U.S. Department of the Interior
Bureau of Land Management

ENVIRONMENTAL ASSESSMENT

DOI-BLM-AZ-C030-2009-0055-EA

CAAZRI 3227

Pirate Cove Dock Improvements

Applicant: The Pirate Cove Marina LLC
SAN BERNARDINO COUNTY, CALIFORNIA

Lake Havasu Field Office
2610 Sweetwater Avenue
Lake Havasu City, AZ 86406

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Contents

1. CHAPTER 1 - INTRODUCTION

1. Project Location

Pirate Cove Marina is an existing marina located at Moabi Regional Park (Park Moabi) just upstream of Topock Marsh and south of Needles, along the western shore of the Colorado River in San Bernardino County, California (Figures 1 and 2). The legal description is Lots 11 and 12 of Section 6, Township 7 North, Range 24 East, San Bernardino Base and Meridian. The existing marina concession lease consists of 16.89 acres.

2. Project Background

The site is leased to San Bernardino County (the County) by the U.S. Bureau of Reclamation (BOR) under Lease No. 14-06-300-1496 (issued September 15, 1964) and managed by the U.S. Bureau of Land Management – Lake Havasu Field Office (BLM-LHFO, CAAZRI 3227). The lease was extended by BLM on July 11, 2002, and expires on September 14, 2039. The County has traditionally subleased the marina concession. The Pirate Cove Marina LLC sublease has been in existence since December 2007.

3. Purpose and Need for the Proposed Action

The purpose of the Proposed Action is to upgrade and improve Park Moabi facilities and provide for accessible, safe and enjoyable recreation opportunities for public appreciation while avoiding or minimizing impacts to cultural and natural resources.

4. Decision to be Made

The BLM LHFO will decide whether or not to grant approval to San Bernardino County for construction and development of facilities at the Pirate Cove Marina.

5. Scoping and Issues

The Proposed Action was presented to the BLM interdisciplinary NEPA team on August 25, 2009. A Tribal consultation letter notifying the Tribe of the proposed action and requesting Tribal comment was sent on October 5, 2010. The following scoping issues were identified: Air Quality, Areas of Critical Environmental Concern, Cultural, Historic & Paleontological Resources, Fish Habitat, Invasive & Non-Native Species, Native American Religious Concerns, Noise, Recreation, Socioeconomics, Threatened or Endangered Species, Visual Resources, Water Quality (Drinking or Groundwater), Wetlands/Riparian Zones, and Wildlife.

2. CHAPTER 2 - PROPOSED ACTION AND ALTERNATIVES

1. Proposed Action (Alternative 3)

Pirate Cove Marina proposes to increase the boat docking capacity at the existing marina by installing four new docks, and constructing a zip line for recreational purposes. All existing and Proposed Action features are within the scope of the existing BOR lease and BLM recreation policy. Proposed features are located within the existing 16.89-acre concessionaire area with the exception of 4 zip line towers. Four zip line towers will be placed off the Pirate Cove Marina sublease on land within the existing Park Moabi lease. Each proposed feature is described below and shown in Figure 3. A Section 10 permit from the U.S. Army Corps of Engineers (USACE) for the docks was issued on August 25, 2008. A modification to this permit is currently being processed by the Corps. A Section 10 permit is currently being processed by the Corps for the zip line (for crossing a navigable waterway).

1. Project Component – Boat Docks

Four new docks would be placed adjacent to the existing docks within the existing marina basin. Docks D and E would be similar to existing Docks A, B, and C, i.e. 260 feet in length, 54 feet wide, with 36 slips each. Dock F would be 160 feet in length by 30 feet wide with 20 slips and used as a courtesy dock for the restaurant/bar. Dock G, for use by houseboats, would be located along the shoreline west of Dock A and would be 250 feet long by 6 feet wide.

The new dock systems would be constructed with heavy-duty, commercial quality 12 inch shop welded, aluminum truss frames. Frames would be set upon USACE approved, 3 feet x 4 feet x 1 foot closed cell polystyrene floatation, attached by 3/8 inch stainless steel bolts. All decking would be low-maintenance wood decking. Center pilings measuring 4 inches x 24 feet (minimum) schedule 40 galvanized steel pipes, will be driven to resistance by pile hammer (no jetting allowed). A total of 43 center pilings would be installed, with tip elevation to be a minimum of 5 feet above the ordinary high water mark. Dock installation is estimated to take five to ten days. Staging of the docks (constructed off-site) would be conducted within the existing parking lot area. Maintenance of the docks is anticipated to take place every five (5) years.

2. Project Component – Zip Line

Installation of a zip line system consisting of eight towers and six segments, two segments will be crossing the Park Moabi inlet of the Colorado River. The proposed zip line is comprised of a harness to carry participants, which is attached to a pulley on a wire cable that can extend long distances over the terrain below, with feet never touching the ground except at raised landings. The towers will consist of a single pole that will be securely embedded into an engineered footing. Each tower will have an elevated steel mesh platform on which the travelers and/or guides may land/stand as applicable. Each platform will be approximately 6 feet to 8 feet below the zip line cable. The pole height above ground level will vary from approximately 10 to 44

feet. Typical pole locations are a minimum of approximately 200' from the shoreline. Two poles to be located in front of the lower cabin units and restaurant will be placed closer to the shoreline (between the structures and the shoreline) due to spatial constraints. The first pole will be placed near the General Store and the last pole will be placed near the Restaurant. Interim poles are for cable structural support only.

3. Mitigation

As part of the proposed project, Pirate Cove Marina concessionaire and the San Bernardino County Parks propose to jointly designate an area within Park Moabi as a wildlife protection area.

Western Lagoon Area. The western lagoon area is approximately 2,965 feet in length and 100 feet in width, covering approximately 6.8 acres. A 50 foot buffer area on each side of the lagoon will be included in the protection area, increasing the total habitat protection area to an estimated 13.6 acres. No beaching of boats will be allowed along the shoreline. Day use will be allowed in the buffer area; however, no clearing of the shoreline will be allowed. The eastern lagoon area, although partially vegetated with bulrush (*Scirpus validus*), is currently accessible by personal watercraft. The lagoon is surrounded by a mixture of sand dune and salt cedar (*Tamarix ramossisima*) scrub habitat.

4. Mitigation Implementation Plan

The applicant (Pirate Cove Marina) will place and maintain regulatory signs to minimize disturbance from boating in these areas. The following items will be conducted to implement the protection plan:

1. Install two square regulatory day markers within the westernmost portion of the Park Moabi Lagoon to protect wildlife habitat from motorized watercraft as shown in the aerial photograph attached. Day markers will read: "Habitat Protection Area - RESTRICTED - Closed to Motorized Craft, Electric OK".

2. Install square regulatory day markers along the shoreline to protect shoreline habitat from boat mooring. Day markers will read: "Shoreline Protection Area – RESTRICTED – closed to shoreline access".

3. Install public informational signs at three key locations within the marina and park providing educational information regarding listed species and emphasizing the importance of protecting wildlife habitat within the lagoon.

4. Complete the installation simultaneously to installation of the proposed docks.

5. Mitigation Area Maintenance

The County, in conjunction with the marina concessionaire, will provide for the long-term

maintenance of the day markers, including replacement of the wildlife habitat signs on an as-needed basis.

2. Alternative 2

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3. No Action Alternative (Alternative 1)

Under the No Action Alternative, none of the Proposed Action components would be built.

4. Alternatives Considered but Eliminated From Detailed Analysis

Dock placement alternatives considered in the planning process include the installation of the four docks as described in Alternative A plus the replacement of the fuel dock with a combined standard dock with fuel dock (Figure X). This alternative would increase the number of boat slips over the proposed action by 40, for a total of 98 new boat slips or a total of 220 vessels, an increase of 87.5 percent. This alternative, however, was eliminated from further consideration as installation of the combined boat slips and fuel dock would require uninstalling, moving, and reinstalling all existing docks in order to provide necessary space between docks for docking of boats. The existing fuel dock location was also preferred for spill prevention planning and containment over the alternative location.

5. Conformance with Land Use Plan

The proposed action is in conformance with the *Lake Havasu Field Office Resource Management Plan* (RMP) which was approved on May 10, 2007. The proposed action is in conformance with the applicable RMP because it is specifically provided for in the following RMP decision(s):

- AC-3. Beale Slough Riparian and Cultural ACEC will be managed to protect and prevent irreparable damage to the relevant characteristics or important values (Map 28).

- LR-6. The BLM will continue to lease recreation areas for concessions, state parks, county parks, and city parks in accordance with the prescribed recreation settings (see Map 20).

- RP-1. Riparian areas will be maintained in sufficient quality and quantity to provide roosting and potential nesting trees and adequate prey base for riparian obligate species such as bald eagle, willow flycatcher, western yellow-billed cuckoo, etc.

- RP-2. New facilities and campgrounds will be located away from riparian wetland areas if they are incompatible with achieving or maintaining riparian wetland function.

- RP-3. The BLM will manage for proper functioning condition within riparian areas and springs, but where hydrological modifications and soil conditions prohibit proper functioning condition; a desired plant community will be defined and managed appropriately (see RMP Maps 6, 7, and 8).

- RP-4. No-wake zones will be recommended as needed, to protect the shore from erosion, prevent damage to riparian growth, and reduce noise to nesting wildlife and fish habitat.

- TE-1. Conserve and protect Migratory Bird species (see RMP Appendix C Table C-7) and their habitats, Lake Havasu Field Office will follow the guidance provided within the Migratory Bird Executive Order 13186, *Arizona Partners in Flight Bird Conservation Plan* (Latta, Beardmore, and Corman 1999), *Partners in Flight Desert and Riparian Bird Conservation Plan* (California Partners in Flight 2006), *USFWS North American*

Waterfowl Management Plan (USFWS et al. 1998), and LCRMSCP (Reclamation, USFWS, and MWD 2004).

- TE-2. No net loss of quantity or quality of priority species and/or priority habitats will occur on the Lake Havasu Field Office. (See Table 3-4 in the PRMP/FEIS.)

- TE-3. Conserve habitat and work toward the recovery of T&E species, as well as reduce the likelihood of additional species listings under the ESA and California ESA.

- TE-6. Ecosystems will be restored and supported in conjunction with vegetation, aquatic, and terrestrial wildlife habitat requirements.

- VM-1. Native plant communities (RMP Appendix C, Table C-1) will be maintained
- appropriate to climate and landform to:
- Provide watershed stability.
- Provide adequate forage for native wildlife species.
- Improve or restore riparian-wetland functions.
- Enhance groundwater recharge.
- Satisfy state water quality standards.

- VM-2. Establishment of invasive and noxious species will diminish throughout the planning area and many will begin to decline in aerial extent, density, and cover.

- VM-5. Only native vegetation will be utilized in all landscaping designs that will incorporate a Desired Plant Community (DPC) concept. Exceptions to this requirement could be made in high-traffic public recreation areas or soil stabilization/reclamation efforts where native species will have a poor likelihood of success due to existing site characteristics. Acceptable non-native plants used for this purpose will consist of genetic variations of natives that will not become invasive and or noxious species (e.g., Chilean mesquite trees).

- WF-1. Wildlife movement corridors will be maintained for biotic diversity, to minimize fragmentation of habitat and to minimize barriers to movement.

- WF-2. The BLM will manage all wildlife habitats with the objective to conserve native species for sustainable public benefits.

- WF-4. Ensure that important habitats for migratory birds are managed, maintained, increased and improved to attain the vegetation structure plant species diversity and density to provide diverse habitat of quality and quantity (see RMP Maps 6, 7, and 8).

- WF-14. To the extent practicable, avoid, minimize impacts and/or take of migratory birds and their habitat.

- WF-15. During construction and tree pruning associated with plan implementation,

identify and avoid all migratory bird nests.

6. Relationship to Statutes, Regulations, or Other Plans

Statutes and regulations that apply to the Proposed Action include the following:

- National Environmental Policy Act of 1969 (Public Law 91-190)
- Federal Land Policy and Management Act of 1976; 43 USC 1701-1782 as amended 1978, 1984, 1986, 1988, 1990-1992, 1994 and 1996.
- Endangered Species Act of 1973; 16 U.S.C. 1531-1544 as amended 1976-1982, 1984 and 1988.
- Migratory Bird Treaty Act, 16 USC 703-712 as amended 1936, 1960, 1968, 1969, 1974, 1978, 1986 and 1989
- Native American Graves Protection and Repatriation Act (NAGPRA) 1990
- National Historic Preservation Act (NHPA) of 1966 as amended (16 U.S.C. 470).
- Act of Congress of June 17, 1902 (32 Stat. 388), and acts amendatory thereof or supplementary thereto.
- Act of Congress approved August 4, 1939 (53 Stat. 1187, 1196), as amended August 18, 1950 (64 Stat. 463).

Individual Recovery Plans:

- Desert tortoise (Mojave population) Recovery Plan. 1994 U.S. Fish and Wildlife Service, Portland OR.
- Yuma Clapper Rail Recovery Plan. 1983. U.S. Fish and Wildlife Service, Albuquerque, New Mexico
- Bonytail (*Gila elegans*) recovery goals (2008 Revisions): Amendment and supplement to the bonytail chub recovery plan. 2008 U.S. Fish and Wildlife Service, Mountain-Prairie Region (6), Denver, Colorado.
- Razorback sucker (*Xyrauchen texanus*) recovery goals (2008 Revisions): Amendment and supplement to the razorback sucker recovery plan. 2008 U.S. Fish and Wildlife Service, Mountain-Prairie Region (6), Denver, Colorado.
- Southwestern Willow Flycatcher Recovery Plan. Albuquerque, New Mexico. 210 pp., Appendices A-O. U.S. Fish and Wildlife Service. 2002.

3. CHAPTER 3 - AFFECTED ENVIRONMENT

This section describes the existing conditions of the affected environment. The table below summarizes the resources and concerns reviewed for this project. Resources not present within the project study area, as well as those present and not affected, are not discussed. Those resources that have been identified by an interdisciplinary team as present and potentially affected are discussed below.

1. General Project Setting

The project site is located at Park Moabi just across from the southern end of Topock Marsh and south of Needles, along an existing inlet on the western shore of the Colorado River in San Bernardino County, California. The Park Moabi Lagoon maintains open access to the Colorado River on the southern reach with direct river connection via inflow/outflow pipes at the northern reach. The site lies within the Basin and Range physiographic province at the southern tip of the Mohave Valley, approximately ½ mile north of Interstate 40. The Havasu National Wildlife Refuge occurs along the Colorado River one mile to the east of the site, the Whale Mountain and the Chemehuevi Mountains occur to the south of the site, the Needles Mountains occur to the southeast, the Sacramento Mountains to the northwest, and the Black Mountains to the northeast of the site.

The marina site has been a County concession for the purposes of water-related recreation since 1964. The existing marina concession lease consists of 16.89 acres. Existing site features include a marina store, maintenance/office building, restaurant, bar, fourteen park models, docks, and a parking lot/future commercial area. Operation of the restaurant and bar is seasonal, open mid-March until November, the marina store and docks are operational year round. The marina concession lease does not accept parking overflow from Park Moabi. Formal development has occurred on all 16.89 acres. A Spill Prevention and Countermeasures Plan is in place at the marina, with a spill kit maintained onsite (see Appendix B).

Climate in the project area is typical of the arid southwest, which is characterized by long, hot summers and mild winters. The average annual high temperature in Needles, California is 87.1 degrees Fahrenheit (F), with the warmest temperatures in July (average high 109 degrees F) and the coolest in December and January (average high 65 degrees F). The average annual low temperature is 61 degrees, with the lowest temperatures in January and December (average low 43 degrees F) and the warmest lows in July (average low 83 degrees F). The average annual precipitation is 5.11 inches, with the majority of the precipitation occurring in August and January (www.weather.com). Elevation at the site is approximately 480 feet (ft) above mean sea level (msl).

Pacific Gas and Electric Company (PG&E) is presently under administration of the Comprehensive Environmental Response Compensation and Liability (CERCLA) Act and is currently conducting remedial activities to investigate the release of hazardous substances (hexavalent chromium) and wastes from the Topock Compressor Station, located approximately 1.0 mile to the southeast of the project site. Historic operations at the compressor station used hexavalent chromium in the compressor station cooling water as a corrosion inhibitor. Subsequent discharge of the cooling water resulted in hexavalent chromium entering the groundwater aquifer. Remedial and corrective actions are currently being implemented to control the spread and remove hexavalent chromium and other chemicals in the groundwater. The marina concession is located within the designated greater Area of Potential Effect (APE) and is approximately 1.0 mile from the mapped hexavalent chromium plume.

2. Resources / Concerns

The following table is a list of resources/concerns that were considered in this Environmental Assessment. Resources/concerns either not present or would not be affected by the Proposed Action will not be addressed further in this Environmental Assessment.

PROJECT RESOURCE REVIEW			
Resources & Programs Considered	**Not Present**	**Present and Not Affected**	**Present and/or Potentially Affected**
Air Quality*			X
Areas of Critical Environmental Concern			X
Cultural, Historic & Paleontological Resources*			X
Environmental Justice*	X		
Farmlands (Prime or Unique)	X		
Fish Habitat*			X
Floodplains*		X	
Forests and Rangelands*	X		
Fuels/Fire Management	X		
Grazing	X		
Hazardous or Solid Wastes*	X		
Invasive & Non-Native Species			X
Lands & Realty			
Law Enforcement		X	
Migratory Birds*		X	
Minerals	X		
Native American Religious Concerns*			X
Noise			X
Public Health & Safety		X	
Recreation			X
Socioeconomics			X
Soils		X	
Threatened or Endangered Species*			X
Travel Management		X	
Vegetation		X	
Visual Resources			X
Water Quality (Drinking or Groundwater)*			X
Wetlands/Riparian Zones*			X
Wild & Scenic Rivers*	X		
Wild Horses/Burros	X		
Wilderness*	X		
Wildlife			X

*Consideration Required by Law or Executive Order

1. Air Quality

The project area is located within EPA's Region 9, which considers air quality levels within the entire states of Arizona, Nevada, and California. Within the confines of California, EPA has delegated enforcement to the California (EPA's) Air Resources Board (CARB). According to CARB 2010 air quality area designations for Ambient Air Quality Standards, the proposed facilities lie within a non-attainment area for both ozone and PM 10 (air born particles less than 10 microns in aerodynamic diameter).

Ozone (O3) non-attainment status is for State standards only. Ozone is an invisible gas that is a major component of smog. High concentrations at ground level are a major health concern by damaging lung tissue. Scientific evidence indicates ambient levels of O3 can affect people with impaired respiratory function (asthmatics) as well as the healthy. Ozone forms in the presence of other air born pollutants (to include engine exhaust) and ultraviolet radiation, stimulated by higher temperatures. Peak levels often occur in warmer times of the day. Particulate matter (PM) non-attainment status is stated under both State and National designations. PM is a mix of particles that affect human health and degrade visibility. Generally the smaller particles (less than 2.5 microns) are most dangerous to human health, causing diverse respiratory and cardiovascular illness. Particulates can include dust, dirt, soot, smoke, or liquid droplets released directly to the air from internal combustion engines, construction, windblown dust or other means.

According to EPA definition, an attainment area is: a geographic area in which levels of a priority air pollutant does not exceed the health-based National Ambient Air Quality Standards) for the pollutant. Attainment areas are defined using federal pollutant limits set by EPA, typically enforced by State authorities. A nonattainment area, by EPA definition, is a geographic area in which the level of a priority air pollutant is often higher than the level allowed by the federal standards.

2. Areas of Critical Environmental Concern (ACEC) - Beale Slough

The Beale Slough Riparian and Cultural ACEC are located adjacent to the south and west of the project site. The Beale Slough Riparian and Cultural ACEC was established to manage and restore regionally important riparian areas, some of which were destroyed during the 1951 Reclamation channelization of the Colorado River. In addition to the biological conservation and improvement contemplated for future actions, the area is rich with cultural and historical resources and regionally important to local Tribes. A portion of the Beale Slough ACEC (around the Topock area) is closed to OHV use. The remainder is limited to travel on "open" roads only. The ACEC designation is designed to prevent irreparable damage to relevant characteristics or important values.

3. Cultural, Historic & Paleontological Resources

BLM conducted a Class III survey in compliance with Section 106, to determine if marina upgrades at Park Moabi would have an adverse effect to any newly discovered cultural

resources. No properties were identified within the Pirate Cove project area. No additional survey is required given the complete absence of evidence of significant prehistoric or historic occupation within the defined project area.

The project site is located outside of the Topock-Needles Special Cultural Resources Management Area boundaries. The project site is tangential to the sacred Topock Maze site, which is a unique and massive geoglyph recognized by the Ft. Mojave and other related Indian tribes as a Traditional Cultural Place.

4. Fish Habitat

The Park Moabi lagoon provides aquatic habitat for several species of native and non-native fish. Two endangered fish species found within this waterbody include the repatriated endangered Bonytail chub (*Gila elegans*) and the Razorback sucker (*Xyrauchen texanus*) which are mentioned further under Threatened and Endangered Species. Other well known fish species include the Striped bass (*Morone saxatilis*), Largemouth bass (*Micropterus salmoides*), Small mouth bass (*Micropterus dolomieui*), Crappie (*Pomoxis sp.*), Bluegill (*Lepomis macrochirus*), Redear sunfish (*Lepomis microlophus*), Flathead catfish (*Pilodictus olivaris*), Channel catfish (*Ictalurus punctatus*), and Carp (*Cyprinus carpio).*

5. Invasive and Non-Native Species

Salt cedar (*Tamarix ramossissima*) occurs along the marina shore and is the dominant vegetation type on the eastern end of the concession area. The introduced Quagga mussel (*Dreissena rostriformis bugensis*) occurs on docks and boats within the marina. Sago pondweed (*Potamogeton pectinatus*), an aquatic weed, also occurs within the marina basin.

6. Native American Concerns

The Tribes have identified the Topock Maze, various intaglios in the general area, the Colorado River and areas along the Colorado River corridor as sensitive. The Chemehuevi Mountains, in particular the peaks known as The Needles, figure prominently in the Mojave life cycle belief system.

7. Noise

Noise is defined as unwanted sound. Environmental noise is usually measured in A-weighted decibels (dBA). Environmental noise typically varies over time, and different types of noise descriptors are used to account for this variability. The noise descriptor most commonly used to establish noise exposure guidelines for specific land uses is the day/night average noise level (commonly referred to as DNL). The noise level experienced at a particular site or area depends on the distance between the source and a specific receptor (humans, wildlife, or sensitive places), presence or absences of noise barriers and other shielding features, and the amount of noise reduction provided by the intervening terrain. The vast majority of land adjacent to the proposed project location is uninhabited, although the existing site is adjacent to I-40. The most common

noise or sound occurrence year-round at Park Moabi and the lower Colorado River is created by watercraft operating for recreational purposes. These noise levels can range from below the legal 85 decibels per hour (db) at a distance of 50' for watercraft, to over 100 db depending on the size of the watercraft, speed and proximity to the individual. Office of Safety and Health Administration (OSHA) worker standards require ear protection at 75 db's, a level when exceeded, can cause hearing loss.

8. Recreation

Recreational boating and water sports are by far the most common activity on the lower Colorado River followed closely by recreational fishing activities. Tens of thousands of boaters visit the area every year to enjoy water sport activities in the summer and fishing in the year round. The project site is located within the Lake Havasu/Colorado River Regional Management Area and BLM's Extensive Recreation Management Area (ERMA). The site's prescribed recreational setting is Rural Developed (see RMP Map 20). Within this setting, BLM's priority for recreation is to ensure a quality experience and enjoyment of natural resources. Activities within the Rural Developed recreational setting category includes: developed camping with RV or trailers, water skiing, interpretive use, OHV use, boating, hiking, rafting, kayaking/canoeing, enjoyment of scenery or natural features, nature study, photography, hunting, fishing, and motor vehicle use. OHV use is prohibited within the marina concession area. Adjacent BLM land to the east of the lease is "closed" to OHV.

The greater Park Moabi (outside the Pirate Cove concession lease area) provides a seven-lane boat ramp, swimming, wading, fishing, camping, picnicking, basketball, and short-term residential lodging. The boat ramp use was approximately 45,000 vessels in 2007 with a peak of 6,370 launches/retrievals in July. Peak months are May through September. Boaters also tie up along the northern shoreline in the eastern portion of the lagoon to relax or to access the onshore. Boats moored at the marina may also contribute to increased traffic on the river. The Park Moabi Lagoon is currently a "no wake" zone allowing protection of the shoreline and associated wetlands. This reduces the level of existing wakes and would negate the effects of any boating increase as far as wake damage is concerned, reducing disturbances to fish and wildlife in those areas as well as reducing wake damage. While this may enhance the aquatic habitat values of the area, it also makes the area more desirable for less intrusive recreation such as fishing.

9. Socio-economics

The existing marina concession employs 100 employees (includes both seasonal and full time employees). Sales from the concession, including boat rental, slip leases, fuel and shop purchases contribute directly to the San Bernardino County Regional Parks Department income, as well as indirectly to other County, State, and Federal government entities through payroll and sales taxes. Tourism visitation to the area generates beneficial economic conditions in the project area by increasing spending in the area, especially during the busy season.

10. Threatened or Endangered Species and Special Status Species

Federally-listed species that may occur in or near the project location consist of the razorback sucker (*Xyrauchen texanus*) the bonytail chub (*Gila elegans*), the southwestern willow flycatcher (*Empidonax extimus traillii*), the Yuma clapper rail (*Rallus longirostris*), the desert tortoise (*Gopherus agassizii, Mohave population*), and the candidate western yellow-billed cuckoo (*Coccyzus americanus occidentalis).* The Colorado River in the project area is also designated as critical habitat for the bonytail chub (Federal Register 1994).

Special status species that may occur in the project vicinity consist of the Arizona bat (*Myotis lucifugus occultus*), Arizona bell's vireo (*Vireo bellii arizonae*), the California leaf-nosed bat (*Macrotus californicus*), the pallid bat (*Antrozous pallidus*), Townsend's big-eared bat (*Plecotus townsendii*), the yellow-breasted chat (*Icteria virena*), western red bat (*Lasiurus blossevilli*), western yellow bat (*Lasiurus xanthinus*), desert pocket mouse (*Chaetodipus penicillatus sobrinus*), Colorado River cotton rat (*Sigmodon arizonae plenus*), Yuma hispid cotton rat (*Sigmodon hispidus eremicus*), western least bittern (*Ixobrychus exillis herperis*), California black rail (*Laterallus jamaicensis coturniculus*), elf owl (*Micrathene whitneyi*), gilded flicker (*Colaptes chrysoides*), Gila woodpecker (*Melanerpes uropygialis*), vermilion flycatcher (*Pyrocephalus rubinus*), Sonoran yellow warbler (*Dendroica petechia sonorana*), summer tanager (*Piranga rubra*), flat-tailed horned lizard (*Phrynosoma mcalli*), relict leopard frog (Rana onca), MacNeill's sootywing skipper (*Pholisora gracielae*), Colorado River toad (*Bufo alvarius*), lowland leopard frog (*Rana yavapaiensis*), sticky buckwheat (*Erogonium viscidulum*), and threecorner milkvetch (*Astragalus geyeri var. triquetrus*)and the Yuma myotis (*Myotis yumanensis*).

11. Vegetation

Vegetation communities within the project vicinity are described as Lower Colorado River subdivision of the Sonoran Desert by Brown (1994). The majority of the project site has been developed, including buildings and parking lots, or periodically cleared during concessionaire activities over the past 50 years. At the time of the site visit in August 2008, there were less than five (5) small isolated patches of bulrush (*Scirpus validus*) less than 20 feet in diameter observed along the shoreline with a sparse component of arroweed (*Pluchea sericea*) along the marina slopes. Mexican fan palms (*Washingtonia robusta*) and other palms occur as landscape plants in and around the marina store and developed areas as well as Palo Verde (Cercidium floridum).

12. Visual Resources

The BLM classifies lands that it administers into four Visual Resource Management (VRM) Class Objectives, which provide management direction and threshold standards to which management activities are measured. The VRM Class Objectives range from Class I, the most scenic and therefore most sensitive to development changes, to Class IV, the least scenic and also least sensitive. The BLM currently manages the area as a Class III area (see RMP Map 33).

Class III objectives are to partially retain the existing character of the viewshed.

1. The level of change to the characteristic viewshed should be moderate.
2. Any proposed activities may attract attention but should not dominate the view of the casual observer.
3. Any changes should repeat the basic elements found in the predominant natural features of the characteristic landscape.

The visual setting in the project area is characterized by the Colorado River floodplain, the Mohave Valley to the north and Topock Gorge to the south. The natural topography is dominated by the Chemehuevi Mountains to the south, the Needles Mountains to the southeast, the Sacramento Mountains to the northwest, and the Black Mountains to the northeast. Recreational use and development of the project site have altered the native character of the project area, but the peninsula to the north remains undeveloped. By boat, the marina site is not visible from the river channel but only from the inlet itself. The marina is not visible to travelers along Interstate 40.

13. Water Quality (Drinking or Groundwater)

As described earlier, the project cove is man-made and receives modest flow through of fresh river water from the up-stream segment of the cove. Designated beneficial uses of this water span the gamut from fish and wildlife, to recreation, irrigation, and domestic water use for as many as 25 million downstream water consumers. The 2010 California 303 (d) and 305 (b) report for the Colorado River Water Quality Control Board indicates there is inconclusive data for this river reach, but no designated beneficial uses are known to be impaired.

14. Wetlands/Riparian Zones

A riparian area occurs between the Park Moabi Lagoon and Historic Route 66. It is 600 ft in length and varies in width from 30 feet to 70 feet. This strip of vegetation continues outside of the concession lease another 0.5 miles to the mouth of the lagoon and the main channel of Colorado River. Several small fragmented patches of bulrush also occur within the existing marina area and channel.

On the west end of the project location near proposed Dock G, outside the concession lease, lies an additional 2 acres of riparian habitat comprising of tamarisk, mesquite and a few palm trees on the bank and a 20 foot diameter patch of bulrush on the inside corner of the jetty. As this is located outside the project area, no construction or removal of vegetation is planned at this location.

4. CHAPTER 4 - ENVIRONMENTAL CONSEQUENCES

Potential Direct and Indirect Effects

This section describes the environmental consequences that can be expected (directly, indirectly and cumulatively) of those resources/concerns identified in Chapter 3 as present and/or potentially affected. Resources not present within the project study area, as well as those present and not affected, are not discussed.

1. Air Quality

1. Proposed Action

- **Air Quality**

According to designations by the California Air Resources Board, the area where the facilities are proposed is currently within designated areas of non-attainment for ozone and PM 10. Typically, during the winter months (non boating months) the prevailing winds are from the north. During the summer months, prevailing winds are from the west and southwest directions, importing air of poor quality from highly developed regions of Southern California. Exhaust emissions that originate from boat engines would be localized and typically dispersed by the prevailing winds. In calm, hot summer conditions, it is unclear how this development will effect local air quality conditions, but local, short term, increases in both non-attainment pollutants are possible, as is carbon monoxide concerns as a result of the proposed action. In windy conditions, elevated particulate matter will be an issue given the abundant bare sands of the surrounding desert.

Temporary increases in fugitive dust for this area could occur during construction of the zip line towers with vehicle and equipment operations.

- **Climate and Meteorology**

Due to the dry and arid climate for this region, indirect effects from the boating would not affect the local area climate.

- **Climate Change**

Existing climate prediction models are global in nature; therefore they are not at the appropriate scale to estimate potential impacts of climate change on the indirect effects of the boating activity expected at this site location.

2. Alternative 2

Alternative 2 would result in the same effects as described for the Preferred Alternative.

3. No Action Alternative

The No Action Alternative would result in no change from the existing current use and disturbance within and adjacent to the proposed location.

2. Areas of Critical Environmental Concern

1. Proposed Action

Compared to the No Action Alternative, no additional impacts to Beale Slough ACEC are expected from this alternative.

2. Alternative 2

No additional impacts to Beale Slough ACEC are expected from this alternative.

3. No Action Alternative

The No Action Alternative would result in no change from existing conditions to the Beale Slough ACEC.

3. Cultural, Historic & Paleontological Resources

1. Proposed Action

As no cultural properties were identified within the Park Moabi project area, the Proposed Action would result in no impacts to cultural resources and Native American Religious Concerns. Additional information can be referenced in Section V. Tribes, Individuals, Organization or Agencies Consulted.

2. Alternative 2

Alternative 2 would result in the same effects as described for the Preferred Alternative.

3. No Action Alternative

The No Action Alternative would result in no change to cultural resources or Native American Religious Concerns.

4. Fish Habitat

1. Proposed Action

The proposed installation, replacement or expansion of four accessible courtesy docks along the marina shoreline would cause minor short term bank and lake bottom disturbances during the implementation of the project. Once installed, the docks will provide overhead shade structure for fish species where there is currently a lack of aquatic habitat structure.

2. Alternative 2

Alternative 2 would result in the same effects as described for the Preferred Alternative.

3. No Action Alternative

The No Action Alternative would result in no change from existing conditions to fish habitat.

5. Invasive and Non-Native Species

1. Proposed Action

A landscape plan previously approved details the planting of native vegetation (i.e. willow, mesquite, cottonwood) to occupy open areas in an attempt to reduce the likelihood of salt cedar becoming reestablished. Regular ground maintenance will also remove any salt cedar regeneration. Any direct, indirect and cumulative effects of the Proposed Action to the control and management of invasive weeds on the project site should be beneficial. Information will be provided via kiosks to boaters about the need to clean and dry boats to prevent the spread of quagga mussels and other nuisance aquatic species.

2. Alternative 2

Alternative 2 would result in the same effects as described for the Preferred Alternative.

3. No Action Alternative

The No Action Alternative would result in no change from existing conditions to invasive and non-native species.

6. Native American Concerns

1. Proposed Action

The Tribes have indicated they are sensitive to modern and non-natural features developed in the viewshed of the river corridor and therefore prefer a return to the natural setting. The proposed marina upgrades, however are an incremental addition to the non-natural setting, which contains buildings, highways, roadways, railroads, pipelines, power lines, etc. and their presence is not expected to contribute measurably to the return to a natural viewshed.

2. Alternative 2

The No Action Alternative would result in no change from the existing current use and disturbance within and adjacent to the proposed location.

3. No Action Alternative

The No Action Alternative would result in no change from the existing current use and disturbance within and adjacent to the proposed location.

7. Noise

1. Proposed Action

Installation of docks will produce a short term loud pounding noise through the piling installation. This will be a loud hammer like noise audible for an undetermined distance from the site. Workers will have hearing protection, and any non workers allowed in the area should be warned of the potential.

2. Alternative 2

Alternative 2 would result in the same effects as described for the Preferred Alternative.

3. No Action Alternative

There will be no change in the current condition.

8. Recreation

1. Proposed Action

The proposed addition of the boat docks, courtesy dock and zip line will indirectly and cumulatively increase, improve and benefit recreation opportunities in and around the Park Moabi/Pirate Cove facility for years to come.

Installation of the four docks will result in the addition of 78 slips to the 112 vessel marina, for a total of 190 vessels, or a 70 percent increase. The addition of 72 boats to the marina translates into an average of approximately 261 additional people (ADOT 2006). The additional 72 vessels would add less than one percent to the overall boat traffic at Park Moabi (based on park launch/retrieval information) at peak times (July). The number of vessels at the marina is likely to be less than 72 during non-peak times. The majority of watercraft activity would continue to occur during daylight hours in the summer months, May through August. However, a maximum increase of 72 boats at the marina is not likely to occur as the installation of docks would convert the existing areas now used for open boating and shoreline tie-ups to docking use only. The courtesy dock is provided for short-term boat docking access to the restaurant/bar and will alleviate shoreline beaching of boats along the south shoreline. Currently, existing recreational use levels have not prevented the utilization of suitable aquatic habitat by the razorback sucker.
Alternative 2

Alternative 2 would result in the same effects as described for the Preferred Alternative.

2. No Action Alternative

With the No Action Alternative, no additional project components would be added. There would be no change in recreation opportunities or experience.

9. Socio-Economics

1. Proposed Action

The existing marina concession employs 100 employees (includes both seasonal and full time employees). Implementation of the Proposed Action would increase receipts from boat rental, slip leases, fuel and shop purchases would increase as a result of the Proposed Action, and contribute directly to San Bernardino County Regional Parks Department revenue, as well as indirectly to County, State, and Federal governments from payroll and sales taxes. Tourism to the region is anticipated to be stimulated from the Proposed Action, thereby increasing spending not only at the marina but in the region, especially during the busy season (May through September).

2. Alternative 2

Alternative 2 would result in the same effects as described for the Preferred Alternative.

3. No Action Alternative

No change to the existing socioeconomic conditions would occur with the No Action Alternative.

10. Threatened or Endangered Species

1. Proposed Action

The Park Moabi lagoon as documented by monitoring data is an apparently preferred important backwater habitat to the razorback sucker. One bonytail chub was caught January 2004 at Park Moabi (the fish was released near the Bill Williams Refuge Office in Lake Havasu about 17 months earlier). In 2005, 10 bonytail chubs were caught in Park Moabi. All of these fish had been released at the boat ramp at Golden Shores (Topock) within about four months of their capture (BOR and USGS 2006). Catching a bonytail chub that was in the system over a year is extremely rare (Mr. Rick Wydoski, BOR, personal communication) provides open water and backwater habitat for the bonytail chub, but is not known to provide spawning habitat.

The razorback sucker may be present in Park Moabi Lagoon at any time of the year. This is because the lagoon contains the type of habitat preferred by razorback. Noise and vibration from increased numbers of watercraft during the high activity times may displace razorback sucker from available habitat within the marina. The most critical time would be the spawning season

(January through June) when adult fish are staging for spawning. The winter months may also be a time of higher use of the lagoon by razorback suckers because the water is warmer than in the river. Most of the razorback sucker spawning season is outside the high-use period for the marina, so disturbance and water quality issues would be reduced from the high-use summer period. The suitability of the marina area to serve as nursery habitat for young razorback suckers would be modified but not eliminated. The presence of non-native fish that also affect nursery habitat would remain, with the non-native fish becoming more of an issue if the presence of the marina maintains their populations at a higher level during the razorback sucker breeding season than is currently experienced. Razorback sucker use of the circulation channel and the rest of the lagoon area is likely to continue. Channels and backwaters are preferred habitat for the razorback sucker and are in limited supply in the Mohave Valley Division. The primary indirect effect to endangered fish from the project would include those impacts resulting from increased recreational boating activities generated by the development that could further degrade the suitability and utilization of the remaining habitat within and along the banks of the lagoon.

2. Alternative

Alternative 2 would result in the same effects as described for the Preferred Alternative.

3. No Action Alternative

No change to the existing conditions would occur with the No Action Alternative.

11. Vegetation

1. Proposed Action

The area has been modified into a recreational site from the natural state. There is very little vegetation that exists within the project area. Most of it has been paved, and no important vegetation would be impacted by the project. No impact to vegetation would occur from attachment of the docks to the shoreline as these locations are currently contoured and hardened against erosion.

2. Alternative 2

Alternative 2 would result in the same effects as described for the Preferred Alternative.

3. No Action Alternative

No change to the existing conditions would occur with the No Action Alternative.

12. Visual Resources

1. Proposed Action

The new features are designed to conform and match the surrounding developed areas. The proposed marina upgrades are designed to increase the aesthetics of the area. The Proposed Action is consistent with the VRM Class III objectives and does not dominate the view of the

Colorado River and surrounding landscape. The marina concession area is not visible from I-40.

2. Alternative 2

Alternative 2 would result in the same effects as described for the Preferred Alternative.

3. No Action Alternative

The No Action Alternative would result in no change from the existing visual setting and conditions of the project site.

13. Water Quality

1. Proposed Action

Small releases of hydro carbon fuels or products of incomplete combustion will occur in this type setting. With the increase in boat slip capacity as proposed, the probability and frequency of that happening can only increase, however, to what level is unknown. Potential impacts would be short term, and ephemeral. An increase of people attracted to the facility could also elevate bacteria concentrations in times of extreme heat and poor circulation within the cove that could produce temporary impairment of primary contact recreation beneficial uses.

2. Alternative 2

Alternative 2 would result in the same effects as described for the Preferred Alternative.

3. No Action Alternative

The No Action Alternative would result in no change from the existing conditions of the project site.

14. Wetlands/Riparian Zones

1. Proposed Action

Intense use of the shoreline by boats and jet skis throughout the year affect shoreline soil and vegetation. Boat shoreline uses at Park Moabi disturb shoreline soils from the high watermark at 452 feet above sea level to an area likely affected by prop wash towards the shoreline. The shoreline is affected because power is often applied in reverse to extricate the boat from the beach; this disturbance occurs at the back of the vessel. This repeated activity maintains a constantly disturbed shoreline soil at these locations, prohibiting vegetative re-generation to stabilize these sites. Impacts to the shoreline are related to the amount of human disturbance caused by actual visitation activities. Constant vessel beaching and foot traffic in relatively concentrated areas tends to compact soils. Such compaction tends to increase long-term shoreline erosion into the lake, as well as inhibit establishment of desirable riparian wetland vegetation. In these areas, vegetative cover that provides shade, habitat and soil stability, is lost.
Direct affects to wetland/riparian vegetation and function occur as boaters and recreationists

begin using the shoreline to access the facilities. This impact has occurred since the facility was opened and consequently could be responsible for the nonfunctional condition of the areas in this proposed action. Construction and expansion of new and existing boat docks should reduce shoreline boat parking and disturbance to the shoreline, but will not improve conditions of the riparian wetland community.

2. Alternative 2

Alternative 2 would result in the same effects as described for the Preferred Alternative.

3. No Action Alternative

The No Action Alternative would result in no change from the existing conditions of the project site.

15. Cumulative Effects

4. Introduction

Cumulative effects are the impacts on the environment that may result from the incremental effect of the Proposed Action or No Action alternative in combination with other past, present, and reasonably foreseeable future actions on BLM-administered lands, as well on those lands under other jurisdictions that are adjacent to or within BLM boundaries. Cumulative effects must consider the likely impact of the Proposed Action or No Action alternative when combined with these additional actions.

5. Past and Present Actions

Over the course of 45 years, Park Moabi has developed and expanded operations to benefit recreationists in fulfilling their reclamation lease since 1964. During this period, recreation activities have increased substantially. During this development, land and vegetation were cleared along the shoreline to accommodate concession and recreational activities that have included for example a store, lodging, boat launching/retrieval, and boat mooring for visitors along the Colorado River. Currently these activities still exist. In 2007, the Pirate Cove Marina LLC secured a sub-lease from Park Moabi to expand and upgrade concession and recreational facilities. Cumulatively, the original intent of the Park Moabi lease has been obtained and new opportunities are being recognized. Cumulatively, it appears that the Park Moabi lease has provided benefits for recreationists and the local economy.

However, in regards to natural resources, the development of Park Moabi over the past 45 years has reduced the abundance of shoreline and upland vegetation to clear areas for concession and recreational activities. Cumulatively, the Pirate Cove Marina project will contribute to the decrease in the abundance, availability and function of shoreline habitat that in turn contributes to the conservation of threatened and endangered species and water quality. A conservative

estimate of the wetland/riparian habitat that has been lost over the past 45 years for the Park Moabi Park, including the development of the Pirate Cove Marina is approximately 7.5 acres.

6. Reasonably Foreseeable Action Scenario

The marina concessionaire (or its assignees) will continue to be responsible for providing recreation opportunities to the public for the foreseeable future. The adjacent and nearby BLM-administered lands will continue to be managed for recreation and public purposes. The marina concession will continue to be used for recreational and/or related commercial activities. Visitor days on the BLM administered lands can reasonably be expected to remain approximately the same over the long term. However, given current economic concerns, the number of visitors and thus the number of boats may decline in the short term. However, any decrease in boaters may be off-set by an increase in family visitors who may use the area for a base camp to hike, fish or rock-hound.

5. Cumulative Effects to Resources

This section describes the cumulative effects of those resources/concerns identified in Chapter 3 as present and/or potentially affected. The area is subject to intense boating activities during the summer boating season from May through September.

1. Wetlands/Riparian Zones

1. Proposed Action

Construction and expansion of new and existing boat docks should reduce shoreline boat parking and disturbance to the shoreline, but will not improve conditions of the riparian wetland community.

The designation of the mitigation area as a shoreline protection area will protect the remaining areas of undeveloped shoreline. This will provide beneficial effects to migratory birds and native fish habitat.

2. Alternative 2

Alternative 2 would result in the same effects as described for the Preferred Alternative except last remaining undeveloped shoreline would not be protected.

3. No Action Alternative

The No Action Alternative would result in no change from the existing visual setting and conditions of the project site and may lead to an increase in the amount of shoreline habitat lost.

6. CHAPTER 5 - TRIBES, INDIVIDUALS, ORGANIZATIONS OR AGENCIES CONSULTED

1. Tribes

Native American Consultation and Identification of Traditional Cultural Places
Fort Mohave Indian Tribe, Colorado River Indian Tribe, Chemehuevi Indian Tribe, Ft. Yuma Quechan Tribe, Havasupai Tribe, Hualapai Tribe, Twenty-Nine Palms Indian Tribe, Cocopah Tribe, and Yavapai-Prescott Tribe.

2. Bureau of Land Management (List of Preparers)

Doug Adams, Fishery Biologist, Lake Havasu Field Office
George Shannon, Archaeologist, Lake Havasu Field Office
Gina Trafton, Planning and Environmental Coordinator, Lake Havasu Field Office
Patricia Taylor, Assistant Field Manager, Lands and Resources
U.S. Bureau of Reclamation
U.S. Fish and Wildlife Service
U.S. Army Corps of Engineers

3. Private Individuals

Pirate Cove Marina LLC

Gerald Hillier, Hillier Consulting and Management

4. County

San Bernardino County Regional Parks Department

7. APPENDICES

1. Appendix A – Maps (example: Project Features, Plan of Development)

Technical Review:					
Supplemental Authorities /Other Resources or Concerns	**May Be Affected**		**If May affect / Mitigations Assigned**	**Signature Name/Title**	**Date**
	Yes	***No***			
Air Quality				*Kirk Koch/Cory Bodman*	
Areas of Critical Environmental Concern				*George Shannon /Paul Fuselier*	
Cultural Resources/ Paleontological Resources				*George Shannon*	
Environmental Justice				*Project Lead*	
Farm Lands (Prime or Unique)		X	By definition, there are no "prime farmlands" on BLM-administered lands within LHFO.	*Project Lead*	
Floodplain				*Kirk Koch/Doug Adams*	
Fuels / Fire Management				*Tim Duck*	
Human Health and Public Safety				*Bill Parry*	
Lands/Realty				*Maria Rosalez*	
Migratory Birds				*Doug Adams*	
Minerals				*Amanda Dodson*	
Native American Religious Concerns				*George Shannon*	
Law Enforcement				*Mike Dodson / Melody Stehwien*	

Technical Review:					
Supplemental Authorities /Other Resources or Concerns	**May Be Affected**		**If May affect / Mitigations Assigned**	**Signature Name/Title**	**Date**
	Yes	***No***			
Operations/ Engineering Review				*Mike Henderson*	
Recreation				*Myron McCoy*	
Rangeland				*Doug Adams /Project Lead*	
Socio-economics				*Project Lead*	
Soils				*Kirk Koch/Cory Bodman*	
Threatened or Endangered Species				*Doug Adams*	
Travel Management				*Myron McCoy*	
Vegetation				*Doug Adams*	
Visual Resources Management				*Myron McCoy/Paul Fuselier*	
Wastes, Hazardous or Solid				*Cathy Wolff-White*	
Water Quality, Drinking or Ground				*Kirk Koch/Cory Bodman*	
Weeds (Invasive & Non Native)				*Doug Adams*	
Wetlands/Riparian Zones				*Doug Adams*	
Wild and Scenic Rivers				*Paul Fuselier*	

Technical Review:					
Supplemental Authorities /Other Resources or Concerns	**May Be Affected**		**If May affect / Mitigations Assigned**	**Signature Name/Title**	**Date**
	Yes	***No***			
Wild Horses/ Burros				*Roger Oyler or Project Lead*	
Wilderness & WSA				*Paul Fuselier*	
Wildlife				*Doug Adams*	

Compliance and assignment of responsibility (Type Program or Employee**):**
_____

Monitoring and assignment of responsibility: (Type Program or Employee**):**
_____

Review:

Prepared by: _____ _____
Doug Adams
Project Lead

Reviewed by: _____ _____
Patricia Taylor, Assistant
Field Manager, Lands and Resources

Reviewed by: _____ _____
Ramone B. McCoy
Field Manager,
Lake Havasu Field Office

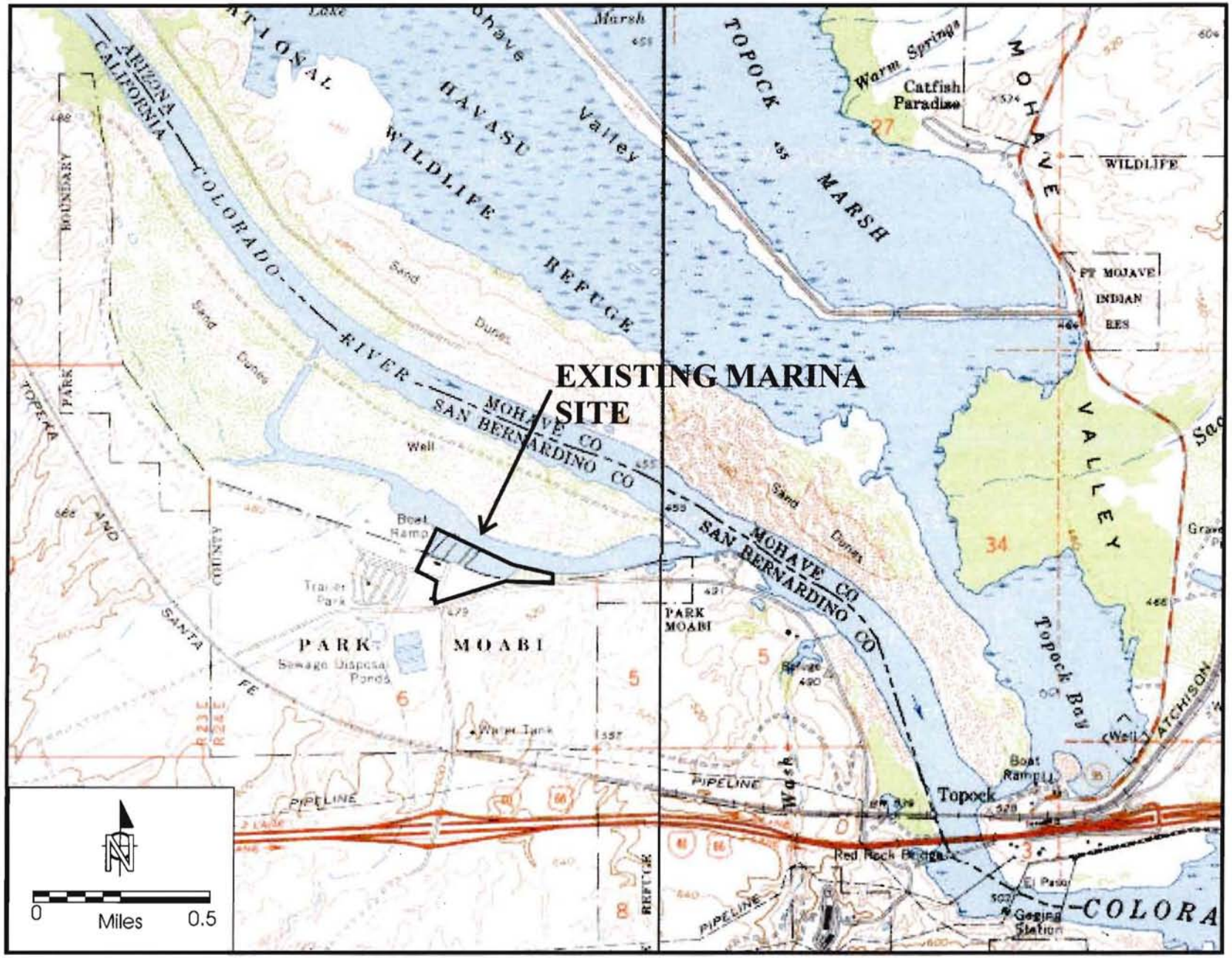
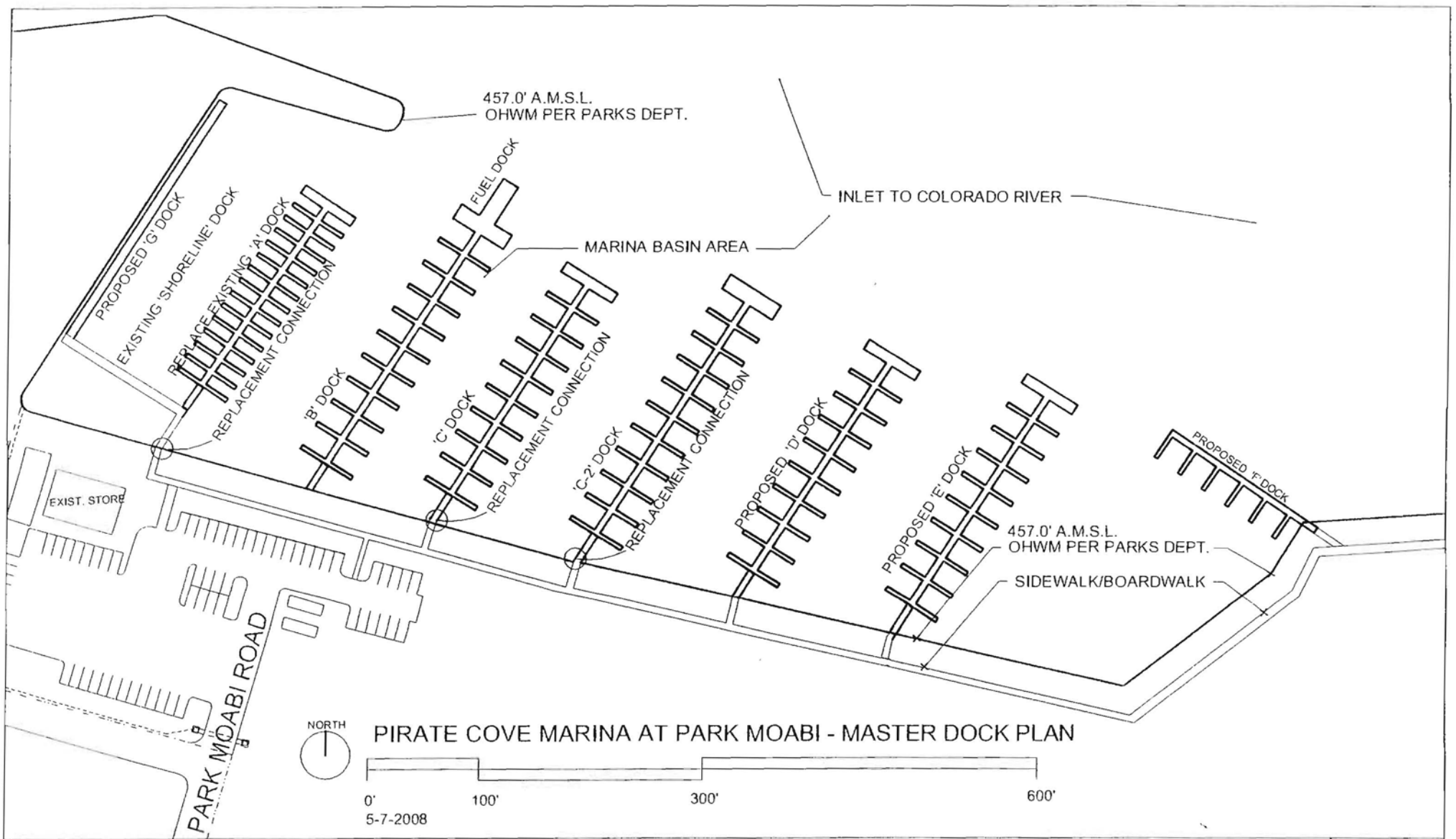


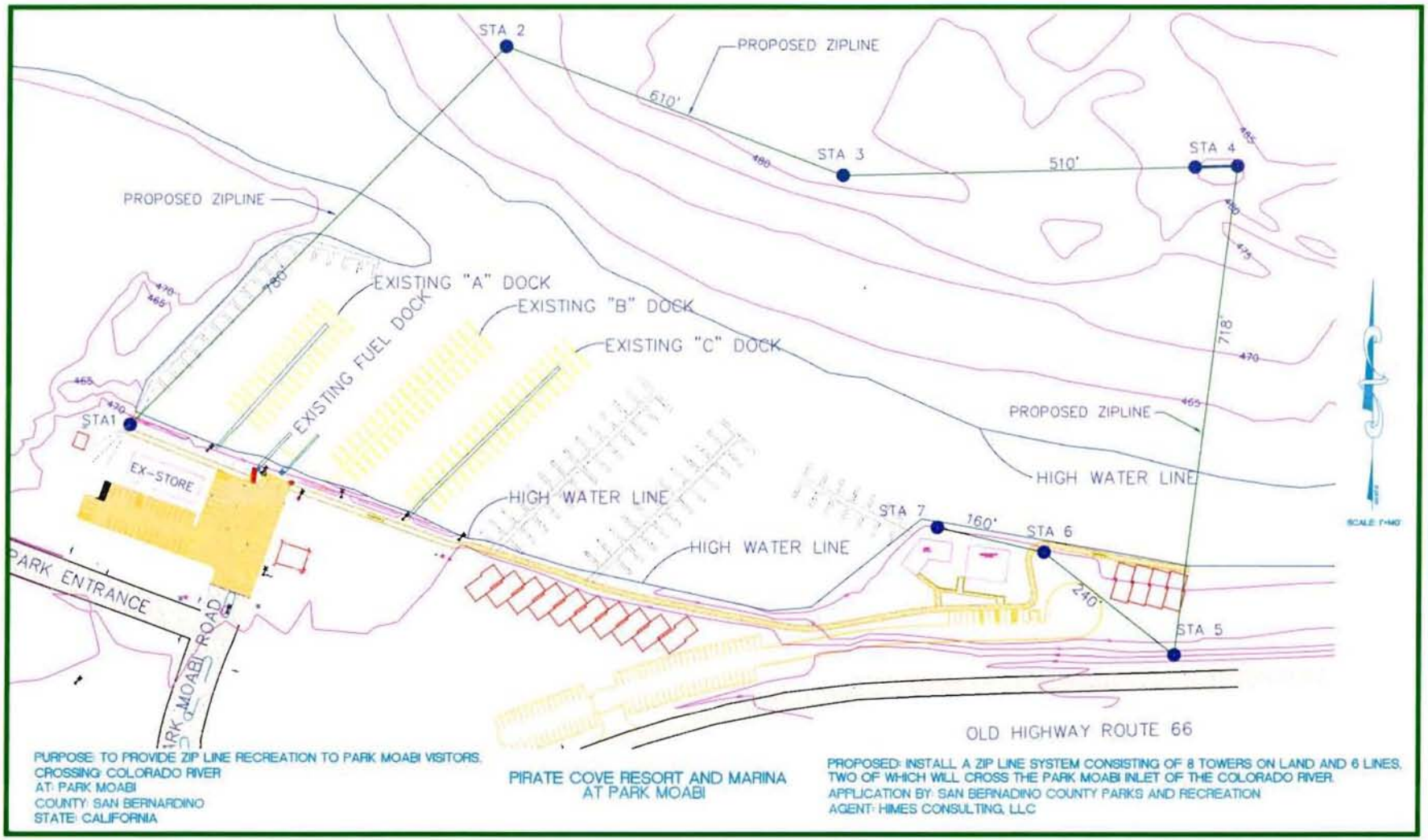
Figure 2. Site Location Map. USGS 7.5 Minute Topographical Map: Topock, Ariz.-Calif. (1970) and Whale Mtn., Calif.-Ariz. (1975).



PIRATE COVE MARINA AT PARK MOABI
PURPOSE: MAINTAIN SAFE BOAT DOCK FOR PUBLIC USE
IN: COLORADO RIVER
AT: PARK MOABI
COUNTY: SAN BERNARDINO

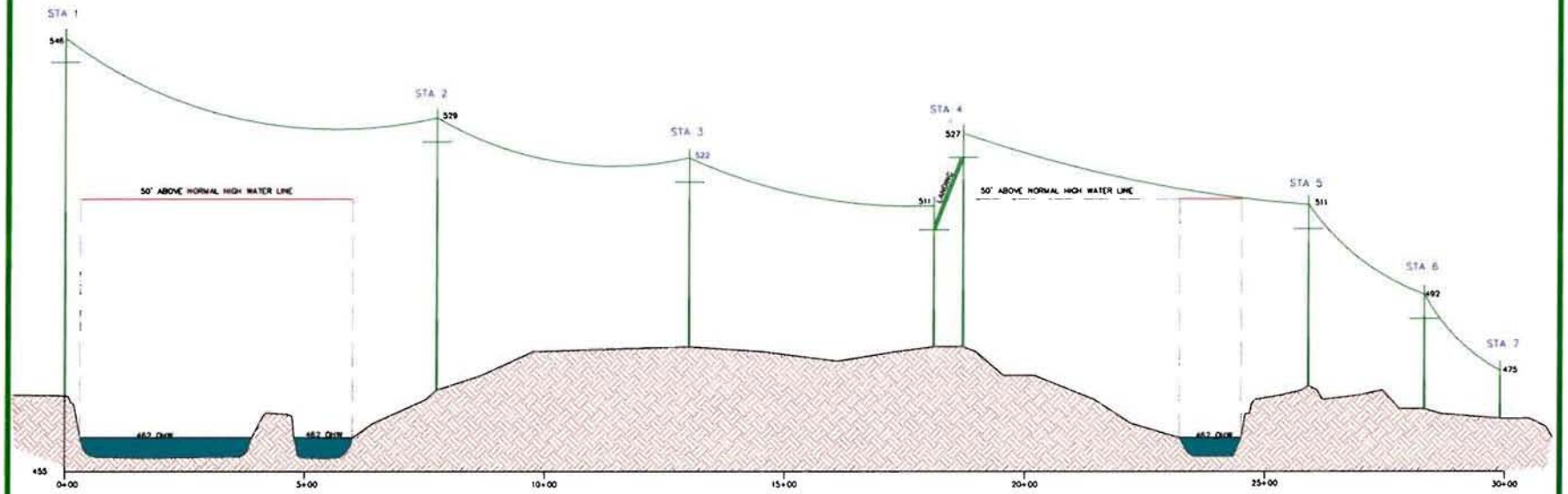
PROPOSED: REPLACE EXISTING DOCKS IN KIND & INSTALL NEW DOCKS
APPL BY: TURTLE COVE MARINA LLC
AGENT: HIMES CONSULTING LLC

8B


STA 2
PROPOSED ZIPLINE
610'
STA 3
510'
STA 4
PROPOSED ZIPLINE
780'
EXISTING "A" DOCK
EXISTING "B" DOCK
EXISTING "C" DOCK
EXISTING FUEL DOCK
718'
STA1
EX-STORE
PROPOSED ZIPLINE
HIGH WATER LINE
HIGH WATER LINE
HIGH WATER LINE
STA 7
160'
STA 6
240'
STA 5
PARK ENTRANCE
PARK MOABI ROAD
OLD HIGHWAY ROUTE 66
SCALE 1"=40'
PURPOSE: TO PROVIDE ZIP LINE RECREATION TO PARK MOABI VISITORS.
CROSSING: COLORADO RIVER
AT: PARK MOABI
COUNTY: SAN BERNARDINO
STATE: CALIFORNIA
PIRATE COVE RESORT AND MARINA
AT PARK MOABI
PROPOSED: INSTALL A ZIP LINE SYSTEM CONSISTING OF 8 TOWERS ON LAND AND 6 LINES,
TWO OF WHICH WILL CROSS THE PARK MOABI INLET OF THE COLORADO RIVER.
APPLICATION BY: SAN BERNADINO COUNTY PARKS AND RECREATION
AGENT: HIMES CONSULTING, LLC

PIRATE COVE RESORT AND MARINA

PROPOSED ZIP LINE - PROFILE VIEW



PURPOSE: TO PROVIDE ZIP LINE RECREATION TO PARK MOABI VISITORS.
CROSSING: COLORADO RIVER
AT: PARK MOABI
COUNTY: SAN BERNARDINO
STATE: CALIFORNIA

PIRATE COVE RESORT AND MARINA
AT PARK MOABI

SCALE: 1"=220' HORZ
SCALE: 1"=22' VERT

PROPOSED: INSTALL A ZIP LINE SYSTEM CONSISTING OF 8 TOWERS ON LAND AND 6 LINES, TWO OF WHICH WILL CROSS THE PARK MOABI INLET OF THE COLORADO RIVER.
APPLICATION BY: SAN BERNADINO COUNTY PARKS AND RECREATION
AGENT: HIMES CONSULTING, LLC

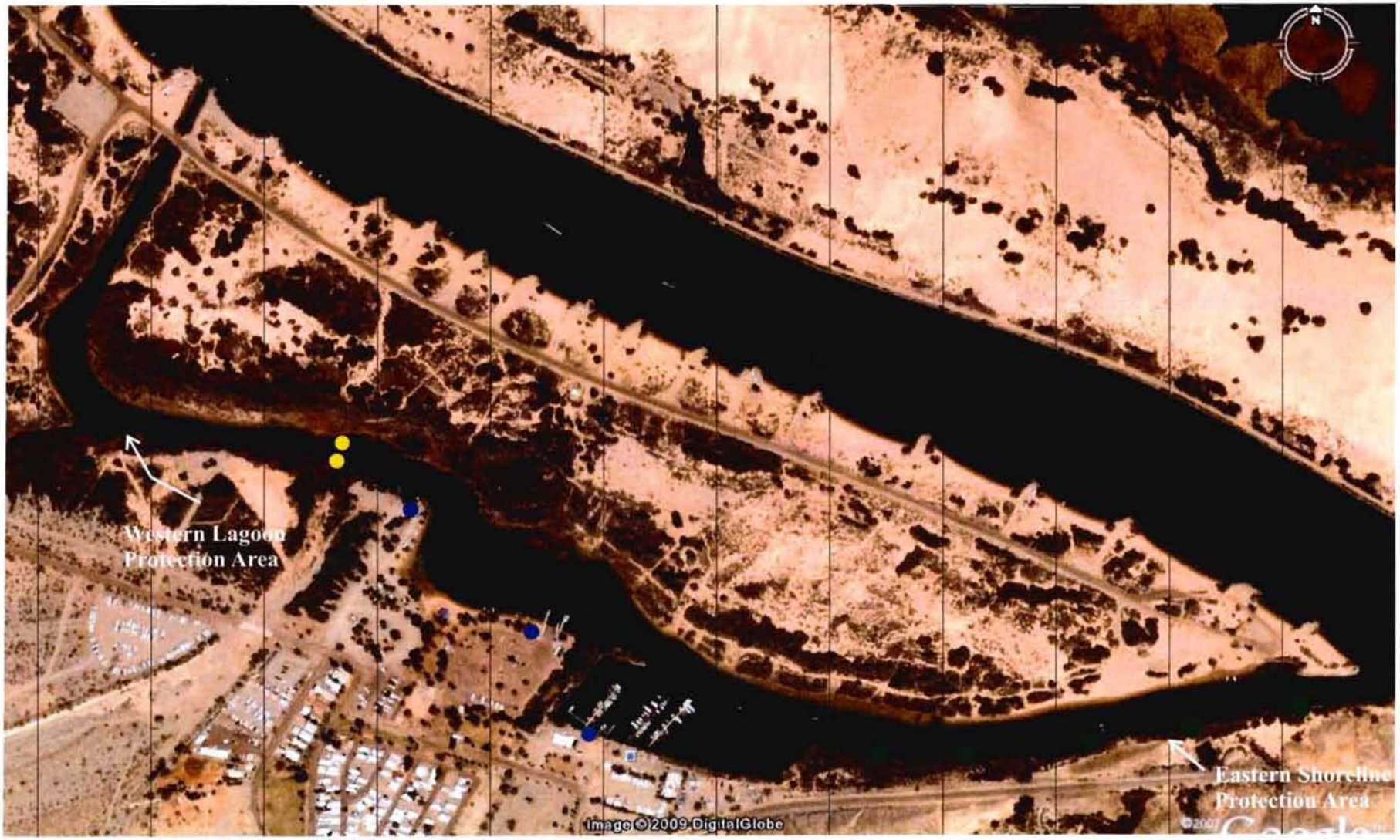


Figure 1. Park Moabi Habitat Protection Plan. 2007 Aerial Photograph.

- Daymarker Lagoon Sign Locations (in the water)
- Educational Sign Locations (on land)
- Shoreline Sign Locations (on land)