 900,091
1986	\$1,463,700	\$185,676	\$ 980,100
1987	\$1,725,828	\$188,588	\$ 1,158,400
1988	\$1,828,040	\$209,996	\$ 1,284,665
1989	\$1,784,290	\$207,119	\$ 1,233,278
1990	\$1,545,984	\$177,705	\$ 1,040,887
1991	\$1,311,193	\$142,177	\$ 905,571
1992	\$1,268,336	\$137,004	\$ 917,486
1993	\$1,383,777	\$149,960	\$ 984,277
1994	\$1,576,960	\$182,976	\$ 1,098,311
1995	\$1,793,260	\$195,559	\$ 1,180,680
1996	\$1,882,188	\$189,344	\$ 1,134,633
1997	\$2,006,186	\$190,050	\$ 1,214,057
1998	\$2,155,810	\$189,905	\$ -





U.S. Recreational Boating 1970 to 1998

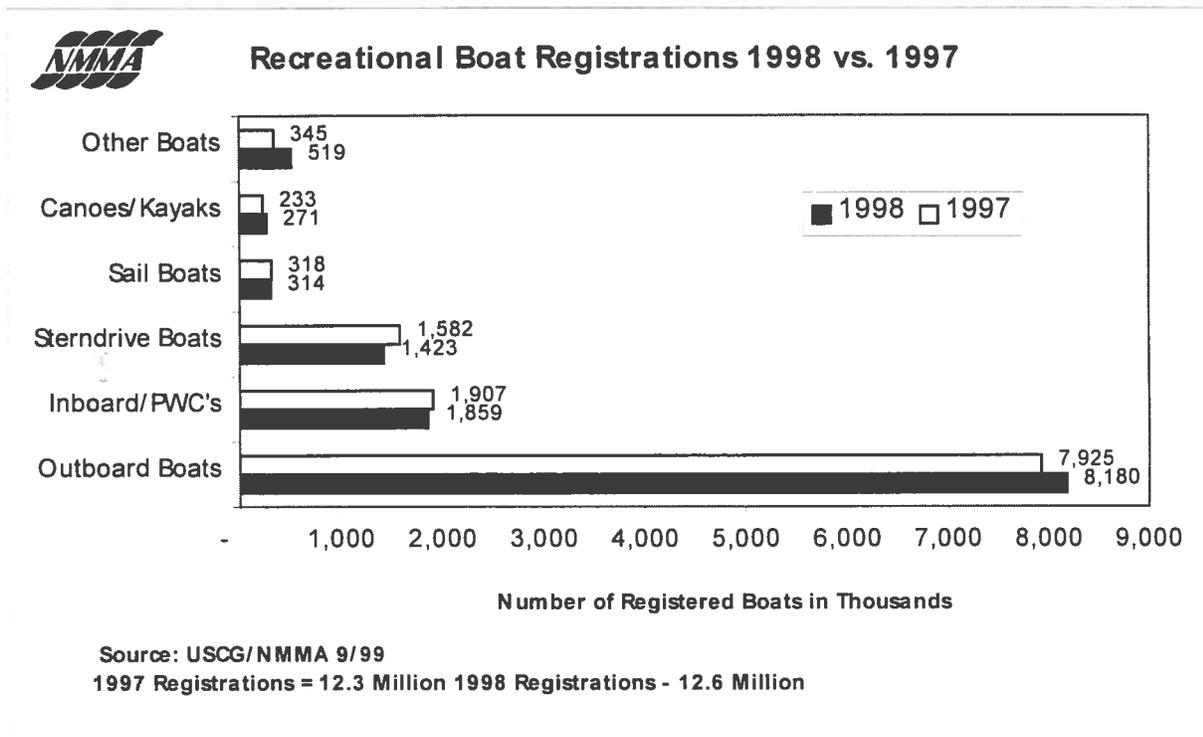
Year	Estimated Retail Expenditures (000)	Total Boats Owned	Total US Boat Registrations
1970	\$3,440,000	8,814,000	
1971	\$1,827,903	8,981,000	5,510,092
1972	\$3,900,000	9,210,000	5,910,794
1973	\$4,245,000	9,435,000	6,339,678
1974	\$4,607,000	9,615,000	6,830,456
1975	\$4,800,000	9,740,000	7,303,286
1976	\$4,800,000	10,105,000	7,721,196
1977	\$5,820,000	10,515,000	7,975,587
1978	\$6,690,000	11,270,000	8,034,905
1979	\$7,500,000	11,625,000	8,200,000
1980	\$7,370,000	11,832,000	8,555,754
1981	\$8,250,000	12,495,000	8,905,097
1982	\$8,100,000	12,820,000	9,073,972
1983	\$9,375,000	13,041,000	9,165,094
1984	\$12,340,000	13,778,000	9,415,023
1985	\$13,284,000	14,285,000	9,583,673
1986	\$14,479,000	14,318,000	9,876,197
1987	\$16,500,000	14,515,000	9,963,696
1988	\$17,927,000	15,093,000	10,362,613
1989	\$17,143,000	15,658,000	10,777,370
1990	\$13,730,903	15,987,000	10,996,253
1991	\$10,564,458	16,262,000	11,068,440
1992	\$10,317,250	16,262,000	11,132,386
1993	\$11,254,041	16,212,000	11,429,585
1994	\$14,070,599	16,239,000	11,429,585
1995	\$17,226,206	15,375,000	11,734,710
1996	\$17,752,671	15,830,000	12,057,269
1997	\$19,344,470	16,230,000	12,309,724
1998	\$19,148,369	16,824,000	



1998 Recreational Boat Registrations

Coast Guard report indicates a two percent increase in state recreational boat registrations.

In its recently released *1998 Recreational Boat Registrations* report, the U.S. Coast Guard reports there were 12.6 million recreational boats registered with the states in 1998. This is an increase of 256 thousand boat registrations - a two percent increase compared to the previous year. While the numbers show a still growing market, not all segment experience growth in registrations during 1998 with outboard boats, canoes/kayaks, and other (not elsewhere classified) showing increases while inboard boat/PWC's and sterndrive boats decreasing in registrations.



Boat registration statistics are the basis for dividing federal recreational boating dollars among the states each year. In addition NMMA uses the registration data in developing its annual state dollar sales of new boats, motors, trailers and marine accessory estimates which are available in the year-end review of the market.

"TOP 20 STATES"

The top 20 states have almost 3 out of every 4 boats registered in the United States during 1998 and account for 9.3 million boats - a two percent increase over the previous year. The top 10 states for boat registrations account for just over half of all registered boats at 6.4 million. As has been the case for the last three years no state dropped out of the Top 20 in 1998. However, there was some movement between the Top 20 state rankings - Illinois moved ahead of South Carolina, Tennessee jumped two positions moving ahead of both Louisiana

and Georgia (the only two states in the Top 20 which reported a decline in boat registrations for the year), and Mississippi and Alabama swapped places. A major change in registration procedures occurred during 1998 in Illinois which started to register canoes and kayaks, no other registration requirements were noted.

Top 20 States 1998 Recreational Boat Registrations

States	Total Registrations for			Rankings	For 1998	
	1998	1997	1996	1998	Percent Change	Cumulative Total
Michigan	980,378	957,105	945,817	1	2.4%	7.8%
California	895,132	894,347	881,092	2	0.1%	14.9%
Florida	805,581	796,662	749,323	3	1.1%	21.3%
Minnesota	780,097	768,555	758,541	4	1.5%	27.5%
Texas	625,754	615,438	611,374	5	1.7%	32.5%
Wisconsin	559,321	543,034	543,305	6	3.0%	37.0%
New York	514,749	512,430	458,092	7	0.5%	41.1%
Ohio	407,686	399,888	398,388	8	2.0%	44.3%
Illinois	396,945	368,513	366,378	9	7.7%	47.5%
South Carolina	394,842	376,201	416,085	10	5.0%	50.6%
Pennsylvania	348,727	340,394	335,480	11	2.4%	53.4%
North Carolina	334,862	328,594	321,114	12	1.9%	56.1%
Missouri	326,879	321,707	307,082	13	1.6%	58.7%
Tennessee	312,030	306,215	297,719	14	1.9%	61.1%
Louisiana	305,386	310,281	320,941	15	-1.6%	63.6%
Georgia	303,129	309,606	302,874	16	-2.1%	66.0%
Mississippi	270,868	252,767	244,279	17	7.2%	68.1%
Alabama	265,592	264,436	261,351	18	0.4%	70.3%
Washington	249,968	245,962	246,174	19	1.6%	72.2%
Virginia	232,409	229,629	229,233	20	1.2%	74.1%

According to Jim Petru - NMMA's Manager of Market Statistics, the two percent increase in last year's registration results "are a continued trend dating from 1972 and is further evidence of the growth seen on the manufacturing side of the industry which translates into sales potential for marine engines, accessories, and supported services."

NMMA's Market Statistics Department is making available the 56-page Summary and Detail Recreational Boat Registrations Report by boat segment, size, power and hull material. Regional summaries include population/income estimates and shoreline/inland water data. The report is also available as an Excel spreadsheet which can be downloaded via e-mail. Cost

for the 1998 registration report is \$50 for NMMA members; \$150 for non-members. Contact the Publications Department in Chicago.

