5.1 INTRODUCTION

This chapter describes the year 2001 baseline inventory of boating-related facilities along with their repair, upgrade, and replacement needs, as identified by marina owner/managers and corroborated through survey analysis and field observations. This information has been assembled in order to ascertain the condition of existing boat-serving facilities in the Delta. The facility inventory also serves as a baseline against which demand projections of present and future facility needs in the Delta can be made (see **Chapter 6**, **Boating Facilities Demand Forecast**). Order of magnitude cost projections have been applied to the facility replacement needs from 2001 through the year 2020. In doing so, three approaches have been applied that address the estimated costs to replace, upgrade, or make repairs to marinas.

5.2 SUMMARY OF FINDINGS

The analysis presented here is based on data obtained from a survey of Delta boating facility providers. This survey was conducted during the months of July and August 2001. At that time, there were 95 marinas in the Delta for which site visits were scheduled. A team of two surveyors attempted to contact all 95 marina owner/ managers and successfully visited 65 facilities (68%). The team conducted site visits, measured docks, and interviewed facility managers and/or operators. Of the remaining 30 marinas, 12 were visited and measurements were taken, but the interviews could not be obtained. Nine owner/managers could not be contacted, so the sites were not visited. Five were private yacht clubs. The final four marina owners declined to participate in the survey.

Although the data for facility and replacement needs were not obtained for the remaining 30 marinas, inventory information regarding these facilities was gathered from the previous 1997 inventory of recreation facilities conducted by the Delta Protection Commission and from the *California Boater Guide to Harbors and Marinas*, issue 2001. Thus, 65 marinas have hard data taken from surveys and 30 marinas have data estimated from other sources. The survey instrument primarily contained questions pertaining to the quantification of existing boating-related facilities, the condition of facilities, and their estimated replacement date over the next two decades.

In general, survey data indicate that Delta marina facilities have had a long-term presence in the region, with 54 out of 61 of the respondents indicating their marinas have been in operation for 21 years or more. Of this number, 44 marinas are older than 40 years and 10 are between 20 and 40 years old. Due to the age of most of the marinas in the Delta, a large backlog of deferred maintenance was encountered during the site surveys.

Marina owners identified their facility replacement, upgrade, and repair needs in the following order of priority: dredging, docks/slips, dry boat storage, launch ramp lanes, parking, and transient docks. Twenty-two marina owners reported that their marinas presently need dredging. In addition, many marinas operators conveyed the desire to convert smaller boat slips to larger slips that could accommodate large boats over 26 feet in length and/or boats that can be berthed in the Delta year-round.

In addition to soliciting information from marina owners regarding repair, upgrade, and replacement needs, they were asked to identify "Dream Projects" for the future. One marina owner identified a hotel and a conference center as a "Dream Project." However, the majority of the people interviewed were more focused on meeting short-term facility maintenance and improvement needs. Their responses also included the following items**:** add or rebuild docks and slips, dredging, add sanitation pump stations, add or improve dry boat storage, add launch ramps, pave parking and roads, expand RV facilities, and add more restrooms.

Table 5-1 summarizes the 2001 baseline inventory of Delta boating related facilities.

Table 5-1

Delta Baseline Inventory of Facilities

Item	Quantity	Unit
Docks	1,887,886	sq. ft.
Covered Boat Slips	8,170	each
Uncovered Boat Slips	3,504	each
Marina Parking	8,725	spaces
Restroom Stalls	677	each
Shower Stalls	364	each
Dry Boat Storage	5,542	spaces
Launch Ramp Lanes	78	each
Vehicle/Boat Trailer Parking	2,115	spaces
Transient Dock Tie-Ups	309	each
Campsites	2,182	each
Day-Use Picnic	324	each
Sewage Pump out Stations	39	each
Fuel Stations	56	each
Oil Collection Stations	25	each
Bilge Pump-Out Stations	10	each

(For more detail, see Table 5-4)

These facilities are distributed throughout the Delta. **Table 5-2** shows the approximate percentage share of facilities broken down by the six Delta zones.

Table 5-2

Distribution of Delta Facilities

(Percent)

Zone	Distribution
North Zone	8%
Northwest Zone	1%
Central Zone	11%
West Zone Delta	55%
East Zone	19%
South Zone	6%
Total	**100%**

(For more detail, see Table 5-4)

The cost (expressed in constant year 2002 dollars) to repair or replace the existing facilities over the next 20 years is estimated to range from $107 million to $159 million.

5.3 METHODOLOGY

This section describes the methods used for the survey and analysis of the current inventory of Delta boating-related facilities. An overview of the study goals, survey development, testing and field applications, site visits, and data tabulation is described below.

STUDY GOALS

The goals for this facility inventory and study of improvement needs were determined jointly by the client (DBW) and the project team, and included:

- Upgrade the Delta boating facility inventory database.
- Establish the baseline inventory of current facilities to match against demand projections for the years 2000, 2005, 2010, 2015, and 2020 as discussed in **Chapter 6** of this study.
- Ascertain the current facility repair, upgrade, and improvement needs for all public-serving boating facilities.
- Apply magnitude of costs to the identified boating facility needs.

SURVEY DEVELOPMENT, TESTING, AND FIELDWORK

A sample survey was developed based on a previously developed boating facility provider survey. The sample survey was then tested on ten marina facilities by the field surveying team including the review and input from a marine facility engineer familiar with marina industry-related construction needs and costs in the Delta. The sample survey results were then critically reviewed and survey questions were adjusted as necessary to best accomplish the intended purpose of this study.

Facility operators were asked to estimate the future time when improvements were to be needed. The options offered included the *present* (rating one), *five years* (rating two), *ten years* (rating three), and *20 years* (rating four). The questions were devised to rank the marinas according to when, over the next 20 years, repair, upgrading, or replacement of facilities would be needed.

The survey team scheduled and undertook facility site visits during the months of July and August 2001. The collected survey data was tabulated and summarized by a recreation research specialist. The inventory data was then augmented with estimates for the 30 facilities not covered in the original survey. The augmented survey was then re-tabulated, with the results serving as the baseline for the status of 95 existing Delta boating-serving facilities included in the sample. The survey instrument is presented in **Appendix 5-1**.

There were two principal products developed through the survey and interview process; the baseline inventory of facilities and the order of magnitude cost determination.

Baseline Inventory

The survey and comparison research outlined above provided the ability to develop a baseline inventory of boating-related facilities.

Order of Magnitude Cost Determination

The magnitude of cost estimates based on indicator units of measure was determined with the help of an engineer specialized in marina construction and rehabilitation in the Delta. These order of magnitude estimates then served as a basis for determining present replacement, upgrade, and repair needs for marinas in the Delta. This exercise involved the formulation of three hypothetical facility cost approaches, each approximating the range of facility types presently found in the Delta. These hypothetical cost approaches are categorized as:

- **Cost Approach 1** – replace existing marinas
- **Cost Approach 2** – upgrade existing marinas
- **Cost Approach 3** – bring existing marinas to serviceable condition

Hypothetical cost approaches are included in **Appendix 5-3** of this report.

The costs are expressed in constant year 2002 dollars and are not adjusted for inflation over time.

5.4 INVENTORY OF EXISTING FACILITIES

A total of 65 marina facilities were surveyed and interviews with their managers or operators were recorded. Data for the remaining 30 facilities that could not be surveyed was derived from the Delta Protection Commission's *Delta Recreation Inventory, 1997* and from the *California Boaters Guide to Harbors and Marinas, 2001*. The resulting total, an inventory of 95 Delta boating facilities is included in this study. This 2001 inventory or baseline summary is presented in **Table 5-3** and then shown in **Table 5-4** broken down by Delta zones.

Based on survey data, the average marina in the Delta has 123 boat slips, 58 dry boat storage spaces, and 0.58 boat launch ramps.

Table 5-3

Delta Boating Facilities Year 2001 Inventory Summary

Facility	Unit of Measure	Number Surveyed	Number Not Surveyed[1]	Total	Average Quantity Per Marina	Number of Marinas with Facility	Percent of Marinas with Facility
Marinas	Each	65	30	95			
Docks	Sq. Feet	1,320,516	567,370	1,887,886	19,872.5	95	100%
Total Boat Slips	Number	8,329	3,345	11,674	122.9	95	100%
Covered Boat Slips	Number	5,828	2,342	8,170	86.0	68	72%
Uncovered Boat Slips	Number	2,501	1,003	3,504	36.9	77	81%
Transient Tie-ups	Number	206	103	309	3.3	50	53%
Dry Boat Storage	Spaces	3,810	1,732	5,542	58.3	63	66%
Launch Ramps	Number	37	18	55	0.6	55	58%
Launch Ramp Lanes	Number	53	25	78	0.8	55	58%
Marina Parking	Spaces	5,970	2,755	8,725	91.8	95	100%
Vehicle/Boat Trailer Parking	Spaces	1,425	690	2,115	22.3	55	58%
Restrooms	Stalls	463	214	677	7.1	95	100%
Showers	Stalls	248	115	363	3.8	75	79%
Day-Use Picnicking	Sites	215	109	324	3.4	46	48%
Sanitation pumping	Stations	27	12	39	0.4	38	40%
Camping	Sites	1,486	696	2,182	23.0	48	51%
Fueling	Stations	37	19	56	0.6	32	34%
Bilge Pump-out	Stations	7	3	10	0.1	10	11%
Oil Collection	Stations	17	8	25	0.3	25	26%

[1] *Unsurveyed marina facility data obtained from Delta Protection Commission 1997 Inventory and from Delta Directories and Maps.*

5.5 OVERVIEW OF SURVEY RESPONSES

The following is an overview of survey data gathered through the Delta boat-serving facilities study.

Marina Ownership

Categorical sorting of surveys indicated whether the facility was publicly owned and open to the public, privately owned (but open to the public), or private (closed membership), such as private yacht club type facilities. The great majority of the 95 marinas are privately owned but open to the general public. Only a few are public facilities (three) or privately run yacht clubs (five). For the purpose of this study, private yacht club surveys were tabulated and summarized separately and included in the supply and demand analysis. They were not included in the cost projections for future replacement, upgrade, and repair of facilities.

In the course of conducting this survey research and site visits, it was observed that the publicly-owned marinas generally differed from the private marinas in the following ways:

Public Marina Characteristics

- Typically accommodate boats under 26 feet in length (small boats)
- Typically larger in size, with more parking, launch ramp lanes, and a greater number of boat slips
- Generally include day-use and picnic facilities

Private Marina Characteristics

- Emphasize service for boats over 26 feet in length (large boats)
- Frequently include on-site dry boat storage
- Typically include retail sales, restaurants, or other service-type amenities

The private-sector providers as a whole appear more focused on serving the boating facility needs of the large-boat owners, with facilities and services that have income potential, while the public sector providers more typically focus on serving the general public and boat owners who operate small boats.

UPGRADES OR EXPANSIONS DESIRED BY MARINA OWNER/OPERATORS

Survey respondents were asked to identify boating-related facilities that need to be upgraded and/or expanded in 2001 or within the following 5, 10, 15, or 20 years. Generally, marina owner/managers were focused on short-term needs. For this reason, few responses were obtained for improvement needs beyond 2001 or within the next five years. Consequently, it was necessary to develop additional criteria to evaluate facility replacement needs that could be anticipated over the next two decades. These additional criteria are described **Table 5-5** and expanded in **Section 5.6.**

The 65 marina owners who responded to the survey identified their priorities as follows:

Improvement Type:	Responses:
Dredging	30
Docks/slips	29
Dry boat storage	21
Launch ramp lanes	20
Parking	15
Transient docks	10

Dredging

Dredging was the most frequently cited need related to the range of repair or improvement options of those responding to the survey. The removal of silt that encumbers marina entrances is particularly problematic to marina owners because of the complex environmental laws and the number of regulatory agencies from which a marina owner/manager must gain approvals in order to undertake dredging activities. Frustration with this process was expressed by numerous marina owner/managers. Some owner/managers have virtually given up trying to obtain permits for dredging as a result. A remedy suggested in the course of this study would establish a lead agency with the responsibility for issuing dredging permits resulting in a "one-stop shopping permit process," which could maintain regulatory overview but would be more user-friendly to applicants.

Docks

Based on survey responses, it is not surprising that the upgrading of docks (which includes marina slips and gangways) is a high priority to marina owner/managers. 71 percent of the marinas in the Delta have been in operation for 40 years or more. Many of the older facilities constructed in the 1960's or earlier were built to primarily accommodate the smaller boat size. Field survey staff observed that when docks are upgraded, boat slips are generally increased in size to accommodate larger boats. These large slips accommodate boats that are typically berthed in marinas year-round, while small boats are primarily berthed only during the warmer prime boating season.

Field note data from the surveyor team quantified the number and size distribution of boat slips at each marina surveyed. Of the total 95 marinas quantified in this survey, there are an estimated 11,674 boat slips. Of this amount, 2,918 (25%) are for small boats and 8,756 (75%) are for large boats.

Dry Boat Storage

Among the 21 marina owner/operators who indicated that they had plans to upgrade or expand dry storage in the future, four indicated that they plan to do so at the present time. Dry boat storage includes boats stored on trailers in storage yards and boats stacked on top of each other on racks. The latter method of storage is generally preferred by marina owner/managers because of the space savings. Boat owners also prefer this method of storage because it provides their boats with better

protection from the weather and vandalism. Currently, there are an estimated 1,110 stack-type dry boat storage spaces in the Delta, which represent an estimated 20% of the total 5,542 of dry storage space inventory.

Launch Ramp Lanes (with boarding floats)

Twenty marina owner/managers responded that they have plans to upgrade or expand launch ramp lanes at their facilities. Of this group, four are planning to do so currently and one within the next five years. Launch ramp facilities generally accommodate the smaller boats that can be towed or personal watercraft (PWC). At this time, there are 78 launch ramp lanes in the Delta located at 55 launch ramps.

Parking Facilities

The desire for additional parking spaces appears to directly correspond with the need for additional launch ramp lanes and boat slips. This trend is generally consistent with the expressed plans of marina operators for upgrading and expanding these boating facilities in tandem. During the field survey work, a significant amount of deferred maintenance needs in Delta marina parking facilities was observed.

Transient Boat Tie-Ups

Transient boat tie-ups are a convenience to boaters. They allow boaters to stop at marinas while they are in-route within the Delta waterways to pick up supplies, enjoy a restaurant meal, or explore a Delta attraction such as the community of Walnut Grove. Among the ten marina owner/managers who responded "yes" to the question regarding plans to upgrade or expand transient dock tie-ups, four indicated they plan to do so in the near future.

5.6 CAPITAL IMPROVEMENT MAGNITUDE OF COST ESTIMATES

In order to estimate the facility capital replacement costs of the 95 marinas in the Delta over the next 20 years, it was necessary to develop criteria that could be used to apply the three cost approaches described in **Section 5.3** to the 20-year forecasted facility needs of marinas. This task was accomplished by creating a matrix with three variables – marina building materials, age of marinas, and present observed condition of marinas. Marina building materials were classified by whether foam floatation materials were exposed or not and whether the marina was made of wood or other materials. Exposed foam with wood structural/ decking material was given the lowest rating. Encased foam with non-wood structural materials was given the highest rating. Marina facilities greater than 40 years old were given the lowest rating while those built within the last 20 years were ranked the highest. Finally, the observed condition of marinas was ranked from poor to excellent with the use of predetermined evaluative criteria. Facilities receiving the lowest aggregate ranking were deemed in need of replacement, repair, or upgrade immediately in order to bring the facility up to a satisfactory condition. The next level of ranking would require remedial actions by 2005 and the next level ranking by the year 2010 and on to 2020. The detailed rating for each marina facility is shown in **Table 5-5**. A summary of needs measured in square footage requirements is quantified by time horizon in **Table 5-6** and then quantified by Delta zone in **Table 5-7.**

Table 5-6

Square Footage Replacement, Upgrade, and Repair Needs by Time Horizon

Year	Square feet *(000's)*
2001	444
2005	519
2010	319
2015	145.
2020	364
Total	**1,791**

The five surveyed yacht clubs were excluded from these square footage quantifications because they are not eligible for public funding programs.

Table 5-7

Square Footage Replacement, Upgrade, and Repair Needs by Delta Zone

Delta Zone	Square feet *(000's)*
North	145
Northwest	16
Central	198
West	986
East	342
South	104
Total	**1,791**

Cost Approaches Application

The following is a brief description of the hypothetical cost approaches developed for this analysis. (Detailed descriptions of the cost approaches may be found in **Appendix 5-3.**)

Cost Approach 1 quantifies the replacement cost for a marina of 190 slips along with dredging. Costs for this approach are based on a unit of $142 per square foot to demolish and replace a major marina operation

Cost Approach 2 quantifies the upgrade cost for an existing marina with 150 slips. Both Cost Approach 1 and Cost Approach 2 include the full range of facilities found at a typical marina operation in the Delta. This includes marina slips, docks, launch ramps, parking, restrooms, fueling and pump-out equipment, and dry storage. The cost estimate also included dredging. Costs for this approach are based on the cost to upgrade an existing marina and assumes a $44 per square foot unit cost.

Cost Approach 3 quantifies the basic repairs to small (under 75 slips) and aging marinas that would be required to keep them serviceable until they can be upgraded or replaced in the future. Costs for this approach are based on the cost to make extensive repairs to an existing marina and assumes a $27 per square foot unit cost.

Next, the square foot costs from each of the three approaches were applied to four scenarios for cost forecasting. The methodology involved matching the square foot unit costs of each of these approaches in the four conceptual scenarios based on the type of building materials, age, and present condition of each of the 65 marinas that were visited and surveyed in this study. This information was then tabulated and a distribution based on the 65 surveyed marinas was then applied to the 30 marinas that were not surveyed.

This cost estimate approach does not take into account which of the three possible choices (replacement, upgrade, or repair) the marina owner/managers might choose over the next 20 years, nor can it anticipate other market forces or entrepreneurial strategies that could affect the types of facilities reviewed in this study. It can, however, provide some idea of the probable dollar demands that will be required over the 20-year period. In order to provide this potential dollar demand, four different cost scenarios were selected and cost estimates developed for each alternative based on the three hypothetical cost approaches. The resulting range established is approximately $107 to $159 million that would be required over the next 20 years.

Cost Application by Year

The four conceptual scenarios for cost projections are as follows:

Scenario 1-$127 million
- 33% Replacement
- 33% Upgrade
- 33% Repair

Scenario 2-$159 million
- 50% Replacement
- 25% Upgrade
- 25% Repair

Scenario 3-$115 million
- 25% Replacement
- 50% Upgrade
- 25% Repair

Scenario 4 - $107 million
- 25% Replacement
- 25% Upgrade
- 50% Repair

Table 5-8 presents the four hypothetical scenarios applied to costs for marina dock facilities (in square feet) for replacement, upgrade, or repair broken down by the specified time horizons of 2001, 2005, 2010, 2015, and 2020.

Cost Application by Delta Zones

In applying costs to boating facilities – replacement, upgrade, or repair needs – **Scenario 1** was selected because it represents the average of the other three scenarios**.** Based on this scenario**, Table 5-9** quantifies the square footage of docks and the cost to replace, upgrade, or repair facilities for the specified time horizon years of 2001, 2005, 2010, 2015, and 2020.

Next, the total costs were distributed among the six Delta zones as shown in **Table 5-10**. To accomplish this, the facility square footage estimates shown in **Table 5-5** were used as the basis for distribution. It was then possible to apply the cost approach data to the quantified square footage. **Table 5-11** presents the summary information expressed in **Table 5-9** by the horizon years of 2001, 2005, 2010, 2015, and 2020.

Table 5-11
Scenario 1
Cost by Horizon Year

Horizon Year	Cost *(000s)*	Percent
2001	$31,475	25%
2005	$36,788	29%
2010	$22,617	18%
2015	$10,288	8%
2020	$25,787	20%
Total	**$126,955**	**100%**

(For more detail see Table 5-9)

Finally, **Table 5-10** presents the detailed breakdown of costs distributed among the six Delta zones based on the three developed approaches. This information is also summarized in **Table 5-12.**

Table 5-12
Cost by Delta Zone

Delta Zone	Cost *(000s)*	Percent
North	$10,310	8%
Northwest	$1,099	1%
Central	$14,004	11%
West	$69,930	55%
East	$24,270	19%
South	$7,441	6%
Total	**$126,955**	**100%**

(For more detail see Table 5-10)

This information not only provides a listing of the replacement, upgrade, and repair needs of Delta marinas in the next 20 years, it also identifies when and where those improvements are most likely to be needed. Since all costs presented in this study are expressed in 2002 dollars, it will be necessary in future years to factor them by the actual cost of living index for budgetary and project development purposes.

Facility Replacements, Upgrades, or Repairs by Delta Zone

Table 5-13 presents the total of costs for replacement, upgrade, and repair for the period of 2001 through 2020. This includes all three cost approaches for **Scenario 1**. The square footage has been divided into three equal segments for each approach. The numerous facilities and units are identified, as well as the related unit costs and total costs for each type of facility. The total estimated cost is $127 million.

Table 5-4
Facility Baseline Inventory by Delta Zone (95 Marinas)

Facility Type	Unit	North Zone	Northwest Zone	Central Zone	West Zone	East Zone	South Zone	Total
Marinas								
Surveyed Marinas	Each	5	1	9	36	10	4	65
Unsurveyed Marinas	Each	3	0	3	20	3	1	30
Total	Each	**8**	**1**	**12**	**56**	**13**	**5**	**95**
Docks								
Surveyed Marinas	Sq. Feet	159,218	15,506	120,256	626,956	322,056	76,524	1,320,516
Unsurveyed Marinas	Sq. Feet	20,334	0	77,274	384,219	58,513	27,030	567,370
Total	Sq. Feet	**179,552**	**15,506**	**197,530**	**1,011,175**	**380,569**	**103,554**	**1,887,886**
Total Boat Slips								
Surveyed Marinas	Each	888	76	881	3,918	2,174	392	8,329
Unsurveyed Marinas	Each	100	0	390	2,072	612	171	3,345
Total	Each	**988**	**76**	**1,271**	**5,990**	**2,786**	**563**	**11,674**
Covered Boat Slips								
Surveyed Marinas	Each	666	76	740	2,460	1,560	326	5,828
Unsurveyed Marinas	Each	88	0	315	1,486	359	94	2,342
Total	Each	**754**	**76**	**1,055**	**3,946**	**1,919**	**420**	**8,170**
Uncovered Boat Slips								
Surveyed Marinas	Each	222	0	141	1,458	614	66	2,501
Unsurveyed Marinas	Each	38	0	146	605	163	51	1,003
Total	Each	**260**	**0**	**287**	**2,063**	**777**	**117**	**3,504**
Transient Tie Ups								
Surveyed Marinas	Each	17	18	54	53	52	12	206
Unsurveyed Marinas	Each	3	0	15	62	17	6	103
Total	Each	**20**	**18**	**69**	**115**	**69**	**18**	**309**
Dry Boat Storage								
Surveyed Marinas	Each	30	50	290	2,189	461	790	3,810
Unsurveyed Marinas	Each	60	0	231	1,083	278	81	1,732
Total	Each	**90**	**50**	**521**	**3,272**	**739**	**871**	**5,542**
Launch Ramps								
Surveyed Marinas	Each	2	1	7	16	8	3	37
Unsurveyed Marinas	Each	1	0	2	11	3	1	18
Total	Each	**3**	**1**	**9**	**27**	**11**	**4**	**55**
Launch Ramp Lanes								
Surveyed Marinas	Each	5	1	8	23	11	5	53
Unsurveyed Marinas	Each	1	0	3	16	4	1	25
Total	Each	**6**	**1**	**11**	**39**	**15**	**6**	**78**
Marina Parking								
Surveyed Marinas	Spaces	428	38	555	3,092	1,552	305	5,970
Unsurveyed Marinas	Spaces	94	0	363	1,734	437	127	2,755
Total	Spaces	**522**	**38**	**918**	**4,826**	**1,989**	**432**	**8,725**
Vehicle/Boat Trailer Parking								
Surveyed Marinas	Spaces	125	25	287	583	280	125	1,425
Unsurveyed Marinas	Spaces	23	0	88	442	106	31	690
Total	Spaces	**148**	**25**	**375**	**1,025**	**386**	**156**	**2,115**

Table 5-5
Delta Boating Facility Replacement Schedule

Facility Type	Unit	North Zone	Northwest Zone	Central Zone	West Zone	East Zone	South Zone	Total
Restroom Stalls								
Surveyed Marinas	Each	20	4	68	250	93	28	463
Unsurveyed Marinas	Each	7	0	28	135	34	10	214
Total	Each	**27**	**4**	**96**	**385**	**127**	**38**	**677**
Shower Stalls								
Surveyed Marinas	Each	4	4	42	139	49	10	248
Unsurveyed Marinas	Each	4	0	15	73	18	5	115
Total	Each	**8**	**4**	**57**	**212**	**67**	**15**	**363**
Day Use Picnic Sites								
Surveyed Marinas	Each	36	0	39	112	10	18	215
Unsurveyed Marinas	Each	4	0	13	71	16	5	109
Total	Each	**40**	**0**	**52**	**183**	**26**	**23**	**324**
Camp/RV Sites								
Surveyed Marinas	Each	30	0	156	1,061	218	21	1,486
Unsurveyed Marinas	Each	24	0	91	440	109	32	696
Total	Each	**54**	**0**	**247**	**1,501**	**327**	**53**	**2,182**
Fuel Stations								
Surveyed Marinas	Each	3	0	5	17	8	4	37
Unsurveyed Marinas	Each	0	0	2	11	4	2	19
Total	Each	**3**	**0**	**7**	**28**	**12**	**6**	**56**
Sanitation Pumping Stations								
Surveyed Marinas	Each	4	0	4	11	7	1	27
Unsurveyed Marinas	Each		0	2	7	2	1	12
Total	Each	**4**	**0**	**6**	**18**	**9**	**2**	**39**
Bilge Pumping Stations								
Surveyed Marinas	Each	1	0	2	1	3	0	7
Unsurveyed Marinas	Each		0		2	1	0	3
Total	Each	**1**	**0**	**2**	**3**	**4**	**0**	**10**
Oil Collection Stations								
Surveyed Marinas	Each	1	0	1	8	6	1	17
Unsurveyed Marinas	Each		0	1	6	1	0	8
Total	Each	**1**	**0**	**2**	**14**	**7**	**1**	**25**

Note:

Surveyed Marinas	65 Each
Unsurveyed Marinas	30 Each
Total Marinas	95 Each

Table 5-5
Delta Boating Facility Replacement Schedule

Marina Facility Survey Identification Number	Estmated Square Footage	Zone	Building Material (1)	Building Material Rating(1)	Age Rating (2)	Condition Rating (3)	Agregate Rating
5	20,651	A	U	1	1	2	4
26	5,762	A	U	1	1	1	3
2	8,996	A	U	1	1	2	4
Sub Total (Zone A)	**35,409**						
11	15,506	B	U	1	1	2	4
Sub Total (Zone B)	**15,506**						
29	4,900	D	U	1	1	1	3
42	7,268	D	U	1	1	1	3
51	2,808	D	U	1	1	1	3
4	9,643	D	U	1	1	2	4
6	4,812	D	U	1	1	2	4
9	8,135	D	U	1	1	2	4
15	21,068	D	U	1	1	2	4
18	41,908	D	U	1	1	2	4
30	13,486	D	U	1	1	2	4
38	25,529	D	U	1	1	2	4
41	3,178	D	U	1	1	2	4
44	8,981	D	U	1	1	2	4
45	41,906	D	U	1	1	2	4
50	21,688	D		1	1	2	4
37	7,150	D	U	1	1	2	4
43	1,570	D	U	1	2	1	4
Sub Total (Zone D)	**224,030**						
54	9,488	E	U	1	1	2	4
63	13,204	E	U	1	1	2	4
Sub Total (Zone E)	**22,692**						
58	16,808	F	U	1	1	2	4
Sub Total (Zone F)	**16,808**						
Sub Total (2001)	**314,445**						
33	23,183	C	U	1	1	3	5
36	3,708	C		1	1	3	5
Sub Total (Zone C)	**26,891**						
7	1,128	D		1	1	3	5
12	20,240	D	U	1	1	3	5
13	8,058	D	U	1	1	3	5
14	17,209	D	U	1	1	3	5
24	40,217	D	U	1	1	3	5
25	23,580	D	U	1	1	3	5
3	41,936	D	U	1	1	3	5
48	33,285	D	U	1	2	2	5
40	12,968	D	U	1	1	3	5
10	8,833	D	U	1	2	2	5
17	5,924	D		1	2	2	5
Sub Total (Zone D)	**213,378**						
56	9,792	E	U	1	2	2	5
60	35,370	E	U	1	1	3	5
65	25,872	E	U	1	1	3	5
59	21,472	E	U	1	2	2	5
3	34,310	E	U	1	2	2	5
Sub Total (Zone E)	**126,816**						
62	2,718	F	U	1	2	2	5
61	3,690	F	U	1	3	1	5
Sub Total (Zone F)	**6,408**						
Sub Total (2005)	**373,493**						