POTENTIAL FOR BATHING AREAS ON THE POTOMAC AND ANACOSTIA RIVERS IN THE WASHINGTON, D.C., METROPOLITAN AREA

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A Preliminary Report by an Ad Hoc Task Force of the Washington Area Waterfront Action Group (WAWAG)
May 21, 1982

Summary

Part I of the report describes characteristics of the Washington Metropolitan Area related to the potential for bathing in the Potomac and Anacostia Rivers. It discusses the history of pollution problems and especially the current status of the cleanup program. Water quality is much improved and further improvements are expected soon. Desirable species of fish have returned, sport-fishing has increased, and water quality standards for swimming are frequently achieved during dry weather periods. Part I also reviews the interest in swimming as an outdoor recreational activity and the history of river bathing in the Washington Metro Area, particularly above Key Bridge and in the Tidal Basin.

Part II of the report covers current possibilities for river bathing in the Washington Metropolitan Area beginning with a description of applicable water quality standards and swimming as a designated use in the standards. General criteria for planning and developing sites for river bathing are discussed followed by brief descriptions of eleven specific sites suggested for further evaluation.

Part III of the report suggests an approach for evaluating the feasibility of the various potential river bathing sites by a team of experts representing a variety of professional disciplines, agencies and the general public. The report ends with a suggested schedule for the evaluation process beginning in June 1982 and culiminating in the implementation of one or more river bathing sites in 1984 and beyond.

I. Introduction

A. Characteristics of the Washington Metropolitan Area

1. General - The Washington Metropolitan Area (WMA) generally is considered to include the District of Columbia together with Montgomery and Prince George's Counties in Maryland and Arlington, Fairfax, Loudoun and Prince William

Counties in Virginia. All except Prince William County border on the Potomac River. The population of the WMA has grown from one million in 1940 to three million in 1980 and it is one of the ten most populous urban areas in the United States.

The unique character of the WMA is influenced by having the national capital in its midst and government as its major industry. This and its many cultural amenities attract an average of 15 million visitors each year. The Potomac River, much of the shoreline of which is in public parks or parkways, flows southerly through the middle of the WMA and is joined by the Anacostia midway through the District of Columbia. These two rivers contribute greatly to the unique character and the esthetic, recreational and commercial values of the area which are highly regarded by both residents and visitors.

2. Pollution - During the twentieth century, and especially since the beginning of rapid growth of the WMA in the 1930's, pollution has greatly impaired the values of the Potomac. It became notorious as an example of water pollution problems in the United States. In 1965 President Lyndon Johnson while signing amendments to the Federal Water Pollution Control Act expressed his desire to clean up the Potomac so that it would be swimmable again in ten years. Progress has been difficult and slow, but significant strides have been taken toward achievement of the Potomac's ultimate potential as a great esthetic, recreational and commercial asset to the WMA and the Nation.

The quality of this upper Potomac tidewater is much improved as we enter the decade of the '80s as compared with the beginning of the '70s, when the river was characterized by noxious floating mats of algae, fish kills and foul odors. For example, during the summer recreation period at Wilson Bridge, Washington's southernmost boundary, where quality was the poorest in the early '70s, the water is visibly clearer and contains lower concentrations of organic matter, higher concentrations of dissolved oxygen, and virtually none of the noxious algae mats.[1/] Bacteria concentrations in the Potomac have decreased to

levels which frequently meet swimming water standards during dry weather periods. A much improved diversity of aquatic organisms has developed, thus producing an improved food chain and habitat for desirable species of fish, for example perch and bass. Graphical examples of progress in the cleanup program from a recent report are shown in Figures 1 and 2.

All of these improvements are not surprising in view of : (1) the upgrading and expansion of treatment facilities at the regional Blue Plains pollution control plant and other plants in the Metro area; (2) the elimination of dry weather raw sewage overflows; and (3) generally more efficient operation of sewer systems and treatment plants. Pollution levels of the discharges from sewage treatment plants have been greatly reduced. Additional reductions are continuing.

Problems still remain, primarily associated with stormwater runoff reaching the Potomac tidewater. The sources are storm sewers and combined storm and sanitary sewers in the Metropolitan area and surface runoff carried into the tidewater from the upper basin by the free-flowing Potomac and small tributaries. During and immediately after storms, large quantities of sediment, debris, and other substances are washed off both urban and rural lands. Much of this pollution reaches the Potomac in the WMA but water quality levels return to normal after a few days. The cleaner Potomac tidewater, as described previously, prevails for most of the time. Some implementation of storm and runoff related pollution controls is underway and others are being studied. These problems are only partly solvable, but fortunately they only occasionally inhibit recreational and other uses of the much improved tidewater Potomac in the WMA.

B. Swimming as an Outdoor Recreation

In 1970, the Metropolitan Washington Council of Governments took a survey of the most popular recreational activities in the District of Columbia and swimming was first on the list.2/ In the same survey, but ranked by annual income group, swimming was third in the below $7,000 income groups, first in the $7,000 to $10,000 group, and second in the over $10,000 group. "Is

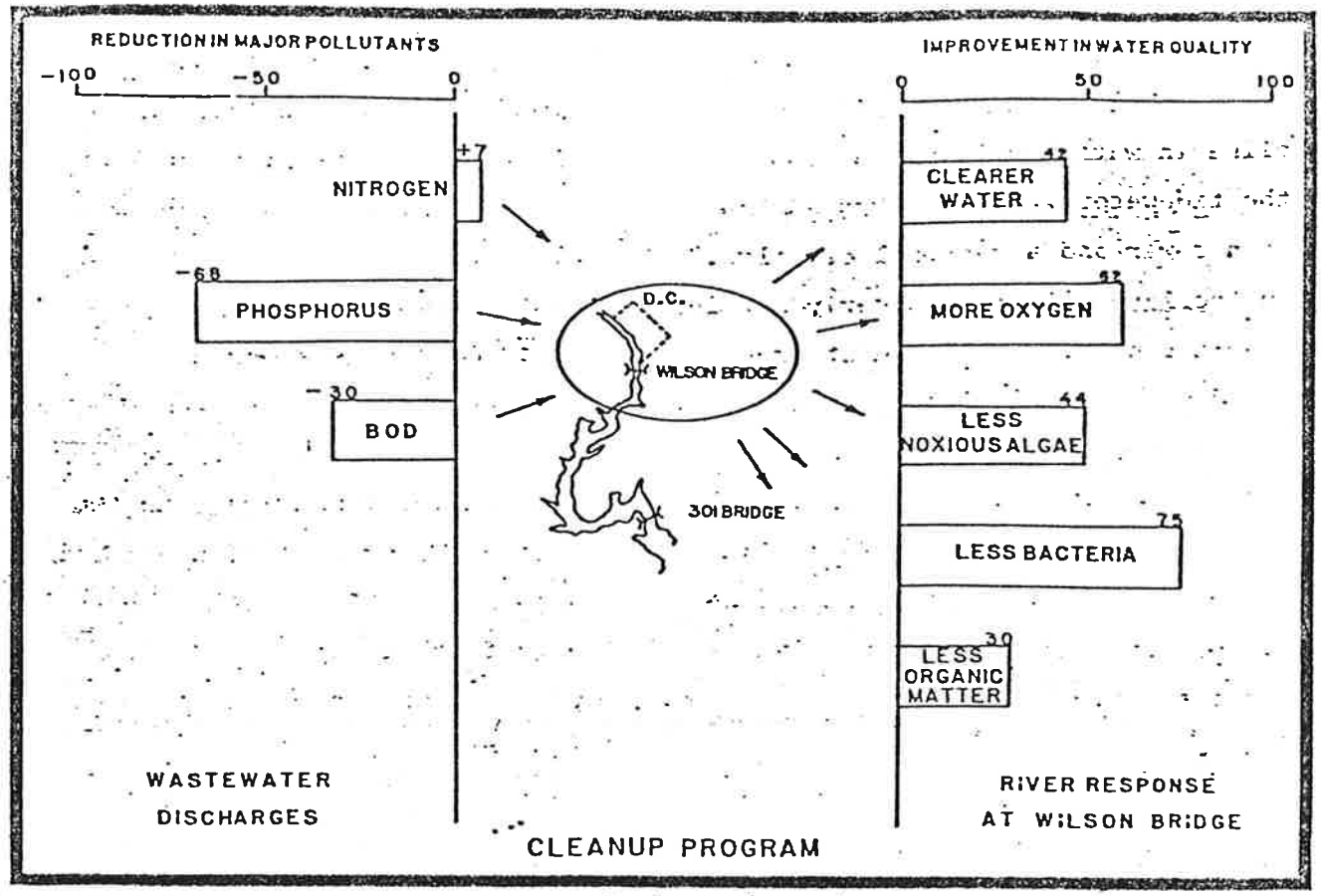
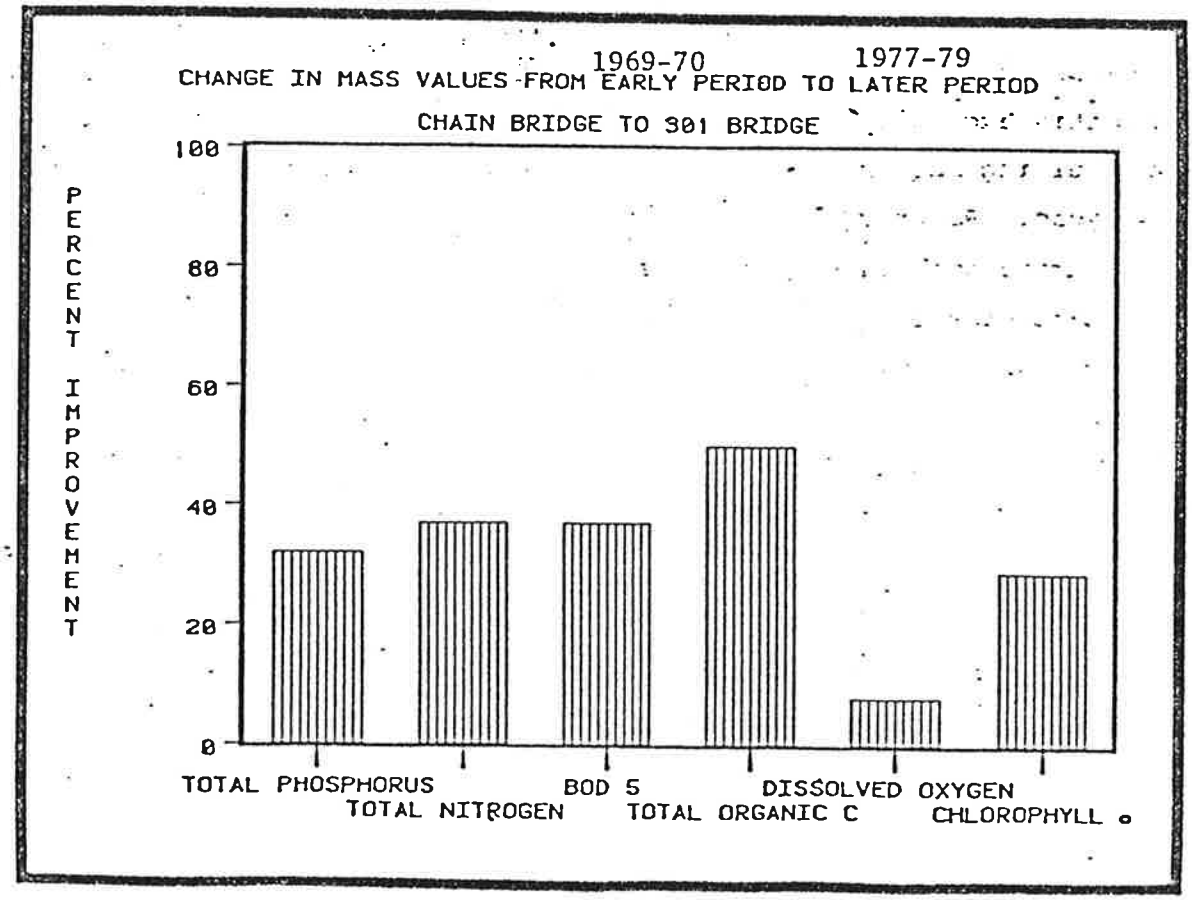


Figure 1



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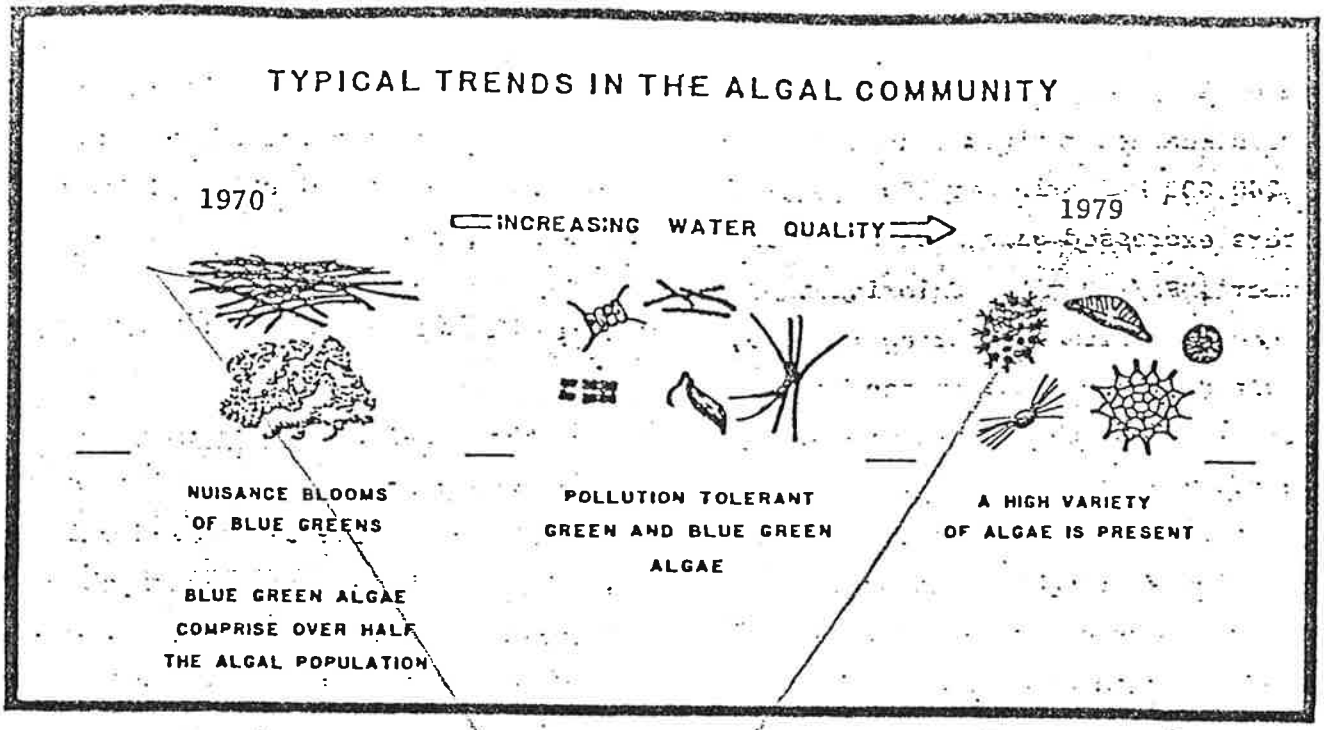


Figure 4

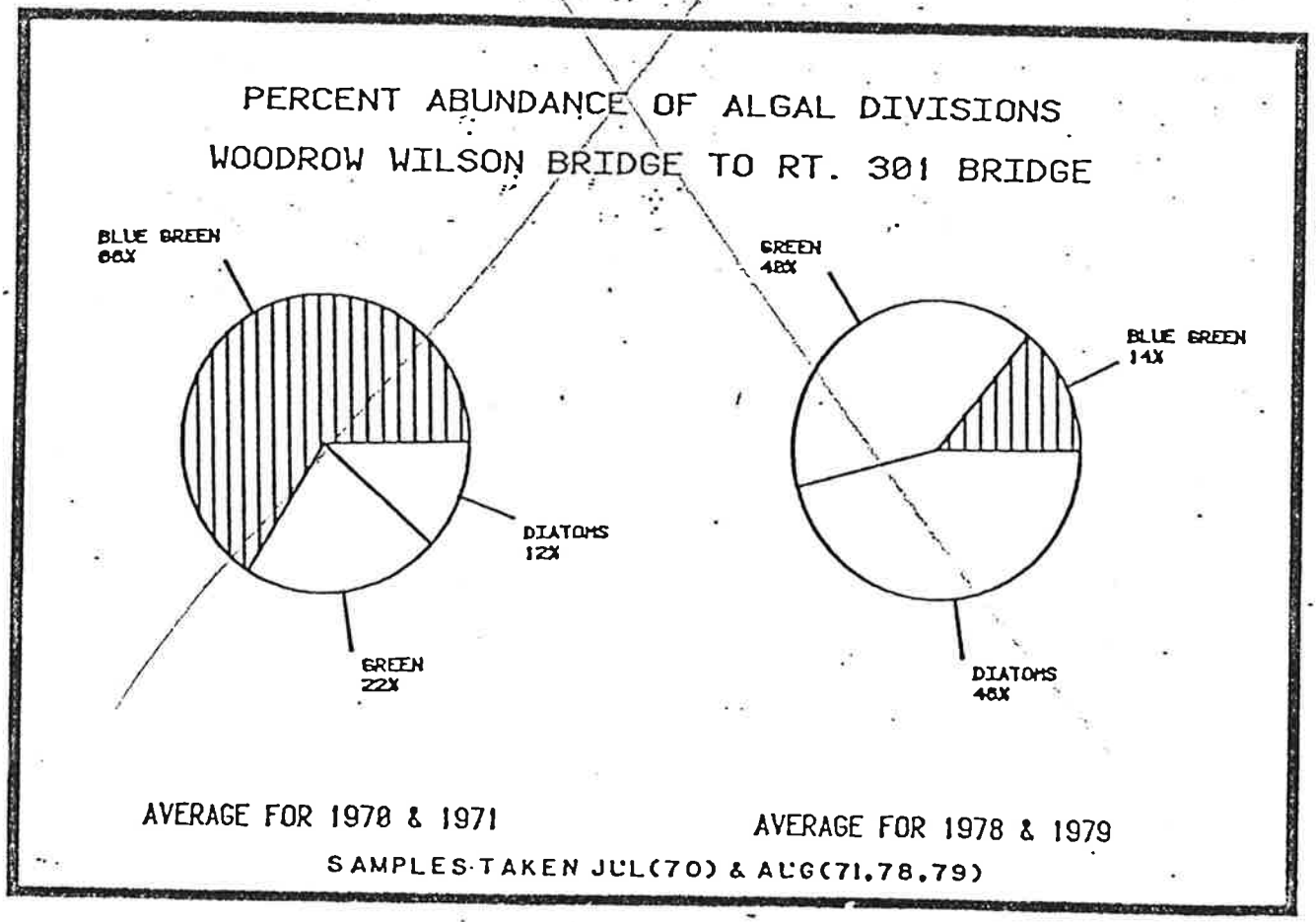


Figure 5

it any wonder, then, that, according to the 1979 A.C. Nielsen Sports Participation Study, swimming is the most participant sport in this country? An incredible 47.5 percent of the [United States] population --that's about 102,162,000 people are swimmers! Moreover, the Gallup Poll has recently found that of the 47 percent of Americans who exercise regularly, swimmers outnumber joggers eight to one (80 million versus 10 million). So come join us, get in the swim."3/

C. River Bathing in Urban Areas, U.S. and Foreign Experience

Citizens of Paris, France, now swim in the Seine River in barges, moored to the river banks. Earlier in this century New Yorkers swam in barges in the Hudson River and, as mentioned elsewhere in this report, Washingtonians swam in the Tidal Basin and above Key Bridge until those areas were closed to bathing due to pollution and other reasons. River bathing in urban areas, even under less than natural conditions such as in Paris, still has a special appeal for outdoor recreators.

D. Past History of and Future Potential for River Bathing in the Washington Metropolitan Area

1. Past History - Although we can't give a date certain for the origin of river bathing in the Washington Metropolitan Area during the pre-colonial or colonial period, undoubtedly it was common then. Bathing in the Potomac continued after Washington, D.C., was designated the Capital of the United States. The Washington Star in a 1926 article about water sports on the Potomac reported as one of the "vitally important facts...that one John Quincy Adams, President of the United States in the early days of the Republic, disported himself daily in the yellow waters of the Potomac."4/ (The reference to "yellow waters" indicates the Potomac had a silt problem then as well as now). The same article stated "Decoration day is the customary formal opening date for the water sports season on the Potomac..." and in addition to hundreds of watercraft on the river "Hundreds of swimmers,

boys and girls, young and old, in brillantly colored bathing suits, will splash into the refreshing waters, making ceremonies complete."

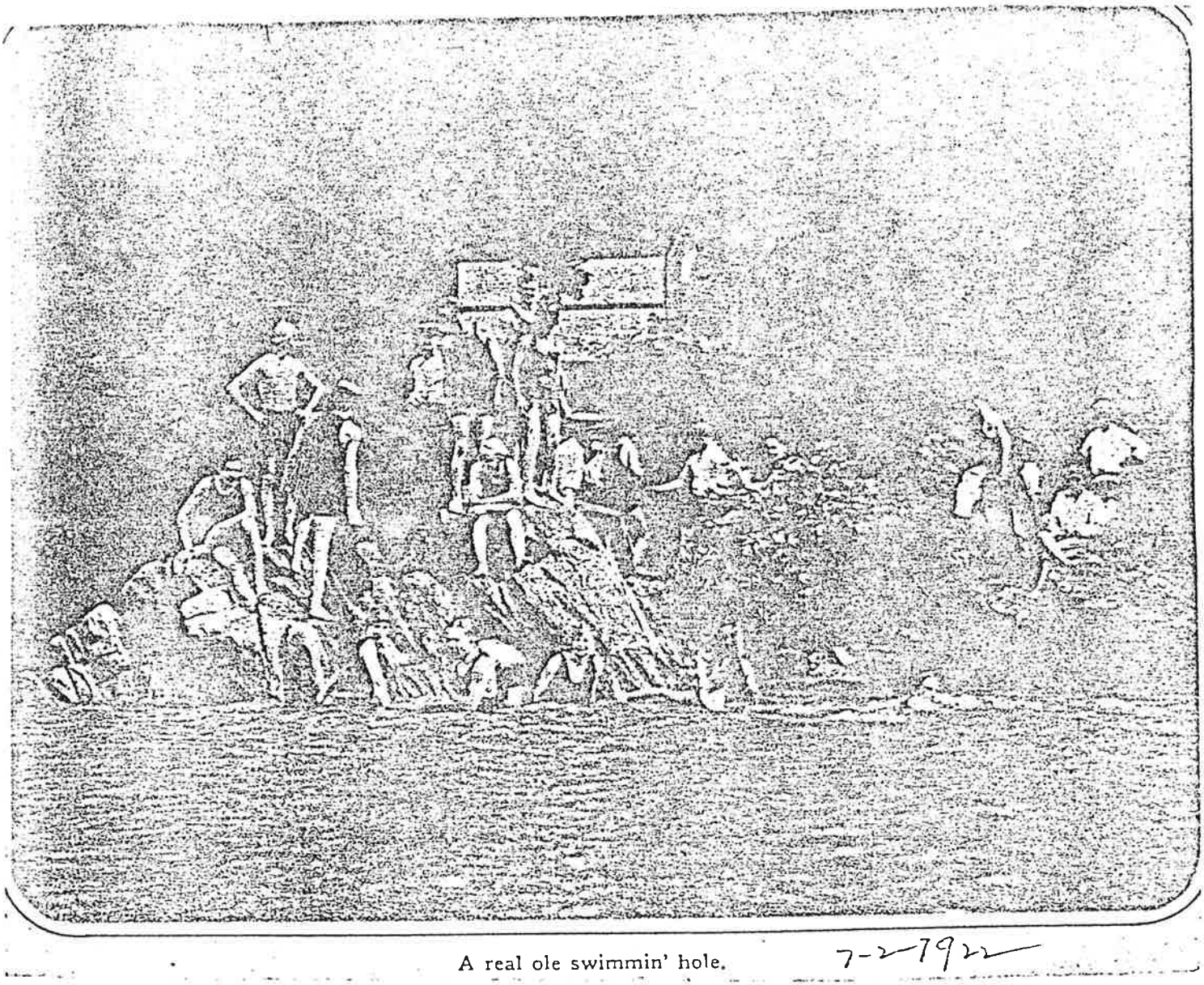
A supervised public bathing beach at the Tidal Basin south of the Washington Monument was opened for use on August 12, 1918.[5] In 1922 a Washington Post article on recreation in the National Capital reported, "Provided with an excellent public bathing beach and pool just south of the Ellipse, swimmers of the capital have unusually fine facilities for enjoying the water. In addition, the Potomac River above Georgetown bridge is a mecca for hundreds daily."[6] The Tidal Basin bathing beach was closed at the end of the 1924 season, officially due to pollution but probably also because it was restricted for use by the white people only and pressures were mounting for a comparable facility for the black population. Washington was then a segregated city and a 1922 proposal "for establishment of a bathing beach for the colored residents of the District" at the lower end of Columbia Island on the Virginia side of the river was never implemented.[7] In 1925 the Washington Star memorialized the closing of the Tidal Basin bathing beach with a cartoon showing Mr. D.C. in his bathing togs and a downcast expression while observing a sign, "Tidal Basin Bathing Beach Closed by Order of Congress" (Fig. 3).

Swimming continued "Up the River" above Key Bridge until 1926 and beyond. This was described by a Washington Post "Up the River Thrills Thousands in Summertime" article as taking place from "numerous summer cottages that line both banks of the historic Potomac."[8] Swimming access also was provided by entrepreneurs, one of whom was Capt. J. R. Dempsey. The Post reported, "The ordinary swimmers off the Dempsey float seem to have even more fun than the experts. Daily it's a laughing, shouting, carefree crowd." (Fig. 4).

Our research hasn't discovered for certain when the swimming from the numerous summer cottages, camps, and commercial floats above Key Bridge was discontinued. However, on the District of Columbia side the Federal Government bought the C&O Canal Company property in 1938 and the National Park Service ordered residential cottage

Illustration from the Washington *Star*, June 10, 1925, when the Tidal Basin beach was closed. Courtesy Montgomery County (Md.) Library.

FIGURE 3



A real ole swimmin' hole. 7-2-1922

FIGURE 4

Swimmers in the Potomac above Key Bridge in 1922. Photo from the Washington Post, July 2, 1922.

owners to vacate in 1941.[9] Probably this action and the similar clearing of occupants from the Virginia shoreline for the George Washington Memorial Parkway ended the era of group swimming in the stretch between Key and Chain Bridges which started with the first camp in 1911.[10]

In 1957 an ICPRB publication on recreation reported that "the National Capital Parks restricts swimming in the Potomac River along the river frontage under its control from the vicinity of Quantico to Great Falls."[11] It went on to say, "People do swim here and there along this section during hot weather, but in most instances it is against the recommendations of local health authorities." The report also stated, "All of the Anacostia River which traverses the eastern part of the District of Columbia is heavily polluted and restricted from swimming by both the District and Maryland health authorities."

2. Current Status - District of Columbia regulations, effective August 27, 1971, and still in existence, prohibit water contact recreational activity in the Potomac and Anacostia Rivers, the Washington Ship Channel, Rock Creek and Oxon Run and their tributaries "due to high levels of fecal and other pollutants."[12] The latter condition no longer exists on the Potomac during dry weather periods as a result of the elimination of dry weather overflows from combined sewers and the upgrading and expansion of wastewater treatment, particularly at the District's Regional Blue Plains wastewater treatment plant. During storms, runoff from both separate storm sewers and combined sewers, the latter also containing a small percentage of sanitary sewage, continue to cause pollution problems. The strong tidal currents and net downstream movement of water in the Potomac River tends to improve quality within a day or two after storms. This flushing action is much less in the Anacostia River which has a much smaller watershed, has much lower net downstream flow, and is much shallower.

The reduced or even elimination of the health hazard from water contact sports during dry weather periods on the Potomac led to a change in the signs along the Potomac prohibiting water contact. In 1981 the Director of the D.C.

Department of Environmental Services recommended deletion of the language, "This water is a health hazard. This stream contains harmful bacteria and viruses. Wash with soap any animal that has been in contact with water", and commented that the "present upper section of the signs are sufficient to protect the safety of the public, i.e., Sorry...No Swimming, No Water Skiing, No Scuba Diving."13/ The National Capital Region of the National Park Service changed the signs accordingly. Due to lack of supervision and facilities, safety remains a primary concern on the Potomac within the District even during dry weather periods.

D.C. Harbor Police have permitted annual raft races in August off East Potomac Park (Hains Point) since 1978, at which many of over a thousand rafting participants are in the water much of the time.14/ Ample supervision, however, has always been provided by the harbor police from boats and the National Park Police on shore where tens of thousands gather to enjoy the fun.

3. Future Demand for River Bathing

The demand for river bathing may be influenced by a number of factors, e.g., the price of auto fuel, the availability of public transportation, and access to the river bank. Preceived as well as actual water quality will be a prime factor; also safety and esthetic considerations such as currents, shoreline characteristics, and bottom conditions will influence demand. The previously mentioned outdoor recreation survey, which found swimming the first preference among area residents, did not differentiate between swimming in artifical pools and river bathing. However, as described above, hundreds of participants in the annual Potomac raft races take advantage of the opportunity to play in the river as well as on it. Also many boaters water ski in Smoot Cove just downstream from the District line in Maryland where regulations do not prohibit water contact sports. Access to the cove from land is difficult but numerous boaters swim from their anchored boats. The demand appears to depend on river bathing opportunities; in other words, the supply creates the demand.

II. Possible Bathing Beach Sites in the Washington Metropolitan Area

A. Water Quality Standards and Designated Water Uses

The existing District of Columbia water quality standards list only the segment of the Potomac River between Key Bridge and the Montgomery County, Maryland boundary for future use for swimming (Class A primary contact recreation) and none of the Anacostia River.[15] No portion of either river is listed as presently acceptable for swimming as a designated use but both are designated for boating (Class B secondary contact recreation).

In 1981 the District developed revised water quality standards which are yet to be approved by the Council.[16] The revised standards list all of the Potomac and Anacostia River as acceptable at present for boating (Class B) and for future restoration to swimming (Class A).

The Potomac River above and below the District of Columbia is within the State of Maryland except for the Virginia embayments in the estuary. The Potomac in Maryland near the District is classified for primary water contact recreation, i.e., swimming, and so are the Virginia embayments below the District line.

The major criterion for swimming required in all the standards is number of fecal coliform bacteria. The limit on number of fecal coliform bacteria is a geometric mean of five samples not to exceed 200 organisms per hundred milliliters of sample (200 orgs/100 ml) with no more than 10 percent of the samples having greater than 400 orgs/100 ml.

B. Water Quality Surveys of Potential Bathing Beach Sites

In 1981 the D.C. Water Hygiene Division planned surveys for the summers of 1981 and 1982 to determine the quality of three potential bathing beach sites on the Potomac. Two are in the segment between Key and Chain Bridges near Three Sisters Island and Fletcher's Boat House. The

third is the Tidal Basin. The report on the 1981 summer survey is scheduled for April 1982 but was not available at the time this draft report was prepared. The second of the planned surveys is still scheduled for the summer of 1982.

C. Potential Bathing Beach Sites

General - All of the sites discussed briefly below would require structural and non-structural planning and development work, including institutional and management arrangements in and among government agencies with probably some private sector involvement. Among the structural work common to all would be shoreline improvement for bathers alongside and in the water at least to wading depths and bathhouse and rest room structures. If access by public transportration is not convenient, consideration of auto parking space would be necessary. Operational arrangements would include water quality monitoring, safety and facilities maintenance and supervision, litter clean-up, etc. It is impossible to estimate costs at this time but user fees might cover part of the costs. Attraction of enough users to defray a significant part of the costs might depend on the availability of other recreational opportunities in or near the bathing area, e.g., refreshment stands, electronic games, etc.

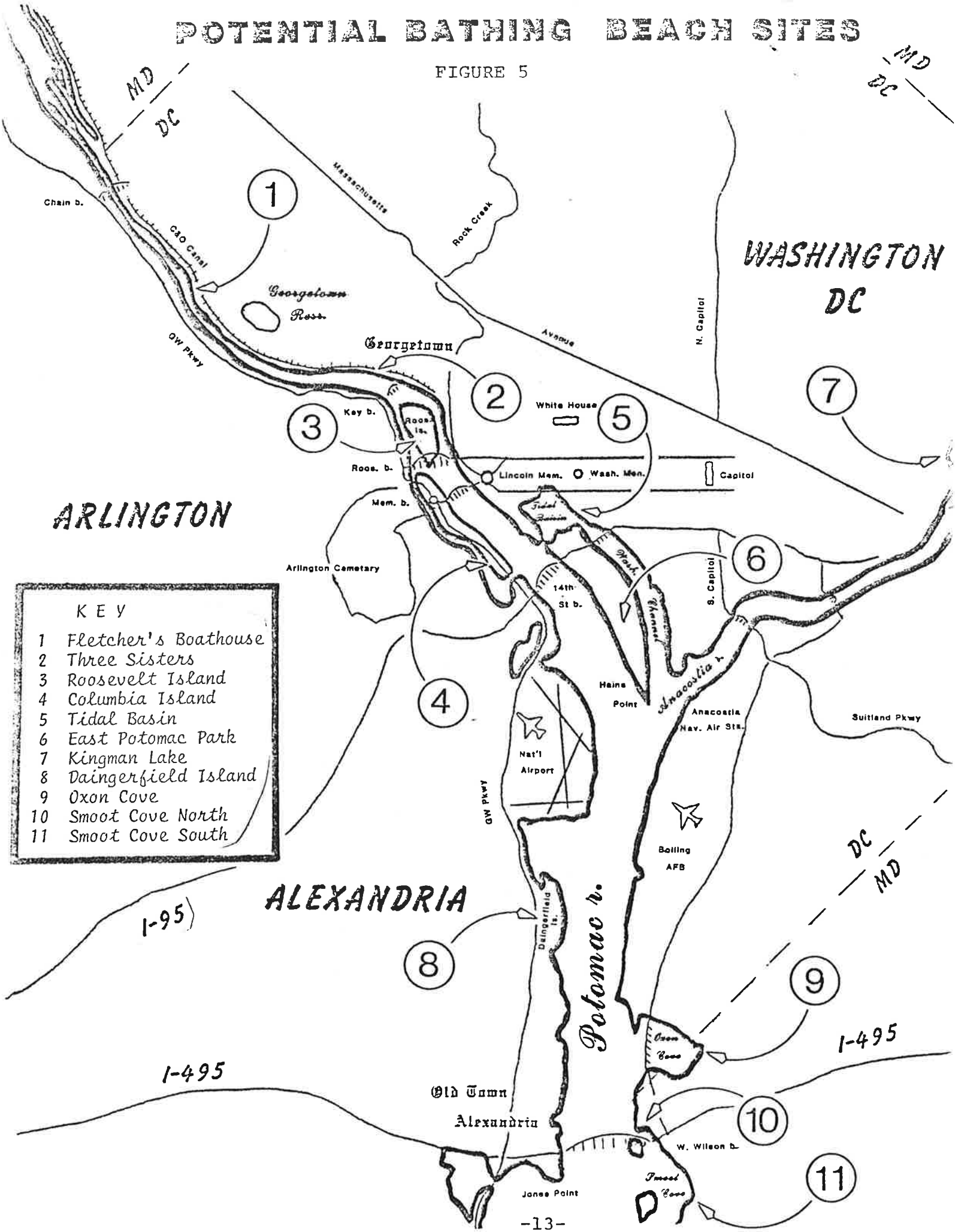
Specific Sites - (See Figure 5)

1.& 2. Upper Potomac Tidewater between Key Bridge and Chain Bridge (e.g., near Fletcher's Boathouse and Three Sisters Island)

The segment of the Tidal Potomac between Key Bridge and Chain Bridge, about 3 1/2 miles long, is probably the cleanest portion of tidal waters within the District of Columbia. The shoreline on both sides is relatively undeveloped, being protected by the George Washington Memorial Parkway on the Virginia side and the C & O National Historical Park on the DC side. Both are administered by the National Park Service.

POTENTIAL BATHING BEACH SITES

FIGURE 5



KEY

1 Fletcher's Boathouse
2 Three Sisters
3 Roosevelt Island
4 Columbia Island
5 Tidal Basin
6 East Potomac Park
7 Kingman Lake
8 Daingerfield Island
9 Oxon Cove
10 Smoot Cove North
11 Smoot Cove South

As mentioned previously in this report, this "Up the River" segment of the Potomac was used by hundreds of swimmers during the 1920s. Swimmers had access from numerous summer cottages and also facilities provided by private entrepreneurs, which included floating docks anchored to the shoreline.

A summer 1981 special water quality study by the DC Department of Environmental Sevices found that the water near Three Sisters Island and Fletcher's Boathouse in this segment met bacterial standards for swimming. A similar study is scheduled for the summer of 1982.

This "Up the River" segment of the Potomac has great potential for bathing from the shoreline, perhaps the greatest within the D.C. boundaries. However, access and facilities for bathers would have to be planned and developed which are compatible with existing uses of the shoreline. Supervision for bathing safety would be very important because hazardous currents and underwater rock formations are more likely to be encountered by swimmers in this segment than below Key Bridge where the tidewater river begins to widen considerably.

3. Roosevelt Island

Roosevelt Island, which is approximately 80 acres in size, is situated in the main stem of the Potomac River opposite Georgetown. Tne National Park Service administers the island. The shoreline is undeveloped and the gradient slopes gently, around the entire island. The Theodore Roosevelt Memorial is the main feature on the island while the remainder of the island is generally maintained in its natural setting.

4. Columbia Island

Columbia Island which approximates Roosevelt Island in size is bisected by the George Washington Memorial Parkway. A lagoon of approximately 50 acres is situated between the island and the Pentagon. The island, for

the most part, is dedicated to open space associated with the Parkway, a few statues, some picnicking, a commuter parking lot, and a marina. The lagoon may offer the best bathing beach opportunity inasmuch as the Parkway is in proximity and parallels the main stem of the river.

5. Tidal Basin

The Tidal Basin, covering approximately 100 acres between the Washington Monument and the Jefferson Memorial, is under the jurisdiction of the National Park Service. It connects the main stem of the Potomac tidewater on the southwest with the Washington Channel on the southeast through tidal gates which provide for tidal flushing of the channel. As mentioned previously in this report, the Tidal Basin was used for public bathing from 1918 through 1924. Currently it is used for fishing from the shoreline and for paddle boats rented from a National Park Service concessionaire. According to prelimnary results from the DC Department of Environmental Services' 1981 survey, the bacterial quality did not meet swimming standards.

6. East Potomac Park

The 330 acre park is an Island surrounded by the Potomac River, Washington Channel and the Tidal Basin. It is the central water focus in the greater metropolitan area. Some 210 acres are dedicated to a 36 hole golf course with the remainder occupied by athletic fields and passive recreational areas. East Potomac Park, administered by the National Park Service, is very popular and is heavily used.

Three potential bathing opportunities are envisioned in the Park.

They are:

1. In the main stem of the Potomac River.

2. In the Washington Channel (Due to boat traffic additional safety precautions are necessary, but historical data indicate a good potential from a water quality standpoint).

3. In the heart of the Park.

In the first two instances the breakwall would have to be removed and major shoreline restructuring would be required. In the later instance, a lake bed would be carved out and a channel dug to and from the newly created lake. Water flows and water treatment could be controlled.

The Federal City Council has recommended that the size of the golf course be reduced and the resultant land (approximately 60 acres) be made available for general recreational purposes. A swimming beach might be an appropriate use within the parameters of their proposal.

7. Kingman Lake (Anacostia River)

Kingman Lake is a relatively shallow channel separated from the main channel of the Anacostia River by the Burnham Barrier created by dredging for flood control purposes. The Lake extends for about 1 3/4 miles southerly from the National Arboretum to the end of the barrier near the railroad bridge crossing of the Anacostia River. It is located within the Anacostia Park-West Bank. The park is 570 acres of open space in various stages of development and use by the public and is under the jurisdiction of the National Park Service (NPS).

The original development concepts for Anacostia Park were prepared for the NPS by Lawrence Halprin and Associates and were generally approved by the National Capital Planning Commission in 1968.17/ Two of Halprin's major proposals for the West Bank included a Tivoli Gardens type park around Kingman Lake and development of the Lake for boating and swimming.

The quality of the Lake is poor, similar to the Anacostia River in that segment. The poor quality is due to storm runoff from the city and upstream, particularly combined sewer overflows from the D.C. Northeast Boundary Trunk Sewer which serves approximately one-third of the combined sewer area of the District.

A 1970 study by Roy F. Weston, Inc., proposed a project for storage and treatment of the combined sewer overflows so as to provide safe water for the areas in the Lake to be improved for swimming and fishing activities.[18/] The proposed project was described as providing treatment plant capacity to support a maximum of 30,000 bathers per day in the swimming lake. The total project cost in 1970 was estimated to be $45,200,000 as compared with estimated benefits of $72,750,000.

8. Daingerfield Island

The 100 acre island (which is not really an island) is situated between National Airport and Old Town Alexandria. A portion of the island is presently in use as a marina, nursery, and playfield--the remainder is undeveloped.

The National Park Service is presently circulating a proposed master plan for the island. It does not include a bathing beach. The Island, however, is large enough to accommodate such use and the shoreline appears suitable for a beach.

9. Oxon Cove

Oxon Cove, which is approximately 80 acres in size is situated within the National Park Services', Oxon Hill Children's Farm. The cove adjoins the Potomac just below the Blue Plains' Treatment Plant. During low river flows the effluent from Blue Plains affects the quality of water in Oxon Cove, however the effluent is chlorinated to reduce the bacteria. Interstate 295 is bridged over the confluence of the Cove and the river. The

Cove is quite shallow and completely undeveloped. Its headwaters flow out of S.E. Washington and the Dupont Heights area of Maryland.

10. Smoot Cove North

This portion of Smoot Cove involves approximately 20 acres immediately north of Woodrow Wilson Bridge (I-495). The land is under the administration of the National Park Service Administration and the City of Washington. The site is being considered as a sludge disposal area for the Blue Plains Treatment Plant. The Cove was created from a sand and gravel operation. The shoreline is undeveloped. Like Oxon Cove, this cove may be affected by the treated effluent from the Blue Plains treatment plant.

11. Smoot Cove South

Some 300 acres comprise this segment of Smoot Cove. The shoreline which is undeveloped, is treelined and contains surprising amounts of sand. The property is privately owned--and on the market. Prince George's County, Maryland, has developed a master plan for the area as has a private developer who apparently has a first option on the property. The Cove is spring fed and is used extensively for boating, fishing, water skiing and swimming. The positive outflow due to springs reduce the effect, if any, on the water quality from the Blue Plains treatment plant effluent discharged to the river about one mile upstream.

III. Evaluating the Feasibility of Bathing Beach Sites

Assessing the feasibility of the various potential bathing beach areas will require the combined efforts of experts from a host of disciplines; and from both the public and private sectors. A team approach is recommended. We suggest that the team include, but not be restricted to, representatives of the following entities:

D.C. Department of Environmental Services

U.S. Environmental Protection Agency

National Park Service

U.S. Army Corps of Engineers

State of Maryland

National Capital Planning Commission

D.C. Department of Recreation

U.S. Department of Transportation

D.C. Department of Transportation

D.C. Office of Business and Economic Development

Interstate Commission on the Potomac River Basin

Managers, engineers, planners, chemists, architects, microbiologists, financial advisors and others will be required to carry out necessary assessment activities. Citizens groups also should be represented.

In general, they must answer the traditional questions of what, when, where, who, and how much. The initial step of the assessment will be geared to reducing the number of sites to the best one or two candidates. In turn, and in-depth analysis will be conducted on these areas. Such important considerations as cost-benefit analysis, accessability, management, maintenance, site design, etc., will be included.

The final report on the selected site(s) will be the foundation for pursuing the dedication of a beach through public (Congress, Federal, State and Local Governments) and private channels. Obviously, a carefully designed program have to be developed to ensure political and community support for the return of swimming in the Nation's Capital.

A suggested schedule of events for carrying out the assessment is as follows:

June 82	Preliminary recommendation of sites to DC Dept. of Environmental Services for water quality assessment.

July 82	Organization of study team by WAWAG's Bathing Beach Committee.
	Adoption of evaluation criteria and study procedures.
August/ November 82	Preliminary investigation of all potential sites. (Application of criteria to areas, including consideration of DC water quality assessments performed during summer).
December 82/ February 83	Preparation of a report on the preliminary investigation-- including recommendations for prime sites for in-depth anaysis.
	Study team establishes procedures for the in-depth analysis.
March/July 83	In-depth analysis.
August/ September 83	Final Bathing Beach Report prepared.
October/ December 83	Public exposure.
	Public Meetings.
1984 and beyond	Implementation.

This report has been prepared by a Washington Area Waterfront Action Group Ad Hoc Task Force composed of:

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