

**US Army Corps  
of Engineers®**

# Whittier Narrows Dam Basin

**Los Angeles County, California**

**Master Plan  
and  
Environmental Assessment**

**SEPTEMBER 2011**

**U.S. Army Corps of Engineers  
Los Angeles District  
P.O. Box 532711  
Los Angeles, CA 90053-2325**

*Funding  
Provided in part by*  
**The American Recovery  
And Reinvestment Act  
(Public Law 111-5)**





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## EXECUTIVE SUMMARY

This *Master Plan and Draft Environmental Assessment for Whittier Narrows Dam Basin* is an update to the 1996 *Whittier Narrows Dam Master Plan and Environmental Assessment*. The Federal project, Whittier Narrows Dam Flood Control Project, (Dam or Project) refers to the structures, amenities, and lands necessary for operation of the Dam. The Whittier Narrows Dam Basin (Basin) refers to the lands acquired for the construction, operation and maintenance of the Project. A U.S. Army Corps of Engineers (Corps) Master Plan for an authorized civil works project is a conceptual project-specific document. It describes the existing resources in the Basin and provides a guide for Corps land management responsibilities and decisions in regard to Project lands, water, and associated resources. The Master Plan provides direction and guidance for land development and utilization in the Basin pursuant to applicable Federal laws, regulations, and policies.

. Since the 1996 Master Plan, the land and resource uses within the Basin have changed significantly. Recreation amenities proposed in the 1996 Master Plan were never built such as an amphitheater designed to accommodate up to 8,000 people and parking for 5,000 cars. A grand prix race course, roller hockey rink, a water park, and golf driving range were also contemplated in the 1996 Master Plan. The area designated for those activities has been developed instead as an organic community urban farm run in partnership with a number of agencies. Other recreation amenities not considered in 1996 have been developed in the Basin including the Bosque del Rio Hondo, a fitness zone, playgrounds, and a fishing pier. The updated Master Plan reflects changes to applicable Federal laws, regulations, policy, and guidance that have been amended or changed since the 1996 Master Plan.

This Master Plan and associated Environmental Assessment (EA) trace the history and development of the Basin and provides the baseline condition of existing resources and amenities. One community workshops was held during the preparation of this Master Plan to: (1) provide information to the public about the Corps' master planning process; (2) identify the public's needs, desires, and concerns regarding current and future use of the Basin, and (3) gain feedback on existing and proposed changes to the existing land use classifications in the Basin.

Meetings were held with the County of Los Angeles (County), who leases a significant portion of the Basin from the Corps for recreation purposes. The County provided information pertaining to current operations and maintenance, visitation data, future plans, and current and future needs and goals. Taken together the Corps identified resource objectives for land uses as well as each land use classification in the Basin.

The Basin is classified according to land use classifications, dictated by Corps' policies and guidance. The Master Plan recommends land at the Basin to be classified into seven land use classifications as defined by Corps' guidance: (1) Project Operations; (2) Recreation; (3) Mitigation; (4) Environmentally Sensitive; (5) Multiple Resource Management - Recreation - Low Density; (6) Multiple Resource Management - Inactive and/or Future Recreation; and (7) Easement Lands. The Master Plan provides guidance for balancing flood risk management requirements, recreation opportunities, and preservation of natural resources for current and future generations.

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## INTRODUCTION

### 1.1 Purpose of a Master Plan

A U.S. Army Corps of Engineers (Corps) Master Plan for an authorized civil works project is a conceptual document that guides Corps decision making and management of Federal land in accordance with Federal laws and regulations to manage the project lands, water, and associated resources and to preserve, conserve, develop, restore, and maintain those resources. The Master Plan provides direction and guidance for land development and utilization in the Basin consistent with Corps regulations, laws, and policies. The Federally-authorized project, Whittier Narrows Dam Flood Control Project (Dam or Project), refers to the structures, amenities, and lands necessary for operation of the Dam. The Whittier Narrows Dam Basin (Basin) refers to the lands acquired for the construction, operation, and maintenance of the Project.

The Whittier Narrows Dam Basin Master Plan is intended to guide the orderly and coordinated use, development, and management of resources within the Basin. Water, land, and other natural and human resources have been assessed and document existing conditions for consideration of Project purposes. The Corps guidance for the preparation of Master Plans identifies applicable policies and procedures including:

- Be developed and kept current for all Civil Works projects and other fee-owned and easement lands for which the Corps has administrative responsibility for management;
- Provide guidance for project development and use and for the responsible stewardship of project resources for the benefit of present and future generations; and
- Promote the protection, conservation, and enhancement of natural, cultural and man-made resources.

The primary goals of a Corps' Master Plan are to prescribe overall land and water management plans, resource objectives, and management concepts, which include:

- Providing the best possible combination of responses to regional needs, resource capabilities, land use suitability, and expressed public interest and desires consistent with authorized Project purposes;
- Contributing toward a high degree of recreation diversity within the region;
- Emphasizing the particular qualities, characteristics, and opportunities of the project; and
- Exhibiting consistency and compatibility with national objectives.

An Environmental Assessment (EA) was prepared in conjunction with this Master Plan in accordance with the requirements of the National Environmental Policy Act (NEPA) (42 USC 4321 et seq.), Council on Environmental Quality (CEQ) regulations published at 42 CFR part 1500, and Corps regulations published at 33 CFR part 230. The purpose of the DEA is to provide sufficient information on the existing environmental conditions within the Basin and the potential environmental effects of the No-Action Alternative (continuation of the 1996 Master Plan) and the Proposed Action (approval of the updated Master Plan) so that decision makers can

determine the need to prepare an Environmental Impact Statement (EIS) or a Finding of No Significant Impact (FONSI). The EA is included as Appendix D.

## **1.2 Project Location**

The Project is comprised of a Dam and lands that support the construction, operations, and maintenance of the Dam. The Basin lies within Los Angeles County (Map 1) in a densely populated suburban area within and near the communities of South El Monte, Rosemead, Industry, Pico Rivera, and Montebello (Map 2). The Basin is located on the San Gabriel River approximately 15 miles east of downtown Los Angeles and 10 miles southeast of Pasadena. The San Gabriel River and Rio Hondo flow into the Basin, but do not convene. State Route 60 (Pomona Freeway) and the Interstate 605 intersect at the northeast corner of the Basin and State Route 19 (Rosemead Boulevard) runs north-south through the middle of the Basin. The flood risk management structures and works are located between East Lincoln Avenue and Rosemead Boulevard.

## **1.3 Authorized Project Purpose**

Flood Risk Management Although the authorized Project purpose in the legislation for the Project was originally referred to as flood control, it is now referred to as flood risk management. The Project purpose is to provide flood risk management to the communities downstream of the Basin, and all other activities that may occur within the Basin must not impede or diminish the purpose of flood risk management.

The Flood Control Act of (FCA) of 1936 (Public Law (P.L.) 74-738), provides for the construction of the Dam and related flood risk management works for the protection of metropolitan Los Angeles County, California. The second (P.L. 75-761), amended the 1938 Act by providing for the acquisition of land, easements, and right-of-way for flood risk management projects, channel improvements, and channel rectification. The Project is an important part of a comprehensive system for flood risk management in Los Angeles County known as the Los Angeles County Drainage Area (LACDA). Whittier Narrows Dam was authorized 18 August 1941 in the Flood Control Act (FCA) of 1941 (Public Law (P.L.) 77-228). Construction of the Dam was completed by the Corps in March 1957.

Recreation Section 4 of the FCA of 1944, (P.L. 78-534), as amended, authorizes the Corps to construct, maintain, and operate public park and recreation amenities at water resource development projects and to permit the construction, maintenance, and operation of such amenities. It authorizes the Corps to grant leases of lands, including structures or amenities that are suitable for public parks and recreation purposes to Federal, state, or local government agencies when such action is determined to be in the public interest. Currently, no water is impounded behind the Dam for purposes of recreation and no releases are made downstream for recreation purposes.

Under the authority of the FCA of 24 July 1946 (P.L. 78-534), as amended by the FCA of 1954 (P.L. 83-780), Los Angeles County (County) was issued an initial 50-year lease to develop a total of 1,160 acres within the Basin for park and recreation purposes which was increased to 1,283 acres reflecting the transfer of the Audubon Society's Nature Area to the County. Under

the authority of Section 4 of the FCA of 1944 an initial 25-year lease was granted to the City of Pico Rivera (City) in 1965 to develop 37.08 acres for recreation uses. A new lease was granted in 1989 which extends the lease to the City through 2034 and includes a total of 70 acres.



**Whittier Narrows Spillway, 1952**

Water Conservation Although there is no storage space allocation for water conservation, operation of Whittier Narrows Dam for water conservation was authorized by the Chief of Engineers in a letter dated 18 October 1956 to Los Angeles District, subject: “Conservation Storage in Whittier Narrows Dam Project” (Corps 1957). Water conservation operation is conducted in a manner that does not compromise

flood risk management; water held temporarily for water conservation

is released in time to ensure the entire storage capacity of the Dam is available if needed for flood risk management operations. Los Angeles County Department of Public Works (LACDPW) operates groundwater recharge areas adjacent the Rio Hondo and San Gabriel River downstream of the Dam. Releases to the San Gabriel River from the spillway gates are limited to the capacity of the LACDPW recharge amenities on the San Gabriel River during small flood events and the recession phase of larger flood events.

#### **1.4 Need for Updated Master Plan**

Federal lands are to be managed in conformance with current Corps’ regulations, policy and guidance. This Master Plan memorializes the Corps’ assessment of land management needs, expressed public desires, and provides guidance for evaluation of specific developments, uses and activities. Its purpose is to provide land development and utilization guidance that balances the needs and desires of the public with legal, policy, and resource constraints.

Current Federal laws, regulations, and policies are responsive to increasing needs for environmental protection and conservation. Corps’ policies recognize a greater need for environmental stewardship that includes conservation and protection of the Nation’s natural resources. Consequently, the updated Master Plan reflects a more integrated ecological approach to land management.

The purpose of this Master Plan is to review existing land uses and resources within the Basin, describes the needs and desires of community stakeholders, prescribe land use classifications for the Basin and identify resource and land use objectives. The Master Plan is the Corps’ guide for management of the Basin’s natural resources.

## 1.5 History of the Basin

Gabrielino villages existed in the San Gabriel Valley when the Spanish established Mission Viejo in 1771, the first European settlement in what is now Los Angeles County. The Spanish established Mission Viejo (the original San Gabriel Mission) on the west side of the Basin on 8 September 1771. The mission was destroyed by flood and fire, and was reestablished 6 miles to the northwest at its present site as the Mission San Gabriel Archangel in 1775.



The Battle of the San Gabriel River was fought 8 January 1847, approximately two miles downstream of the Dam. The American victory ended Mexican rule of California and incorporated the California territory into the United States. Several ranches and a small village of adobes called “Old Mission” occupied the area during the mid 1800’s. The “Old Mission” area was west of the Rio Hondo, where Lincoln Avenue and San Gabriel Boulevard intersect. The small community may have been destroyed by flood in 1867, but there were several houses in the area as shown on the 1894 U.S. Geological Survey (USGS) Pasadena Quadrangle. Standard Oil first drilled for oil in the Basin in 1917. Over the next several years, other oil companies drilled in the Basin and in the adjacent Montebello Hills.



**Rio Hondo in 1916**

On 12 June 1915, Los Angeles County Flood Control District (LACFCD) was created to address flood risk management in Los Angeles County. The floods of 1914 placed a greater emphasis on the need for flood risk management although there was an awareness of the need prior to 1900. The LACFCD agency worked with the Corps’ Los Angeles District on various minor flood risk management projects, but it was not until two decades later with the 1 January 1934 flood that major flood risk management projects were given serious consideration. The New Deal Relief and Public Works Program provided the financial vehicle for comprehensive construction programs.



*the Los Angeles County Drainage Area, California, Whittier Narrows Flood Control Basin* was issued in April 1945 and established the location and design of the Dam and appurtenant amenities.

On 28 February 1947, a preliminary report outlining recreation possibilities at the Basin was published. The first Master Plan for the Basin was developed in December 1973 and superseded by the *Revised Recreation Master Plan for Whittier Narrows Flood Control Reservoir* in December 1974 which established the locations of most of the recreation at the Basin today.

In September 1996 the *Whittier Narrows Dam Master Plan and Environmental Assessment* was issued and superseded the 1974 plan and is the Corps Master Plan in effect today. In September 2008, a group of agencies led by the Watershed Conservation Authority (WCA) launched an effort to outreach to the public about their views of the Basin and develop a vision for the future of the Basin. It was considered in the development of this Master Plan.

In 1935 and 1936, the Corps and the LACFCD became partners in a large Works Progress Administration (WPA) contract to design a comprehensive flood risk management plan for the County (Corps 1938). The severe storms and floods of February and March 1938 provided additional impetus for the need for a comprehensive flood risk management program in southern California. They provided rainfall and runoff data for use in new design criteria and as verification for existing design criteria. *The Definite Project Report on*



**Opening day of the Visitor Center, 1979**



**Construction of the Dam and Spillway**

## **1.6 Applicable Laws, Executive Orders, Regulations, and Policy Guidance**

The following Federal laws, Executive Orders, and Corps regulations and guidance are pertinent to the Master Plan update.

### **Public Laws**

The Flood Control Act of 1944, Section 4, as amended (16 USC Section 460d) authorizes the Corps to construct, maintain and operate public park and recreation amenities at water resource development projects; to permit construction of such amenities by local interests; to permit the maintenance and operation and maintenance of such amenities by local and interests; and to grant leases for public park and recreational purposes on Federally-owned lands controlled by the Corps, including structure or amenities thereon. Preference for use is given to Federal, state, or local governmental agencies. The authority to issue licenses is included under this authorization and may be granted without monetary consideration.

The National Environmental Policy Act of 1969, as amended (42 USC 4321 et seq.) provides a framework for Federal agencies to minimize environmental damage and requires Federal agencies to evaluate the potential of environmental impacts of their proposed actions. Under NEPA, a Federal agency prepares an Environmental Assessment (EA) describing the environmental effects of any proposed action and alternatives to that action to determine if there are significant impacts requiring development of an Environmental Impact Statement (EIS) or if a Finding of No Significant Impact (FONSI) is appropriate. The EA must identify measures necessary to avoid or minimize adverse impacts, and all impacts must be reduced to a level below significance in order to rely upon a FONSI.

The Migratory Bird Treaty Act, as amended (16 USC 703-712) prohibits the taking or harming of any migratory bird, the living bird, any part of the bird, its eggs, or eggs without an appropriate Federal permit. This Act covers birds specifically listed therein or named in wildlife treaties between the United States and countries, including Great Britain, Mexican States, Japan and countries once part of the former Soviet Socialist Republics. Disturbance of the nest of a migratory bird requires a permit issued by the United States Fish and Wildlife Service (USFWS) pursuant to Title 50 of the Code of Federal Regulations.

The Fish and Wildlife Coordination Act of 1958 (16 USC 661-667e) requires that any agency impounding, diverting, channel deepening, controlling or otherwise modifying a stream or body of water for any purpose whatever, including navigation and drainage, consult with the United States, Fish and Wildlife Service. The Act is intended to give fish and wildlife conservation equal consideration with the purposes of water resource development projects.

The Federal Water Project Recreation Act of 1965, as amended (16 USC 460I-12 to 460I-21) requires that recreation and fish and wildlife enhancement be given full consideration in Federal water development projects. The Act authorizes the use of Federal water resource project funds for land acquisition in order to establish refuges for migratory waterfowl.

The Clean Water Act, as amended (33 USC 1251-1387), authorizes water quality programs; requires certification from the state water control agencies that a proposed water resource project is in compliance with established effluent limitations and water quality standards (Section 401); establishes conditions and permitting for discharges of pollutants under the national pollutant discharge elimination system (NPDES) (Section 402); and requires that any non-Corps entity acquire a permit from the Corps for any discharges of dredged materials into the waters of the United States, including wetlands (Section 4040). The Act also defines the conditions which must be met by Federal projects before they may make discharges into the waters of the United States. Under the Section 404(b)(1) guidelines, as published in 40 CFR 122.6, only the Least Environmentally Damaging Practicable Alternative should be recommended. The United States Environmental Protection Agency (EPA) has primary responsibility for implementing the programs designed to clean up waters of the United States.

The Clean Air Act, as amended (42 USC 7401-7671q), establishes Federal standards for seven toxic air pollutants. It also establishes attainment and maintenance of National Ambient Air Quality Standards (Title I), motor vehicles and reformulation (Title II), hazardous air pollutant (Title III), acid deposition (Title IV), operation permits (Title V), stratospheric ozone protection (Title VI), and enforcement (Title VII). Under Section 176(c) of the Clean Air Act Amendments of 1990, the Lead Agency is required to make a determination of whether the Proposed Actions “conform” to the State Implementation Plan (SIP). Conformity is defined in Section 176(c); compliance with the SIPs is for the purpose of eliminating or reducing the severity and number of violations of the NAAQS and achieving expeditious attainment of such standards. If the total direct and indirect emissions from a Proposed Action are below the General Conformity Rule “*de minimus*” emission thresholds, then a Proposed Action would be exempt from performing a comprehensive Air Quality Conformity Analysis, and would be in conformity with the SIP. In addition, the analysis must consider whether the emissions would be “regionally significant” before determining no comprehensive Air Quality Conformity Analysis is required.

The Endangered Species Act of 1973, as amended (16 USC 1531 et seq.), protects threatened and endangered species, as listed by the USFWS, from unauthorized take, and directs Federal agencies to ensure that their actions do not jeopardize the continued existence of such species. Section 7 of the Act defines Federal agency responsibilities for consultation with USFWS.

The Archaeological and Historic Preservation Act, as amended (16 USC 469), requires that Federal agencies consider the effect of their undertakings, including Federally-licensed activity or program, on historic American sites, buildings, objects, and antiquities of national significance when taking actions that include, but are not limited to, flooding, the building of access roads, relocation of railroads or highways, and other alterations of the terrain caused by the construction of a dam.

The National Historic Preservation Act of 1966, as amended (16 USC 470 et seq.), requires that Federal agencies consider the effect of their undertakings, including federally licensed activities or programs, on properties eligible for the National Register of Historic Places (NRHP).



The American with Disabilities Act of 1990, as amended, (42 USC 126 et seq.), prohibits public entities, defined as any state or local government, or division thereof, from excluding any individual with a disability from participation in or be denied the benefits of the services, programs, or activities of a public entity, or be subjected to discrimination by any such entity. A "qualified individual with a disability" is an individual with a disability who, with or without reasonable modifications to rules, policies, or practices, the removal of architectural, communication, or transportation barriers, or the provision of auxiliary aids and services, meets the essential eligibility requirements for the receipt of services or the participation in programs or activities provided by a public entity.

Leases: Non-Excess Property of Military Departments and Defense Agencies, as amended, (10 USC 2667(a)), authorizes the Corps to lease Federal land under its control to non-Federal entities when such use will promote the national defense or to be in the public interest. Lands considered for lease under this authority must not be necessary for public use and is not considered excess. This leasing authority typically applies to uses that are considered "non-recreation."

Easements for Rights of Way, as amended (10 USC 2688), authorizes the Corps to issue easements for rights-of-way over, in, and upon Federal land controlled by the Corps when such use will not be against the public interest.

## **Executive Orders**

Executive Order (EO) 11514, Protection and Enhancement of Environmental Quality, amended by Executive Order 11991, Relating to Protection and Enhancement of Environmental Quality, mandates that the Federal government provide leadership in protecting and enhancing the quality of the nation's environment to sustain and enrich human life. Federal agencies must initiate measures needed to direct their policies, plans and programs so as to meet national environmental goals. CEQ regulations include procedures for early environmental impact statement (EIS) preparation and require impact statements to be concise, clear, and supported by evidence that agencies have made the necessary analyses.

Executive Order 11988, Floodplain Management, outlines the responsibilities of Federal agencies in the role of floodplain management. Federal agencies are required to evaluate the potential effects of actions on floodplains, and should avoid undertaking actions which directly or indirectly induce growth in the floodplain or adversely affect natural floodplain values. Construction of structures and amenities in floodplains must consider alternative approaches that avoid adverse effects and incorporate flood proofing and other accepted flood risk management measures. Agencies shall attach appropriate use restrictions to property proposed for lease, easement, right-of-way, or disposal to non-Federal public or private parties. This EO requires Federal agencies to provide leadership and take action to: (1) avoid development in the base (100-year) floodplain unless it is the only practicable alternative; (2) reduce the hazards and risk associated with floods; (3) minimize the impact of floods on human safety, health and welfare; and (4) restore and preserve the natural and beneficial values of the base floodplain.

Executive Order 11990, Protection of Wetlands, states that the Federal agencies shall take action to minimize destruction, loss or degradation of wetlands, and to preserve and enhance the natural and beneficial values of wetlands in carrying out the agencies responsibilities. Each agency, to the extent permitted by law, shall avoid undertaking or providing assistance for new construction located in wetlands unless the head of the agency finds (1) that there is no practicable alternative to such construction, and (2) that the proposed action includes all practicable measures to minimize harm to wetlands which may result from such use. Federal agencies shall also provide opportunity for early public review of any plans or proposals for new construction in wetlands.

Executive Order 12088, Federal Compliance with Pollution Control Standards, requires all Federal agencies to ensure that all necessary actions are taken for the prevention, control, and abatement of environmental pollution with respect to Federal amenities and activities under control of the agency.

Executive Order 12898, Environmental Justice in Minority Populations and Low-Income Populations, requires Federal agencies to identify and address disproportionately high and adverse impacts of Federal Actions, including Federal licensed actions, programs, policies, or activities, on minority or low income populations in the United States.

Executive Order 13112, Invasive Species, requires Federal agencies to expand and coordinate efforts to prevent the introduction of invasive species and to minimize the economic, ecological, and human health impacts that invasive species may cause.

Executive Order 13148, Greening the Government through Leadership in Environmental Management, mandates that environmental management considerations must be a fundamental and integral component of Federal Government policies, operations, planning, and management. The primary goal of this EO in the natural resources arena is for each agency to strive to promote the sustainable management of Federal facility lands through the implementation of cost-effective, environmentally sound landscaping practices, and programs to reduce adverse impacts to the natural environment.

Executive Order 13514, Federal Leadership in Environmental, Energy, and Economic Performance, sets sustainability goals for Federal agencies and focuses on making improvements in their environmental, energy and economic performance. This EO requires Federal agencies to set a 2020 greenhouse gas emissions reduction target within 90 days, increase energy efficiency, reduce fleet petroleum consumption, conserve water, reduce waste, support sustainable communities, and leverage Federal purchasing power to promote environmentally-responsible products and technologies.

## **Corps of Engineers Guidance**

The following paragraphs list Engineer Regulations (ER), Engineer Pamphlets (EP), and Engineer Manuals (EM) published by the Corps pertinent for planning, development, and management of the Basin. These Corps documents are cited with their initial publication date and updates using a system of changes to specific pages to incorporate modifications to the guidance resulting from new legislation or policy changes. The documents including changes are available in digital format at the publications page on the Corps' Headquarters website: <http://140.194.76.129/publications/>.

- Regulations - Engineer regulations (ER) establishes topic-specific procedural practices that must be followed at Corps District levels.
- Pamphlets - Engineer pamphlets (EP) provide clarification guidance and/or detailed implementation guidance in support of Federal laws and regulations.
- Manuals - Engineer manuals (EM) are documents which provide comprehensive planning and design guidance for a wide range of technical and functional activities.

## **Engineering Regulations**

ER 200-1-5, Policy for Implementation and Integrated Application of the U.S. Army Corps of Engineers Environmental Operating Procedures (EOP) and Doctrine, 30 Oct 2003, provides specific policy and

guidance for implementation and the integrated application of the Corps' EOP and associated doctrine across the full spectrum of Corps' program management initiatives and business processes.

ER 200-2-2, Environmental Quality: Policy and Procedures of Implementing NEPA, 04 Mar 1988, (33 CFR part 230), provides policy and procedural guidance to supplement the Council of Environmental Quality's final regulations implementing the procedural provisions of the NEPA for the Civil Works Program of the Corps.

ER 405-1-12, Real Estate Handbook, 20 Nov 1985, provides guidance on real estate requirements and procedures, including guidance on appraisals, acquisitions, relocation assistance, homeowners' assistance, real estate claims, audits, and recording and reporting.

ER 1105-2-100, Planning Guidance Notebook, 22 Apr 2000 (original); 30 Jun 2004 (Appendix D - Amendment 1); 31 Jan 2007 (Appendix F - Amendment 2); 30 Jun 2004 (Appendix G – Amendment 1); 20 Nov 2007 (Appendix H – Amendment 1), provides overall direction by which the Corps Civil Works projects are formulated, evaluated and selected for implementation. It contains a description of the Corps planning process, Corps missions and programs, specific policies applicable to each mission and program, and analytical requirements.

ER 1110-2-240, Water Control Management, 08 Oct 1982; 30 Apr 1987 (change 1); 01 Mar 1994 (change 2), prescribes policies and procedures to be followed by the Corps in carrying out water control management activities, including the establishment of water control plans for Corps and non-Corps projects, as required by Federal laws and directives.

ER 1110-2-400, Design of Recreation Sites, Area and Amenities, 31 May 1988, establishes policy, and guidance for the design of recreation sites, areas, and amenities.

ER 1130-2-530, Flood Control Operations and Maintenance Policies, 30 Oct 1996, establishes the policy for the operation and maintenance (O&M) of Corps flood risk management and related structures at civil works water resource projects and of Corps-built flood risk management projects operated and maintained by non-Federal sponsors.

ER 1130-2-540, Environmental Stewardship Operations and Maintenance Guidance Procedures, 15 Nov 1996 (Original); 04 Nov 2002 (change 1); 31 Jul 2005 (change 2); 11 Aug 2008 (change 3), establishes land management policy for Corps-administered project lands and water, based on various authorizing legislation and the principles of good environmental stewardship. Environmental stewardship includes both passive and proactive management to sustain healthy ecosystems and biodiversity, and conserve natural resources, such that Corps lands and waters are left in a condition equal to or better than their condition when acquired, and such that those natural and cultural resources are available to serve the needs of present and future generations. Management plans will be prepared for all Corps administered lands and waters.

ER 1130-2-550, Recreation Operations and Maintenance Policies, 15 Nov 1996 (Original); 01 Oct 1999 (change 1); 01 Mar 2002 (change 2); 15 Aug 2002 (change 3); 30 Aug 2008 (change 4); 30 Mar 2009 (change 5), establishes the policy for management of recreation programs and activities, and for the operation and maintenance of U.S. Army Corps of Engineers recreation amenities and related structures, at civil works water resource projects. Chapter 3 of this regulation calls for preparation and implementation of project Master Plans and operational management plans.

ER 1165-2-26, Implementation of Executive Order 11988 on Floodplain Management, 30 Mar 1984, sets forth general policy and guidance for Corps implementation of Executive Order 11988, Floodplain

Management, as it pertains to planning, design, and construction of Civil Works projects, to activities under the operation and maintenance program, and to the real estate program of the Corps. The policy of the Corps with respect to floodplain management is to formulate projects which, to the extent possible, avoid or minimize adverse impacts associated with use of the base (100-year) floodplain and avoid inducing development in the base floodplain unless there is no practicable alternative. The decision on whether a practicable alternative exists will be based on weighing the advantages and disadvantages of floodplain sites and non-floodplain sites. Factors to be taken into consideration include, but are not limited to, conservation, economics, esthetics, natural and beneficial values served by floodplains, impact of floods on human safety, location advantage, the functional need for locating the development in the floodplain, historic values, fish and wildlife habitat values, endangered and threatened species, Federal and State designations of wild and scenic rivers, refuges, etc. and, in general, the needs and welfare of the people. The test of practicability will apply to both the proposed Corps action and to any induced development likely to be caused by the action. Identification and evaluation of practicable alternatives shall include consideration of alternative sites (carrying out the proposed action outside the floodplain); alternative actions (other means which accomplish the same purpose as the proposed action); and no action. When a determination is made that no practicable alternative to undertaking an action in the floodplain exists, it will be appropriately documented and the features or qualities of the floodplain that make it advantageous over alternative non-floodplain sites shall be described and adequately supported.

ER 1165-2-119, Modifications to Completed Projects, 20 Sep 1982, provides guidance on the use of available authorities, as compared to the need of new project authorizations, for study and accomplishment of modification to completed projects.

ER 1165-2-400, recreation Planning, Development, and Management Policies, CH1, 09 Aug 1985, defines the objectives, philosophies, and basic policies for the planning, development and management of outdoor recreation and enhancement of fish and wildlife resources at Corps water resource development projects.

ER 1165-2-501, Civil Works Ecosystem Restoration Policy, 30 Sep 1999, provides policy on Corps involvement in ecosystem restoration and protection through Civil Works programs and activities.

### **Engineering Pamphlets**

EP 310-1-6, Corporate Information: Graphic Standards Manual, 01 Sep 1994 (original); 01 Jun 2006 (change 1), establishes a unified approach regarding the use of Corps logotype and preparation of visual communications. The manual covers the use of the logo in business cards, signs, publications, forms, vehicles, and miscellaneous items.

EP 310-1-6a, 232 Sign Standards Manual, VOL 1, 01 Jun 2006, provides direction and guidance for signage, including planning, use, placement, materials, and maintenance, at Corps Civil Works water resource projects.

EP 310-1-6b, Sign Standards Manual, VOL 2, Appendices, 01 Jun 2006, provides guidance on procurement procedures, materials and specifications, sign maintenance procedures, typography reference, reference material, and reproduction materials for signage at Corps water resource projects.

EP 1130-2-540, Environmental Stewardship and Maintenance Guidance and Procedures, 15 Nov 1996 (original); 04 Nov 2002 (change 1); 31 Jul 2005 (change 2); 11 Aug 2008 (change 3), establishes guidance for the management of environmental stewardship-related operations and maintenance activities at Corps civil works water resource projects and supplements ER 1130-2-540, Environmental Stewardship Operations and Maintenance Policies.

EP 1130-2-550, Project Operations-Recreation Operation and Maintenance Guidance and Procedures, 15 Nov 1996 (original); 01 Oct 1999 (change 1); 01 Mar 2002 (change 2); 15 Aug 2002 (change 3); 30 Aug 2008 (change 4), establishes guidance for the management of recreation programs and activities, and for the operation and maintenance of Corps recreation amenities and related structures, at civil works water resource projects and supplements ER 1130-2-510, Recreation Operation and Maintenance Policies. Master Plans and operational management plans are to be developed in accordance with the guidance on master planning and report content contained in Chapter 3 of both ER and EP 1130-2-550.

EP 1165-2-316, Rules and Regulations Governing Public Use of Water Resources Development Projects Administered by the Chief of Engineers, May 2000; codified as 36 CFR part 327, establishes rules and regulations pertaining to the recreation land use and safety measures at Corps administered water resource and development projects.

EP 1165-2-502, Ecosystem Restoration – Supporting Policy Information, 30 Sep 1999, provides policy information in support of ER 1165-2-501 to guide Corps of Engineers involvement in ecosystem restoration and protection through Civil Works programs and activities.

### **Engineering Manuals**

EM 1110-1-400, Recreation Facility and Customer Services Standards, 01 Nov 2004, provides general guidance for the rehabilitation of existing, and the design and construction of new recreation areas and amenities, the provision of customer services, and recreation program evaluation activities at recreation areas managed by the Corps of Engineers. The overall purpose of this document is to establish a uniform level of quality nationwide by which Corps-managed parks will meet the needs of current and future park customers.

EM 1110-2-410, Design of Recreation Areas and Amenities – Access and Circulation, 31 Dec 1982, presents data compiled from experience and research that may be useful to Corps personnel concerned with the design of access and circulation to recreation sites, areas and amenities. The material presented in the manual is intended as design guidance for obtaining an end product which results in safe, useable, economical recreation developments and accessible to all.

### **South Pacific Division Regulations**

SPDR 1110-2-1, Land Development Proposals at Corps Reservoir Projects, Nov 2001, establishes South Pacific Division (SPD) policy for evaluating land development proposals within flood basins of the Corps, and documenting the results of the evaluation. The policies of this division regulation detail the procedures to be followed in evaluating land development proposals by any entity (companies, organizations, private parties, governments, or agencies) to construct buildings, roads, or other amenities, or in any way would modify the land forms, vegetation, surface characteristics, or use lands within basins operated by the Corps for flood risk management. The objective is to assure that project purposes are not compromised, that the public is not endangered, and that natural and cultural resources associated with project lands are not harmed.

## 1.7 Pertinent Publications

### U.S. Army Corps of Engineers Publications

- U.S. Army Corps of Engineers, Los Angeles District, *Analysis of Design, 57'x10' Crest Gates for Whittier Narrows Dam*, 1937
- U.S. Army Corps of Engineers, Los Angeles District, *Flood Control in the Los Angeles County Drainage Area*, 1938
- U.S. Army Corps of Engineers, Los Angeles District, *Analysis of Design, Whittier Narrows Dam Vol. I*. (Revised 1941)
- U.S. Army Corps of Engineers, Los Angeles District, *Flood Control in the Los Angeles County Drainage Area*, 1939
- U.S. Army Corps of Engineers, Los Angeles District, *Hydrology in the Los Angeles County Drainage Area*, 1939
- U.S. Army Corps of Engineers, Los Angeles District, *Preliminary Report, recreation Development, Whittier Narrows Flood Control Basin*, 1947
- U.S. Army Corps of Engineers, Los Angeles District, *Report, Master Recreation Plan Whittier Narrows Flood Control Reservoir*, 1953.
- U.S. Army Corps of Engineers, Los Angeles District, *Administration and Development of Project Land and Water Areas* , 1956.
- US Army Corps of Engineers, Los Angeles District, *Reservoir Regulation Manual for Whittier Narrows Flood Control Reservoir, Los Angeles River, California*, 1957.
- U.S. Army Corps of Engineers, Los Angeles District, *Whittier Narrows Dam and Reservoir, Periodic Inspection and Continuing Evaluation Report No. 1*, 1970
- U.S. Army Corps of Engineers, Los Angeles District, *Operation and Maintenance Manual for Whittier Narrows Dam, Los Angeles River Improvement, Los Angeles County Drainage Area, California*, 1970
- U.S. Army Corps of Engineers, Los Angeles District, *Revised Recreation Master Plan for Whittier Narrows Flood Control Reservoir, Los Angeles River Feature Design Memorandum No4.* , 1973.
- U.S. Army Corps of Engineers, Los Angeles District, Final Environmental Impact Report for Whittier Narrows Water Reclamation Plant, Bureau of Engineering, City of Los Angeles*, 1975
- U.S. Army Corps of Engineers, Los Angeles District, *Operations and Maintenance Manual, Los Angeles County Drainage Area*, 1975
- U.S. Army Corps of Engineers, Los Angeles District, *Plan of Study, Review Report for Flood Control and Allied Purposes, Los Angeles County Drainage Area*, 1976
- U.S. Army Corps of Engineers, Los Angeles District, Supplement No. 2 to *Feature Design Memorandum/Proposal Fiscal Year 1978, recreation Development*, 1978

- U.S. Army Corps of Engineers, Los Angeles District, *Interim Report on Hydrology and Hydraulic Review of Design Features of Existing Dams for LACDA Dams*, 1978
- U.S. Army Corps of Engineers, Los Angeles District, *Whittier Narrows Basin Master Plan and Final Environmental Impact Report/Statement, Los Angeles, California*, 1981
- U.S. Army Corps of Engineers, Los Angeles District, *Final Report, Review of Water Resources within the Los Angeles County Drainage Area*, 1985.
- U.S. Army Corps of Engineers, Los Angeles District, *Conceptual Design Material Whittier Narrows Basin Recreation Lake Water Supply and Discharge Amenities*, 1986
- U.S. Army Corps of Engineers, Los Angeles District, *An Evaluation Report, Whittier Narrows Recreation Lake*, 1986
- U.S. Army Corps of Engineers, Los Angeles District, *Final Environmental Assessment Whittier Narrows Recreation Lake and Wildlife Area Los Angeles County, California*, 1987
- U.S. Army Corps of Engineers, Los Angeles District, *Whittier Narrows Basin Recreation Lake Feature Design Memorandum*, 1987
- U.S. Army Corps of Engineers, Los Angeles District, *Los Angeles County Drainage Area, Recreation Review*, 1988
- U.S. Army Corps of Engineers, Los Angeles District *Supplemental Environmental Assessment for the Design Refinements to the Whittier Narrows Recreation Lake*, Los Angeles County, California, 1988
- U.S. Army Corps of Engineers, Los Angeles District, *Los Angeles County Drainage Area Review, Final Feasibility Report*, 1991
- U.S. Army Corps of Engineers, Los Angeles District, *Conceptual Management Plan for the Whittier Narrows Basin Wildlife Area*, 1994
- U.S. Army Corps of Engineers, Los Angeles District, *Supplement 1 to the 1981 Whittier Narrows Basin Master Plan, Including Environmental Assessment*, 1995
- U.S. Army Corps of Engineers, Los Angeles District, *Los Angeles River Feature Design Memorandum*, 1996
- US Army Corps of Engineers, Los Angeles District, *Environmental Assessment for Whittier Narrows Master Plan, Los Angeles County Drainage Area, California San Gabriel River*, 1996
- US Army Corps of Engineers, Los Angeles District, *Whittier Narrows Dam Master Plan, Los Angeles County Drainage Area, California, San Gabriel River*, 1996
- US Army Corps of Engineers, Los Angeles District, *Los Angeles County Drainage Area (LACDA), Water Conservation and Supply, Santa Fe-Whittier Narrows Dams, Feasibility Study, Final Report with Environmental Impact Statement and Environmental Impact Report*, 1998

### Other Agency Publications

- City of Los Angeles, Department of Recreation and Parks, *2009 Citywide Community Needs Assessment*, 2009

Whittier Narrows Dam Basin  
Master Plan and Environmental Assessment

Watershed Conservation Authority, [Draft] *Visioning Whittier Narrows*, 2010



## 2 PROJECT DESCRIPTION

### 2.1 Project Data

The Project is formed by an earth (rolled fill) dam with a crest length of 16,960 feet at the top of Dam at elevation 239.0 NGVD 1929 and a maximum height above the Rio Hondo streambed of 56 feet. The area and capacity of the Basin at elevation 229.0 feet NGVD 1929 (top of spillway gates when closed) are 2,241 acres and 33,465 acre-feet, respectively (Corps, August 1995). At the top of the Dam, the area is 3,455 acres and the capacity is 63,512 acre-feet. Rosemead Boulevard passes over the Dam and across the Basin in a north-south



Aerial View of the Dam 1957

orientation. The roadway is elevated within the Basin with a minimum elevation of 211.0 feet NGVD, 1929. Below this elevation, the Mission Creek pool and the Rio Hondo pool are divided by Rosemead Boulevard with only the flood flow channel, which has an invert elevation of 197.5 feet NGVD, 1929, connecting the two pools. The Rio Hondo pool at stages below elevation 188 feet NGVD, 1929 is divided into two pools by a diversion dike in the Rio Hondo channel just above the Dam. The San Gabriel River channel is separated from the Mission Creek pool below elevation 208 feet NGVD (invert of flood flow channel at San Gabriel River). Table 2.1 presents a summary of pertinent data describing the physical characteristics of the Project (Corps 2010a).

<b>Table 2.1 Whittier Narrows Dam and Basin Pertinent Data</b>	
<b>General Information</b>	
Construction Completed	October 1957
Stream System	Rio Hondo and San Gabriel Rivers
Drainage Area	554 square miles
<b>Basin</b>	
<b>Elevation</b>	
Water supply pool (Rio Hondo)	201.6 ft, NGVD
Water supply pool (San Gabriel)	213.5 ft, NGVD
Flood control pool	228.5 ft, NGVD
Top of gates (gates closed)	229 ft, NGVD

<b>Table 2.1 Whittier Narrows Dam and Basin Pertinent Data</b>	
Spillway design surcharge level	238.9 ft, NGVD
Top of Dam	239 ft, NGVD
<b>Area<sup>1</sup></b>	
Water supply (Rio Hondo)	280 acres
Water supply (San Gabriel)	71 acres
Flood control	2,241 acres
Spillway design surcharge level	3,447 acres
Top of Dam	3,455 acres
<b>Capacity, Gross<sup>2</sup></b>	
Water supply (Rio Hondo)	2,462 ac-ft
Water supply (San Gabriel)	387 ac-ft
Flood control pool	33,465 ac-ft
Top of gates (gates closed)	34,596 ac-ft
Spillway design surcharge level	63,168 ac-ft
Top of Dam	63,512 ac-ft
Allowance for sediment	0 ac-ft
<b>Dam: Earthfill</b>	
Height above original streambed	56 ft
Top length	16,960 ft
Top width	16 ft
Freeboard	0.1 ft
<b>Spillway (San Gabriel)</b>	
Type of gates	Tainter
Number and size of gates	9 - 50'W x 29'H
Gate sill elevation	200 ft, NGVD
Top of gates (gates closed) elevation	229 ft, NGVD
Discharge at design surcharge (el. 234.0)	251,000 cfs
Maximum discharge capacity (el. 239.0)	307,900 cfs
<b>Outlets (Rio Hondo)</b>	
Type of gates	Tainter
Number and size of gates	4 - 30'W x 20'H
Size of outlets	30'W x 19'H
Gate sill elevation	184 ft, NGVD
Regulated outflow	40,000 cfs
Maximum capacity (el. 229.0)	74,700 cfs
<b>Standard Project Flood</b>	
Duration (inflow)	4 days

<b>Table 2.1 Whittier Narrows Dam and Basin Pertinent Data</b>	
Total volume	198,000 ac-ft
Inflow peak	70,000 cfs
<b>Probable Maximum Flood</b>	
Duration (Inflow)	4 days
Total volume (including baseflow)	774,100 ac-ft
Inflow peak	393,600 cfs
<b>Historic Maximums and Dates</b>	
San Gabriel	
Maximum release (25 January 1969)	11,500 cfs
Maximum water surface elevation (10 January 1995)	216.65 ft, NGVD
Rio Hondo	
Maximum release (17 February 1982)	38,800 cfs
Maximum water surface elevation (25 January 1969)	213.5 ft, NGVD
<sup>1</sup> Updated September 2009. <sup>2</sup> Based on August 1995 Survey. Source: Corps 2010a. NGVD is 1929	

The outlet works are located near the right abutment of the Dam so that discharges are directed into the Rio Hondo. Four radial gates, 30 feet wide by 20 feet high, when closed, seal gate openings 30 feet wide by 19 feet high. The gates are numbered sequentially from left to right looking downstream. Gate sills are at elevation 184 feet NGVD, 1929. Regulated outflow of 40,000 cfs is reached at elevation 208.4 feet NGVD, 1929. Maximum discharge capacity (Basin elevation 229.0 feet NGVD, 1929) is 74,700 cfs. Trash racks are not provided because the outlets are sufficiently large to pass the anticipated maximum size of debris. The piers between the gates are designed to withstand unequal water pressures caused by any gate being closed while the adjoining gate is open. Automatic electrical operation of gate No. 1 is provided to open the gate when the water surface reaches elevation 189 feet NGVD, 1929, and close the gate when the water surface falls below elevation 187 feet NGVD, 1929.

The spillway structure, consisting of nine 50- by 29-foot radial gates, separated by six 8-foot wide and two 16-foot wide piers, is located so as to discharge into San Gabriel River. The gate sills are at elevation 200 feet NGVD. The gates are automatically operated by floats and counterweights above water-surface elevation 228.5 feet NGVD where they commence opening and continue until fully open at water surface elevation 233.5 feet NGVD. At water-surface elevation 234 feet NGVD, the design discharge is 251,000 cfs, and at elevation 239 feet NGVD, the discharge is 308,000 cfs. In addition to the automatic control system, the spillway gates are equipped with mechanical hoists for use in routine maintenance and in emergencies if the automatic control system should fail. Each gate is hoisted by a unit containing a 3-horsepower motor and gear reductions designed to lift the gate at a speed of approximately one foot per minute. The motor is connected to the hoist mechanism through a clutch designed to disengage

when the automatic float system is in operation. Controls for the mechanical hoists are located on the bridge adjacent to each motor.



**Drop Structure on San Gabriel River**



**Spillway Gates**

Although the Project does not have a storage space allocation for water conservation or water supply, the water control plan has a provision for water conservation operation. On the recession side of a flood event when the peak flood flow has passed and the Rio Hondo pool elevation is below elevation 201.6 feet (approximately 2,500 acre-feet), water held in storage may be released at rates that can be conserved through groundwater recharge. Floodwaters may be held up to elevation 213.5 feet NGVD (532 acre-feet) on the spillway side for release to the San Gabriel River. The County operates spreading grounds downstream of the Dam along both the Rio Hondo and San Gabriel River.

## **2.2 Hydrology and Basin Operations**

### **Climate and Hydrology**

The climate in the drainage area is subtropical and semiarid in the valleys and hills, and is temperate and humid in the mountains. Most precipitation in the drainage area is associated with general winter storms that result from extra-tropical cyclones of north Pacific origin. During the months of November through April, storms move south over the Pacific Ocean to the latitudes of southern California and then inland, resulting in precipitation over large areas. Major storms consist of one or more cyclonic disturbances and occasionally last 4 days or more. Thunderstorms, which may result in intense precipitation over small areas during short periods, occasionally occur either in association with general winter storms or independently. Summer thunderstorms are infrequent (Corps 1957).

The largest floods from the entire drainage area above the Basin result from winter storms, but the largest floods from small sub-basins result from thunderstorms. The mean seasonal precipitation in the drainage area ranges from 16 inches at the Dam to more than 45 inches at the crest along the northern boundary of the area. Precipitation occurs primarily during the months of November to April. Rainless periods of several months during the summer are common. Snow falls frequently during the winter at elevations above 5,000 feet but melts rapidly except on the protected northern slopes and on the higher peaks. Snow rarely falls in the valley. The effects of

snow on flood runoff are considered slight. Runoff from the drainage area is characterized by unusually high flood peaks of short duration. The physiographic features of the region serve to intensify rainfall rates. High rainfall intensities, combined with the effect of shallow surface soils underlain by impervious bedrock, fan-shaped collecting systems, occasional denudation by fire, and steepness of gradients, produce floods heavily laden with debris below the canyon mouths. Most streams in the drainage area are intermittent. During normal dry weather the discharge of many streams is increased by regulated outflow from dams in the mountains (Corps 1957). The Mediterranean climate of southern California allows year-round use of recreation amenities.

Flood hydrographs are typically of less than 24 hours duration and are usually less than 48 hours duration, with inflow rates dropping rapidly between storms. Based on the USGS streamgage record for the Rio Hondo below the Basin, California, the long-term average outflow into the Rio Hondo from the Project for the period 1967 through 2008 is 122,600 acre-feet per year (or 169.7 cubic feet per second). The mean annual outflow varied from a high of 638.1 cfs in water year 1969 to the lowest runoff of 40.9 cfs in water year 1972. Although there is a significant amount of water released into the San Gabriel River from the Dam, most of the water released from the Dam is through the outlet works on the Rio Hondo. Channel flow below the Dam is characterized by releases of relatively long duration with occasional sharp peaks from the tributary urban areas downstream.

In the alluvial fan and valley fill areas of the Project watershed, sediment production is minimal due to the soil and channel stabilization characteristic of urban development. In the steep mountainous segment of the watershed, sediment production can be very high, particularly following periods in which wildfire denudes the watershed of vegetation. However, Santa Fe Dam Basin and the other County dams in the watershed intercept most of the sediment produced by the mountainous areas upstream of these structures.

## **Dam Operation**

Flood risk management of runoff into the Dam is governed by the Reservoir Regulation Manual (Corps 1957). In addition to the description of the water control plan, the manual provides extensive background information on the history of the project, watershed characteristics, hydrologic data collection systems, hydrologic forecasting, agency responsibilities, and coordination for water control management. The Reservoir Regulation Manual as well as the current hydrologic status of the Dam is available on the Corps' Reservoir Regulation website (Corps 2010a).

The Project was authorized and constructed to provide flood risk management to the downstream areas along the San Gabriel, Rio Hondo and Los Angeles Rivers, and is an integral part of the overall Los Angeles County Drainage Area Flood Control System (LACDA). In addition, the Project is authorized for water conservation. The outflows from the Dam can be released into both the earth-bottom San Gabriel River channel and the Rio Hondo concrete channel. Releases from the Dam outlet works to the Rio Hondo are limited to a maximum of 41,000 cfs. The gated spillway on the San Gabriel River side of the Dam embankment is capable of releases up to 308,000 cfs with a pool elevation at top of Dam (elevation 239 feet NGVD). Dam and Basin pertinent data are provided in Table 2.1.

Flood risk management operations in the Reservoir Regulation Manual (Corps 1957) describe how the Basin storage space (33,465 acre-feet at elevation 228.5 feet NGVD) is utilized in conjunction with a maximum Rio Hondo outlet release of 41,000 cfs, and a spillway release into the San Gabriel River of about 5,000 cfs, to control flood inflow events to the safe flow carrying capacity of the downstream Rio Hondo and San Gabriel River channels, respectively.

Downstream channels' safe flow carrying capacity varies during flood events. Carrying capacity depends on rainfall and flood runoff downstream of the Dam. Flood releases from the Dam may be reduced as necessary so as not to exceed the flow conveyance capacity of the downstream flood risk management channels. An extensive system of Corps and County telemetered rain gages and stream gages monitor precipitation and stream-flow throughout the watershed on a continuous basis to aid in management of water releases.

Although the Basin does not have a storage space allocation for water conservation or water supply, the water control plan has a provision for water conservation operation. On the recession side of a flood event when the peak flood flow has passed (i.e., discharges from a flood event are getting smaller) and the Rio Hondo pool elevation is below elevation 201.6 feet NGVD (approximately 2,500 acre-feet), water held in storage may be released at rates that can be conserved through groundwater recharge. The water conservation operations on the Rio Hondo side of the Basin inundate an area roughly bounded by Rosemead Boulevard on the east, Lincoln Avenue on the west, San Gabriel Boulevard on the north, and the Dam embankment on the south. Likewise, floodwaters may be held up to elevation 213.5 feet NGVD (532 acre-feet) on the spillway side for release to the San Gabriel River. The County operates an efficient system of spreading basins downstream of the Basin along both the Rio Hondo and San Gabriel Rivers.



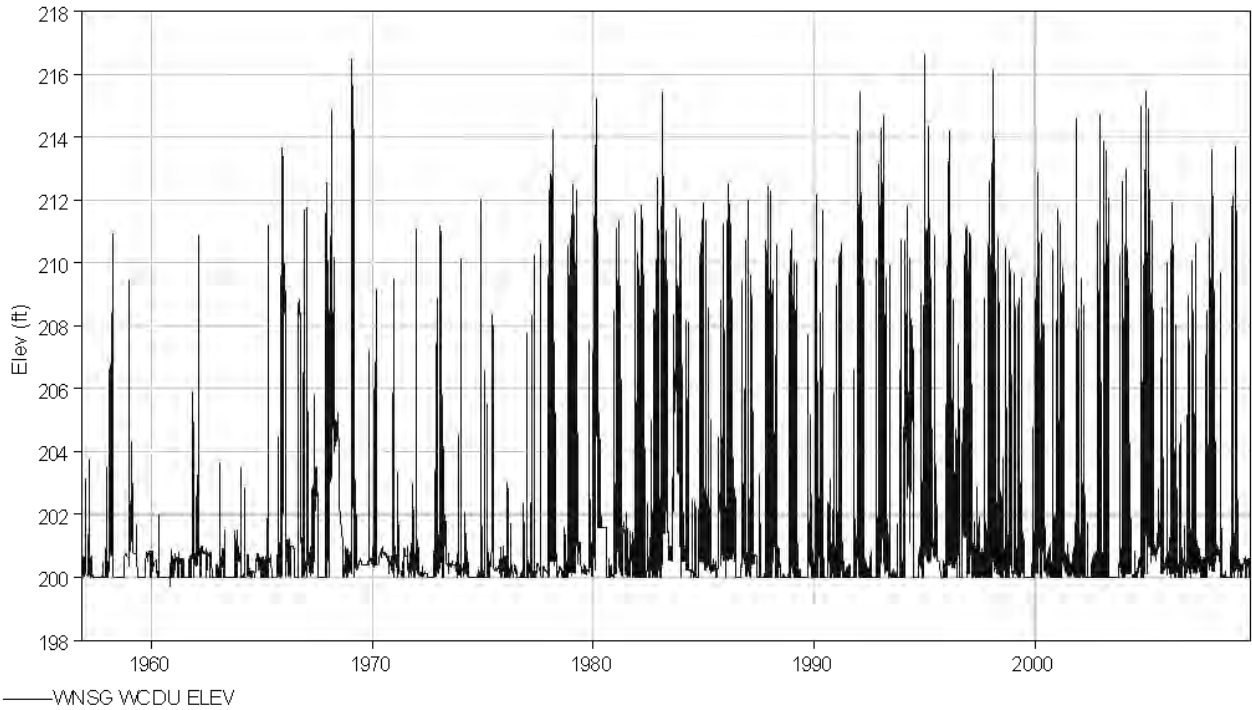
**San Gabriel River and Legg Lake**

Project operations do not involve temporary or permanent storage of floodwaters for recreation purposes. Basin lands behind the Dam, when not used for storing floodwaters, are utilized for other purposes such as recreation and transportation corridors. Recreation uses within the Basin include picnic areas, sports fields/courts, recreation lakes, concession stands, wildlife nature areas, golf courses, equestrian area, and hiking and biking trails. During Project operations, these areas and amenities can be inundated with minimal damage (Corps 1998).

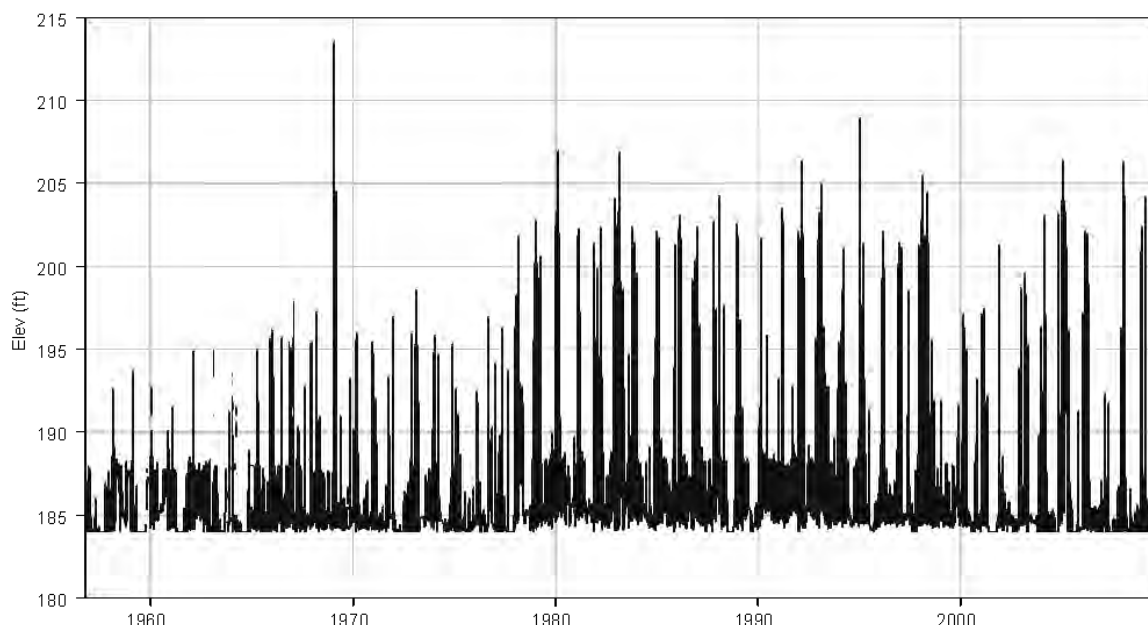
### **Basin Filling Frequency**

The frequency and areal extent of flood inundation needs to be considered in development and utilization of the Basin. Project operations manage flood inflows and results in periodic storage of flood waters within the Basin. Statistical analyses of water surface elevations reached over the historical period of time the Dam has been operational enables the determination of filling frequency. This refers to the relationship between the elevations that waters reach within the Basin and how frequently those elevations are reached. Corps filling frequency values for the Dam are presented in Table 2.4 (Corps 2010b).

The Dam has a water surface elevation gage which produces a continuous record of the Basin stage. This historical operation record of the water surface elevation is the principal information used to develop a statistical relationship between water surface elevation and frequency. Figures 2.1 and 2.2 present Project historical record (Rio Hondo and San Gabriel pools, respectively) water surface elevations from October 1956 to October 2009 (53 years) (Corps 2009).







**Figure 2.1 Historic Water Surface Elevation (San Gabriel River)**

The filling frequency (water surface versus frequency) relationship was derived by performing a partial duration graphical frequency analysis of the historical monthly maximum Basin water surface elevations. This statistically derived relationship was augmented by using the results of prior Corps hydrology studies that used inflow volume frequency and hydrograph routing procedures to estimate the frequency of occurrence of the less frequent (rarer) floods such as the 100-year, 200-year, and 500-year events. In Table 2.4, percent chance exceedance means, for example, that every year there is a 1-percent (1 out of 100) chance for the indicated Basin water surface (225.3 feet NGVD) elevation to be equaled or exceeded due to flood inflows. The elevation-frequency contours in Map 7 show the Basin area inundated for the 10-, 50-, and 100-year return period flood events as well as the area inundated when the water surface elevation is at top of Basin pool (228.5 feet NGVD). It should be noted that the depiction of a single basin inundation area for return periods more frequent than the 100-year require merging the inundation areas defined by two different elevations (on the Rio Hondo and San Gabriel River sides). With regard to duration of Basin inundation, the project operation for flood risk management produces short periods of Basin inundation. Floodwaters are released quickly (a matter of hours or days) in order to regain storage space to capture future flood inflows.

<b>Table 2.4 Whittier Narrows Dam Filling Frequency Relationship</b>			
<b>Percent Chance Exceedance</b>	<b>Return Period</b>	<b>Basin Stage (feet) (Rio Hondo)*</b>	<b>Basin Stage (feet) (San Gabriel)*</b>
0.2	500	230.6	230.6
0.5	200	229.7	229.7
1.0	100	225.3	225.3
2.0	50	213.0	217.0

5.0	20	207.5	216.0
10.0	10	206.4	215.5
20.0	5	204.6	215.0
50.0	2	202.7	213.4
80.0	1.25	201.8	212.4
90.0	1.11	201.6	212.1
95.0	1.05	201.5	212.0
99.0	1.01	201.4	211.9
<p>*Note that Whittier Narrows Dam straddles both the Rio Hondo and San Gabriel River. On the Rio Hondo (west) side, the bottom of the basin is elevation 184 feet. On the San Gabriel River (east) side, the bottom of the basin is elevation 200 feet. When either pool elevation exceeds about 220 feet, the 2 pools are assumed fully merged into a single Basin pool.</p>			

## Operational Issues

Due to the urbanized nature of the valley portion of the watershed, the runoff response to rainfall is rapid with typically high peak discharges of relatively short duration. With the intensive use of the Basin for recreation and for transportation corridors (e.g., Rosemead Boulevard, North Durfee Avenue, and State Highway 60), the Dam inflows require that sufficient advance warning be given to affected agencies and the public to minimize potential flood impacts and ensure public safety. Unlike other LACDA dams, the outlet works at Whittier Narrows Dam do not have a trash rack because the 4 radial gates are so large (30 feet wide by 20 feet high) and can be opened so high (19 feet) that trash buildup is not a problem. The spillway gates on the San Gabriel side are even larger (50 feet by 29 feet).

### 2.3 Real Estate

The Corps acquired 2,640.1 acres in fee and has limited rights over an additional 186.5 acres through a flowage easement. The Corps reserves 869.4 acres exclusively for operation of the Dam. The remaining 1,770.7 of fee acres are available for compatible purposes with a preference toward recreation development.

The Corps granted a lease to the County for a term of 50 years effective 11 June 1957 for 1,161 acres for recreation purposes. A new 50 year lease for 1,258 acres with the County took effect on 1 June 1986 and terminates on 31 May 2036. A 25-year lease was signed with the City of Pico Rivera (City) effective 1 December 1965 to develop approximately 37 acres for recreation. . The Corps granted a subsequent lease of 120.44 acres in and out of the Basin for recreation purposes to the City for a term of 50 years commencing on 1 December 1984 and terminates on 30 November 2034. Map 4 shows the various leases in the Basin.

The Corps approved the use of Basin land for several other non-recreation uses determined to be in the public interest which include 26 acres for the development of a Water Reclamation Plant through a lease to the Los Angeles County Sanitation District and 82 acres for agricultural uses through three separate leases. Other non-recreation outgrants and other uses authorized by the Corps in the Basin include:

- Lease to Texaco for a research facility;
- Permit to the U.S. Army Reserve for an administration headquarters;
- National Guard Reserve center; and
- Lease to W.B. Core, Inc. for radio towers which no longer exist.

Additional easements have been granted for storm drains, drainage ditches, pipelines, sewer lines, communication lines, gas lines, access roads, and power lines. The most visible of the easements is the one issued to Southern California Edison Company for three power lines that cross through the middle of the Basin.

## **2.4 Watershed**

The combined drainage area of the San Gabriel River and the Rio Hondo is 554 square miles of which 60 percent are mountains, 30 percent valley, and 10 percent hills. The San Gabriel River originates in the precipitous canyons of the upper San Gabriel Mountains, flows across the San Gabriel Valley, into the Basin, passes through the Dam, and empties into the Pacific Ocean. The Rio Hondo headwaters are in the Los Angeles River watershed to the west of the San Gabriel River watershed. The Rio Hondo flows into the Basin, through the Dam outlet works, and joins the Los Angeles River at a point approximately 1.5 miles north of Interstate 105. Elevations in the drainage area vary from about 184 feet NGVD (1929) in the Basin to 10,064 feet NGVD at San Antonio Peak (Mt. Baldy) on the northeast boundary, and from about 400 to 1,400 feet along the Puente Hills forming the southern boundary. Watershed boundaries are shown in Map 5.

Though the two rivers have separate watersheds, they are both forced to pass through the “narrows” created by the hills known as Whittier Narrows. Historically, during large flood events, the two rivers passing through the Whittier Narrows would rise and join together. As a result, waters from the San Gabriel River would periodically enter the Rio Hondo channel and drain into the Los Angeles River. During low flow conditions, the rivers remain separate and drain to the Pacific Ocean through their respective water courses. The longest watercourse above the Basin is 39.5 miles. The average gradient of the San Gabriel River in the mountains is 260 feet per mile. The average gradients of San Gabriel River and the Rio Hondo in the valley are 41 and 27 feet per mile, respectively.



**San Gabriel River through the Basin**

Along the summits and in the higher ravines of the mountains there is a fairly well-developed growth of ponderosa pine, incense cedar, juniper, and oak. Cottonwoods, box elders, sycamores, oaks, willows, and alders are found along the watercourses at lower elevations. The remainder of the mountains is covered with brush, varying in density from scattered bushes to nearly impenetrable thickets. These consist of California lilac, scrub oak, mountain mahogany, sumac, laurel, sage, and manzanita. The hills have few trees mostly oaks, sycamores, and cottonwoods along the stream channels. Grasses are the principal natural vegetation on the hills. On much of the hill land and nearly all the valley land the natural vegetation has been replaced by urban and suburban development. As a result of the urban development, most of the valley has a high percentage of impervious cover that eliminates rainfall infiltration and storm-runoff percolation.

Seven miles upstream of the Basin is Santa Fe Dam, which controls runoff from 236 square miles of the San Gabriel River watershed and is also owned by the Federal government and managed by the Corps. The County operates 12 dams for flood control, water conservation, and sediment control within the San Gabriel River watershed, three of them upstream of Santa Fe Dam Basin. In addition to the control of runoff provided by these dams, there is an extensive system of spreading grounds operated by the County for groundwater recharge. All principal channels of the river system below the mountain front have been channelized.

## **2.5 Surrounding Land Uses**

Land uses immediately adjacent to the Basin consist of a mix of residential, commercial, and light industrial activities. The primary land use south and west of the Basin is residential. To the north, Rush Street serves as a commercial and light industrial corridor, with residential neighborhoods located beyond. Santa Anita Avenue serves as a major civic and commercial corridor within the City of South El Monte, with residential neighborhoods located to the East. To the east and southeast, Peck Road and Rooks Road serve primarily as light industrial corridors, with trucking operations; residential neighborhoods are beyond.

## 2.6 Market Area

Market area refers to the surrounding residential areas and communities that are within a reasonable proximity to the Basin. They are areas where individuals and/or families would be expected to travel from their home to take part in the Basin’s recreation opportunities. Populations that utilize the recreational and natural areas of the Basin are considered the market demographic. The primary market demographic includes the residents of adjacent communities, such as El Monte, Montebello, Monterey Park, Rosemead, West Covina, and Whittier. The market demographic is considered when identifying recreation and resource needs for the Basin.

Demographics considered in the master planning process include the 2000 population, estimated 2008 population, age distribution, ethnic heritage, household size, density of people per square mile, median household income, the percentage of individuals living below the poverty level and other statistics (Table 2.2). Overall population, household size, and density describe the number of people that may utilize the Basin for recreation purposes. The statistics obtained for the median household income and number of people living below the poverty level help to determine the need for free or low cost recreation activities. Ethnic and educational background assists define the need for signage, interpretative programs, educational enhancement, recreation types and other activities to meet a broad spectrum of socioeconomic needs.

<b>Community</b>	<b>Los Angeles County<sup>1</sup></b>	<b>Local Communities<sup>2</sup></b>
2000 Population	9,519,338	480,431
2008 Population Estimation	9,832,137	487,400
Age Distribution	≤ 9 yrs.	16.1%
	10-19	14.8%
	20-54	52.0%
	≥ 55	17.0%
Ethnicity <sup>3</sup>	Asian	11.9%
	Black	9.8%
	Latino	44.6%
	Native American	0.8%
	Pacific Islander	0.3%
	White	48.7%
Other	23.5%	
Household Size	3.0	3.4
Density (People per Square Mile)	2,344	8,365
Median Household Income	\$42,189	\$41,735
Individuals Living Below Poverty Level	17.4%	16.8%
High School Graduates	69.9%	64.7%
Bachelor’s Degree or Higher	24.9%	17.2%
Living With a Disability	20.4%	21.2%
<sup>1</sup> Data taken from 2000 Census Data, American FactFinder. <sup>2</sup> Data averaged from Table 2.1 above.		
<sup>3</sup> Mixed-race ethnicities reported resulting in a total greater than 100%. n/a; data not reported in 2000 Census.		

The household income of the selected adjacent communities is, on average, not significantly different than that for Los Angeles County, though slightly more families are living below the poverty level (Table 2.2). Over 60% of residents in the surrounding communities have received a high school diploma and 17% have gone on to complete a bachelor's or higher degree.

Population density describes the distribution of people in the market area and is an important demographic to consider in meeting the needs of the community. Los Angeles County is the third most densely populated county in California with 2,344 living in each square mile. The high density of people per square mile indicates that pressure on the natural environment and demand for open space, recreational opportunities, and environmental protections is greater than other less densely populated areas in the state of California.

With an estimated 10 million people living within the Basin market area, there is significant need for recreation opportunities, open space, and environmental stewardship. To reflect the demographics in the market area, the development of these opportunities must widely appeal to a broad spectrum of the population.

<b>Community</b>	<b>El Monte</b>	<b>Montebello</b>	<b>Monterey Park</b>	<b>Rosemead</b>	<b>West Covina</b>	<b>Whittier</b>
<b>2000 Population</b>	115,965	62,150	60,051	53,505	105,080	83,680
<b>2008 Population Estimation</b>	121,791	61,906	61,234	54,412	105,790	82,267
<b>Age Distribution</b>						
≤ 9 yrs.	20.0%	16.7%	11.7%	15.6%	16.0%	16.2%
10-19	17.0%	14.7%	11.8%	14.8%	15.4%	15.3%
20-54	49.0%	48.6%	49.3%	51.2%	49.6%	59.0%
≥ 55	12.6%	20.0%	27.1%	18.4%	18.2%	19.5%
<b>Ethnicity<sup>2</sup></b>						
Asian	18.5%	11.6%	61.8%	48.8%	22.7%	3.3%
Black	0.8%	0.9%	0.4%	0.7%	6.4%	1.2%
Latino	72.4%	74.6%	28.9%	41.3%	45.7%	55.9%
Native American	1.4%	1.2%	0.7%	0.9%	0.8%	1.3%
Pacific Islander	0.1%	0.1%	0.1%	0.1%	0.2%	0.2%
White	35.7%	46.8%	21.3%	26.6%	43.9%	63.2%
Other	39.3%	33.9%	12.4%	19.7%	21.2%	25.8%
<b>Household Size</b>	4.2	3.3	3.1	3.8	3.3	2.9
<b>Density (People per Square Mile)</b>	12,139	7,536	7,869	10,398	6,524	5,719
<b>Median Household Income</b>	\$32,439	\$38,805	\$40,724	\$36,181	\$53,002	\$49,256
<b>Individuals Living Below Poverty Level</b>	26.1%	17.0%	15.6%	22.8%	9.0%	10.5%
<b>High School Graduates</b>	44.2%	62.1%	71.6%	53.2%	78.2%	78.8%
<b>Bachelor's Degree or Higher</b>	7.1%	14.3%	25.1%	12.9%	21.9%	21.9%

<b>Living With a Disability</b>	22.1%	22.0%	21.0%	23.9%	19.0%	18.9%
<sup>1</sup> Data taken from 2000 Census Data, American FactFinder. <sup>2</sup> Mixed-race ethnicities reported resulting in a total greater than 100%.						

## 2.7 Regional Context

The range of recreation options within and adjacent to Los Angeles County is very diverse and responds to a broad spectrum of recreation and leisure preferences. Los Angeles County provides approximately 87,000 acres of parkland (just under 9 acres per 1,000 people); 37,000 acres of recreation area (3.6 acres per 1,000 people); a roughly equivalent amount of wilderness area; 2,900 acres of beaches; 13,000 acres of golf courses; and 645,000 acres of forest. The National Parks and Recreation Association recommends 10 acres of open space per 1,000 residents, so the County as a whole has nearly adequate park space. Map 6 shows the locations of open space and park lands throughout the region. Statistics provided do not adequately capture the disparities that exist at the local level in urbanized areas, especially when the access and proximity to open space are limited. Because of the location of the Basin, the recreation amenities it provides play an important role in filling this local need.

## 3

## PLANNING PROCESS

### Vision and Mission

According to Corps guidance, the ongoing vision of water resources management emphasizes sustainability and environmental stewardship in natural resources management. The Corps mission states:

“The Army Corps of Engineers is the steward of the lands and waters at Corps water resources projects. Its Natural Resources Management Mission is to manage and conserve those natural resources, consistent with eco-system management principles, while providing quality public outdoor recreation experiences to serve the needs of present and future generations. In all aspects of natural and cultural resources management, the Corps promotes awareness of environmental values and adheres to sound environmental stewardship, protection, compliance, and restoration practices. The Corps manages for long-term public access to, and use of, the natural resources [of the Basin] in cooperation with other Federal, State, and local agencies as well as the private sector. The Corps integrates the management of diverse natural resource components such as fish, wildlife, forests, wetlands, grasslands, soil, air, and water with the provision of public recreation opportunities. The Corps conserves natural resources and provides public recreation opportunities that contribute to the quality of American life.” (ER 1130-2-550, Chapter 2, Paragraph 2-2.a.(1) (15 November 1996).

### Use of the Master Plan

The Master Plan is essential for efficient and cost-effective use of natural resources, recreation development, and management programs. The Master Plan provides guidance for land use and future development. It is a tool for the responsible stewardship of Basin resources for the protection, conservation, and enhancement of natural, cultural, and human made resources for the benefit of current future generations. The goals of the Master Plan are to identify a water and land resource objectives and management concepts including:

- Responding to regional needs, resource capabilities, and expressed public interests and desires consistent with authorized project purposes.
- Contributing towards recreation diversity within the region.
- Emphasizing the unique qualities and characteristics of the Basin.
- Exhibiting consistency and compatibility with national objectives and other state and regional goals and programs.

The Master Plan describes and identifies: (1) an inventory of Basin lands, resources, and uses; (2) a summary of the public participation input; (3) a summary of resource and ecosystem use objectives; and (4) the recommended land use plan.



## Public Participation

Public participation is an essential element in the development of this Master Plan. Community involvement offers an opportunity for the public to voice their concerns and desires and enriches the process with local knowledge of the Basin area. The objectives of public involvement are to:

- Provide information about the Corps Master Plan process Make the public's desires, needs, and concerns known to decision-makers; and
- Consider the public's views in reaching decisions (EP 1130-2-550).

The public has generally expressed a strong desire for these public spaces to meet the diverse and evolving needs of the surrounding communities. The process recognizes the limitations of capital improvement and maintenance budgets within the context of the regulations of the Corps and the Project purpose. While public input is solicited and encouraged under the master planning process, the Corps cannot relinquish decision making authority, nor deviate from legal or policy considerations

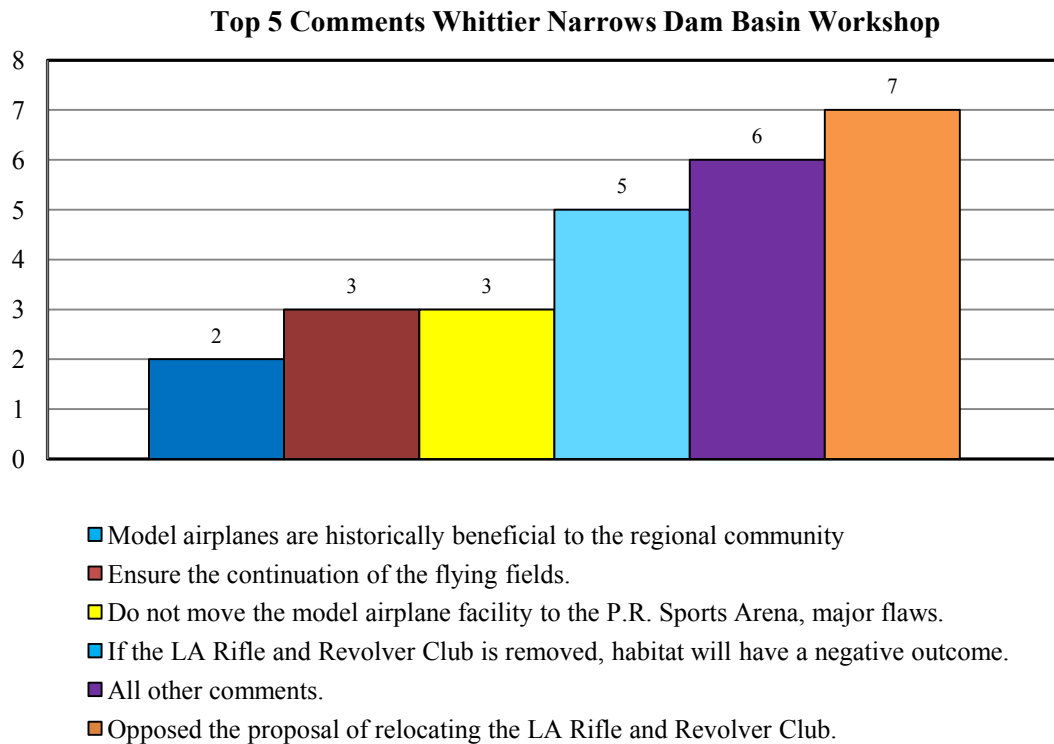
A community workshop was held to encourage dialogue between the Corps, the County, the City, and stakeholders. The community workshop was held on 21 April 2010 from 5:00 pm – 7:00 pm at the City of Pico Rivera Sports Arena. Approximately 20 people attended. Comments were received during the workshop and by mail and email. They have also been incorporated as part of the public participation process.

The majority of comments concerned the location of the Triple B Clay Shotgun Park and the Model Airplane Hobby Area (see Maps 10 and 11). User groups of these amenities desired that the amenities remain at their current location. User groups stressed the participation of young people in programs at both amenities and stewardship practices already in place that maintain amenities and respect the wildlife. Questions about the WCA master planning effort were answered by representatives from the WCA who attended the workshop.

Issues and comments raised by attendees at the Corps workshop included:

- Desire to maintain current locations and configurations of existing golf courses and the model airplane field.
- Recognition of the quality of the amenities. Participants acknowledged that the nature or variety of amenities available at the Basin is not available in other locations.
- Wider dissemination of information about the environmental stewardship and training, and recreation opportunities provided within the Basin for young people.
- Understanding of the WCA-led master plan as part of the development of the Corps Master Plan update.

Outreach efforts were also conducted by the Water Conservation Authority and its partners. The "Visioning Whittier Narrows" process was launched in September 2008 by the Watershed Conservation Authority, with a variety of activities to gather input from surrounding community officials, user groups, and members of the public.



**Figure 3.1 Top 5 Comments from Community Workshop**

Feedback from the community was carefully considered as well as input from the County and the City. This information was utilized in the development of resource objectives, land use classifications, specific policies on special events, filming, and other activities and are included in Appendix A, Outgrant Policies. Concerns and issues raised by the public have been communicated to the County or the City as applicable. Many of the concerns pertain to ongoing maintenance which is the responsibility of the County or City as part of their obligations under their respective leases.

## 4 LAND ALLOCATION, LAND USE CLASSIFICATION, AND RESOURCE INVENTORY

The Corps land use classification system is defined in EP 1130-2-550. The Corps acquires land for a specific purpose. This purpose is its “allocation.” Allocated lands may be utilized under the opportunities and constraints of “land use classifications.” This section describes land allocations and land use classifications, and provides a complete description of all lands within the Basin and their existing classifications, uses, conditions, and needs.

### 4.1 Land Allocation

Land allocation refers to the identification and documentation of lands at Civil Works projects in accordance with the authorized purposes for which they were or are to be acquired. There are four primary land allocation categories applicable to Corps projects for Project Operations (e.g., flood risk management, water supply, hydropower, etc.), Recreation, Fish and Wildlife, and Mitigation. Basin land was acquired for the Project for the purpose of flood risk management, which falls under the allocation of Project Operations. This allocation establishes the primary and uncompromising purpose of the Basin as operations for the purpose of flood risk management. All land use classifications are secondary to this purpose and must be compatible with flood risk management.

<b>Land Allocation</b> Operations
<b>Land Use Classifications</b> Project Operations Recreation Mitigation Environmentally Sensitive Multiple Resource Management* Easement Lands
<b>*Multiple Resource Management</b> Recreation – Low Density Vegetative Management Inactive and/or Future Recreation

### 4.2 Land Use Classifications

Allocated project lands are further classified for development and resource management consistent with authorized project purposes and Federal laws including NEPA. The classification process refines the land allocations to fully utilize project lands and must consider public desires, legislative authority, as well as regional and project specific resource requirements and suitability. The Project Operations allocation takes precedent over any other classification categories. For example, agricultural or grazing use of project land is not a land use classification but may be an interim or corollary use to meet management objectives. Land is classified into one of the following categories:

Project Operations This classification includes those lands required for the structure, operations center, office, maintenance compound and other areas that are used solely for Project Operations.

Recreation Land developed for intensive outdoor recreation activities by the public, including developed recreation areas, and areas for concession, resort, and quasi-public development. Recreation areas planned for initial development are included in this classification. Undeveloped areas are classified as Multiple Resource Management (MRM) until initiation of development.

Mitigation This only includes land acquired or designated specifically for mitigation. Land classified in this category should be evaluated for consideration for lease or license to the Department of the Interior or the state.

Environmentally Sensitive Land areas where scientific, ecological, cultural, or aesthetic features have been identified. The identification of these areas must be supported by narrative explaining the rationale for the classification. These areas, normally within one of the other classification categories, must be considered by management to ensure the sensitive areas are not adversely impacted. This classification anticipates that there would be limited or no development for public use on land in this classification. There is a strict prohibition against agricultural or grazing uses.

Multiple Resource Management Lands managed for one or more of, but not limited to, these activities to the extent that they are compatible with the primary allocation(s). The activities should be fully explained in the narrative portion of the Master Plan.

Recreation - Low Density Low density recreation activities such as hiking, primitive camping, wildlife observation, hunting, or similar low density recreation activities.

Wildlife Management Lands in this sub-category shall be evaluated for consideration for lease or license to the Department of the Interior or the state, or shall be designated for direct management by the Corps.

Vegetative Management Includes management activities for the protection and development of forest and vegetative cover.

Inactive and/or Future Recreation Areas Recreation areas planned for the future or that have been temporarily closed. These lands will be classified as Multiple Resource Management in the interim.

Easement Lands All lands for which the Corps holds an easement interest but not fee title. Planned use and management of easement lands will be in strict accordance with the terms and conditions of the easement estate acquired for the project.

### **Guiding Principles**

Community input with Corps' guidance was utilized to identify guiding principles for the management of the Basin. These include:

- Ensure that all uses within the Basin are consistent with the flood risk management operations;
- Protect and restore ecosystem function;
- Ensure that a variety of recreational opportunities are provided for public use; Stakeholders recognize their environmental responsibility and preservation of cultural and historical resources; and
- Management of the Basin lands and activities should integrate sustainable practices.

## **Land Use Classification Restrictions**

Certain uses and activities at the Basin are not compatible in all classifications, or are limited within classifications. Uses and activities designated as incompatible within a classification are not permitted. Additional guidelines and restrictions applicable to all land use classifications can be found in Appendix A, Outgrant Policies.

### **4.1.1.1 Project Operations**

- No recreation activities are permitted within Operations areas except on specifically designated trails or by permission of the District Commander.
- Potentially compatible activities that require review and approval by the District Commander include: filming, training activities for public organizations (e.g., police and fire departments), biological surveys, and volunteer activities complying with the Corps volunteer activities. Filming, training and biological surveys must comply with the procedures and requirements outlined in the applicable appendices to this Master Plan. Volunteer activities require case-by-case analyses.
- Use by government personnel during emergencies (fire department staging, etc.) is potentially compatible but shall require case-by-case analysis under the applicable procedures and requirements, including Federal environmental laws and regulations.

### **4.1.1.2 Recreation**

- Structures/development are allowed to support high density recreation uses and users (e.g., restrooms, drinking/water fountains, garbage and recycling cans, informational signage/kiosks, benches, picnic tables, group picnic areas, etc.). Sports fields and amenities requiring improvements to the land, grading, excavation, or installation of structures requires specific analysis.
- Dogs are allowed only on-leash, 6 feet in length or less, except where dog parks for off-leash use are specifically designated.
- Bicycles are allowed on designated trails, paths, and roads. Trails may be closed in the event of excessive erosion.
- Horses are allowed on trails, paths, and roads, but no grazing is permitted.
- Organized volunteer activities that are non-invasive or minimally invasive, such as trash pickup, held outside of breeding season (15 March – 15 September) or over 100 feet from environmentally sensitive areas are considered compatible.
- Special events are preferred at the areas designated in the Special Events Policy. Special events may be permitted outside these designated areas in certain circumstances subject to event-specific review. See Appendix A, Outgrant Policies, for additional guidance.
- Filming or training activities may be compatible and should be coordinated with the County.

#### **4.1.1.3 Mitigation**

- Structures/development is compatible only as authorized or allowed in the project documents creating the mitigation area.
- Dogs are not allowed.
- Recreation uses such as hiking and horseback riding are compatible on approved designated recreation trails only.
- Boating, swimming or fishing are not compatible.
- Organized volunteer activities that are non-invasive or minimally invasive, such as trash pickup, held outside of breeding season, are considered compatible. Special events are incompatible with this classification. No special events may be held within or traverse Mitigation areas. This restriction includes, but is not limited to, organized walk/run events and bicycle races.
- Biological surveys are compatible subject to certain restrictions and should be coordinated with the lessee, or the Corps, if the area has not been leased to others.
- Still photography is compatible with this classification. Professional still photography is subject to certain restrictions and should be coordinated with the County or the Corps, if the area has not been leased to others.

#### **4.1.1.4 Environmentally Sensitive**

- Structures/development is considered compatible only to support trail users (e.g. restrooms, drinking/water fountains, garbage and recycling cans, informational signage/kiosks, and benches). Picnic tables shall be limited and generally located in close proximity to trailheads or other developed areas.
- Dogs are not allowed, whether on or off-leash.
- Bicycles are not allowed. Use of bicycles on dirt trails can contribute to erosion. Horses are compatible on existing trails, but no grazing is permitted.
- Organized volunteer activities that are non-invasive or minimally invasive, such as trash pickup, held outside of breeding season (15 March – 15 September), are considered compatible.
- No special events may be held within or traverse Environmentally Sensitive areas. This restriction includes, but is not limited to, organized walk/run events and bicycle races.
- Boating and swimming are not compatible with this classification.
- Restoration proposals are compatible. However, all requests will require request-specific analysis.
- Biological surveys are compatible subject to certain restrictions and should be coordinated with the lessee, or the Corps, if the area has not been leased to others.
- Still photography is compatible with this classification. Professional still photography is subject to certain restrictions and should be coordinated with the lessee or the Corps, if the area has not been leased to others.

#### **4.1.1.5 Multiple Resource Management (MRM)**

##### **MRM – Recreation – Low Density**

- Structures/development is allowed only to support low density uses and users (e.g., restrooms, drinking/water fountains, garbage and recycling cans, informational signage/kiosks, benches, picnic tables, group picnic areas, etc.).
- Designated, organized sports fields are not compatible with this classification.
- Dogs are compatible only on leashes 6 feet or less in length, except where dog parks for off-leash use are specifically designated.
- Bicycles are allowed on designated trails, paths, and roads. Trails may be closed in the event of excessive erosion.
- Horses are allowed on trails, paths, and roads, but no grazing is permitted.
- Organized volunteer activities that are non-invasive or minimally invasive, such as trash pickup, held outside of breeding season or over 100 feet from habitat areas, are compatible.
- Special events are preferred in the land use classification Recreation; however, special events may be permitted in this land use classification area subject to event-specific review. See Appendix A, Outgrant Policies, for additional guidance.
- Professional still photography is compatible subject to certain restrictions and should be coordinated with the lessee or the Corps, if the area has not been leased to others.
- Restoration proposals are compatible with the MRM classification. However, all requests will require specific analysis.

#### **MRM – Vegetative Management**

- Structures/development generally considered compatible only to support trail users (e.g., restrooms, drinking/water fountains, garbage and recycling cans, informational signage/kiosks, and benches). Picnic tables shall be limited and generally located in close proximity to trailheads or other developed areas.
- Dogs are compatible only on leashes 6 feet or less in length, on designated trails. No dogs are allowed off designated trails, whether on- or off-leash.
- Bicycles are allowed only on designated trails. Use of bicycles on dirt trails can contribute to erosion. Trails may be closed to bicycles in the event of safety or environmental concerns.
- Horses are compatible on existing trails, but no grazing is permitted.
- Organized volunteer activities that are non-invasive or minimally invasive, such as trash pickup, held outside of breeding season (15 March - 15 September), are.
- No special events may be held within or traverse MRM-Wildlife Management or MRM-Vegetation Management areas. This restriction includes, but is not limited to, organized walk/run events and bicycle races. Still photography is compatible with this classification.
- Professional still photography is compatible subject to certain restrictions and should be coordinated with the lessee or the Corps, if the area has not been leased to others.
- Restoration proposals are compatible with the MRM –Vegetative Management classifications. All requests will require specific analysis. Biological surveys are compatible subject to certain restrictions and should be coordinated with the lessee, or the Corps, if the area has not been leased to others.

#### **MRM – Inactive and/or Future Recreation**

- Areas may include recreation leased areas and leases for non-recreation purposes. Dogs are compatible only on recreation-leased area, on leashes 6 feet or less.
- Special events are preferred at the areas designated in the Special Events Policy. Special events may be permitted outside these designated areas in certain circumstances subject to event-specific review. See Appendix A, Outgrant Policies, for additional guidance.
- Filming, training, and volunteer activities may be compatible and should be coordinated with the lessee or the Corps if the area is not leased.

## Existing Land Use Classifications

The existing land use classifications for the Basin as shown on Map 7 (Map 8 herein) of the 1996 Master Plan are (1) Project Operations; (2) Recreation; (3) Mitigation; (4) Multiple Resource Management; and (5) Easements. For the areas designated with a land use classification of MRM, two types of land management was identified: MRM-Inactive and/or Future Recreation and MRM-Recreation-Low Density.

## Existing Facility Inventory

**Ten recreation areas have been identified in previous Master Plans. These areas designations have been maintained for continuity in this Master Plan. The areas are illustrated in Maps 9 through 13.**

### Recreation Area A

Area A is located in the northern portion of the Basin, east of the Rio Hondo and north of the Pomona Freeway (I-60). The area covers 144 acres. There is one point of entry into Area A, located on the east side of the area from Rosemead Boulevard and an exit from the north to Loma Avenue. There is parking for approximately 450 cars.. Existing recreation includes baseball and soccer fields, a park administration building, a BMX facility, the Los Angeles Rifle and Revolver Range, and a model airplane/hobby area. Additional amenities include seven restrooms, four picnic pavilions with barbecues and picnic tables, four tot lots, and approximately 100 picnic tables.

Athletic Fields The athletic fields include seven lighted baseball fields, seven unlighted soccer fields and one lighted soccer field, with use permitted by the County.

BMX Facility The facility includes a BMX track with snack stand, bleachers, portable restrooms, and parking for approximately 10 cars.

Los Angeles Rifle and Revolver Club This organization has been in existence for approximately 50 years. The organization pays a modest annual fee to County for its use and members actively participate in its upkeep and enforcement of regulations. It is open to the public.





Model Airplane/Hobby Area This area has also been in existence for approximately 50 years and is one of the few remaining model airplane amenities in southern California, and one of the last three international safety-approved tether car/airplane radio controlled sites in the U.S. The area is provided as a public facility by County. Existing amenities include approximately two acres of asphalt tether plane flying circles with attached steel safety cage, grass corner fields and press viewing towers, a complete American Miniature Race Car Association circular track 50 feet in diameter and 4 feet wide, one runway approximately 500 feet long, and two 100-foot taxiways. In addition, there are eight picnic tables, three barbecues, restrooms, and an auto gate access.

## Recreation Area B

Area B is located in the northern part of the Basin and has two main points of entry, one from Rosemead Boulevard, located to the west of the area, and one from Chino Avenue, located on the east side of the area. Amenities operated by the County include a family picnic area with playing fields and a sixteen-court tennis center concession. Three paved lots provide parking for approximately 550 cars. In addition, parking is available on an unpaved area in the northern portion of Area B when special events are held.

Southeast of the tennis center is an open space used as a Dog Show Arena. An abandoned Nike Missile Site is currently used by the County for maintenance and storage. The American Military Museum, operated as a concession, is located in the northernmost portion of the Area, immediately south of Rush Street. There is an open field to the south of the museum which is used as an overflow parking area for large events. Amenities include:



**Playground and Picnic Areas**

Picnic Area with Playing Fields Located next to Pomona Freeway, the area includes two multi-use fields, a volleyball court, five large pavilions with tables, approximately 90 concrete/wood picnic tables, and two tot lots. This area is used for community fairs and festivals throughout the year, operated by a concessionaire.

Whittier Narrows Tennis Center This area is operated by concession and includes 16 lighted tennis courts, a pro shop, three restrooms, and a parking lot.



Dog Show Area This area is located in the south east portion of Area B, next to the Pomona Freeway.

Urban Farm (Earthworks) and Community Gardens This area is located just north of the Pomona Freeway at Santa Anita Avenue. The Community Gardens provide small plots where local residences can grow vegetables and flowers. The Los Angeles and San Gabriel Conservation Corps co-manage these amenities.

### **Recreation Area C**

### **Earthworks Community Farm**

This area consists of 152 acres south of the Pomona Freeway and west of Rosemead Boulevard. The area includes the Triple B Clays trap and skeet shooting facility, an Archery Range, the Bosque del Rio Hondo, and the Sporting Dog Training facility located in the southern portion of Area C. The Whittier Narrows Water Reclamation Plant is located south of the Archery Range. A Southern California Edison Company easement runs through the area.

Triple B Clays Shotgun Park The facility, operated under a concession agreement with the County offers amenities for trap and skeet shooting. The area includes 14 shooting stations, a restaurant, retail sporting goods store, registration building, two restrooms, paved parking for approximately 250 cars, and a spectator area.



Archery Range Located just south of the trap and skeet range, the archery range is operated by the same concessionaire as Triple B Clays. The primary range contains 14 hay bale targets with additional targets located in a “cross country” course within adjacent densely vegetated areas. There is one restroom, a paved parking lot for approximately 50 cars, and an open lawn area for overflow parking.

### **Triple B Clays Shotgun Park**

Bosque del Rio Hondo Located in the southern portion of Area C just north of San Gabriel Boulevard and west of Rosemead Boulevard, this natural area provides picnic areas, access to bike paths and equestrian trails, parking, and restrooms.



**Bosque del Rio Hondo**

### **Recreation Area D**

This area is located in the center of the Basin and is bounded by the Pomona Freeway on the north, Rosemead Boulevard on the west, Durfee Avenue on the south, and Santa Ana Avenue on the east. Area D covers 214 acres and contains three lakes (Legg Lake, Center Lake, and North Lake) with a total of 77 acres of water surface. Amenities in this area, include two group picnic areas, tot lots, fishing, boating, and bicycling activities. The level of the lakes is maintained by pumping water from existing wells. The California



**Trails around Legg Lake**

Department of Fish and Game stocks the lakes with trout, bass, and catfish. An agricultural area located south of Legg Lake and west of the Southern California Edison Company



easement currently contains a nursery area and strawberry fields. It is operated through an agricultural lease directly with the Corps. Entries into Area D are from Santa Anita Avenue, Durfee Avenue, and Rosemead Boulevard. Parking for approximately 1,150 cars is available in paved parking amenities in Area D. Amenities include the following:

Picnic Area Pavilions, tables, and barbecues are scattered throughout Area D. There are approximately 220 picnic tables, nine metal barbecues, and three wood overhead pavilions, each approximately 30 feet by 60 feet. A large group picnic area is located immediately to the north of North Lake and two smaller group picnic areas located east of the lakes. All three group picnic areas are fenced and available by reservation through the County.

Fitness Course A fitness course has been installed on the east side of Legg Lake and is very popular. A 5K jogging/walking course has also been designated that circumnavigates the three lakes. A paved trail winds through the picnic areas within the park, along which are intermittent “fitness” stations. Each station provides a metal or wood structure specific to a particular stretch or strength activity, such as doing set-ups, pull ups, or leg and arm stretches.

Model Boating A radio controlled model boat course has also been designated at Legg Lake.

Fishing Amenities A new fishing pier has been installed on the south edge of Legg Lake and is very popular. Enthusiasts may also fish from the shore, and a very popular Fishing Derby is held each summer.

Concession Stand Located on the northern edge of Legg Lake, there is a concession stand with a (non-motorized) boat rental. A bicycle rental concession is also located in this area.

Play Equipment The area includes a variety of playground areas, including some distinctive and fanciful concrete sculptured animals that were designed in the early 1960s by artist Benjamin Dominguez, and now cared for by Friends of La Laguna. There are two tot lots in Area D.



**Play Sculptures by Artist Benjamin Dominguez**

## Recreation Area E

This area is located north of Durfee Avenue and east of Santa Anita Avenue. The site consists of approximately 58 acres, and has amenities for picnicking and children's play areas. A County maintenance facility is located in the northern most portion of Area E. An expansion area of South El Monte High School is adjacent to the picnic area. Paved parking for approximately 290 cars is available in the Area. Area E includes:

Picnic Area The picnic area has two group picnic areas that are fenced and available by reservation. Approximately 85 wood/concrete picnic tables are scattered throughout the picnic area, most of which are placed from the middle of the area back towards Lexington/Gallatin Road and Farmer Avenue. The picnic area includes six wood octagon shade structures, approximately 40 feet in diameter. Each of the shade structures has five to six picnic tables within the structure. Two masonry restrooms and two tot lots are located in the picnic area

Disc Golf Courses Two disc (Frisbee) golf courses are located south of the parking lot and Lexington/Gallatin Road.

Snail Building This distinctive structure, located at the corner of Lexington/Gallatin Road and Santa Anita Avenue, was formerly used as a Visitor Center and is now closed to the public. It is recommended that the Visitor Center at Whittier Narrows Dam be reopened in the future. There is a parking lot for approximately thirty cars.

Los Angeles County Parks and Recreation Administrative and Maintenance Building Located at Lexington/Gallatin Road, this serves as the offices for the Park Superintendent and staff and for maintenance equipment.

## Whittier Narrows Golf Course

The Whittier Narrows Golf Course is approximately 216 acres and is located in the northwestern portion of the Basin, west of the Rio Hondo Channel. There are two golf courses, an 18-hole course and a 9-hole executive course, that were developed by Los Angeles County Parks and Recreation and are operated by concession. There is also a driving range, concession stand, clubhouse, rest room amenities, and parking for approximately 300 cars.

The Rio Hondo is separated from the golf course by a chain-link fence. A regional multi-use trail maintained by the County is located between the fence and channel.

## Nature Area

The Nature Area, previously administered by the Audubon Society, is currently under the direction of the County. The Nature Area covers 320 acres of land south of Durfee Ave and north of the San Gabriel River. The Nature Area contains five miles of trails through restored riparian vegetation. 142 acres



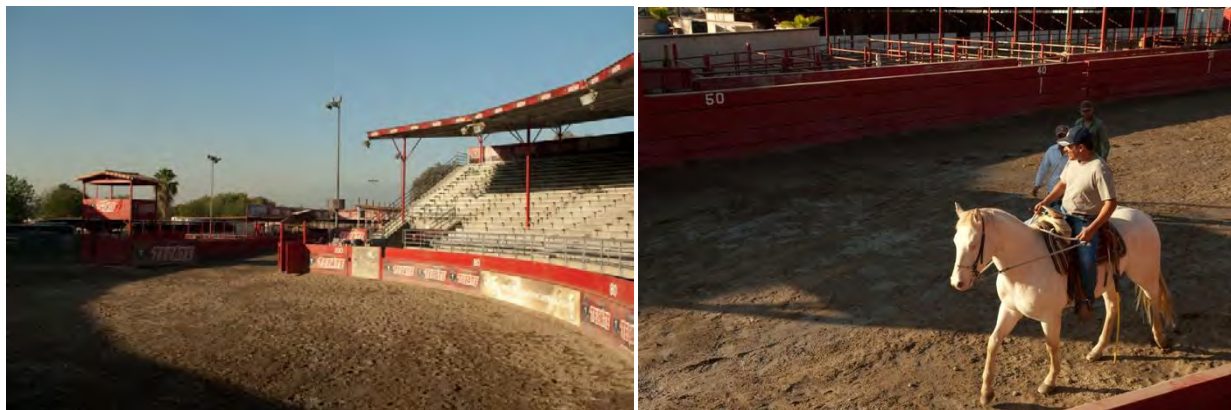
were added to the Nature Area in 1975 at the southwestern side.

A small Nature Center building is located in the northeast corner of the area. Self-guided nature walks or walks led by docents start from the Nature Center building. The Nature Center has a small gift shop, library, and restrooms. A ramada, approximately 30 feet by 42 feet with a fixed metal barbecue, a concrete and metal prep table, and about 12 concrete picnic tables are available in the area. The Nature Center has revolving and permanent exhibits of the natural history of the area. There is parking for approximately 40 cars and two buses. A Los Angeles County Police substation also occupies this site.

### **Equestrian Center, Sports Arena, and Bicentennial Park**

Located in the eastern portion of the Basin between Rooks Road and the San Gabriel River, this area is approximately 53 acres in size. Amenities include.

Equestrian Center and Stables The Equestrian Center, is located northeast of the Sports Arena and is leased and operated by the County, with actual operations provided by a concessionaire. The Equestrian Center and equestrian trails are located between the San Gabriel River and the Dam west of Peck Road. The area is partially-improved with boarding stables for approximately 182 horses, and five outdoor riding rings, but the area lacks paved roads and vegetation.



#### **City of Pico Rivera Sports Arena Complex**

Sports Arena The sports arena consists of a masonry and wood equestrian arena with bleachers and a partial roof. The sports arena is operated by the City of Pico Rivera. It has one main center ring for horse showing, and two holding pens. Parking consists of an asphalt lot for approximately 350 cars, with an overflow lot for parking on turf (approximately 200 feet by 300 feet). When the overflow parking area is not being used for parking, equestrian uses can occur here. The stadium can accommodate approximately 5,000 people, and is heavily utilized from approximately April through October, for rodeos and for concerts.

Bicentennial Park Campgrounds The campground, located in the Bicentennial Park includes approximately 55 camp sites on approximately 31 acres suitable for tent or pop-up trailer camping, with water and electrical connections. The campground is no longer in operation by the City of Pico Rivera, because the sites are not considered large enough to accommodate current standard RVs.



**Closed Campground Facility at Bicentennial Park**

### **Pico Rivera Municipal Golf Course**

The Pico Rivera Municipal Golf Course is operated by the City of Pico Rivera and is located south of the Dam, adjacent to the San Gabriel River channel. The 28-acre site consists of a 9-hole executive course, driving range, clubhouse, and paved parking for approximately 75 cars.

### **Streamland Park**

Streamland Park is operated by the City and located downstream from the Dam, between Rosemead Boulevard and the Dam. Access is available from Durfee Road to the south. Three baseball diamonds, and three basketball courts, as well as two restrooms, parking, and a tot lot with a slide and swing set are located in the park.

### **Trail System**

An extensive trail system extends throughout the Basin. The system includes foot trails, nature trails, bicycle paths, and equestrian trails. Access to trails is provided from Rosemead Boulevard, Santa Anita Avenue, Durfee Road, Siphon Road, Peck Road, San Gabriel Boulevard, Lincoln Avenue, Loma Street, Rush Street, Adelia Avenue, and Potrero Avenue. The equestrian trails, developed by the County, connect with an extensive trail system outside the Basin, including the LARio trail and the 40-mile San Gabriel River Trail which travels within the right-of-way of the San Gabriel River and is used by equestrians, hikers, and bicyclists.

### **Qualitative Facility Assessment**

As part of the facility inventory, a qualitative assessment of the condition of existing recreation amenities was completed, in order to identify potential short-term capital repair needs and potential life-safety issues. The facility assessment did not involve detailed evaluation of structures, non-recreation amenities, and amenities that were not open and available to the public.

<b>Table 4.1 Description and Qualitative Assessment of Existing Basin Recreation Features.</b>		
<b>Facility</b>	<b>Description</b>	<b>Condition</b>
Area A: Northwest Quadrant, Sports Fields		
Baseball Diamonds	A total of 7 lighted baseball fields. Diamonds and grass in good condition, though fencing is rusted, and bleachers are in disrepair. Amenities may be in need of upgrade in short-term.	Good/Fair
Soccer Fields	A total of 8 soccer fields. Several fields are in need of a period of inactivity to allow rejuvenation of grass. Goal posts are rusting.	Fair
Model Airplane Field	Cement landing pad and launching amenities.	Good
AMRCA Race Track	Small remote control car race track.	Good
Rifle and Gun Club	No direct access. Amenities may need upgrading and/or safety review.	No Access
BMX Track	Track has starting gates and lights. Area around track lacks vegetation and is esthetically unappealing.	Fair
Picnic Areas	Grassed areas with ornamental trees offer concrete picnic tables, tot lots, 10 men's/ women's restrooms, and information booth. All are well-maintained.	Good
Area B: Northeast Quadrant, Picnic Areas, Tennis Center, Community Gardens		
Earthworks Community Farm	Earthworks Community Farm. Several garden plots enclosed by cyclone fencing.	Good
Picnic Area	Grassed area with picnic tables, tot lots, and restrooms. A total of 5 shelters have sunscreens for shade, and all 4 restrooms are well maintained, lighted, and ventilated.	Good
Overflow Parking	Large dirt lot east of Rosemead Blvd. used for overflow parking during special events. No vegetation or lighting. Esthetic appeal and safety are compromised.	Poor
Tennis Center	A total of 16 tennis courts with wind screens and newer court surfaces. Administration building and pro-shop with restrooms.	No Access
American Military Museum	Houses a collection of military machinery. Fee required. Buildings, fencing, and lack of vegetation are esthetically unappealing. However, there is no public access to facility infrastructure.	Poor
Area C: Southwest Quadrant, Gun and Archery Ranges		
Triple B Clays Shotgun Park	A total of 14 cinder block launch towers. Shooting club and restrooms.	Good
Archery Range	Wood and hay bale targets are well worn and deteriorating. Parking lot pavement crumbling. Safety/security may be issues	Poor



<b>Table 4.1 Description and Qualitative Assessment of Existing Basin Recreation Features.</b>		
<b>Facility</b>	<b>Description</b>	<b>Condition</b>
	here, as the area is isolated and not lighted. Separate men's/women's restroom facility in disrepair.	
Sporting Dog Training Area	Aerial shows natural fields with unpaved trails.	No access.
Bosque del Rio Hondo	Small parking area for natural hiking trail to Rio Hondo. Restroom closed during visit. Fee required.	Good
<b>Area D: North, Center, and Legg Lakes</b>		
North Lake	Large northernmost lake with island. Man-made waterfall at southeast shore of lake. Lake shoreline is hardened, eroding, and denuded. Sloping of the bank and revegetation will likely be necessary in the short-term future to maintain esthetics and stabilize the bank.	Fair
Center Lake	Smallest of the lakes. Lots of aquatic vegetation along shorelines. Non-native vines abundant. In need of invasive species removal. Concrete and grout pier at east end of lake. Dirt path between Center and North Lakes is eroding and may need culvert replacement or bridge installation.	Good
Legg Lake	Lakes are noted as "public fishing lakes" requiring license. Though slopes are steep, they are vegetated with no obvious hardening or erosion. Fishing pier of composite decking and metal. Model boat area at west end of lake. Channel from Legg to Center Lake has eroding bank hardening which will need replacing or removal in the short-term.	Good
Picnic Areas	Park and picnic area with well maintained and healthy grass and trees. Concrete picnic benches. Tot lots for ages 2-5 and 5-12. Fitness stations, picnic shelters, restrooms, and drinking fountains along paved and dirt trails. Several unhealthy sycamore trees are slated for removal.	Good
Picnic Shelters	A total of 3 shelters of concrete block and wood available for use. Some have 3' cyclone fencing. Shelter and tables in working condition. Some areas are in need of revegetation.	Good
Restrooms	Eight men's/women's restrooms. Concrete block and wood roof. Well lighted and ventilated, tiled, and well maintained.	Good
Fitness Course	Metal and plastic fitness stations in working order overall, but are well-used and may be in need of replacement in the short-term.	Good/Fair
Tot Lots	Several tot lots are present, including metal and plastic structures, and several sculpture play areas, all with sand and/or rubber ground surfaces. Sculptures need repainting.	Good/Fair
Wheel Fun Rentals	A small wooden concession for paddle boat and bicycle rentals. Adjacent cargo box storage. Lattice in need of minor repairs.	Good

<b>Table 4.1 Description and Qualitative Assessment of Existing Basin Recreation Features.</b>		
<b>Facility</b>	<b>Description</b>	<b>Condition</b>
Horseshoes	Six horseshoe pits.	Good
Footbridge	Wooden footbridge between Legg and Center Lakes. Wood is deteriorating in places and bridge is in need of paint.	Fair
Wildlife	Abundance of geese, ducks, and shorebirds result in fecal pollution. It may be necessary or may become necessary to manage fecal matter to ensure public health in the short- to long-term future.	Poor
<b>Area E: South of Pomona Freeway and West of Area D</b>		
Group Picnic Area	Grassed area with ornamental trees offers picnic areas for large groups with shelters and tables. Two Frisbee golf courses and a sand volleyball court are present. Multiple tot lots of metal and plastic structures with sand and rubber ground surfaces present. A total of 2 restroom amenities available. Area is well maintained. Restrooms well lighted and ventilated.	Good
Shelters	A total of 6 shelters in this area, made of wooden roofs over picnic tables. Some shelters are separated from park with 3' cyclone fencing.	Good
“Snail” Building	County training facility, closed to public, former visitors Center.	Good
<b>Other Amenities</b>		
County Golf Course	Between Walnut Grove Avenue and the Rio Hondo is an 18 hole golf course and pro-shop. Restrooms and other amenities well maintained.	Good
Streamland Park	South of the Dam embankment near Rosemead Blvd. Park and sports fields, including picnic tables, full basketball court, two half basketball courts, 2 baseball diamonds, tot lot, and 4 restroom amenities.	Good
Pico Rivera Municipal Golf Course	A 9-hole golf course downstream of the Dam embankment and west of the San Gabriel River. Clubhouse, pro-shop, driving range, and restrooms. Additional restrooms near the 5 <sup>th</sup> fairway.	Good
Sports Arena Complex	Arena and associated amenities. Arena appears to be in good condition from the outside, though the associated amenities are esthetically unappealing due to lack of vegetation and use for storage. No access.	Good
Campgrounds	No longer used as campgrounds.	Poor
Equestrian Center	Several permanent stables, portable trailers, and a restroom facility. Area is not paved and there is no vegetation, resulting in fugitive dust and low esthetic appeal.	Fair

<b>Table 4.1 Description and Qualitative Assessment of Existing Basin Recreation Features.</b>		
<b>Facility</b>	<b>Description</b>	<b>Condition</b>
Natural Area	South of Durfee Avenue west of Rosemead Blvd. Large natural area expands between San Gabriel River and Rio Hondo. Non-native species require removal.	Fair
Nature Center and Museum	Just south of Durfee Ave at the east end of the natural area is a small nature center with museum, parking lot, and restroom facility. Facility lies at beginning of a nature trail to the San Gabriel River. Another small building next to the museum is used as the Sheriff substation.	Good

## **Recreation Needs Analysis and Assessment of Potential Future Demand for Amenities**

### **Projected Future Population Growth and Demographic Shifts**

The population of Los Angeles County, as enumerated in the 2000 Census, was approximately 9.6 million people. A 2007 forecast prepared by the California State Department of Finance suggested that by 2010 the County’s population would approach 10.5 million people, and by 2020, approximately 11.2 million people (State of California 2007). The current economic climate may temper this growth rate, which represents 17% from 2000-2020, and 7% between 2010 and 2020, but over the long term it is anticipated that the County’s population will increase placing demands on existing recreation amenities.

State data also suggest that the age cohorts with the largest projected growth rates from 2010 to 2020 are those aged 70-74 (51% increase), ages 65-69 (50% increase) and 60-64 (31% increase). By contrast, the share of the population that is aged 10-19 is anticipated to decline by over 15% during the period.

These figures reflect the aging of the “Baby Boom” generation, whose members have sought to maintain an active lifestyle, including pursuing a range of low-impact recreation activities such as fitness walking and biking, as well as higher intensity sports like tennis and skiing. This demographic shift may suggest a need to provide and maintain venues for these activities, while also providing for athletic fields that can support team and league activities oriented toward younger participants.

Los Angeles County is also ethnically diverse. Hispanic residents are projected to comprise the largest share of the population in 2020, at approximately 52%. This mirrors the statewide trend: by 2020 California’s population of European descent will have grown only 4%, while the Hispanic population will have grown 58%, and the Asian/Pacific Islander population will have grown 55%. The African American population will have grown 20%, and American Indian population will have grown 29%. Recreation preferences are shown to be linked to cultural and ethnic values. Amenities must be responsive to the values of the market demographic.

## **Visitation Trends at Whittier Narrows Dam Basin and Related Amenities**

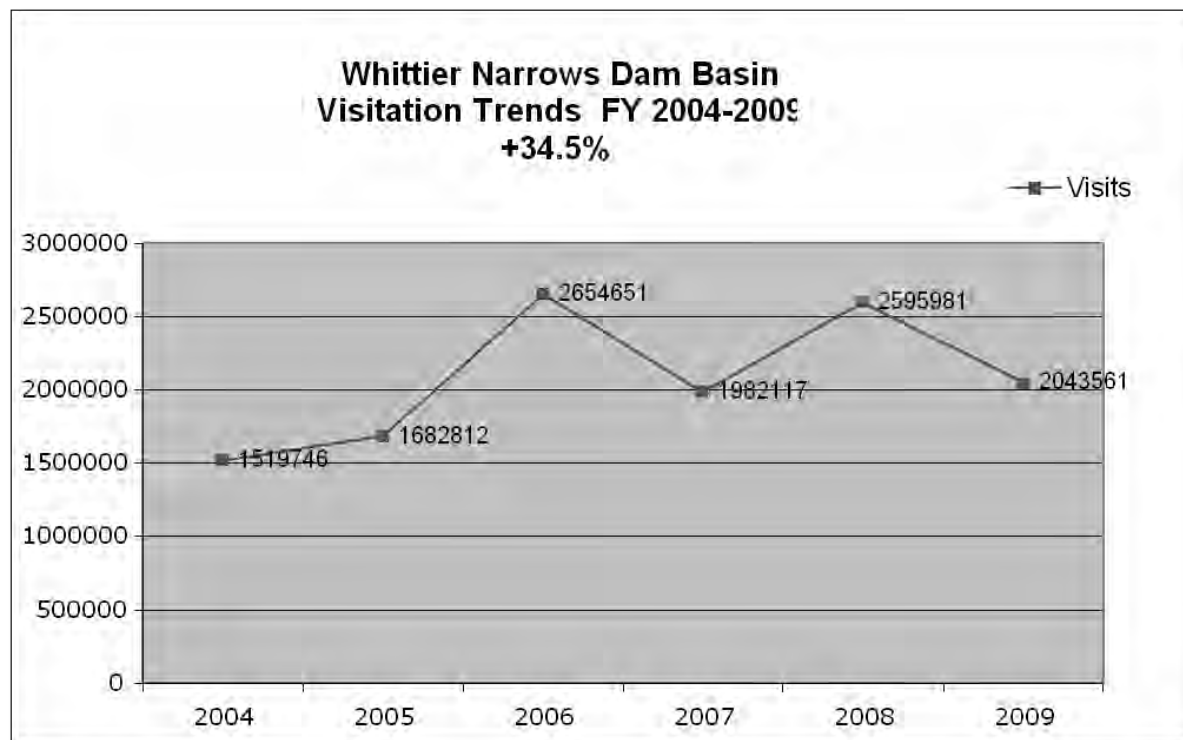
Figure 4.1 below illustrates trends in visitation at the Basin from Fiscal Year 2004 through 2009. This Figure excludes visitation to the Whittier Narrows Golf Course, Nature Area, and other amenities operated by the City.

Visitation estimates suggest a roughly 34% increase in number of visits to County amenities at the Basin over this timeframe. Notable increases of approximately 2.6 million additional visits occurred in 2006 and 2008. Future visitation is projected to be in the range of 2 to 2.5 million visits per year. Key variables affecting visitation include gas prices, which tend to discourage visits when they are high, and the extension of light rail; one alignment would establish a major transit stop at the 60 Freeway and Santa Anita Boulevard, and this may have a positive effect on number of visits.

Quantitative data has not been collected on visits to specific amenities, but anecdotal observations made by recreation managers suggest that the most popular amenities are the golf course, athletic fields, Legg Lake, and the picnic areas. County park staff have estimated a “baseline” of approximately 2,000 visitors per day, including users of the model airplane field, fishing amenities, and boaters. Picnic areas tend to experience more seasonal use.

The City does track visitation at Streamland Park and Pico Rivera Municipal Golf Course, though figures were not available for this report. The City, through its concessionaire, also tracks attendance at the Sports Arena, and estimates that between 35,000 and 40,000 people visit annually.

There are a number of regional-scale recreation amenities within a 30-mile service radius of Whittier Narrows Dam Basin that are attractive destinations for County residents. The 30-mile service radius is consistent with applicable Federal regulations as well as related County level of service standards for regional parks that suggest a 25-mile service radius. Map 14 illustrates regional amenities within the vicinity of the Basin.



**Figure 4.1 Whittier Narrows Dam Basin Visitation Trends**

A representative range of these amenities illustrates the diversity of options available, including:

There are significant public lands resources available to potential visitors with Los Angeles County. Table 4.2 illustrates the total park acreage within Los Angeles County. Data was gathered in support of the 2009 *Citywide Community Needs Assessment*.

The range of recreation options within and adjacent to the County is very diverse and responds to a broad spectrum of recreation and leisure preferences.

The City of Los Angeles completed a citywide needs assessment (City of Los Angeles 2009), which provides an estimate of recreation needs for a similar demographic. Key findings from the City's needs assessment are summarized below.

Unmet citizen needs exist for a wide range of parks, trails, outdoor and indoor amenities and programs. From a list of 30 various parks and recreation amenities, respondents were asked to indicate for which ones they and members of their household have a need. The parks and recreation amenities with the highest percentage of need from respondent households are:

- Walking and biking trails (63%),
- Small neighborhood parks (60%),
- Large community and regional parks (53%),

- Shelters and picnic areas (50%)
- Nature trails (46%).

These are amenities that benefit a broad constituency, not just one or two user groups. Figure 4.2 above summarizes the percentage of survey respondents indicating a need for each type of facility queried (*all figures taken directly from the Citywide Needs Assessment report*).

From a list of 23 recreation programs, respondents were asked to select the four recreation programs that they currently participate in the most frequently. Responses include: special events/festivals (8%) and youth sports programs (7%). It should also be noted that special events/festivals had the highest percentage of respondents select it as their first choice as the program they currently participate in most often.

### **Assessment of State Future Trends**

The trends described above, which emphasize low impact, low density recreation, are echoed in the California State Parks' 2008 California Outdoor Recreation Plan (CORP, California State Parks 2009). Californians tend to participate in activities that are less expensive, require less equipment, and need fewer technical skills. Californians' top 15 activities (by participation) were:

1. Walking for fitness or pleasure
2. Driving for pleasure, sightseeing, driving through natural scenery
3. Beach activities
4. Swimming in a pool
5. Day hiking on trails
6. Wildlife viewing, bird watching, viewing natural scenery
7. Jogging and running for exercise
8. Bicycling on paved surfaces
9. Outdoor photography
10. Using open turf areas
11. Using play equipment, play structures, tot-lots
12. Organized team sports such as soccer, football, baseball, softball, basketball
13. Fishing – freshwater
14. Bicycling on unpaved surfaces and trails
15. Surfing or boogie boarding, windsurfing

The most commonly used amenities included community buildings, open spaces to play, picnic tables/pavilions, unpaved multipurpose trails and paved trails. Less than 20% of respondents reported using amusement (e.g., park train ride) areas, tennis or basketball courts, dog park areas, botanical gardens, or skate parks.

The most common activities adult respondents participated in were:

- Walking (49%)
- Playing (30%) (e.g., Frisbee, playing catch with a ball, kite flying, playing with children)
- Sedentary activities (24%)
- Eating/picnicking (24%).

**Table 4.2 Acres of recreation Lands in Los Angeles County**

Acres of Recreational Lands in Los Angeles County

Acres (Using 2008 Thomas Brothers Map)	Park	Open Space	Beach	Ecological Preserve / Estuary	Fairground	Historical Park	Historical Point of Interest	Recreation Area	Wilderness Area	Wildlife Refuge	Zoo	Forest	Golf Course	TOTAL ACRES
City of Los Angeles	11,906		166	518			46	1,123		177	103		1,523	15,562
Other Cities in Los Angeles County	15,991	2,822		214		18	1	2,274	1,177	137			5,123	27,757
Los Angeles County	6,233	58	2,000	134		1,361		1,106		2,019			1,093	14,441
State of California	33,833		707	37	470			24,150						58,727
Private	57		0					3,271					5,486	8,984
Santa Monica Mountains Conservancy	17,519	4,993		870	170									23,382
Federal Government	1,516		0					4,366	35,410			645,496		686,788
Unknown	225												116	341
<b>TOTAL ACRES</b>	<b>87,280</b>	<b>7,873</b>	<b>2,873</b>	<b>1,773</b>	<b>640</b>	<b>1,346</b>	<b>47</b>	<b>36,290</b>	<b>36,587</b>	<b>2,333</b>	<b>103</b>	<b>645,496</b>	<b>13,341</b>	
<b>ACRES PER 1000 PEOPLE IN THE CITY</b> (Using 2006 Census Est. 9,948,081)														
City of Los Angeles	1.197	0.000	0.017	0.052	0.000	0.000	0.005	0.113	0.000	0.018	0.010	0.000	0.153	1.564
Other Cities in Los Angeles County	1.607	0.284	0.000	0.022	0.000	0.002	0.000	0.229	0.118	0.014	0.000	0.000	0.515	2.790
Los Angeles County	0.627	0.006	0.201	0.013	0.047	0.133	0.000	0.111	0.000	0.203	0.000	0.000	0.110	1.452
State of California	3.401	0.000	0.071	0.004	0.000	0.000	0.000	2.428	0.000	0.000	0.000	0.000	0.000	5.903
Private	0.006	0.000	0.000	0.000	0.017	0.000	0.000	0.329	0.000	0.000	0.000	0.000	0.551	0.903
Santa Monica Mountains Conservancy	1.761	0.502	0.000	0.087	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	2.350
Federal Government	0.152	0.000	0.000	0.000	0.000	0.000	0.000	0.439	3.559	0.000	0.000	64.886	0.000	69.037
Unknown	0.023	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.012	0.034
<b>TOTAL ACRES</b>	<b>3.774</b>	<b>0.791</b>	<b>0.239</b>	<b>0.178</b>	<b>0.064</b>	<b>0.135</b>	<b>0.005</b>	<b>3.648</b>	<b>3.678</b>	<b>0.235</b>	<b>0.010</b>	<b>64.886</b>	<b>1.341</b>	<b>84.034</b>

**Notes:**

Population

2006 US Census estimate: 9,948,081(2000 census: 9,519,338)

Data Source

Thomas Brothers 2008 GIS map Layer TBM\_LACO\_OWNA

Processing

Data layer contained many types of areas. Areas NOT used: Airport, Museum Park, Cemetery, Civic Center, College/University, Hospital, Military, Miscellaneous, Movie Studio, Oil Refinery, Prison, Racetrack, Shopping Mall, Stadium/Arena. Data layer lacked jurisdiction. Data was compared to TBM's City Boundaries layer, LAEAP's own Parks layer, property names were inspected; web sites were consulted. Best effort was made to classify ownership of properties as shown in tables above.

Processed by Daniel Elroi, NorthSouth GIS, 9/10/08.

LARAP's Data

LARAP's own parks layers was NOT used, to help keep this analysis consistent, i.e. To use a single data source. However, the total acres derive from Thomas Brothers match LARAP's own total acres.

Acres per LARAP Parks layer: 15,565

Respondents participated the least in fishing (5%), active water sports (4%), tennis (2%), martial arts/tai chi/yoga (<1%), and in-line skating (<1%).

When asked which recreation activities they would like to participate in more often, the majority of adult respondents chose: 1) walking for fitness or pleasure (46%), 2) camping in developed sites with amenities such as toilets and tables (45%), 3) bicycling on paved surfaces (45%) and 4) day hiking on trails (44%).

California Outdoor Recreation Plan 2008 Research suggests that this demand is from a variety of age groups including the Baby Boom generation, which continues to hike, mountain bike, kayak, and engage in other physically active, resource-based recreation. By contrast, golf and tennis are decreasing in popularity.

One of the outdoor recreation activities with a high-tech focus is geocaching. This activity is best described as a modern treasure hunt where participants try to find a hidden cache (treasure) using a map and a geographic positioning system (GPS) receiver. Since the first geocache was hidden in 2001 the amount of geocaches has reached over 700,000 globally by the end of 2008. To address this trend, California State Parks has also added Wi-Fi access to several state park units. Many other technical advances are improving the equipment used for kayaking, skate boarding, and mountain biking.

These statewide surveys results suggest a continuing future need for outdoor recreation walking/jogging/cycling paths, flexible open turf areas that are not necessarily dedicated to a particular type of programming, and opportunities for the occasional but perhaps transient high risk adventure sport.

### **County Projections of Potential Future Needs and Demands**

Recreation managers for the County indicated that the most popular areas at Whittier Narrows Dam Basin are:

- Whittier Narrows Golf Course
- Pico Rivera Sports Arena
- The athletic fields
- Pico Rivera Municipal Golf Course
- Legg Lake
- Picnic areas at Areas D and E
- The model airplane field

Recreation managers also indicate that none of these areas are so heavily utilized as to suggest that future management actions may be required to address potential resource impacts associated with a large number of visitors. Demands for these amenities are highest on the weekends; during the week, demand is reasonable but readily managed.



Public demand is high for soccer, baseball, and for open turf fields that can support flexible programming and are not dedicated to one particular use. Recreation managers report that demands are high for these amenities throughout the County and not just within the immediate service area covered by the Basin. Fields are rotated to minimize wear, with no more than 8 of the 10 soccer fields permitted at any one time.

Recreation managers indicate that visitors are highly “destination driven;” if they come to the Basin for a specific activity, for example, playing in a sports league, trap shooting, tennis or using the model airplane field, visitors tend to stay in that particular area, and do not move around to different venues within the Basin.

In a survey of visitors to the Basin undertaken in the fall of 2008, over 90 percent reported arriving at the Basin by car; very few arrive on foot, bicycle, or public transit. (*Visioning Whittier Narrows 2010*) Opportunities exist to create a system of green streets that would improve walking and biking routes to the Basin for adjacent neighborhood residents. Please see the *Visioning Whittier Narrows 2010* for additional details on proposed green streets.

Recreation managers indicated that parking availability presently meets visitation and demand levels. The County closes Basin parking lots on very busy days. Easter and Mother’s Day are the two busiest days of the year. Parking lots are often closed by 10:00 am. Entrance fees are charged subject to Corps review.

Restrooms are generally viewed as adequate to meet demand. The County maintains 27 sets of restrooms at the Basin, and the City of Pico Rivera maintains 4 restrooms at Streamland Park.

## **Conclusions**

The Basin provides a diverse array of recreation experiences, from “traditional” bat-and-ball active athletics, to sports with specialized audiences such as model airplane fields, trap shooting and archery, to activities that have responded to relatively recent leisure trends (BMX, disc golf), to opportunities to simply “commune with nature.” The diversity of possible experiences makes the Basin a very significant resource for residents of its market area and the region.

Projected visitation at the Basin through 2020 is estimated to remain stable at 2009 levels, in the most conservative projection, or grow at a rate equal to or exceeding the projected population increase of approximately 7 percent. This growth in visitation suggests additional demands for resources at the Basin both for active athletic amenities and for lower density, lower impact amenities such as walking trails and picnic areas that respond to desires for more “green breathing space” and opportunities to be “commune with nature.” The County intends to address demands for additional playing fields, through the expansion of the existing soccer complex at Area A amenities.

Basin carrying capacity, includes both an environmental dimension (how much use can the resource support without being compromised) and a social dimension (how much use can occur before the quality of visitor experience is diminished) presently appears to be in balance. Should visitation continue to increase, and especially if it exceeds projections, more detailed studies

should be made of potential impacts, and appropriate management responses and actions considered.

### Existing Environmental Conditions

An EA has been prepared in conjunction with this Master Plan to comply with the National Environmental Policy Act (NEPA), other Federal laws, Executive Orders, and Corps’ guidance. The EA describes the physical land resources, air quality, noise conditions, biological resources including Federally-threatened and endangered species, cultural resources, hazardous and toxic wastes, socioeconomics, environmental justice, traffic and transportation, utilities, esthetics, recreation resources, public health and safety, and sustainability. Other information includes the environmental consequences of the Recommended Plan, and consultation and coordination with interested parties.

### Land and Resource Sustainability

This section concludes with an assessment of the physical and adjacent use conditions and factors that may influence future development of recreation amenities.

### Constraints, Suitability, and Compatibility

**Project Operations** The primary constraint on land uses within the Basin is the periodic inundation of portions of the Basin for downstream flood risk management. Areas within the Basin have been identified according to hydrologic and topographic analysis reflecting the level of flood inundation, and activities and structures may occur within each area of the Basin. Table 4.3 provides the acceptable uses of each inundation category, including appropriate structures constraints that can be constructed and recreation or other uses.

The frequency, extent, and duration of flood inundation must be considered in the management and appropriate use of Basin lands. As part of this updated Master Plan, the filling frequency curves have been recalculated, and maps have been developed that illustrate flood stage elevations for the 10-, 50-, and 100-year floods. Map 15 illustrates locations of existing recreation amenities with flood line elevations. Areas of potential concern are the Sports Arena and Equestrian Center since they are within the 10-year flood elevation.

<b>Table 4.3 Minimum Criteria for Basin Land Use</b>		
<b>Evaluation Frequency</b>	<b>Development Constraints</b>	<b>Acceptable Land Uses</b>
Up to 10-yr flood	Subject to prolonged inundation, sedimentation, and wave erosion	Structures are not recommended. Natural trails and open play fields are acceptable.
10-yr flood to the 50-yr flood	Subject to frequent flooding, sedimentation, and wave erosion	Open or floodable structures and field amenities that can sustain inundation with acceptable maintenance cost. Concession stands with portable contents, bridle trails, shade and picnic armadas, backstops, goalposts, etc. are considered appropriate.

**Table 4.3 Minimum Criteria for Basin Land Use**

Evaluation Frequency	Development Constraints	Acceptable Land Uses
50-yr flood to the 100-yr flood	Subject to periodic flooding, sedimentation, and wave erosion	Floodable structures and multipurpose paved surfaces that can sustain inundation with acceptable maintenance cost. Floodable restrooms and picnic areas are considered appropriate.
100-yr flood to the Basin Design Flood	Subject to infrequent flooding, sedimentation, and wave erosion	Flood-proofed, closed structures are permitted. Structures conducive to human habitation are prohibited.

### Topography

The topography within the Basin is relatively flat (Map 16). The highest elevations are in the north and northeastern portions of the basin where Recreation Areas A, B, and C are located. Amenities in these areas include athletic fields, Tennis Center, BMX Facility, Model Airplane/Hobby Area, Los Angeles Rifle and Revolver Club, Sports Arena, and Equestrian Center. Areas C and D which currently in agriculture use, even though at a lower elevation, are above the 50-year flood elevation and are suitable for recreation development. Generally, the topography of the Basin does not constrain recreation development.

### Environmental Resources

With the exception of the Nature Center and surrounding restored areas, the landscape of the Basin reflects its highly urbanized setting. The Basin valley soils, classified as recent alluvium and older alluvium, vary from coarse sand and gravel in the stream channels and at the canyon mouths to silty clay and clay loam in the lower (southern) part of the valley, and clay on the east and west sides (Maps 17 and 18). These soils do not pose any particular constraints to development.

The developed recreation areas such as picnic areas, sports fields and other amenities include non-native vegetation planted over many years to create the “urban park like” setting. (see Map 19). Undeveloped areas adjacent to the Rio Hondo provide opportunities for restoration of native vegetation with increased habitat value potential. There are also patches of ruderal vegetation which provide additional restoration opportunities. Both the coastal California gnatcatcher and least Bell’s vireo have been recorded in the Nature Area as shown on Map 20,

### Views and Aesthetic Qualities

The Dam embankment is the highest point in the Basin providing views across the Basin including the nearby Puente Hills and the distant San Gabriel Mountains. Views within the Basin include a variety of settings including landscaped parks, natural areas, roadways, recreation sports areas, rivers and lakes.

Aesthetic value within the Basin is seen and experienced in the lush green landscaped areas of the golf courses and picnic areas, and the natural riparian and riverine habitats along the San Gabriel River and Rio Hondo. The man-made North, Center, and Legg Lakes are an expansive, well-maintained area of lawn, paved and dirt trails, tot lots, and picnic areas. Legg and Center Lakes have grassy sloping shores and Center Lake has some shoreline aquatic vegetation. Aesthetic value is compromised when maintenance is compromised and where maintenance yards are not separated from public use areas.

### **Connectivity and Accessibility**

Connectivity and Access to the Basin The Basin is easily accessible from local streets, by public transportation, and freeways. The Pomona Freeway (SR 60) and the San Gabriel Freeway (I-605) provide regional vehicular access. The Pomona Freeway passes through the Basin and has off ramps at Rosemead Boulevard and Santa Anita Avenue, both of which provide access directly into the Basin. The San Gabriel Freeway provides access to the Basin from the east via an off ramp at Beverly Boulevard.

There are no major constraints in accessing the Basin. Recreation amenities are accessible from the north via Rosemead Boulevard and Santa Anita Avenue, from the east via Peck Road, from the south from Rosemead Boulevard, and from the west from San Gabriel Boulevard. Rosemead Boulevard, Santa Anita Avenue, San Gabriel Boulevard, and Durfee Avenue traverse the Basin. Pedestrian and bicycle access include each of the roadways, as well as numerous paved and unpaved trails throughout the Basin. Map 21 illustrates the various multi-modal access points throughout the Basin. Access to the Basin is also available by public transportation. Bus routes are located on Rosemead Boulevard, Santa Anita Avenue, Durfee Avenue, and Montebello Boulevard, all of which intersect and transect the Basin.

Accessibility and Connectivity within the Basin A number of roads transect the Basin, and there are numerous parking lots throughout the Basin that provide close access to the major amenities (see Map 21). While this allows for easy access, it means there is more vehicular traffic within the Basin.

Although there is a system of trails throughout the Basin for pedestrians, joggers, and cyclists, freedom of movement across the Basin is limited by several factors. Several major roadways, which bisect and disconnect the Basin, cause visitors to cross several lanes of traffic when moving from one amenity to another. Rosemead Boulevard and Durfee Avenue in particular are major access routes and could have additional crosswalks with traffic signals to facilitate safe pedestrian crossing. There is an undercrossing below the 60 Pomona Freeway that connects Areas A and C and allows safe passage for hikers and bicyclists. Additional underpasses or bridges could be constructed to improve pedestrian movement within the Basin.

Basin managers report that amenities within the Basin are fully compliant with the Americans with Disability Act (ADA). Parking lots have an appropriate number and configuration of handicapped accessible parking spaces. Restrooms, shelters, and other buildings within the Basin have been designed for universal access. As new amenities are built, they are constructed to be fully compliant with the ADA.

Trails that are not paved are typically comprised of compacted native soils. Unpaved trails may pose an obstacle to Basin visitors with limited mobility, due to the inherent unevenness and decreased stability of a natural hiking trail. Trails may also have a slope that may limit reasonable access.

Wildlife Corridors and Connectivity Movement of wildlife between two areas varies by species and each species may require differing corridor characteristics. Spencer (2005) identifies two types of barriers; a barrier that is impassable under any circumstances for a particular species, and a filter barrier, which may be utilized by a species under some circumstances. For example, most ground-dwelling species will not pass over a busy roadway, particularly if it has several lanes of traffic, retaining walls, a large area with no vegetation, fences, or other physical barriers. In general, smaller ground-dwelling species, such as amphibians, reptiles, and small mammals, are more reluctant to pass over barriers or through filters, and are therefore less mobile than other species. Large mammals and birds are less sensitive to barriers. Fish barriers include low or no streamflow, culverts, dams, concrete channels, felled trees and other natural and man-made obstacles.

Barriers and filters throughout the Basin indicate connectivity through and within the Basin is limited. Roadways discourage movement through and within the Basin for most species, except birds and bats. Areas of development and recreation are also significant barriers. Even areas of native habitat due to their small size, disturbance level, and disconnection from the adjacent Puente Hills result in few, ground-dwelling and small mammal taxa being able to disperse to the Puente Hills. Aquatic passage within the Rio Hondo and San Gabriel River is precluded by the presence of the Dam and flood risk management grade control structures.

The nearest area of non-urbanized, natural wildlife habitat to the Basin is within the Puente Hills to the east of the Basin, and the Montebello Hills to the west. The Basin is located directly in this Chino-Puente Hills wildlife corridor pathway and plays a role in determining wildlife connectivity throughout the length of the Puente Hills (Spencer 2005). Due to the highly urbanized condition of the surrounding area and in the Basin, the Basin is ineffective as a wildlife corridor and is likely to prevent wildlife passage through the larger Chino-Puente Hills corridor. Several major high occupancy highways and freeways pass through the Basin, including Rosemead Boulevard, the Pomona Freeway, Durfee Avenue, and San Gabriel Blvd.

## **Maintenance**

A major constraint to development and operations within the Basin is the minimum resource requirements needed for adequate maintenance. During economic downturns when municipal revenues are reduced, recreation department budgets may be reduced. By contrast, when recreation budgets are adequately funded, finding and employing trained staff may be a challenge. Compounding this problem for recreation managers is the availability of funding for capital improvements, but a lack of sufficient maintenance funding. Construction of recreation amenities without additional operations and maintenance funding stretches existing park maintenance resources.

When new amenities are proposed additional maintenance resources should be identified at the outset. If additional resources are not available to meet the additional needs, fees or volunteer

services may be a way to fill these resource gaps and should be included as part of the overall planning for the development.

## **5** RESOURCE OBJECTIVES

### **5.1 Resource Management**

Resource management is moving towards an integrated ecological approach, as demonstrated by the changing guidance of the Federal government. In urbanized areas such as southern California, ecosystems and their various habitat communities have become severely restricted. With the surrounding environment so drastically altered, biodiversity (species richness) is reduced and landscape linkages are broken. Conservation and restoration require a redefined planning process. A Corps Master Plan must reflect the most current advances in restoration ecology and wildlife management in the context of the Corps mission, regulations, and guidance.

Science recognizes the need for habitat connectivity so that wildlife not only has the necessary space to roam, but also has genetic diversity to ensure that an “island effect” on species is not inadvertently created on remnant habitat lands. With species increasingly endangered or of special concern, objectives must consider habitat that is needed for species most at risk given current conditions at the Basin. Objectives must also anticipate changes that may alter this scenario in the future. Effective adaptive management techniques need to respond to current conditions as well as an unknown future. The following Resource Objectives are common to all land use classifications and incorporate the principles of Flood Risk Management, Safety and Security, Environmental Quality and Character, Connectivity, and Community Involvement,

### **5.2 Resource Objectives**

Resource objectives are based on the input from stakeholders as well as Corps’ guidance. Resource objectives apply to all lands managed by the Corps.

#### **5.2.1 Flood Risk Management**

The primary Project purpose is flood risk management, which is the process of identifying, evaluating, selecting, implementing and monitoring actions to manage levels of flood risk. Land utilization for purposes other than flood risk management *must* be compatible and cannot compromise Project operations. The resource objectives for flood risk management apply to all land use classifications. Lands classified for Project Operations only are managed by the Corps for Project needs and typically underlie Project structures, access roads, and areas near or close to Project structures. They are reserved exclusively for Corps operations unless the District Engineer finds that another use would be compatible with Corps operations and that permitting a secondary use would be in the interest of the government.

#### Resource Objectives

- Educate the public and stakeholders on flood risk awareness and safety issues.
- Promote installation of signage and interpretation to educate the public about the role of the Basin for flood risk management.

- Ensure that future land use proposals and activities are compatible with estimated levels and frequency of inundation, to ensure that the Dam can be operated without constraints that compromise downstream flood risk reduction.

Resources: EO 11988, ER 1165-2-26, ER 1110-2-240, ER 1130-2-530, EP 310-1-6a, CESPDR 1110-2-1.

### **5.2.2 Safety and Security**

Safety includes not just safety from flood risk, but also physical safety for all persons while in the Basin. Affording persons the ability to survey one's surroundings; comprehend potential threats; report potential threats; and the ability to leave federal lands in the event of perceived danger are aspects of a safe and secure environment.

#### Resource Objectives

- Educate the public and stakeholders on flood risk awareness and safety issues.
- Install additional signage on any road traversing the Basin identifying that motorists are entering and/or exiting the Basin.
- Ensure that infrastructure is properly maintained to avoid creating a public hazard.
- Provide means for visitors and emergency personnel to communicate quickly their specific location in the Basin.
- Safety features such as fencing, lighting, warning signs, and call boxes installed where needed and maintained.
- Maintain adequate patrols for safety.
- Design of amenities so that vandalism and other "illegal activities" are discouraged.
- Maintain a Basin safety plan that ensures that restricted areas, danger zones, and hazardous areas are clearly marked and if necessary, barricaded and closed.

Resources: EP 1130-2-550, EM 385-1-1.

### **5.2.3 Environmentally Quality**

Environmental quality refers to the integrity and value of natural resources including land, water, air, noise, aesthetic, biological, and cultural resources. The conservation, preservation, and restoration of environmental resources are recognized as important to human welfare and quality of life. Environmental legislation emphasizes the importance of protection and enrichment of environmental quality.

With increased urbanization throughout southern California, natural resources have become increasingly limited. The Basin provides a large open space within a densely populated urban area. Within the Basin, important natural habitats provide refuge for endangered species and species of special concern. Where practicable, these habitats should be managed or restored for protection and conservation of the species.



The impacts of climate change expected during this century will impact storm and flooding frequency and duration, availability and quality of water, wild fires, ecosystem functions, and energy production and demand. To minimize future impacts, stakeholders must be ready to develop, implement, and assess adjustments or changes in operations and maintenance to enhance resilience or reduce vulnerability to systems and programs. The use of energy is a key component of sustainability in reducing the impacts of climate change. Energy saving measures should be implemented and new development constructed in accordance with green building principles.

### Resource Objectives

- Encourage uses, activities, management practices, and future development that conserve natural and cultural resources.
- Preserve areas containing unique, sensitive and/or significant resources to minimize disturbance so the integrity and values will not be adversely impacted by other uses, management practices, or developments within the Basin.
- Discourage uses in natural lands or open spaces that deteriorate environmental quality and provide environmental compensation for land uses that adversely affect the natural resources of an area that cannot be prevented.
- Design site, operation of facilities, and activities to avoid or minimize adverse environmental impacts per Corps' guidelines and design criteria.
- Promote use of appropriate native plant palettes in new landscaping or when rehabilitating established landscaped areas to maximize biodiversity and reduce soil erosion.
- Preserve areas of vegetation that have a cultural and/or social significance.
- Minimize conflicts between land uses, activities, and developments through buffering, screening, and other measures
- Promote land uses and activities that minimize impacts to global climate change.
- Use adaptive management to respond to changing conditions due to climate change.
- Encourage use of reclaimed water for irrigation of recreation amenities.
- Promote traffic plans that would minimize generating pollution within the Basin
- Encourage new development to be consistent with green building principles.
- Encourage sustainable design.
- Encourage new buildings achieve a Leadership in Energy & Environmental Design (LEED®) Silver or higher rating.
- Determine suitability of natural areas for either wildlife habitat or recreation before changing land use classifications.

Resources: North American Wetlands Protection Act, Aesthetic and Scenic Quality § 232 of WRDA 1996, Endangered Species Act, National Historic Preservation Act as amended, Clean Air Act, Noise Control Act, Clean Water Act, Environmental and Economic Benefits of Landscape Practices on Federal Landscaped Grounds, EO 13186 Federal Responsibilities to Protect Migratory Bird Act, EO on Federal Leadership in Environmental, Energy and Economic Performance, ER 1130-2-540.

#### **5.2.4 Recreation**

There is a critical shortage of open space within urbanized southern California. The goal is to provide quality recreation experiences including an accessible, safe and healthful environment, a diversity of recreation opportunities for a diverse cultural community, and maintain a harmonious balance between the natural resources of the Basin and the community's needs and desires. ER 1130-2-550 states that future recreation development must be dependent on a project's natural or other resources. Previously approved development plans for land currently outgranted for recreation are grandfathered under this regulation.

##### Resource Objectives

- Encourage community participation in expressing needs and desires to identify future development proposals.
- Optimize design of recreation amenities and access to minimize conflicts between activities and natural resources.
- Respect landscapes of significant and/or cultural value.

Resources: 16USC 460d, ER 1165-2-550, EP 1165-2-550

#### **5.2.5 Connectivity**

This resource values movement of people between Basin facilities to maximize public benefit and minimize environmental degradation. Movement of people in, out, and around the Basin must consider various modes of transportation, individual mobility, the need for safety and to quickly evacuate during a flood event.

##### Resource Objectives

- Encourage identification and connection with regional trail systems and eliminate impediments to trail connections within the Basin.
- Promote safe and efficient circulation and access to the Basin's recreation facilities to control traffic and provide a link between activities within the Basin.
- Minimize impacts on natural resources by locating similar amenities near vehicular access points.
- Encourage circulation and traffic plans for optimal use of public transportation to and within the Basin.

Resources: NTSA, Trails for America in the 21<sup>st</sup> Century Act (16 USC 1245).

#### **5.2.6 Ecosystem Restoration**

Natural creeks are an integral wildlife corridor within the region. Within the Basin several tributaries of the Los Angeles River carry local run-off through the Basin to the river. With urbanization these creeks have become degraded, reducing wildlife connectivity, losing habitat value, and reducing water quality.

### Resource Objectives

- Encourage the restoration of creeks and streams for safe corridors for wildlife movement.
- Restore wildlife habitat diversity and value.

Resources: North American Wetlands Protection Act, Endangered Species Act, EO 13186 Federal Responsibilities to Protect Migratory Bird Act.

### **5.2.7 Cultural Resources**

Cultural resources play an important role in preserving the nation’s heritage and history. Nature centers and interpretative panels can safely display artifacts and interpret the history of a site, while ensuring the protection of identified sites for future generations.

### Resource Objectives

- Promote preservation and protection of historic and cultural sites within the Basin.
- Encourage education and interpretation aspects of cultural sites

Resources: National Historic Preservation Act, Archeological Resources Preservation Act as amended.

### **5.2.8 Community Involvement**

Encourage the local community to become partners with Basin stakeholders and the Corps as Basin stewards. By creating a sense of ownership, the local community is empowered to take an active role in the Basin by indentifying problems, participating in volunteer programs, identifying and protecting resources, and educating the general public about these resources.

### Resource Objectives

- Volunteer programs for education and interpretation, clean-up and restoration activities, and safe accessibility of the Basin.
- Maintain communication channels among Basin users, County, and Corps on the public’s needs and desires, future development, and problems and opportunities within the Basin.

Resources: NEPA (42 USC 4321 et seq.), EP 1130-2-550.

## 6

# LAND USE CLASSIFICATION AND RESOURCE PLAN RECOMMENDATIONS

### Recommended Land Use Classifications

The recommended land use classifications proposed in this Master Plan include: Project Operations, Recreation, Environmentally Sensitive, Mitigation, and Multiple Resource Management - Recreation - Low Density, Multiple Resource Management - Vegetative Management, and Multiple Resource Management - Inactive and/or Future Recreation.

Nationwide regulations and policies are outlined in Chapter 16, ER 1130-2-550 and the “Non-Recreation Outgrant Policy.” The South Pacific Division of the Corps issued SPD Regulation 1110-2-1, “Land Development Proposals at Corps Reservoir Projects,” to clarify acceptable guidelines for development proposals. The Corps has prepared additional guidance regarding appropriate uses within each land use classification. This guidance is intended to clarify to the stakeholders and the public what activities/events are compatible with resource goals and objectives described in Section 5 and in accordance with Corps guidance and regulations on outgranted lands.

### Recommended Actions Applicable to All Land Use Classifications

A number of recommended actions are applicable to all land use classifications. . These include:

- Improve condition of existing trails and create new trails where appropriate. Improvement of hiking trails and other designated use trails in conjunction with other restoration measures would increase public access and awareness of the biological and other natural resources in the Basin.
- Safer and designated access points to existing trails leading to the Nature Area would expand the visitor’s experience and knowledge of the area.
- Encourage use of public transportation.  
Implement policy of landscaping with indigenous native plants. The Corps and its lessees should work together to identify an plant palette of indigenous native plants to use in landscaping new recreation areas and replace non-native plant material with native plants over time except where provided in association with a specific cultural, historical, or recreation experience.
- Eradicate invasive exotic species during the non-breeding season (16 September to 14 March) to avoid impacts to nesting birds. The Corps is mandated to eradicate invasive species including giant reed (*Arundo donax*) and various non-native species on lands it manages, and to educate the public on the significance of the need for this action that would substantially enhance the natural environment throughout the Basin (EO 13112). Encourage lessees to maintain the area free of weeds and debris consistent with lease requirements.
- Through an Adaptive Habitat Management Plan (AHMP) an invasive species eradication program should be implemented to restore native plant communities. Through the AHMP process with interested stakeholders, create a short-term and long-range plan for plant replacement that seamlessly integrates native plants over time in the existing landscape.

- Recognize that the existing landscape requires more water than the native plants that may replace them and adjust irrigation practices as needed.
- Replace whole sections of the landscape with native plants ensure the successful establishment of the native plants by having compatible needs.
- Institute a uniform system of way-finding using Corps signage guidelines (EP 310-1-6a, 01 Jun 06) so that the public and emergency personnel can easily navigate the Basin.
- Combine a system of GPS with trail markers to positively identify locations in the Basin.
- Create and locate signs throughout the Basin, understandable by a wide range of people, which identify current locations of visitors and other amenities in the Basin.
- Indicate on signs where park personnel can be reached in case of emergencies.
- Install signs, understandable by a wide range of people, which indicate length and physical difficulty of trails and estimated walking/hiking times.
- Institute and develop additional sustainable resource management practices in addition to those already in place at the Basin.
- Continue green waste management policies for recycling of lawn clippings, shrub and tree trimmings and green debris, either on site or for composting off site.
- Implement additional “smart irrigation” systems throughout the Basin with satellite-operated controllers that monitor weather conditions and adjust irrigation schedules accordingly. Create an education program to demonstrate how this can be adapted for residential landscapes.
- When replacing irrigation systems, identify zones with similar watering regimes and retrofit to meet these needs; avoid planting schemes in cases where water requirements may be incompatible.
- Develop a program to manage and recycle construction waste and provide incentives and recognition for lessees and contractors who adopt it per EO 13514. Identify a “green list” of contractors who have implemented strong recycling programs and encourage their participation in future projects.
- Retrofit pavement projects with the use of porous pavement alternatives where appropriate to allow for the infiltration of storm-water.
- Implement landscape-based storm-water management systems, such as bio-swales, rain gardens and infiltration areas in retrofits and new construction projects.
- Improve or restore stream channels wherever feasible to provide a buffer and cover for wildlife, prevent erosion, and intercept sediment and nutrients that run off from turf surfaces.
- Develop an Integrated Pest Management program that uses alternatives to chemical fertilizers and pesticides.
- Use low voltage solar lighting where feasible.
- Identify potential heat islands and institute landscape-based mitigation to provide cooling through shade and evapo-transpiration.
- Address water quality through structural and non-structural Best Management Practices (BMPs). Water quality in the lakes is of great concern to the public, as indicated in surveys and workshops.

## **Recommendations Applicable to Individual Land Use Classifications**

### **Project Operations**

Project Operations land is the most restrictive in terms of utilization and development. It is managed by the Corps for operational and maintenance requirements and includes the Dam, Dam embankment, outlet works, spillway, instrumentation and access roads, and other needs associated with maintaining flood risk requirements. This also includes the Corps maintenance yard located at the northwest corner of Durfee Avenue and Santa Anita Avenue.

### **Recreation**

A total of 438.5 acres is recommended for classification into the Recreation category.

The land use classification of Recreation indicates the most flexible or developable use of land within the Basin. Areas include amenities such as sports fields and associated support amenities including parking lots, restrooms, concessionaires and other amenities. Recreation areas are generally located in the higher elevations of the Basin as Corps policy restricts certain kinds of structures within the given flood-line elevations or they must be mitigated by being floodable.

BMX Facility This area has a dirt surface and is close to the Rio Hondo. In the long-term, this use should be evaluated for its continued popularity and may best be re-designated as MRM – Recreation – Low Density for compatibility with the Rio Hondo and mitigation area.

Athletic Fields These areas are heavily used and while there is a rotation plan for use, it additional maintenance may be required. In addition to remaining fallow, the fields may need to be aerated and re-seeded and allowed more time to recover.

American Military Museum Site should be reevaluated for accessibility, safety, esthetics, and potential improvements.

Triple B Clays Shotgun Sports Park BMPs should be implemented such as vegetated swales to help ensure no contaminants are getting into the waterways.

Archery Range Recommend periodic review of maintenance procedures and operations. Periodic surveys for interest or desire for an archery facility are recommended to ascertain whether this is still meeting current recreation needs. If the Archery Range continues operations, it is recommended that improvements be made to the amenities and a concessionaire or volunteer group identified to assist with maintenance of the amenities.

Equestrian Center An overall plan for BMPs for water quality should be implemented on the entire facility that includes placement and structure of wash-down amenities, manure management, dust control, and integrated pest management.

Sports Arena Complex Recommend that future landscaping use native plants and implementation of BMPs including impervious paving and drainage to bio-swales.

## **Environmentally Sensitive**

A total of 214.3 acres is recommended for this land use classification. The areas under this classification include the Nature Center and Museum, Whittier Narrows Nature Area, and Bosque del Rio Hondo. This area is home to a number of species including ducks, cormorants, egrets, herons, owls, and hawks. The endangered least Bell's vireo and coastal California gnatcatcher have been documented here (see Map 20). Classification to Environmentally Sensitive would severely restrict activities and use of the area. It would provide a high level of protection of the area to preserve the habitat value for resident species and is compatible with Corps' environmental stewardship policies and reflects community desires for protection of wildlife habitat.

Discovery Center Requests to renovate and replace the Nature Center and Museum with a "San Gabriel River Discovery Center" has been approved by the Corps. The new Discovery Center site and amenities will include a meeting area, classrooms, hands-on exhibits about conservation, the river's ecology, and how the watershed works. The 11.5-acre site will include outdoor classrooms and pathways with interpretive displays to enhance the learning experience within the natural setting.

Whittier Narrows Nature Area Restoration of both upland and riparian community areas would increase the overall quality of the Nature Area for wildlife and habitat.

## **Mitigation**

A total of 150.8 acres is recommended for this land use classification.

Mitigation lands are required to offset adverse environmental impacts that occurs from development either onsite, or at an offsite location within the watershed. There are three areas designated as Mitigation (Map 22). Area 1 was set aside as mitigation for the Water Reclamation Plant and in essence functions as part of the Environmentally Sensitive Nature Area although transected by Siphon Road. Area 2 was set aside as a buffer for the BMX facility and soccer fields. It appears that a soccer field has been placed in this area since the last plan. Area 3 is being held as potential future mitigation for additional development in the Basin. It is recommended that a comprehensive plan be prepared that would identify the most optimal and appropriate plant communities for wildlife habitat and for opportunities for trails.

## **MRM – Recreation – Low Density**

A total of 637.8 acres is recommended for this land use classification.

The classification of MRM – Recreation – Low Density recognizes areas that have less intensive recreation uses such as picnic areas, open play areas, and golf courses.

Whittier Narrows and Pico Rivera Golf Courses Recommend review of sustainable practices already in place and consideration of additional sustainable management practices, including: the use of reclaimed water, smart irrigation, mulching lawnmowers that keep grass clippings in

place, and composting of green waste on site. Implementing BMPs for fertilization and storm-water management throughout the golf course would address runoff which may contain chemical fertilizers, pesticide and herbicides. A program of Integrated Pest Management is recommended so that herbicides and pesticides are kept to a minimum and the least toxic material is used (such as *Bacillus thuriengensis* or Bt).

North Lake, Central Lake, and Legg Lake and Surrounding Picnic Areas Play sculptures designed by artist Benjamin Dominguez require additional maintenance and preservation. They should be checked for their structural integrity and paint maintained as originally designed. The islands in Legg Lake should have invasive plants removed and restored to a native plant palette.

Visitor Center (Snail) Building It is recommended that this facility be reopened as a Visitor Center with updated displays on the watershed, history, and operations of the Dam.

### **Multiple Resource Management – Inactive and/or Future Recreation**

A total of 188.4 acres is recommended for this land use classification.

MRM – Inactive and/or Future Recreation areas include those areas that may be just empty open space (including dirt lots for overflow parking) or utilized on an interim use such as for agriculture. Careful consideration should be given to how lands classified as MRM – Inactive and/or Future Recreation are developed. Once a recreation use is established with the attendant capital investment and established user group, a change to a different use in the future would be difficult.

Since it is unclear when these lands could be developed, these areas are broken into “opportunity areas” and a series of general recommendations are made based upon input from the community, adjacent uses, the recreation needs assessment, and plans by the lessees.

Agricultural Fields The nursery area around the Water Reclamation Plant is used in part for dispersal of reclaimed water and should probably remain in this use since it provides a buffer around the reclamation plant. The area across the street is also used as a nursery area. With the high demand for additional playing fields such as soccer, and the access from Durfee Avenue and Rosemead Boulevard, it is recommended that this area be converted to Recreation or the area is suitable for expansion as part of Area B picnic areas and designation as MRM – Recreation – Low Density.

### **Timeline of Resource Plan Recommendations**

Resource plan recommendations are shown below according to their recommended implementation timing and by land use classification (Table 6.1).

<b>Table 6.1 Recommended Actions for Improvement and Management Throughout Basin</b>
<b>Recommended Immediate Measures</b>



Native Plant Landscaping and Invasive Plant Removal	<ul style="list-style-type: none"> <li>• Institute invasive plant eradication program for species such as giant reed, tree tobacco, castor bean, salt cedar in conjunction with the AHMP. This would substantially improve the natural environment throughout the Basin.</li> <li>• Replace non-natives with native species.</li> </ul>
Install Wayfinding	<ul style="list-style-type: none"> <li>• Create signs placed throughout the Basin that identify current location of visitors as well as the other amenities in the Basin.</li> <li>• Indicate on signs where park personnel can be reached in case of emergencies.</li> <li>• When practicable, install signs that indicate length and physical difficulty of trails and estimated walking/hiking times.</li> <li>• Combine a system of GPS with trail markers to positively identify locations and amenities.</li> </ul>
Trail Enhancement	<ul style="list-style-type: none"> <li>• Enhance hiking trails and other low-density recreation features in conjunction with restoration management measures to increase accessibility to the public and facilitate more awareness of the biological resources found in the Basin.</li> <li>• Connect trails to create loops and facilitate movement throughout Basin.</li> <li>• Decommission disturbed trails and unofficial trails created by Basin visitors.</li> <li>• Structure trails to discourage homeless encampments.</li> </ul>
Improve Water Quality	<ul style="list-style-type: none"> <li>• Implement BMPs to improve water quality and habitat conditions.</li> <li>• Launch education campaign to spread awareness of human impacts on water quality and habitat.</li> </ul>
Implement Sustainable Resources Management	<ul style="list-style-type: none"> <li>• Implement “smart irrigation” systems throughout the Basin. Implement landscape-based storm-water management systems.</li> <li>• Naturalize lake shores and ensure good water quality in lakes.</li> <li>• Employ green waste management, smart irrigation, and BMPs</li> <li>• Develop an Integrated Pest Management (IPM) program.</li> <li>• Use low voltage solar lighting and other energy saving utilities and measures.</li> <li>• Manage special events to ensure no closures of park amenities or impacts to environmentally sensitive areas.</li> <li>• Manage fugitive dust at denuded lots.</li> </ul>
Implement Safety Measures	<ul style="list-style-type: none"> <li>• Ensure pets are leashed at all times within Basin and install signage to remind pet owners.</li> <li>• Install lighting and emergency call boxes in dark or isolated areas.</li> <li>• Implement parking lot closure procedure for busy summer or holiday periods.</li> <li>• Investigate options for increasing safety within the model airplane field.</li> </ul>

### **Economic Feasibility**

Economic feasibility involves demonstrating the economic value of implementing recreation development plans that are sustainable over time in terms of public needs and desires, use and perception, and operation and maintenance. It is recognized that well maintained recreation amenities are well used and those that are not have little interest from the public and are often considered unclean and/or unsafe and decline further. When this happens, it often costs more to refurbish and rehabilitate amenities or implement new ones than providing a carefully constructed operations and maintenance program.

While no specific plans are considered under this updated Master Plan, future plans proposed for recreation development are guided by Corps policies and guidelines for demonstrating the need and economic feasibility of such proposals. This includes documenting financial capability on the part of the proponent, sufficient funding to complete the proposal, as well as long term operation, maintenance, and repair. The proponent must also show the economic need for the project by providing market survey information to indicate community desire and the need for the project to indicate its future community use and intrinsic value.

If a proponent is not able to provide funding through normal budgetary means to maintain quality and use to a safe and clean standard, funds for operation and maintenance may need to be found elsewhere. This may involve the charging of use fees for certain activities such as ball fields, group reservations and special events (fees are subject to District Commander approval). Other sources include state and local funding sources, trusts, and private organizations to help defray costs. Public volunteer programs to staff amenities such as nature areas and visitor center could be pursued.

## 7

## CONCLUSION

The Federal government owns and the Corps manages eleven Basins in southern California with the primary purpose of flood risk management. Since the Basins are “dry” most of the year, holding water only after storm events occur (usually December through March), the Basin may also be used for other purposes, primarily recreation that may not impede Project operations. Over sixty (60) years of Federal laws and regulations have empowered the Corps to work with local interests to develop, construct, operate, and maintain recreation amenities within the Basins serving community needs.

The Corps leased to the City of Los Angeles through its Department of Recreation and Parks a significant portion of land in the Basin to the City for recreation purposes. Over the last fifty (50) years the Corps and the City have developed a variety of recreation amenities with Federal and City funds through cost sharing agreements. Amenities include ball fields, picnic areas, trails, and lakes. The City has also independently developed recreation amenities.

The Master Plan is a tool for the Corps, stakeholders, and public interests to guide future development in the Basin. Corps regulations and policies guide the development of amenities through the Master Plan. This Master Plan is an update of the last Master Plan for Sepulveda Dam Basin completed in 1981. Although Corps regulations recommend the update of a Master Plan every five (5) years, Federal funding is not always available to initiate and complete this process. As a result, this Master Plan incorporates a longer time frame into it, identifying short and long term recommendations for recreation development, amenity maintenance, restoration of native habitats, and other actions. This has been accomplished through a process which has:

- Identified existing recreation amenities and other facilities within the Basin,
- Incorporated the local community’s needs and desires for recreation development,
- Developed resource goals and objectives, and
- Developed additional policies to facilitate these goals and objectives.

As a result, this Master Plan identifies land use classifications for the Basin based on this process within the definitions of Corps regulations. This will guide interested parties for future development through years to come to preserve and protect the Nation’s lands and resources.

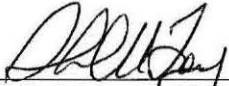
**8**      **APPROVAL**

I have reviewed this Updated Master Plan and Environmental Assessment for the Whittier Narrows Dam Basin prepared by my staff for the guidance of future development for recreation and environmental stewardship efforts within the Whittier Narrows Dam Basin located in Los Angeles County, California in keeping with the Corps' mission, values and vision.

This Master Plan is technically sound, environmentally acceptable, and meets the appropriate requirements of Corps regulations guiding the development of Master Plans for Corps' water and land resource projects.

Therefore, I approve this Master Plan for Whittier Narrows Dam Basin as presented, subject to updates as needed for the benefit of flood risk management, public use, and environmental stewardship.

28 SEP 2011  
Date

  
\_\_\_\_\_  
R. Mark Toy, P. E.  
Colonel, US Army  
Commander and District Engineer

9

## ACRONYMS AND GLOSSARY

ac-ft	acre-feet
ARRA	American Recovery and Reinvestment Act
CEQ	Council on Environmental Quality
CESPD	Corps of Engineers South Pacific Division
CFR	Code of Federal Regulations
cfs	cubic feet per second
Corps	U.S. Army Corps of Engineers
CRWQCB	California Region Water Quality Control Board
CWA	Clean Water Act
EA	Environmental Assessment
EC	Engineering Circular
EIS	Environmental Impact Statement
EM	Engineer Manuals
EO	Executive Order
EP	Engineer Pamphlets
EPA	Environmental Protection Agency
ER	Engineer Regulations
FCA	Flood Control Acts
FONSI	Finding of No Significant Impact
MP	Master Plan
MRM	Multiple resource management
NEPA	National Environmental Policy Act
NGVD	National Geodetic Vertical Datum
P.L.	Public Law
SPD	South Pacific Division
USC	United States Code
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
WRDA	Water Resources Development Act

**Abutment** A geological feature that each end of a Dam is tied into for support.

**Archaeological resources** Surface or buried material remains, buried structures, or other items used or modified by people.

**Basin** Land area comprised of all Federal lands managed by the Corps that were acquired for the construction, operation and maintenance of the Whittier Narrows Dam Basin.

**Channel** Portion of the project carrying flow may be described as: natural, constructed, riprapped, concrete, trapezoidal, leveed, overbank, low flow, bypass etc.

**Dam** Barrier built to hold back flowing water.

**Discharge** Volume of water that passes through a given cross-section per unit time; commonly measured in cubic feet per second (cfs) or cubic meters per second (m<sup>3</sup>/s); also referred to as flow. In its simplest concept discharge means outflow; therefore, the use of this term is not restricted as to course or location, and it can be applied to describe the flow of water from a pipe or from a drainage basin.

**Drainage area** Area of a stream at a specified location is that area, measured in a horizontal plane, which is enclosed by a drainage divide.

**Easement Lands** Land over which the Federal government acquired an interest in real estate to support construction, operation and/or maintenance of the project. Not equivalent to fee title.

**Ecosystem Management** An ecosystem is a dynamic community of biological organisms, including humans, and the physical environment in which they interact. Ecosystem management by the Corps is a proactive, goal-driven approach to sustaining ecosystems and their values. The Corps will manage communities to promote regional environmental values occurring on project lands toward sustaining ecosystems in which the project lands and waters occur. Such ecosystems and communities will be identified in resources objectives and/or land use classifications contained in the Master Plan and the OMP. Preferential treatment will be given to the management of ecosystems, communities, and habitats identified as having special status species. (ER 1130-2-540 15 Nov 96 2-2 f. (1)(a))

**Embankment** Bank of earth, concrete, or other material constructed to hold back water.

**Endangered Species** Any species which is in danger of extinction throughout all or a significant portion of its range, and has been so listed by the FWS/NMFS at 50 CFR 17.11 and 17.12.

**Enhancement** Enhancement measures/activities are those measures/activities taken above a stewardship level (i.e., level of required to sustain fish and wildlife resources for the life of the project), and those measures/activities which produce an increase or concentration of animal numbers for the purpose of recreation benefits. Historically the term “enhancement” has been used an indication of a net habitat improvement over the without project condition. However, this term now implies making the habitat better for some species than it would have been naturally in the absence of human intervention. Since this goes beyond the goal of ecosystem restoration, the use of the term, enhancement is rarely appropriate in Corps documents.

**Flood Risk Management** Flood risk management is the process of identifying, evaluating, selecting, implementing, and monitoring actions taken to mitigate levels of risk. Scientifically sound, cost-effective, integrated actions are taken to reduce risks. Social, cultural, ethical, environmental, political, and legal considerations are accounted for in the process.

**Floodplain** The lowland that borders a river, usually dry but subject to flooding.

**Groundwater** Water in the ground that is in the zone of saturation, from which wells, springs, and groundwater runoff are supplied.

**Historic archaeological resources** Archaeological sites whose deposits that post-date European contact.

**Interpretive Services** Communication and education processes provided to internal and external audiences which support accomplishment of Corps missions, tell the Corps story, and reveal the meanings of, and relationships between natural, cultural, and created environments and their features.

**Invasive Species** A species whose introduction does or is likely to cause economic or environmental harm or harm to human health. A species that is non-native to the ecosystem under consideration and whose introduction causes or is likely to cause economic or environmental harm or harm to human health.

**Invert** As used in hydraulic engineering, the bottom or lowest point or elevation of a structure such as a pipe, conduit or channel.

**Land Allocation** The identification and documentation of lands at Civil Works projects in accordance with the authorized purposes for which they were or are to be acquired. There are four primary land allocation categories applicable to Corps projects: (1) operations (i.e., flood control, hydropower, etc.), (2) recreation, (3) fish and wildlife, and (4) mitigation.

**Land use classifications** All lands are acquired for authorized project purposes and allocated for these uses. The classification process is a further distribution of project lands by management categories, which based upon resources available and public needs, will provide for full utilization while protecting project resources. (EP 1130-2-550 15 Nov 96 1-4.d.)

**Market Area** The geographic range that people are expected to reasonably travel from to visit the Basin area.

**Master Plan** A conceptual document guiding the Corps responsibilities pursuant to Federal laws and regulations to preserve, conserve, restore, maintain, and manage the project lands, waters, and associated resources. The plan addresses all resources including but not limited to fish and wildlife, vegetation, cultural, esthetic, interpretive, recreation, mineral, commercial, and outgranted lands, easements and water. The Master Plan is the document that organizes authorized activities, i.e., established by project specific authorities as well as general authorities for stewardship responsibilities which guide the project's role within the region, watershed, and ecosystem.

**Mitigation** Mitigation measures authorized by Congress or approved by Headquarters compensate for ecological resources unavoidably and adversely affected by a Corps project. Mitigation includes stand-alone projects; work undertaken concurrently with project construction; and operation, maintenance and management measures. (ER 1130-2-540 15 Nov 96 2-2 (6)(b))

**Multiple Resource Management** Lands managed for one or more of, but not limited to, these activities to the extent that they are compatible with the primary allocation(s). The activities should be fully explained in the narrative portion of the Master Plan.

**Native Species** With respect to a particular ecosystem, a species that other than as a result of an introduction, historically occurred or currently occurs in that ecosystem.

**Non-statutory Mitigation** The definition of mitigation is broadened to include "all measures necessary to make the Corps project whole." No specific statute may address these actions, yet damages are incurred and appropriate mitigation should be provided. Non-statutory mitigation actions may take the form of actions to restore project value, such as replacing trees, soil stabilization, and providing new, relocated, or replacement amenities.

**Outgrant** Authorizes a non-Federal entity the right to use Army-controlled real property. It is a written legal document that established the timeframe, consideration, conditions, and restrictions on the use of Army property.

**Outlet works** The hydraulic structure that controls the flow of water through a dam, usually consisting gates upstream of a lined conduit or pipe.

**Outreach Activities** Communication efforts involving programs that reach diverse populations such as students, teachers, organized groups such as Boy Scouts, Girl Scouts, 4-H, and the general public, beyond the physical boundaries of Corps projects and amenities.

**Planning Area** The planning area is a geographic space with an identified boundary that includes the area identified in the study authorizing document and the location of alternative plans which are often called project areas. The locations of resources that would be directly, indirectly or cumulatively affected by alternative plans are also called the affected area.

**Recreation – Low Density** Recreation activities such as hiking, primitive camping, wildlife observation, hunting, or similar low density recreation activities.

**Recreation** Land developed for intensive recreation activities by the visiting public, including developed recreation areas and areas for concession, resort, and quasi-public development. At new project, recreation areas planned for initial development will be included in this classification. Future areas will be classified as multiple resource management until initiation of the development.

**Resource Objectives** Clearly written statements that are specific to a project or group of projects. They specify the attainable options for resource development and/or management. They must be consistent with authorized project purposes, Federal laws and directives, regional needs, resource capabilities, and expressed public desires.

**Special Event** Special events at Corps' Basins such as water carnivals, fishing tournaments, boat regattas, music festivals, dramatic presentations, and other special recreation program of interest to the general public.

**Spillway** Hydraulic structure whose purpose is to bypass flow that exceeds the storage and/or release capacity of a dam.

**Stewardship** Natural resources management through a stewardship concept ensures the conservation, preservation, or protection of those resources for present and future generations. Stewardship focuses on sustaining ecosystems. Stewardship shall be applied in a biological community context, thereby providing protection for the existing species populations, communities, habitat types and ecosystems.

**Traditional cultural properties** Places associated with the cultural practices or beliefs of a living community. The significance of these places sites is derived from the role the property plays in a community's cultural identity as defined by its beliefs, practices, history and social institutions.

**Watershed** An area characterized by all direct runoff being conveyed to the same outlet. Similar terms include basin, drainage basin, catchment, and catch basin. A part of the surface of the earth that is occupied by a drainage system, which consists of a surface stream or a body of impounded surface water together with all tributary surface streams and bodies of impounded surface water.



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# APPENDICES

## APPENDIX A: OUTGRANT POLICIES

- Appendix A1: Recreation Development Policy for Outgranted Corps Lands, ER 1130-2-550, Chapter 16 (9 March 2009)
- Appendix A2: Non-Recreational Outgrant Policy, Memorandum (30 March 2009)
- Appendix A3: Land Development Proposal at Corps Reservoir Project, SPD-R 1110-2-1 (18 December 2001)
- Appendix A4: Corps Policy on Filming and Photography in Operations Area
- Appendix A5: Corps Policy on Special Events at Whittier Narrows Dam Basin
- Appendix A6: Corps Policy on Training in Operations Area
- Appendix A7: Corps Policy on Biological Surveys in Operations Areas
- Appendix 8: Corps Policy on Volunteer Activities
- Appendix A9: Corps Policy on Distribution of Printed Material at Whittier Narrows Basin

## APPENDIX B: LEASES

## APPENDIX C: PUBLIC PARTICIPATION

## APPENDIX D: ENVIRONMENTAL ASSESSMENT

- Appendix D1: Vegetation
- Appendix D2: Wildlife
- Appendix D3: Adaptive Habitat Management Plan

## APPENDIX E: MAPS

## **APPENDIX A:**

# **OUTGRANT POLICIES**

## **APPENDIX A1-A7: OUTGRANT POLICIES**

An outgrant is a written legal document that establishes the timeframe, consideration, conditions, and restrictions on the use of Corps property. An outgrant is typically a lease or license and authorizes the right to use Corps-controlled real property.

The Corps granted a lease of 1,161.0 acres in the Whittier Narrows Dam Basin for recreational purposes to the County of Los Angeles Department of Recreation and Parks for a term of 50 years commencing on 11 June 1957 and terminating on 10 June 2007. A new lease for a term of 50 years commencing on 1 June 1986 increased the County's acreage for recreational development to 1,258.0 acres and extended the termination date to 31 May 2036.

The Corps also granted a lease of 120.4 acres in the Basin for recreational purposes to the City of Pico Rivera for a term of 50 years commencing on 1 December 1984 and terminates on 30 November 2034.

The Corps approved the use of Basin land for several other non-recreational uses determined to be in the public interest which include 26 acres for the development of a Water Reclamation Plant through a lease to the Los Angeles County Sanitation District and 82 acres for agricultural uses through three separate leases.

In addition to applicable statutes, regulations, and guidelines, the most recent Corps policies for outgrants are described in memoranda and Engineering Regulations (ER) publications. ER 1130-2-550 dated 9 March 2009 provides the "Recreation Development Policy for Outgranted Corps Land." On 30 March 2009 the memorandum, "Non-Recreational Outgrant Policy," was issued. The South Pacific Division issued SPD Regulation 1110-2-1, "Land Development Proposals at Corps Reservoir Projects" on 18 December 2001. It established SPD policy and procedures including checklists and diagrams the districts must use in evaluating land development proposals at Corps Basins within the SPD.

The purpose of these publications was to establish consistent nationwide criteria to evaluate proposals on Corps Civil Works water resources projects. These policies were developed jointly by the Real Estate and Operations Communities of Practice. Because these memoranda establish policies for proposed development, they are included as part of Appendix A.

APPENDIX A1: Recreation Development Policy for Outgranted Corps Land

APPENDIX A2: Non-Recreational Outgrant Policy

APPENDIX A3: Land Development Proposal at Corps Reservoir Projects

APPENDIX A4: Corps Policy on Filming and Photography in Operations Area

APPENDIX A5: Corps Policy on Special Events at Whittier Narrows Dam Basin

APPENDIX A6: Corps Policy on Training in Operations Area

APPENDIX A7: Corps Policy on Biological Surveys in Operations Area

**APPENDIX A1:  
RECREATION DEVELOPMENT POLICY  
FOR OUTGRANTED CORPS LAND**

DEPARTMENT OF THE ARMY  
U.S. Army Corps of Engineers  
Washington, D.C. 20314-1000

ER 1130-2-550  
Change 5

CECW-CO

Regulation  
No. 1130-2-550

30 March 2009

**Project Operations  
RECREATION OPERATIONS AND MAINTENANCE  
GUIDANCE AND PROCEDURES**


1. This change 5 to ER 1130-2-550, 15 November 1996 establishes a recreation development policy for outgranted Corps lands.

2. Substitute the attached pages as shown below:

Chapter	Remove Pages	Insert Pages
Table of Contents	iii	iii
Chapter 16	-	16-1 through 16-3
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3. File this change sheet in front of the publication for reference purposes.

FOR THE COMMANDER:

  
STEPHEN L. HILL  
Colonel, Corps of Engineers  
Chief of Staff

## CHAPTER 16 – RECREATION DEVELOPMENT POLICY FOR OUTGRANTED CORPS LANDS

16-1. Purpose. This guidance establishes a consistent, nationwide policy that will be applied to evaluate requests for recreation development at Corps water resources development projects and was developed jointly by the Real Estate and Operations Communities of Practice. The Corps intent is to provide public outdoor recreation opportunities that support project purposes and meet the recreation demands created by the project itself while sustaining our natural resources. Depending on specific project legislation, project purposes may also include navigation, hydropower, flood control, and or water supply. Additional statutes can assign missions responsibilities such as fish and wildlife management, and endangered species.

16-2. Applicability. This policy applies to all existing recreation outgrants issued after 6 December 2005 and all new requests for recreation development by Federally recognized Indian Tribes, public (Federal, state and local), private sector and quasi-public entities and individuals at Civil Works water resources development projects. Previously approved development plans for land currently outgranted for recreation development are grandfathered under this policy. When proposed development is not specifically addressed in a previously approved development plan for an existing outgrant instrument, the proposed development will be treated as a new request; however, land availability will not have to be reevaluated. New or existing sublessees that propose recreational development outside the terms and conditions of the current outgrant instrument are considered as a new request. All new requests require a conceptual development plan in sufficient detail to evaluate the proposed recreation development.

### 16-3. Policy.

a. The primary rationale for any future recreation development must be dependent on the project's natural or other resources. This dependency is typically reflected in facilities that accommodate or support water-based activities, overnight use, and day use such as marinas, campgrounds, picnic areas, trails, swimming beaches, boat launching ramps, and comprehensive resort facilities. Examples that do not rely on the project's natural or other resources include theme parks or ride-type attractions, sports or concert stadiums, and stand alone facilities such as restaurants, bars, motels, hotels, non-transient trailers, and golf courses. Normally, the recreation facilities that are dependent on the project's natural or other resources and accommodate or support water-based activities, overnight use, and day are approved first as primary facilities followed by those facilities that support them. Any support facilities (e.g., playgrounds, multi-purpose sports fields, overnight facilities, restaurants, camp stores, bait shops, comfort stations, boat repair facilities) must also enhance the recreation experience, be dependent on the resource-based facilities, be secondary to the original intent of the recreation development and the land base occupied by the outgrant. The Corps will not support private exclusive use of any type of facility.



ER 1130-2-550  
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b. Corps policy is to provide outdoor recreation opportunities to the public where there is an unfulfilled demand and a corresponding deficit of those facilities. This shortfall is fulfilled by either the Corps constructing the facilities itself or allowing Federally recognized Indian Tribes, other public (Federal, state and local), private sector, quasi-private entities or individuals to do so on project lands through an outgrant. Accordingly, outgrants that the Corps enters into should not unfairly compete with other established private or public recreational facilities. Existing outgrants with proposed facilities in development plans should be given priority to develop similar facilities within a reasonable timeframe before issuing a new outgrant for like facilities.

#### 16-4. Definitions.

a. Comprehensive Resort – Typically, multi-faceted developments with facilities such as marinas, lodging, conference centers, golf courses, tennis courts, restaurants, and other similar facilities.

b. Conceptual Development Plan – Requestor's or existing lessee's plan for an area of Corps land that shows existing and or proposed facilities, services, and acreage necessary to meet the current and potential public demand and the management and development activities to be undertaken.

c. Master Plan - A conceptual document guiding Corps responsibilities pursuant to Federal laws and regulations to manage the project lands, waters, associated resources, and preserve, conserve, develop, restore and maintain those resources. The primary goals of a Master Plan are to prescribe an overall land and water management plan, resource objectives, land use classifications, and associated design and management concepts. The plan addresses all resources including but not limited to fish and wildlife, vegetation, cultural, aesthetic, interpretive, recreational, mineral, commercial, and outgranted lands, easements and water.

d. Outgrant – Authorizes the right to use Army-controlled real property. It is a written legal document that establishes the timeframe, consideration, conditions and restrictions on the use of Army property. For the purposes of this policy, an outgrant is typically a lease or license authorized by 16 USC 460d, 10 USC 2667 and the general administrative authority of the Secretary of the Army (reference ER 405-1-12, Chapter 8 (Real Property Management) and the forthcoming EC 405-1-80 (Management and Outgrant Programs).

e. Project Level Representative – Person responsible for operations at a project or area level such as lake manager, operations project manager, resource manager, etc.

#### 16-5. Evaluation Criteria.

a. All new requests for recreation development must be in writing and will be reviewed by a district team. At a minimum, the team will consist of a project level representative, Real Estate, Operations, and other district legal/technical elements as appropriate (Engineering, Planning, Regulatory, etc.). Final authority to approve recreation development rests with the District Commander. In the rare circumstance that exceptions to this policy may be warranted,

proposals for recreational developments may be forwarded to the Director of Civil Works through the Division Commander for review on a case by case basis.

b. Although these evaluation criteria are integral to any land availability determination, the preparation of the Report of Availability (ROA) will follow the processes established in ER 405-1-12, Chapter 8 (Real Property Management) and the forthcoming EC 405-1-80 (Management and Outgrant Programs), ER 200-2-2 (Procedures for Implementing NEPA) and ER 200-2-3 (Environmental Quality-Environmental Compliance Policies). In addition, the evaluation will be consistent with ER 1130-2-540 (Environmental Stewardship Operations and Maintenance Policies), ER 1130-2-550 (Recreation Operations and Maintenance Policies), and ER 1130-2-406 (Shoreline Management at Civil Works Projects.)

c. The team will evaluate requests for recreation development using the following criteria:

- (1) Consistent with project purposes
- (2) Reasonable connection to the project's natural and other resources
- (3) Consistent with land use classifications and resource management objectives in the Project Master Plan (or supplement thereto)
- (4) In the public interest
- (5) Justified by public demand (market study- See Appendix C)
- (6) Economically viable (feasibility study- See Appendix D)
- (7) Meets the recreation demands created by the project itself while balancing natural resources requirements

d. Routine, minor expansions/requests of previously approved facilities within the lease footprint such as additional campsites at an existing campground, additional marina boat slips, enlargement of a restaurant, additional picnic sites or parking spaces may warrant a streamlined evaluation in accordance with established District procedures.

16-6. Implementation. This policy is effective immediately and supersedes any existing project, district, or MSC policy on evaluating proposed recreation development.

## APPENDIX C

### Market Studies

#### C-1. Market Study.

a. A market study is contingent upon developing an inventory of the supply of existing types of recreational resources within a given area. The study must also include a recreational demand analysis that provides an indication of what people do, feel and want concerning recreational facilities (e.g., public demand). By comparing the inventory and the demand analysis it is possible to determine the types and amount of additional recreational facilities that are needed now or in the future. At a minimum, proposed recreation development by Federally recognized Indian Tribes, public (Federal, state and local), private sector and quasi-public entities and individuals will demonstrate a demand for the type of facilities proposed and a current or near future need for the type of facility being proposed.

b. Proposed demand studies shall contain data on the regional population and future projections, demographic characteristics and an inventory of similar types of recreational facilities (e.g., campgrounds, picnic areas, marinas, etc.) and their resources (e.g., 125 camping spurs, 150 picnic tables, etc) within a 30-mile radius of the proposed site requested for development. The study should demonstrate that the demand analysis was done through one or a combination of methods. General categories of methods include but are not limited to, public input gathered through surveys and or workshops, using recreational standards (e.g., 1000 camping spurs per 50,000 people), participation levels/rates (e.g., 2.4 million people participate in picnicking, which is 56 percent of the regional population), and trend analysis (e.g., extrapolating historical use statistics for those similar types of facilities over a ten to 20 year period).

c. The availability of information described above for use in the study will vary from region to region. Federally recognized Indian Tribes, public (Federal, state and local), private sector and quasi-public entities and individuals should consult with State Census Bureaus, State Departments of Commerce, State and Federal Recreational Agencies, and travel bureaus for this information and to minimize study cost. Each state has a State Comprehensive Outdoor Recreation Plan that contains analysis criteria referenced above. In addition there are numerous Federal recreational studies such as the National Survey of Recreation and Environment that contain this type of information. Regional universities with outdoor recreational departments may also be a source for information and assistance.

d. All costs associated with a market study, NEPA documents, land surveys, preparation and review of the ultimate lease by the Corps as well as any other administrative costs associated with Corps review and approval of any proposed development are the responsibility of the entity proposing the recreation development.

## APPENDIX D

### Feasibility Studies

#### D-1. Feasibility Study.

a. The intent in requiring a private sector or individual to provide a feasibility study is to demonstrate that the entity can make a reasonable return of profit on a yearly basis for the proposed recreational development and that such development is economically viable. Factors such as the input of capital to develop the facility(s), maintenance cost, insurance, labor, etc. should be addressed. The type and size level of the facility(s) (e.g., 250 camping spurs vs. 100 spurs, 200 marina boat slips vs. 100) should also be addressed to demonstrate a reasonable rate of profit would occur. The numbers of visitors needed and the associated fee for these services should also be addressed. Detailed charts, graphs, and projections are not required; however, enough data must be provided to demonstrate such factors have been considered and that a profit can be generated.

b. Feasibility studies for Federally recognized Indian Tribes, public (Federal, state and local), or quasi-public entities will also be required. However the content of the analysis is limited to the types and size of the facility and evidence that yearly profits of the facility will offset or nearly offset the yearly operational cost of the proposed facility(s). Private sector or individuals working through a public entity for a development request (third party) will be required to furnish a feasibility study that complies with the requirements for a private requestor or individual as referenced above.

c. All costs associated with a market study, NEPA documents, land surveys, preparation and review of the ultimate lease by the Corps as well as any other administrative costs associated with Corps review and approval of any proposed development are the responsibility of the entity proposing the recreation development.

## APPENDIX A2: NON-RECREATIONAL OUTGRANT POLICY



DEPARTMENT OF THE ARMY  
U.S. ARMY CORPS OF ENGINEERS  
WASHINGTON, D.C. 20314-1000

CECW-CO/CEMP-CR

MAR 30 2009

MEMORANDUM FOR SEE DISTRIBUTION

SUBJECT: Non-Recreational Outgrant Policy

- 1. Background.** In executing the U.S. Army Corps of Engineers mission, districts receive numerous and diverse proposals for use of lands and waters at Civil Works water resources projects. Nationwide guidance specifically for recreation development on outgranted land was issued on 6 December 2005. No similar nationwide criteria exist to evaluate proposals for non-recreation purposes. Districts have taken different approaches in evaluating these proposals. This has created inconsistencies in the type and scope of use authorized and other conditions related to authorizations, such as mitigation and long term affects on public resources. Past proposals have included a wide variety of activities involving the utilization of public lands and waters, such as roadways, public utilities (power lines, waterlines, intakes and outfalls, natural gas and fuel pipelines, etc.), commercial navigation activities (harbors, barge terminals, mooring cells, etc.), flood risk management or hydropower generation structures, public facilities such as schools, fire houses, police stations, and private residential subdivisions. At times, there may be an interrelationship between recreation and other real estate outgrant proposals (e.g. leases, licenses, easements). In those cases, the intent and philosophy of both policies will be evaluated, along with other applicable statutes, regulations, and guidelines, such as the Corps Environmental Operating Principles. This policy was developed jointly by the Real Estate and Operations Communities of Practice.
- 2. Purpose.** The purpose of this guidance is to establish a consistent, nationwide policy that will be applied to evaluate non-recreational real estate outgrant requests for use of Civil Works lands and waters. The Corps intent is to meet legitimate needs for the use of project lands and waters while sustaining our natural resources and protecting authorized project purposes. Depending on specific project legislation, project purposes may include navigation, hydropower, flood risk management, recreation, water supply, and low flow augmentation. Additional statutes can assign mission responsibilities, such as fish and wildlife and endangered species management.
- 3. Applicability.** This policy applies to all new non-recreational outgrant requests for use of Corps fee owned lands and waters by the public (Federal, State and local), Indian Tribes, private sector, quasi-public entities, or individuals at Civil Works water resources projects. All requests submitted prior to the effective date of this policy will be processed in accordance with current District policies. Existing outgrants are grandfathered under this policy. Proposals to modify or renew existing outgrants will also be evaluated for policy compliance under this guidance.

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SUBJECT: Non-Recreational Outgrant Development Policy

All new proposals must comply with Section 9 - Evaluation Criteria, Enclosure 1 - General Outgrant Application Information, and as applicable, Enclosure 2 - National Environmental Policy Act Guidance, Enclosure 3 - Mitigation Guidance, and Enclosure 4 - Additional Guidance For Specific Outgrant Applications. It is recommended that designated corridors be established in Project Master Plans where feasible and new proposals should utilize these corridors where they exist. This policy is not applicable to oil, gas, or mineral exploration or extraction. This policy is also not applicable to the licensing of hydropower facilities by non-federal interests on Corps administered Civil Works Projects. That program is regulated by the Federal Energy Regulatory Commission. However, full compliance with the associated non-federal hydropower requirements defined in ER 1110-1-1454 (Corps Responsibilities for Non-federal Hydroelectric Power Development under the Federal Power Act) is required. Specific guidance for evaluating antenna siting requests is contained in 41 CFR 102-79.70-79.100. A license, lease, or easement will be issued in association with the request depending on proposed use of the Federal property (i.e. whether a tower or other facilities will be constructed on Federal property; or solely placement of an antenna).

4. **Policy.** The primary rationale for authorizing any future non-recreational outgrant request for use on Corps lands or waters will be one of two reasons: there is no viable alternative to the activity or structure being located on Civil Works land or waters; or, there is a direct benefit to the government. Examples of instances of no viable alternative include but are not limited to: cross-country utilities, pipelines, or roadways that must cross projects, public water intakes, or commercial mooring cells in a navigable waterway. If a proposal meets one of these two criteria, it must be evaluated in light of compatibility with authorized project purposes, compliance with statutory and regulatory requirements, including environmental and cultural resource laws, cumulative impacts, and overall long-term public interest factors. The impacts associated with an individual action or the accumulated impact of a series of actions must not adversely impact the capability of the project to generate the benefits for which the project was congressionally authorized, constructed, and is operated. The Corps shall coordinate and/or consult with American Indian/Alaska Native Governments when reservation lands are involved. Public or private structures or activities that are not dependent on use of, or location on, Civil Works lands and waters, such as schools, fire houses, and hospitals are prohibited unless no viable alternative is proven available. Permanent commercial ventures and private residences are prohibited. Any private exclusive use of Civil Works lands and waters not specifically authorized by ER 1130-2-406 is prohibited.

5. **Consideration.** In most instances, an applicant will be required to pay the fair market value or consideration for use of Civil Works lands and or waters. This consideration may be monetary or non-monetary. However, in-kind consideration is not authorized for leases or licenses granted under 16 USC 460d.

6. **Mitigation.** Mitigation guidelines can be found in Enclosure 3. Wherever possible, applicants requesting use of Corps fee-owned lands or waters generally will be required to mitigate for adverse impacts to ensure that public resources suffer no net loss of value, post-construction. This may include statutory and/or non statutory mitigation actions. However, only

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SUBJECT: Non-Recreational Outgrant Development Policy

non-statutory mitigation may be waived as defined in Enclosure 3, paragraph 4. Where required, a Mitigation Plan must be prepared and approved by the District Engineer prior to issuance of the outgrant instrument. Approved mitigation plans shall become a condition of and added as an addendum to the applicable real estate instrument.

7. **Administrative Expense.** In addition to consideration and mitigation, the applicant will be required to pay administrative expenses for the outgrant. Administrative cost for the evaluation of any application documents (preliminary, detailed, supporting) will be paid up front and prior to the start of the review process by project and district personnel in accordance with Civil Works Policy Memorandum, "Collection of Civil Works Appropriations," dated 2 October 2008.

8 **Storage Capacity.** By law, every Corps water resource project has designated missions (e.g., flood risk management reduction, hydropower, navigation, water supply, etc). To ensure compliance with law, the Corps is required to maintain the ability to store water to support these missions. The amount of water storage availability for each mission is identified in a congressionally approved Water Allocation Report. Changes to these amounts may not be done without a re-allocation study and an approved amended Water Allocation Report. Proposals that impact water storage availability for any mission will be required to offset the impact. This includes impacts up to the maximum storage of the reservoir (see Definitions Section 8d.).

9. **Definitions.**

a. **Consideration** - The fair market value received for the outgrant (monetary and non monetary, such as in-kind improvements or services). Administrative expenses and mitigation requirements cannot be applied towards consideration. Administrative expenses and mitigation cost are considered as an additional expense to the fair market value of the outgrant.

b. **Designated Corridors** - A parcel of land with fixed boundaries that has been identified in the Project Master Plan or operational management plan as being the preferred location for future outgrants (e.g., public utilities, roadways, pipelines, etc) or proposed modifications to existing outgrants suitable to accommodate compatible types of outgrants.

c. **Freeway** - A road that has controlled access and is designed to link urban areas. Freeways are designed for high volumes of traffic, use grade separations at all intersections, have design speeds of 50-65 miles per hour, and no median access. Freeways include expressways, interstates, and toll-roads.

d. **Maximum Storage** - The total storage space in a reservoir (in acre feet) below the maximum attainable water surface elevation (crest of the dam or top of the flood pool), including any surcharge storage (capacity above the maximum operating level of reservoir).

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e. **Operational Management Plan** - A separate document from the Project Master Plan that outlines in detail the specific operation and administration requirements for natural resources and park management consistent with the approved Project Master Plan. Management strategies consistent with authorized project purposes, approved resource use objectives, and land designations will be established in the document. The document will be used as a working tool for the overall management of the project on a day to day basis.

f. **Non-Statutory Mitigation** - The definition of mitigation is broadened to include "all measures necessary to make the Corps project whole." No specific statute may address these actions, yet damages are incurred and appropriate mitigation should be provided. Non statutory mitigation actions may take the form of actions to restore project value, such as replacing trees, soil stabilization, and providing new, relocated, or replacement facilities.

g. **Outgrant** – A document which authorizes the right to use Civil Works lands and waters. It is a written legal document which conveys the right to use Army controlled real property. For the purposes of this policy, an outgrant is typically a lease, license, or easement generally authorized by 16 USC 460d, 10 USC 2667 or 10 USC 2668, and the general administrative authority of the Secretary of the Army (reference ER 405-1-12, Chapter 8 (Real Property Management), AR 405-80 (Management of Title and Granting Use of Real Property), and the forthcoming EC 405-1-80 (Management and Outgrant Programs).

h. **Project Level Representative** – Person responsible for operations at a project or area level, such as lake manager, operations project manager, park manager, resource manager, etc.

i. **Project Master Plan** - A conceptual document guiding Corps responsibilities pursuant to Federal laws and regulations to preserve, conserve, develop, restore, maintain, and manage project lands, waters, and associated resources. The primary goals of a Master Plan are to prescribe an overall land and water management plan, resource use objectives, land use classifications, and associated design and management concepts. The plan addresses all resources including, but not limited to, fish and wildlife, vegetation, cultural, aesthetic, interpretive, recreational, mineral, water, and commercial.

j. **Regional Arterial Road** – A road that links multiple communities within two or more counties, and provides continuous and mostly uninterrupted traffic flow. Regional arterial roads are designed for high volumes of traffic, design speeds of 45-50 miles per hour, and use partially controlled access, grade separation at isolated intersections and limited curb and median access controls to facilitate traffic flow.

k. **Statutory Mitigation** - Statutory mitigation is driven by regulations that require mitigation to correct negative impacts to the environment based on a proposed action. For example, § 33 CFR 320.4(r) and 33 CFR 332 detail the required mitigative actions when wetlands or navigable waterways (e.g., discharge of dredged or fill material into the water) are impacted.



CECW-CO/CEMP-CR

SUBJECT: Non-Recreational Outgrant Development Policy

1. **Viable Alternative** – Other lands or waters not under Corps management that meet the intended objective of the proposal. Factors such as cost or the appearance of unused Corps lands or waters will not affect the determination of viability.

**10. Evaluation Criteria.** All new requests for use or revisions to existing outgrants must be in writing and reviewed by a district team. Generally, the team will at a minimum consist of a Project Level Representative, Real Estate, Operations, and other legal/technical elements as appropriate (Counsel, Engineering, Planning, Regulatory, etc.). Final approval rests with the District Engineer unless such authority is specifically delegated to an appropriate subordinate level to accommodate a minor request. In the rare circumstance that exceptions to this policy may be warranted, proposals for non-recreational use will first be forwarded to the Division Commander. If the review for these exceptions is not resolved at the Division level, as a last resort, the request will be forwarded to Headquarters (CECW-CO-N, CEMP-CR, applicable headquarters Regional Integration Team, and the Director of Civil Works (if needed)) for resolution.

a. Although these evaluation criteria are integral to any land availability determination, the preparation of the Report of Availability (ROA) will follow the processes established in ER 405-1-12, Chapter 8 (Real Property Management), AR 405-80 (Management of Title and Granting Use of Real Property), the forthcoming EC 405-1-80 (Management and Outgrant Programs), ER 200-2-2 (Procedures for Implementing NEPA) and ER 200-2-3 (Environmental Quality-Environmental Compliance Policies). In addition, the evaluation will be consistent with ER 1130-2-540 (Environmental Stewardship Operations and Maintenance Policies), ER 1130-2-550 (Recreation Operations and Maintenance Policies), and ER 1130-2-406 (Shoreline Management at Civil Works Projects).

b. The team will evaluate requests using all of the following criteria:

- Consistent with project purposes
- Viable alternatives to utilization of public lands and waters
- Consistent with complete land use classifications and resource management objectives identified in the approved Project Master Plan (or supplement thereto)
- Consistent with applicable evaluation contained in the enclosures
- In the public interest
- Demonstrated need
- Technical capabilities
- Financial capabilities (consideration, mitigation and administrative expenses)


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11. **Implementation.** This policy is effective immediately and supersedes any existing project, district, or MSC policy on evaluating proposed outgrants. This policy will remain in effect until incorporated into appropriate Engineer Regulations. District policies may be developed that supplement this policy in order to further define evaluation roles and responsibilities within the district. However, district policies will not be in conflict with this policy.

FOR THE COMMANDER:

Encls



MERDITH W. B. TEMPLE  
Major General, USA  
Deputy Commanding General  
for Civil and Emergency Operations

**GENERAL OUTGRANT APPLICATION INFORMATION  
ENCLOSURE 1**

**1. Preliminary Information** – The applicant must provide the preliminary information requested below (a-h) to the Project Level Representative. The initial submission will be evaluated by the Project Level Representative and district team to determine if a proposal is appropriate for location on Government property. Administrative cost for the evaluation of any application documents (preliminary, detailed, supporting) will be paid by the applicant prior to the start (up front) of the review process by project and District personnel, in accordance with Civil Works Policy Memorandum, “Collection of Civil Works Appropriations” dated 2 October, 2008.

a. Identify Applicant:

(1) Name, address, and phone number of applicant. The application must be submitted by the entity to whom the outgrant will be assigned.

(2) Point of contact for processing (e.g. City Manager, Mayor, Commissioner, etc)

b. Describe the structure or facility.

c. Identify the purpose, need and objective (benefits, enhancements, statutory requirements) for the structure or facility.

d. Justify placement of structure or facility on government property. The justification should include a description of all alternative locations and routes that were investigated, including routes and locations off of project lands. The description will also include rationale for why the other alternatives were not selected. Cost factors alone will not affect the determination of viability.

e. State the duration for which the proposed outgrant is requested. Include the duration of the temporary license if one is needed (usually 1 year).

f. Generally describe the location and dimensions of the requested outgrant area to include a preliminary site plan. NOTE: Outgrants should be placed in the footprint of existing project outgrants or within designated corridors where possible.

g. Provide basic construction methods and timeline.

h. Anticipated impacts (environmental, cultural resource, social, etc.).

**2. Detailed Information** - If upon review of an initial request, the Corps determines that the requested activity may be feasible and will be considered further, the information below must be provided as required. This information will be provided to the Project Level Representative and be evaluated by the district team. Additional information may be requested based on the nature of the proposed activity. A Corps determination will be made as to what environmental documentation is required for the proposed action. Preliminary information concerning administrative fees, consideration and mitigation will be provided to the applicant.

**a. Coordination**

(1) Provide concurrence from third parties who may be affected by the structure or facility (e.g. other existing outgrants)

(2) Provide other agency concurrence regarding legal or regulatory requirements where necessary (e.g. responsible State natural resources and utility entities).

NOTE - A temporary real estate instrument will be required prior to conducting any on-the-ground activities (for surveys, ground disturbance, soil and groundwater testing). An Archeological Resources Protection Act (ARPA) permit may also be required.

**b. Description of Proposal**

(1) Provide preliminary plans and specifications for the proposed outgrant. Include construction areas, if applicable.

(2) Provide a map(s) which includes the following:

(a) A legal description (location, identification of parcel) of the proposal. (reference to a known Corps of Engineers property monument is encouraged). This description can also be provided separately;

(b) The upper guide contours and elevation intervals appropriate to the terrain as applicable, if available;

(c) Identification of the project property line (Federal government property line) in relation to the proposal;

(d) Any structures that will be affected (e.g.: fences, roads, monuments, gates, intake structures, natural and environmental resources, etc.); and

(e) The estimated acreage of the proposed outgrant.

(3) Stake/flag the boundary or centerline of the outgrant if requested

**c. NEPA** - If NEPA documentation is required from the applicant, see Enclosure 2.

d. **Mitigation** – Non-statutory mitigation is generally required for impacted public resources. Mitigation often requires, but is not limited to, wildlife habitat improvement and vegetative plantings on the area of actual disturbance and on additional areas or other forms of restitution. Statutory mitigation may also be required if the proposed work involves applicable statutes, regulations, and guidance concerning impacts of a proposed action. For example, a discharge of dredged or fill material into waters of the U.S typically requires a Section 404 permit (Clean Water Act) and associated mitigation. See Enclosure 3 for additional mitigation guidance.

e. **Storm Water Requirements** – In accordance with State, County and/or local laws, various Districts within the Corps do not allow outgrants for storm water facilities. For those Districts that allow outgrants for storm water facilities, the applicant must also contact the applicable State, County and/or local agency responsible for storm water permits. The applicant must provide documentation of the contact, a Notice of Intent and evidence that a permit is being pursued (if required). In addition, the applicant shall provide a Storm Water Pollution Prevention Plan when required if earth-disturbing activities are to be performed. This plan shall include the means by which erosion and sedimentation will be controlled and monitored to protect the drainage courses.

f. **Storage Capacity** – In general, Corps policy is no net loss of maximum storage capacity. This generally includes calculating amounts of cut and fill which could impact storage capacity.

g. **Landscaping and Revegetation** - As part of site stabilization and restoration, the applicant in most cases will be required to reestablish vegetation after construction. The applicant must demonstrate that the seed and vegetative plantings proposed for revegetation are native species to the area and not listed as an invasive species on a Federal or applicable State list.

NOTE: Applicants, please review Enclosure 4 for guidance addressing additional requirements for specific types of outgrants.

**NATIONAL ENVIRONMENTAL POLICY ACT (NEPA) GUIDANCE  
ENCLOSURE 2**

For outgrant proposals requiring an Environmental Assessment (EA) the following information is generally required by NEPA. Additional information may be requested depending on the nature of the proposal. An EA facilitates the decision process regarding the proposed action and alternatives. Additional information concerning NEPA can be found at <http://ceq.hss.doe.gov/>.

NEPA documents may be completed by the Corps or the applicant. If completed by the Corps, the applicant must pay for the expenses incurred prior to the work being initiated. If completed by the applicant, the applicant must pay for the expenses to be incurred by the Corps prior to the Corps review in accordance with Civil Works Policy Memorandum, "Collection of Civil Works Appropriations" dated 2 October 2008.

- a. SECTION 1                    AUTHORITY, PURPOSE, AND SCOPE provides the authority for the proposed action, summarizes the project purpose, provides relevant background information, and describes the scope of the EA.
- b. SECTION 2                    ALTERNATIVES examines alternatives for implementing the proposed action.
- c. SECTION 3                    PROPOSED ACTION describes the recommended action.
- d. SECTION 4                    AFFECTED ENVIRONMENT describes the existing environmental and socioeconomic setting.
- e. SECTION 5                    ENVIRONMENTAL IMPACTS OF THE PROPOSED ACTION identifies the potential environmental and socioeconomic effects of implementing the proposed action and alternatives.
- f. SECTION 6                    MITIGATION PLAN summarizes mitigation actions required to enable a Finding of No Significant Impact for the proposed alternative.
- g. SECTION 7                    FEDERAL, TRIBAL, STATE, AND LOCAL AGENCY COORDINATION provides a listing of individuals and agencies consulted during preparation of the EA.
- h. SECTION 8                    REFERENCES provides bibliographical information for cited sources.
- i. SECTION 9                    APPLICABLE ENVIRONMENTAL LAWS AND REGULATIONS provides a listing of environmental protection statutes and other environmental requirements.

- j. SECTION 10 LIST OF PREPARERS identifies persons who prepared the document and their areas of expertise.
- k. APPENDICES
- A Correspondence
  - B Section 404 Permit (if required)
  - C Fish and Wildlife Coordination/Correspondence
  - D Cultural Resources Coordination/Correspondence
  - E Public Comments (if applicable)
  - F Newspaper Public Notice (if applicable)
  - G Other

**MITIGATION GUIDANCE  
ENCLOSURE 3**

1. **Statutory Mitigation.** Statutory mitigation must be done in accordance with applicable statutes, regulations and guidance. Statutory mitigation is generally defined as actions that reduce the severity or intensity of adverse impacts of other actions, to include:

a. Avoiding the impact by not taking a certain action or parts of an action or by moving the project location. Applicants are encouraged to consider avoidance as the preferred mitigation measure.

b. Minimizing impacts by limiting the degree or magnitude of the action and its implementation, for example, by adjusting site layout.

c. Rectifying the impact by repairing, rehabilitating, relocating, or restoring the affected public resources.

d. Reducing or eliminating the impact over time by monitoring, maintaining, and/or replacing equipment or structures to prevent future degradation from equipment or structural failure over the life of the action.

e. Compensating for the impact by replacing or providing substitute resources or environments. With the exception of unique habitats under imminent threat of destruction, a mere change in ownership of existing habitat is generally not considered mitigation. Habitat improvement must be implemented in addition to long-term protection of the habitat.

Statutory Mitigation requirements vary somewhat under the environmental laws, regulations, and executive orders. For Corps of Engineers Regulatory Program mitigation guidance see 40 CFR Part 230 "Compensatory Mitigation for Losses of Aquatic Resources", 33 CFR 320.4 paragraph R, and 33 CFR 332. It is recommended that for actions on Civil Works lands and waters that require mitigation under these regulations, the mitigation occur on site where feasible.

2. **Non-Statutory Mitigation:** The definition of mitigation is broadened to include "all measures necessary to make the Corps project whole". Not all of the adverse impacts to a site will be required to be mitigated by a federal statute or regulation, but for outgrants, all adverse impacts must be mitigated unless a waiver is issued (see paragraph 4). The applicant for the outgrant will be advised of the impact and required mitigation. An example of impacts that may not be covered by existing authorities is a proposal that is categorically excluded from NEPA documentation but may still result in the destruction of a small wooded area containing twenty trees. There are no threatened or endangered species or any wetlands involved. Another instance may entail the destruction of 20 campsites resulting from a road expansion. In each case, the impacted resources must be restored or otherwise mitigated.



**3. Real Estate Outgrant Documentation.**

a. Where mitigation is required as a result of an outgrant, it will be addressed as a condition of the real estate instrument. A copy of the mitigation plan, use restrictions, and/or Memorandum of Agreement (MOA) will be included as an attachment to the outgrant document. If a mitigation plan, restrictions or an MOA is required, the outgrant instrument must be modified to incorporate compliance with the terms of the plan, restrictions or MOA as a condition of the outgrant. The outgrant instrument must be modified to incorporate a specific termination clause to address failure to comply with mitigation requirements.

b. In addition, action may also be required under the specific statute(s) that required the mitigation. A clear timetable must also be provided if mitigation requirements extend beyond the execution date of the outgrant agreement. Coordination with the office(s) which are responsible for these requirements must be completed to ensure the requirements are in place before the outgrant document is executed.

**4. Waiver of Non-Statutory Mitigation Requirements.** When only "Non-Statutory Mitigation" is required, the Corps may choose to waive this mitigation requirement in cases where the requested activity will further an authorized project purpose and/or meet a public demand that the Corps is unable to meet. However, the Corps does not have the authority to waive mitigation requirements when such mitigation is required by a law, regulation, or statute.

**5. Responsibility for Expenses.** In most cases, all costs associated with processing the mitigation aspect of the outgrant and initiating and maintaining mitigation requirements over the life of the mitigation action are the responsibility of the outgrant applicant and will be agreed upon and documented in the real estate outgrant instrument. These administrative costs are in addition to the fair market value consideration, if applicable, of the property to be outgranted and any other purely administrative expenses incurred as a result of this outgrant request in accordance with Civil Works Policy Memorandum, "Collection of Civil Works Appropriations" dated 2 October 2008.

**6. Future Ownership and Management of Mitigation Properties.** On-site mitigation should be achieved wherever possible. If on-site mitigation is not possible, off-site mitigation should be undertaken, as follows:

a. Acquisition of Real Property. To the maximum extent possible, any additional lands or other real property interest required to be purchased by the applicant for mitigation purposes will be contiguous with existing project lands or waters. The NEPA decision document will clearly address any requirement for the acquisition of non-statutory mitigation lands. In no instance will the Corps take title to real property prior to receiving approval of the Director of Civil Works. Management of mitigation properties will be accomplished in accordance with 33 CFR 332.7. Typically, a Real Estate Plan (REP) will be prepared to support this type of action. However, there may be circumstances that require the preparation and approval of a Real Estate Design Memorandum (REDM) where acquisition of the land is tantamount to implementation of the project and approval of a decision document is required prior to commencement of the acquisition effort (e.g., some fish and wildlife mitigation projects). In addition, an REDM may

be appropriate when there is a new acquisition requirement for an existing project for which a REDM was previously utilized.

b. Other Mitigation Services.

1) Mitigation services generally consists of restoration, creation, relocation, or improvements of the same type (i.e., three acres of existing wildlife habitat destroyed and replaced with three or more acres of new wildlife habitat lands) to offset the damaged resource base. In other circumstances, it may be more appropriate to accept other types of services (i.e., three acres of existing wildlife habitat destroyed and mitigated by rip rapping 1,000 linear feet of shoreline to protect nearby wildlife habitat). Entering into agreements for the replacement of impacted wildlife habitat with recreation facilities is generally not appropriate.

2) In the absence of specific authority, the Corps may not accept cash in lieu of mitigation services. In some limited instances, however, it is possible for the Corps to directly perform the mitigation work by entering into agreements with states or others and then to be reimbursed by the state or others for such work. Approval from the Assistant Secretary of the Army (Civil Works) (ASA-CW) may be necessary prior to entering into such an agreement. In some cases, a real estate instrument or a management plan may be required in accordance with 33 CFR 332.7 if a land acquisition is part of the mitigation service.

**ADDITIONAL GUIDANCE FOR SPECIFIC OUTGRANT APPLICATIONS  
ENCLOSURE 4**

**1. Requirements for Specific Structures and Applicable Legal Compliance** - In addition to the requirements listed in Enclosures 1 through 3, the following information may be required as appropriate for specific types of outgrants. This list is not intended to be all inclusive but an illustrative example of additional requirements that exist for specific types of outgrants. The construction, operation and safety of these outgrants will require compliance with all applicable Federal, state, and local laws, codes, and standards. While it is not the responsibility of the Corps to inspect these facilities for safety compliance, the Corps reserves the right to halt the construction and or operation of the structure if a safety issue creates a danger to the life of project visitors or the ability of the Corps to carry out project missions. All of these specific outgrant applications must include a safety point of contact. Also note that the application must be submitted by the entity to whom the outgrant will be assigned.

**a. Electric Power and Communication Lines, and Structures and Facilities for Radio, Television, and other Communication Services**

- (1) Specify line heights, voltage, cutoff locations and elevations
- (2) Submitted plans must be certified by a state certified professional engineer as being in compliance with the National Electric Safety Code requirements, ER-1110-2-4401, 30 May 97 (Clearances For Electric Power Supply Lines and Communication Lines Over Reservoirs), American National Standard ANSIC2, National Electric Safety Code (NESC), American National Standard ANSI/NFPA 70, and the National Electric Code NEC.

**b. Sewer and Water Lines**

- (1) A state certified professional engineer must certify plans as being in compliance with all applicable Federal, State, and local government regulations.
- (2) Additional requirements may apply pertaining to flood-proofing and impacts to public resources.
- (3) Submit documentation demonstrating coordination with the applicable Corps of Engineers District Real Estate Office concerning the format for water pipeline easements contained in Real Estate Policy Guidance Letter No. 26, Easements to Support Water Supply Storage Agreements and Surplus Water Agreements, 10 June 2008.

**c. Water Intake Structure**

- (1) Submit plans and specifications showing any effects on Corps facilities, as well as current and future water volume needs that may impact water storage/surplus water contracts, etc.
- (2) Submit documentation demonstrating coordination with the applicable Corps of Engineers District Real Estate Office concerning requirements contained in Real Estate Policy Guidance Letter No. 26, Easements to Support Water Supply Storage Agreements and Surplus Water Agreements, 10 June 2008.
- (3) Provide written documentation showing permission has been procured from the water contract holder if required.
- (4) Provide approval/permit from appropriate regulatory agency (state/local) if applicable. Also provide water supply contract, authorizing document, or decision document based on statute, for authorizing a water supply intake.

(5) Provide documentation of review and approval from Corps of Engineers Dam Safety Committee

**d. Outfalls (e.g. stormwater, sewage, etc.)**

(1) A copy of the National Pollutant Discharge Elimination System (NPDES) permit must be provided for approval of any outfall that is placed on Corps administered lands and waters. Also furnish any other state/local approvals as applicable.

(2) A plan to prevent erosion, and to prevent litter, trash, and pollutants from being deposited on Corps administered lands and waters must be provided.

(3) Submitted plans must be certified by a state certified professional engineer.

(4) Submitted plans must be in compliance with Project Shoreline Management Plan if applicable.

**e. Major Oil, Natural Gas and Fuel Carrying Pipelines (Under USC 30 Section 185 for pipelines 24" and greater in diameter)**

(1) Disclosure of Ownership - If a partnership, corporation, association, or other business entity applies for an easement, the application shall disclose, where applicable:

(a) Name and address of each partner

(b) Name and address of each shareholder owning 3 percent or more of the shares; the number and percentage of any class of voting shares of the entity; and

(c) Name and address of each affiliate of the entity. If the entity controls the affiliate, include the number of shares and percentage of any class of voting stock of that affiliate; if, however, the affiliate controls the entity, include the number of shares and percentage of any class of voting stock of the entity.

(2) If this information is already on file, and current, in the District Engineer's office, or local Bureau of Land Management or Federal Energy Regulatory Commission offices, references may be made to it; the applicant need not file repetitious disclosure documents with successive applications.

(3) Submit documentation demonstrating coordination with the applicable Corps of Engineers District Real Estate Office concerning requirements contained in Real Estate Policy Guidance Letter No. 27, Issuance of Fuel Carrying Pipelines that are 24 inches or more in diameter, 29 October 2008.

NOTE: For oil, natural gas and fuel pipelines smaller than 24" in diameter, please refer to requirements contained in General Outgrant Application Information (Enclosure 1).

**f. Roads**

(1) Generally, Civil Works lands will only be made available for roads that are considered regional arteries or freeways (See Definitions in the Guidance). All other types of roads, including driveways and alleys, are generally not permitted on these lands. The expansion of existing roads on Civil Works lands will be considered on a case by case basis.

(2) Indicate whether or not Federal Highway Administration funds are being used for this road.

(3) A state certified professional engineer must certify plans as being in compliance with all applicable Federal, State, and local government Regulations.

g. **Telecommunications.** Authorities applicable to issuing outgrants for telecommunication purposes depending on the type of instruments desired are referenced in the Telecommunications Act of 1996, which is codified at 47 USC 332 and implementing regulations are provided in 41 CFR 102-79.70 to 79.100. In addition the applications must be in compliance with forthcoming Engineering Circular 405-1-80 (Management and Outgrant Programs), Section XIX, Procedures for Siting of Communications Facilities on Army Controlled Lands. Proposals must include documentation to ensure the outgrant would not create the following problems:

(1) Impair, interfere, or degrade the Federal missions of the project or its operations.

(2) Interfere with existing radio frequency (RF) activities.

(3) Documentation of coordination with Federal Aviation Administration (FAA) and/or Department of Defense (DoD) and siting approval for any proposed telecommunication facility that will be located within proximity to an existing FAA facility or DoD system.

h. **Hydropower facilities.** Any request to construct/develop hydropower facilities will be an unusual request that will be handled on a case by case basis per ER 1110-2-1454 as amended.

## APPENDIX A3: LAND DEVELOPMENT PROPOSALS AT CORPS RESERVOIR PROJECTS



REPLY TO  
ATTENTION OF:

DEPARTMENT OF THE ARMY  
SOUTH PACIFIC DIVISION, CORPS OF ENGINEERS  
333 Market Street, Room 923  
San Francisco, California 94105-2195

CESPD-MT-E (1110-2-1)

18 DEC 2001

MEMORANDUM FOR

Commander, Albuquerque District  
Commander, Los Angeles District  
Commander, Sacramento District  
Commander, San Francisco District

SUBJECT: SPD Regulation 1110-2-1, Land Development Proposals at Corps Reservoir Projects

1. References:

- a. Memorandum, CESPD-PD-R, 7 May 1992, subject: Policy of Corps Reservoir Lands.
- b. Policy Guidance Letter No. 32, 28 April 1993, subject: Use of Corps Reservoir Flowage Easement Lands.
- c. Memorandum, CESPD-ET-EW, 20 May 1999, subject: Hydrologic and Hydraulic Evaluation of Balancing Cut and Fill Volumes for Land Development Proposals at Corps Reservoir Projects.

2. Enclosed is the completed CESPD Regulation 1110-2-1, Land Development Proposals at Corps Reservoir Projects. This regulation accounts for previously issued USACE regulations, interim policy guidance, SPD memorandums, internal correspondence and the latest analysis of impacts by land developments proposals under consideration. It is a valuable tool. It establishes SPD policy and procedures, including checklists and diagrams your districts must use in evaluating land development proposals at Corps reservoirs within SPD.

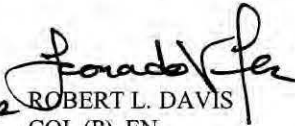
3. Land development within Corps reservoir projects continue to present new challenges. They require a thorough analysis of negative impacts on flood storage space especially those that effect critical features of the Spillway Design Flood and the Probable Maximum Flood. There are an increasing number of developments being proposed within Corps project lands. There is a balance between the requirements to adhere to established policy guidance, while at the same time working with the developers.

CESPD-MT-E

SUBJECT: SPD Regulation 1110-2-1, Land Development Proposals at Corps Reservoir Projects

4. This regulation will also be made available on the SPD Internet Homepage at <http://www.spd.usace.army.mil>. Questions regarding the above or enclosed may be directed to Ms. Theresa Mendoza or Mr. Boni Bigornia of my staff at (415) 977-8106/8102.

Encl

  
For ROBERT L. DAVIS  
COL (P), EN  
Commanding

CESPD R 1110-2-1

DEPARTMENT OF THE ARMY  
SOUTH PACIFIC DIVISION, CORPS OF ENGINEERS  
333 Market Street, Room 923  
San Francisco, California 94105-2195

CESPD-MT

CESPD REGULATION  
NO. 1110-2-1

November 2001

Engineering and Design  
LAND DEVELOPMENT PROPOSALS AT CORPS RESERVOIR PROJECTS

1. Purpose. This regulation establishes South Pacific Division (SPD) policy for evaluating land development proposals within reservoirs and flood basins of the Corps, and for documenting the results of the evaluation. Land development proposals are those by companies, organizations, private parties, governments, agencies, or any other entities to construct buildings, roads, or other facilities or in any other way to modify the landforms, vegetation, surface characteristics, or use of lands within a reservoir or basin operated by the Corps for flood control. The Corps has responsibility to assure that the project purposes are not compromised, that the public is not endangered, and that natural and cultural resources associated with project lands are not harmed. The points and procedures for evaluation of development proposals in this regulation are to assist in meeting these responsibilities and complying with applicable laws and directives.
2. Applicability. This regulation is applicable to all SPD Districts and other field operating activities within this command.
3. References.
  - a. EO 11988, Floodplain Management, 42 F.R. 26951, 24 May 1977.
  - b. ER 1165-2-26, Implementation of Executive Order 11988 on Floodplain Management, 30 March 1984.
  - c. ER 405-1-12, Real Estate Handbook, 20 November 1985.
  - d. ER 200-2-2, Procedures for Implementing NEPA, 4 March 1988.
  - e. ER 1110-2-240, Water Control Management, 24 May 1990.
  - f. EP 1165-2-314, Flood Proofing Regulations, 31 March 1992.

This regulation supercedes: CESPD-DE Memorandum, Subject: Interim Guidance for Evaluating Development within Corps Reservoir Projects; Dated 7 May 92 and CESPD-ET-EW Memorandum, Subject: Hydrologic and Hydraulic Evaluation of Balancing Cut and Fill Volumes for Land Development Proposals at Corps Reservoir Projects; Dated 20 May 99.



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- g. Policy Guidance Letter No. 32, Use of Corps Reservoir Flowage Easement Lands, 28 April 1993.
  - h. ER 1130-2-530, Flood Control Operations and Maintenance Policies, 30 October 1996.
  - i. ER 1130-2-540, Environmental Stewardship Operations and Maintenance Policies, 15 November 1996.
  - j. ER 1130-2-550, Recreation Operations and Maintenance Policies, 15 November 1996.
4. Delegation of Responsibilities. The water control authorities and responsibilities of all commands are executed through the Districts' Water Control Operations Centers or Reservoir Control/Regulation Sections.
- a. Commander, South Pacific Division will:
    - (1) Establish Division-wide policies and procedures concerning evaluation of land development proposals;
    - (2) Establish and maintain close contact with the District staff relative to the land development project and provide advisory assistance as required; and
    - (3) Conduct review of land development proposals prior to approval by the District Commander to insure national and regional consistency in policy application.
  - b. District Commanders will:
    - (1) Establish and execute the reservoir operations program in accordance with policies;
    - (2) Establish and maintain liaison with SPD personnel in Water Control, Operations Division and Real Estate and Environmental relative to the land development project;
    - (3) Conduct an internal review by all pertinent offices within the District, including the District's Water Control, Engineering, Operations, Real Estate, Planning Divisions, Environmental and Counsel;
    - (4) Prior to approval, submit land development proposals to SPD for review to insure national and regional consistency in policy application; and,
    - (5) Approve or disapprove development proposals and retain the evaluation package on which the decision was based.

5. Factors To Be Considered for Developments in SPD Reservoirs. A formula cannot be developed to calculate the acceptability of a development project but numerous factors should be considered in the evaluation of land development proposals.

a. Real Estate Requirements. Proposed developments need to be evaluated to ensure they do not conflict with the terms of real estate interests held for the project or constrain future operational flexibility of the project. Provisions to be put into new real estate outgrant instruments should include recognition of the fact that the water control plan is expected to change in the future and that flood releases are based on the most current water control plan. A decision to limit developments on project lands must be consistent with the underlying provisions of the applicable real estate interest held by the Government or the project sponsors. Before making a final determination on the proposed development, the Offices of Real Estate and Counsel should be consulted.

b. Reservoir Storage.

(1) Developments that occur within an SPD reservoir (i.e., on either lands held in fee or on lands in which USACE or local sponsors may have real estate interests) will not be allowed to reduce the reservoir's project storage space. This requirement includes the space for the Spillway Design Flood (SDF). The Probable Maximum Flood (PMF) design space is a critical feature in the operation of a Corp reservoir project. The primary consideration in approving excavations or landfill placements is the preservation of "project storage capacity" of the project. "Project storage capacity" is herein defined to include all hydrologic and hydraulic needs of the project, which encompasses the volume for the entire project, i.e., sedimentation, hydropower, recreation, agriculture, water supply, and spillway design flood.

(2) Most developments require cut and fill operations that change the original topography of the flood control basin. Even if there is a balance of cut and fill, there may be an adverse effect on flooding frequency within the basin due to the change in the area-capacity curve. The cut and fill operations must not cause any property to be flooded more frequently than before the development was in place. This can be done by ensuring that for every elevation on the modified area-capacity curve, an equal or larger reservoir volume would be created by the development, i.e., for any "fill" volume, an equal or greater volume of "cut" must be removed at an elevation below the fill. Impoundment areas such as lakes or spreading basins should be evaluated as "fill" if they are not designed to release their water from the reservoir (i.e., gravity flow, pumping or recharge) prior to a flood.

(3) Cumulative degradation of project storage through land development that does not mitigate for this lost volume has an insidious effect on the hydrologic design and operation of the project. Therefore, proposals for excavation and grading of the flowage easement that result in loss of project storage will not be approved unless substitute flood storage is provided.

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(4) Normally, to account for losses in volumetric space caused by vertical development, the best engineer practices would require developers to balance cut and fill up to the elevation at Maximum Reservoir Level (MRL). Unfortunately, from the point of volumetric calculations and legal control, real estate rights are not generally acquired for land between the elevation of the guide acquisition line (or take line) and the elevation of the top of the dam. Clearly, for land developments beyond our acquisition line we have no legal authority to regulate incursions in the vertical space that would otherwise be available for floodwaters in a design flood event. This acquisition policy represents an attempt in balancing hydrologic design requirements and political realities of real estate acquisition.

(5) When reviewing proposed developments that at least partially occur on project-owned lands, best engineering practices should be taken into account in considering any adverse impacts to dam safety during a design flood. In such instances, when the proposed development would interfere with the purpose for which the project easement or fee interest was acquired, the Government has the authority to require volumetric mitigation for that portion of the development proposal over which the Corps has real estate rights to the top of the MRL. (See Appendix A, figure 1)

(6) The Government has no jurisdiction for vertical space above land over which no real estate interests exist. However, as stewards of the project, the Corps can encourage the developer to mitigate for that volumetric area (storage space) that is removed from the project storage space above the project acquisition line by the proposed development. (See Appendix A, figure 2 and 3).

(7) In cases where there is a new development on lands that would be inundated by the PMF, but over which the Corps has no real estate interests, or when a new PMF has been developed, there exists a need to ascertain the integrity of the Corps project and any dam safety issues resulting from the routing of the PMF. In such cases, the following analysis should be performed, in coordination with the Dam Safety Assurance Program. The PMF inflow flood should be (mathematically) routed through the reservoir making the assumption that over such lands, the storage space is not available. This assumption should reflect actual and reasonably projected development throughout the life of the project. Such an analysis would relieve the District from a need to seek volume mitigation over lands over which we have no control, and also ensure that 100 percent of the PMF can be safely passed over the spillway. This new routing may result in a higher water surface elevation, and may indicate a deficient spillway. In such cases, the Dam Safety Assurance Program should be engaged resulting in a study to determine appropriate corrective action. Corrective action might take the form of either enlarging the spillway, raising the dam, use of a parapet wall on top of the dam to meet freeboard deficiencies, re-operation of spillway gates, acquiring rights over private land between the elevation of the dam's spillway and the elevation of the top of dam, or a combination of these alternatives. In some cases, it may prove more acceptable to purchase easement rights, as opposed to raising the dam (or some other combination of solutions).

c. Flood Damage to Property. In general, where land developments occur, it should be susceptible to period flooding. Buildings that contain utilities, records and/or equipment should either be flood proofed or should have contingency plans developed for evacuation of moveable items before the flood. A modified version of the Los Angeles District's Minimum Criteria for Reservoir Land Use Projects has been adopted for regional use and is presented as Appendix B. Use of this table will provide consistent criteria for developers upon which to base their conceptual plans.

d. Flood Damage to the Reservoir.

(1) Floatables. If the development has storage tanks, vehicles, or any other article that could float during a flood, each item must be adequately anchored to prevent it from becoming dislodged due to buoyancy and/or swift currents. A floating object could get drawn into the intake structure (act as a plug) and potentially cause loss of control of the project. They also could get swept over the spillway, creating the potential for serious damage to structures or property downstream.

(2) Release of Pollutants. The water quality of water stored or released from Corps reservoir projects is the responsibility of the Corps. If a development stores or handles pollutants, leakage or accidental discharge into the flood waters could lead to environmental problems, both within and downstream of the project. Operational constraints during this event could include a need to hold polluted floodwaters until they can be treated or recovered. This could create a dangerous situation in which scheduled releases cannot be made. This additional operation constraint would narrow the range of options for water control decisions. Need to evaluate risk of releases and where necessary take corrective actions.

(3) Debris Build-up and Cleanup within the Flood Control Basin. Some development proposals are large enough to affect the natural flow of sediment into the reservoir. This could cause larger quantities of sediment and/or debris to deposit in the reservoir where it had not been anticipated. If debris impinges on inflow into the reservoir, the problem could cause additional flooding. Also, the designs of the outlet works, spillway and embankment are based on the net area-capacity curve, which is developed based on the sediment distribution. Extreme changes in sediment distribution may affect the operation of the project as designed. Additionally, the build-up of debris or sediment in an area that used to be free flowing could lead to redirection of flows that produce detrimental erosive forces. If the redirected flows were to impinge upon the dam embankment, the safety of the dam could be compromised. Cleanup of the development could be very costly. Therefore, flow paths must be examined to avoid these problems.

e. Existing and Planned Project Use. Many projects have Master Plans that guide the use of resources and the orderly development of project lands. All development proposals should be reviewed for consistency with the Master Plan to assure that the proposed development will not conflict with existing or planned uses. If the review indicates that the proposed development is

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either inconsistent with the Master Plan or may conflict with existing or planned uses, the Master Plan will be updated or supplemented prior to approval of the proposed development.

f. **Induced Constraints to System Flexibility.** Reservoir projects need operational flexibility in order to deal with forecast errors, operational inefficiencies, and delays in meeting operational objectives, emergencies, and unique situations. Flexibility is needed to allow the water control manager to adapt the water control plan to special circumstances that may arise in the river system. If a rising pool level in the reservoir were to approach a development where damages could result, the water control manager should not be placed under pressure to release flood waters that otherwise may have been held back to prevent further flooding of the downstream system. In most cases, one of the primary purposes of the project is to provide flood protection for these downstream areas. Real-time flexibility gives the water control manager the ability to make modifications to the water control plan, and, if necessary, to make best use of the reservoir and the overall reservoir system. Therefore, the proposed development must not adversely affect the system operations.

g. **Constraints to Future System Flexibility.** Water control managers must also deal with future changes in the watershed (physiography and development), new hydrologic data and technology, operational experience, changed downstream conditions (increased/decreased channel capacity), changing emphases (e.g. environmental concerns, water quality, water conservation, recreation, etc.). Many Corps reservoir projects are no longer able to provide the degree of protection for which they were originally designed, due to one or more of the above reasons. Re-regulation studies are undertaken to try to optimize the operational objective function, i.e., to determine how the project can best be operated to maximize the public benefit. Developments that may appear to be acceptable under present conditions may not be acceptable when considering future needs for operational flexibility. The future flexibility of the project and the entire river system to meet authorized purposes should not be compromised by inappropriate reservoir development.

h. **Public Safety Problem.** Some development proposals result in an increase in the number of people or animals within the reservoir. The size of a proposed development should be evaluated. Facilities that can hold a large number of people might be denied for safety reasons. Examples of large facilities that might not be allowed in flood control basins are: hospitals, schools, libraries, museums, theaters, shopping centers, and amusement parks. A development may also attract a larger number of people than it was designed for. For example, an underground parking lot may attract children as a play area or may attract transients as a sleeping area. Because these developments were not originally intended to have people playing in, or occupying them, contingencies would likely not have been set up to evacuate the people in the event of a flood. Therefore, public safety would be at risk. Part of the liability could be attributed to the Corps, adding risk and potential delays to water management decisions. Flooding of electrical circuits and wiring may create special hazards to evacuation procedures. Some developments create hidden dangers and must be carefully evaluated for potential public safety problems.

i. Environmental Stewardship. Environmental ramifications of any proposed development must be fully explored and all requirements for assessing, coordinating, and reporting possible impacts must be followed. Some of the basic responsibilities for environmental stewardship at Corps-operated reservoirs are described in reference 3i, though there are numerous other pertinent directives dealing with requirements relating to NEPA, the Endangered Species Act, the Fish and Wildlife Coordination Act, the Clean Water Act, the Clean Air Act, the National Historic Preservation Act, etc. Any land development proposal should be coordinated as soon as possible with the Operations and Environmental elements so that the necessary steps to gather information and to deal with environmental requirements and procedures can be planned out, as some of these might be expensive and time consuming.

6. Contingency Plan. A Contingency Plan should be developed for any development within the flood control basin that is subject to hazardous conditions and damages from a flood event. A thorough technical analysis by the developers will force them to consider what emergencies could arise within a flood control basin and determine what contingency measures are required to deal with them. The agreement, which allows development, should state that it is the sole responsibility of the developer to evacuate the area. At projects where monitoring exists, the District would attempt to make notifications to affected interests. The agreement should further state that: "Prior to commencement of construction, the developer will produce and finalize an evacuation contingency plan." This will ensure that a procedure has been worked out beforehand. The plan shall not be reviewed or require approval from the Corps; however, its contents should include standard operating procedures for: regular patrols of the area (if warranted); warning systems, their triggering mechanisms, their thresholds and minimum warning times based on the hydrology of the watershed; mobilization of equipment and manpower for evacuation of humans, animals and/or records, utilities and equipment; emergency notifications (phone number and personnel lists); access roads and escape routes; and clean-up and repair.

7. Reporting. The evaluation of any land development within a flood control basin must be well documented. The report must explain what factors were evaluated and what the results of the evaluations were. The level of detail appropriate in the documentation will vary depending on the specifics of the proposal, but must be sufficient to explain and support the recommendation and decision. The completed evaluation package, including the proposal and environmental documentation, is to be submitted to SPD for review to insure national and regional consistency in policy application, prior to approval action by the District Commander. A checklist of minimum requirements for a report is outlined in Appendix C, Evaluation Criteria Checklist for Land Development Proposals.



ROBERT L. DAVIS  
COL (P), EN  
Commanding

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November 2001

4 Appendices

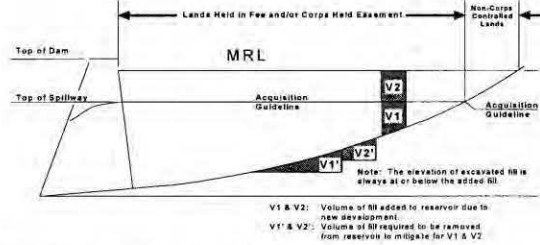
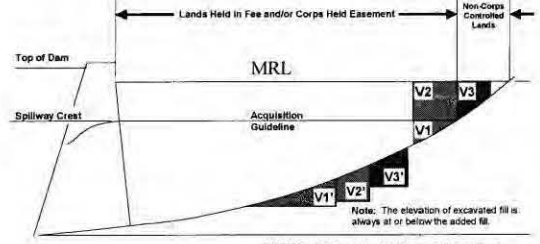
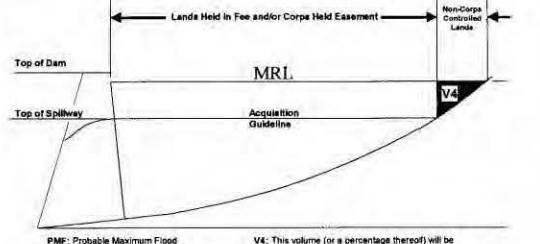
App A – Typical Cut and Fill Volumes for Land Development Proposals (Figures 1 thru 3)

App B – Minimum Criteria for Reservoir Land Use Projects

App C – Evaluation Criteria Checklist for Land Development Proposals

App D – Glossary

**Appendix A – Typical Cut and Fill Volumes for Land Development Proposals**

<p><b>Figure 1</b></p> <p>Projects entirely on Corps controlled lands</p>	 <p>MRL: Maximum Reservoir Level</p>
<p><b>Figure 2</b></p> <p>Projects that straddle Corps and non-Corps controlled lands</p>	 <p>MRL: Maximum Reservoir Level</p>
<p><b>Figure 3</b></p> <p>Volumes to be excluded from consideration in PMF computations</p>	 <p>MRL: Maximum Reservoir Level</p>



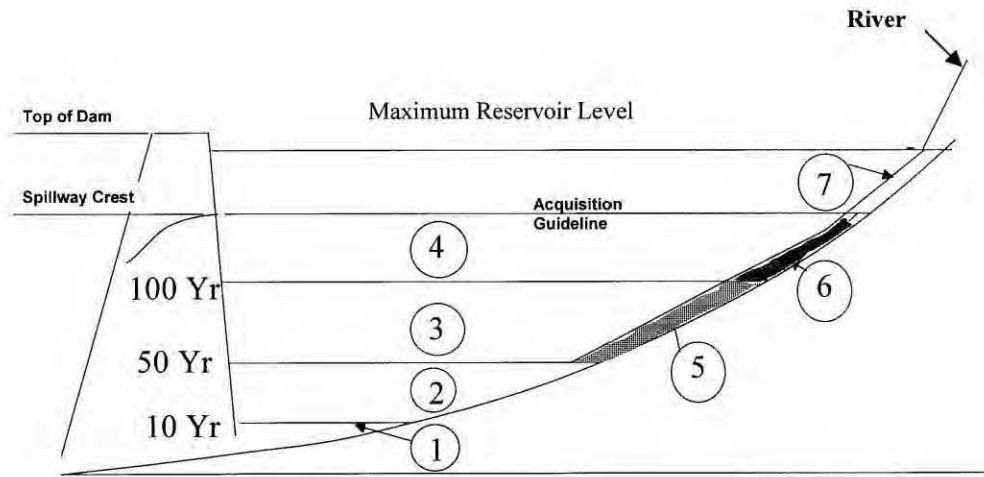
**Appendix B -Minimum Criteria for Reservoir Land Use Projects**

Location	Figure Level	(*)Elevation Frequency Range	Development Constraints	Acceptable Land Uses
Reservoir	1	Up to 10-yr flood	Subject to prolonged inundation, sedimentation, and wave erosion	Structures are not recommended. Nature trails and open play fields are acceptable.
	2	10-yr flood to the 50-yr flood	Subject to frequent flooding, sedimentation, and wave erosion	Open or floodable structures and field facilities that can sustain inundation with acceptable maintenance costs. Concession stands with portable contents, bridle trails, shade and picnic armadas, backstops, goalposts, etc. are considered appropriate.
	3	50-yr flood to the 100-yr flood	Subject to periodic flooding, sedimentation, and wave erosion	Floodable structures and multipurpose paved surfaces that can sustain inundation with acceptable maintenance costs. Floodable restrooms and picnic area are considered appropriate.
	4	100-yr flood to the Reservoir Design Flood	Subject to infrequent flooding, sedimentation, and wave erosion	Flood-proofed, closed structures are permitted. Structures conducive to human habitation are prohibited.
River floodplains	5	Below the reservoir 100 yr flood elevation and up to the 100-yr river flood	Subject to frequent flooding, sedimentation, and wave erosion	Open-type or floodable structures and field facilities that can withstand flood-flow velocities for 100-yr conditions and will not impede the passage of flood flows.
	6	Above the reservoir 100 yr flood elevation and up to the 100-yr river flood	Subject to frequent flooding, sedimentation, and wave erosion	Structures are not recommended. This area must be reserved in an open manner to provide for conveyance of the 100-yr flood.
	7	Above the reservoir 100 yr elevation and above the 100-yr river flood	Subject to variable flooding, sedimentation, and wave erosion	Flood-proofed, closed structures are permitted along the floodway fringe. All development must meet Federal regulatory floodway regulations and be approved by the District Engineer.

\* Frequency criteria shall be for a reservoir and watershed conditions of at least 50 yrs in the future. Most current frequency curve may be used as guidance in estimating future conditions. Note: Land uses at lower elevations may be developed at higher elevations

Before making a final determination on the proposed development, the Offices of Real Estate and Counsel should be consulted.

**Appendix B - Minimum Criteria for Reservoir Land Use Projects**



Note: Refer to Table B of Minimum Criteria for Reservoir Land Use Projects for description

**Appendix C –Evaluation Criteria Checklist for Land Development Proposals**

**Each Question that is answered contrary to the guidance should have an explanation.**

1. Corps Reservoir or Basin: \_\_\_\_\_
- 2a. Name of Development Proposal: \_\_\_\_\_ 2b. Project No.: \_\_\_\_\_
- 2c. Project Manager: \_\_\_\_\_ Telephone No. \_\_\_\_\_
- 2d. District Reviewers:  
Environmental: \_\_\_\_\_ Counsel: \_\_\_\_\_  
Real Estate: \_\_\_\_\_ Operations: \_\_\_\_\_  
Engineering: \_\_\_\_\_ Reservoir Regulation: \_\_\_\_\_
3. General Project Description:
4. Summary comment/recommendation for the proposed development:
5. Materials Reviewed: Report(s) Plan(s) Other(s)
6. Titles and Date of Reviewed Materials:
7. Will the proposed development be located within the reservoir (defined as all land below the Maximum Reservoir Level?) Yes No Cannot be Determined
8. Do any of the potentially affected easements conflict with the approved water control plan? Yes (explain) No Cannot be Determined
- 9a. Will there be any “cut and fill” operations in preparation for the proposed development? Yes No Cannot be Determined
- 9b. If “Yes”, would they allow drainage by gravity? Yes No Cannot be Determined
10. Is there any loss of storage at any elevation below the Maximum Reservoir Level? Yes (Explain) No Cannot be Determined

**Appendix C –Evaluation Criteria Checklist for Land Development Proposals**

11. Do any buildings, ponds, etc. remove or have the potential to remove (e.g., by sandbagging to save expensive property) flood control volume from the Corps project?

Yes      No      Cannot be Determined

12. If located within the reservoir, what is the elevation frequency range (currently) associated with the location?

below 10 Yr     10-50 Yr     50-100 Yr     greater than 100 Yr

13. Do the facilities/structures of the proposed development comply with the attached Appendix B “Minimum Criteria for Reservoir Land Use Projects?”

Yes      No (If No, explain)

14.a. Do you have a copy of the title, leasehold, or easement?

Yes      No

14b. Will the proposed development conflict with the Corps flowage easements or other Real Estate interests? (explain why)

Yes(explain)    No    Cannot be Determined

15. Is there a proposal for sale or exchange of land, or change in easement between the Government and the Developer?

Yes      No

16. Is a Categorical Exclusion (CATX) Required per ER 200-2-2?

Yes      No

17. Has the review been coordinated with Fish and Wildlife Service or the State Fish and Game Department?

Yes      No

18. Are there any existing or potential endangered species identified? (If Yes, provide list)

Yes      No

19. If Yes, what steps have or are being taken to mitigate for issues related to endangered species (present or future)?

**Appendix C –Evaluation Criteria Checklist for Land Development Proposals**

20. What other environmental compliance requirements, if any, are to be met and what actions have been taken to satisfy the requirements? (For example, cultural resources, water quality, air quality, permit requirements, FAA coordination, non-source pollutant discharges, etc.)

21. Can any potential hidden constraints or dangers be identified (e.g., submergence of electrical wiring, underground parking, etc.)? Yes No Cannot be Determined

22. Will there be impacts to reservoir operations or potential impacts regarding operation constraints as a result of the proposed development (e.g., loss of reservoir storage capacity, increase of inflow volume into the reservoir, etc.)?

Yes No

23a. Are there any possibilities of damage to the Corps project as a result of the proposed development due to floatable objects/structures?

Yes No

23b. If “Yes”, is there a plan in place to mediate the problems with floatables?

Yes No

24a. Will there be any pollutants stored within the proposed development?

Yes No

24b. If “Yes”, what steps are being taken to minimize or eliminate contamination by pollutants?

25a. Will there be an increase in the quantity of debris/sediment inflow to the flood control reservoir as a result of the proposed development?

Yes No Cannot be Determined

25b. If Yes, how much (what rate?)

26. Will the proposed development include facilities/structures that can hold large number of people (e.g., hospitals, schools, libraries, museums, theaters, shopping centers, amusement parks)? Yes No Cannot be Determined

27. What are the proposed development’s impacts to the future operational flexibility of the dam?

28. Does the proposed development have any potential impact on ongoing studies (in-basin, downstream, or re-operation studies)? Yes No Cannot be Determined

29. Will any part of the proposed development conflict with Corps’ project Master Plans for the area of proposed development? Yes No Cannot be Determined

**Appendix C –Evaluation Criteria Checklist for Land Development Proposals**

30. Recommendations:

31. Other Comments?

Submitted By: \_\_\_\_\_

Date: \_\_\_\_\_

## Appendix D - Glossary

Acquisition Guideline - Often referred to as the Take Line or Guide Acquisition Contour, is the contour line established with a reasonable freeboard allowance above the top pool elevation for storing water for flood control, navigation, power, and irrigation.

Corps Controlled – Used to refer to lands held in fee and/or Corps held easements

Fill – Any earth, water, or man-made structure that, when placed on the reservoir land, reduces the storage capacity of the reservoir.

Floodplain - The lowland and relatively flat areas adjoining inland and coastal waters, and including, at a minimum, that area subject to flooding in any given year.

Maximum Reservoir Level (MRL) – The Maximum Reservoir Level is the elevation resulting from the routing of the Spillway Design Flood.<sup>1</sup>

Probable Maximum Flood (PMF) - Is the flood that may be expected from the most severe combination of critical meteorological and hydrologic conditions that are reasonably possible in the region. The PMF is calculated from the Probable Maximum Precipitation (PMP). The PMP values encompass the maximized intensity-duration values obtained from storms of a single type. Storm type and variations of precipitation are considered with respect to location, area coverage of a watershed, and storm duration. The probable maximum storm amounts are determined in much the same way as are standard project flood amounts, except the precipitation amounts are first increased to correspond to maximum meteorological factors such as wind speed and maximum moisture content of the atmosphere.<sup>1</sup>

Project Storage Capacity - As defined in this reference, project storage refers to the hydrologic and hydraulic needs of the project, which encompasses the volume of the entire project, i.e. sedimentation, hydropower, recreation, agricultural, water supply, reservoir design, and spillway design.

Reservoir Design Flood (RDF) – The Reservoir Design Flood is that flood, along with associated antecedent conditions, that was originally used to determine the design benefits and level of flood protection provided by the project. In most cases this is the event that determined the original spillway crest, or the boundary between the flood control pool and storage provided primarily for dam safety issues.

Spillway Design Flood (SDF) – Spillway Design Flood is the flood hydrograph used in the design of a dam and its appurtenant works particularly for sizing the spillway and outlet works, and for determining maximum temporary storage and height of dam requirements.<sup>1</sup>

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<sup>1</sup> Reference EM 1110-2-1420, Hydrologic Engineering Requirements For Reservoirs, dated 31 October 1997.

## **APPENDIX A4: CORPS POLICY ON FILMING AND PHOTOGRAPHY IN OPERATIONS AREA**

### **Filming**

Filming within recreation areas leased to the lessee and open to the public should be coordinated with the lessee. Filming within Corps operations areas, including the Dam and spillway, require a right-of-entry permit from the Corps, which constitutes a “Federal action” requiring compliance with environmental laws including NEPA.

Certain types of filming activities within operations areas have been assessed under the Environmental Assessment (EA) associated with this Master Plan. Filming activities meeting the following conditions will generally not require a request-specific EA:

- a. Filming is limited to two (2) consecutive days.
- b. Activities to be filmed are limited to walking, talking, and slow vehicle driving (not to exceed 25 mph).
- c. No major equipment (heavy cranes, etc.) may be used. Limited equipment such as a camera dolly is allowed.
- d. No stunts, pyrotechnics, weapons, firearms, fire, special effects, aircraft, animals, set construction, and/or water contact is/are permitted. No ground disturbance or physical alteration of the property (cutting of vegetation, moving rocks, etc.) is permitted.
- e. Activities including setup and takedown are limited to 2 hours before sunrise to 2 hours after sunset.
- f. A safety review must be completed by the Corps.
- g. The Corps must confirm there will be no effect on endangered species.
- h. Trailers for actors, crew, craft services, etc. shall generally be located outside operations areas. Use of the spillway or other operations areas may be granted during dry season only. Trailers and equipment placed within operations areas overnight may be monitored by a security guard, during dry season only.
- i. No vehicles may be driven on turf or vegetated areas. Actors may be driven to the filming location.
- j. Upon completion of filming, the permittee must remove/properly dispose of all trash and restore the area to pre-filming condition.
- k. An evacuation plan is required.

Requests for film permits that propose to meet the above restrictions shall provide the required documentation to demonstrate compliance along with the film permit application, no less than 30 days before the proposed filming date. The Corps shall review and confirm that the request complies with the restrictions above.

Requests for filming that do not meet the conditions above are subject to a more detailed request-specific review including an EA for NEPA compliance. All requests not meeting the above restrictions must be received no less than 90 days before the proposed filming date.

All filming requests are subject to Corps requirements regarding liability, insurance, and consideration. All filming requests are subject to a clear weather forecast of 48 hours. Use of certain areas may be limited by the season and current weather conditions.



Processing of all requests and required management/monitoring has associated fees and charges to be borne by the applicant.

Please contact the Corps for the fee schedule and further information on the film application process.

### **Still Photography**

- Still photography in Environmentally Sensitive Areas shall be limited to two consecutive days.
- No vehicles may be parked on grassy areas.
- The Corps must confirm there will be no effect on endangered species.
- No stunts, pyrotechnics, weapons, firearms, fire, special effects, aircraft, animals, set construction, and/or water contact is/are permitted. No ground disturbance or physical alteration of the property (cutting of vegetation, moving rocks, etc.) is permitted.
- All photography requests are subject to a clear weather forecast of 48 hours. Use of certain areas may be limited by the season and current weather conditions.
- Processing of all requests and required management/monitoring has associated fees and changes to be borne by the applicant.
- Please contact the Corps for the fee schedule and further information on the still photography application process.

**APPENDIX A5:  
CORPS POLICY ON SPECIAL EVENTS  
AT WHITTIER NARROWS DAM BASIN**

1. Under Corps regulations, special events are subject to the review and approval of the Corps. At Whittier Narrows Dam Basin (Basin), events less than 1,000 people, subject to the restrictions included in the Master Plan, are within the authority of the lessee. Events over 1,000 people are subject to specific review and approval by the District Commander.
2. The approval of special events over 1,000 people is a “Federal action” requiring compliance with environmental laws including NEPA. Through the Environmental Assessment associated with this Master Plan, the Corps has assessed impacts associated with special events subject to the conditions and limitations below and determined the impacts are less than significant. Generally, no event-specific Environmental Assessment will be required for events that meet these conditions and limitations, after verification by the Corps.
  - a. Events must be assessed on an event-specific basis.
  - b. Events may not obstruct use or access to any other area of the Basin. Recreational users of the adjacent areas may not be impeded.
  - c. Events may not exceed 5,000 people (including vendors, staff and attendees) on any given day.
  - d. Events may not exceed two days of the event plus two days (48 hours) setup and two days (48 hours) cleanup/takedown. Event areas must remain open to the public during setup and cleanup except where safety and/or logistics is/are a concern.
  - e. No stunts, pyrotechnics, weapons, firearms, fires, aircraft including helicopters, animals other than dogs, and/ or water contact is/are permitted.
  - f. Amplified sound shall not exceed 100 dBl 20 feet from the source. This is considered the equivalent of a loud auto horn at 10 feet.
  - g. No amplified sound shall be permitted after 10:00 pm Monday through Saturday, nor after 7:00 pm on Sunday.
  - h. No ground disturbance (digging, leveling, etc.) of any area is permitted. No physical alteration (cutting of vegetation, moving rocks, etc.) is permitted. Relocation of placed “landscape boulders” are not included, but shall be returned to their original position at the direction of the lessee. Staking of tents is permitted, but all holes shall be re-filled and compacted at the close of the event as holes left un-treated may cause people to trip and injure themselves.
  - i. All cars shall be parked in designated parking stalls or on dirt shoulder. Cars on shoulder shall be parked parallel to the road. No vehicles may be parked on grass areas. Vehicles may be used at the site for setup and takedown only.
  - j. Cars for demonstration or exhibit shall place an oil pan beneath all vehicles when parked on the grass. All oil and fluid leaks/drips shall be cleaned up by the vehicle’s owner at the close of the event. The event proponent shall be responsible for a final inspection and clean-up of the area.
  - k. Walk/runs, marathons, races etc. must be assessed on an event-specific basis.

1. Car shows must be assessed on an event-specific basis.
3. Requests for events meeting the above limitations must be submitted to the Corps no less than 30 days prior to the proposed event date for review and confirmation that the event complies with applicable requirements.
4. Events not meeting the above limitations are subject to a more detailed event-specific evaluation by the Corps, including an Environmental Assessment for NEPA compliance. Requests for such events must be submitted to the Corps no less than 90 days prior to the proposed event date.
5. All Special Events, including those assessed in the Master Plan EA, must meet the following requirements:
  - a. The right to charge is subject to the event proponent providing parking assistance, adequate policing for crowd control, and other services required for the health, safety, and welfare of event participants.
  - b. The event proponent must meet bonding, insurance, and other requirements under local laws.
  - c. No costs shall accrue to the Government.
  - d. Use of Project/Basin lands will not preempt public use of project recreational resources. All other Basin areas must remain accessible to non-event Basin users.
  - e. The event proponent shall provide a plot plan showing the proposed layout of the event. A Parking Plan (including plan for disabled parking), Traffic Plan, and Evacuation Plan shall be required. No vehicles may be parked on grassy areas outside designated parking. Event proponents shall encourage the use of public transit, carpooling, and bicycling to the event. Parking limitations for the event shall be posted one week prior to the event.
  - f. Event proponents must coordinate security requirements with the County. Generally, events over 1000 people should have 1 security guard/person for each 500 people.
  - g. The site shall be fully restored to prevent conditions by the event proponent within 48 hours of event closure. The County may require a bond from the event proponent.
  - h. Events longer than four days or over holidays are generally disfavored, requiring a special exception by the District Commander.
  - i. Either the lessee or the event proponent must submit a Post-Event Report within 30- days following the event containing the number of attendees, funds received (see collection cost analysis below), any problems encountered, any damage to the property, and any other issues of concern.
  - j. Collection of any funds in connection with the event, including for admission and parking, must be approved by the District Commander prior to the issuance of the County's permit. Collection of entry fees in excess of actual total costs will be paid to the Corps for legal disposal unless surplus proceeds are used for benefit to the project (Whittier Narrows Dam Basin). A collection cost analysis will be provided by the event proponent within 30 days following the event. The Corps reserves the right to audit the County's records.
  - k. Adequate public restrooms (portable) and first-aid facility (e.g., tent), as applicable, must be provided although publicly available facilities may not be closed to the public during the event.

- l. Alcohol sales (e.g., beer and wine garden) must be licensed and comply with applicable local laws.
  - m. The event proponent is required to hold the government harmless, accept liability and provision of indemnity and insurance are required.
  - n. The Corps must have access to the special event site at all times.
6. Walk/runs and bicycle rides shall not enter Environmentally Sensitive Areas at any time. Paths and or trails through the Basin for the event may be closed for the time period of the event and one hour before and one hour after the event for clean-up and removal of any and all trash created during the event.
7. Presence of animals shall be limited to exhibition purposes. All animals shall be enclosed in a secure “pen”. Petting zoos shall be continuously monitored and all animal waste and excess feed shall be removed continuously. A final inspection and clean-up of the area shall be the responsibility of the event proponent.

**APPENDIX A6:  
CORPS POLICY ON TRAINING IN OPERATIONS AREA**

**Training in Operations Areas  
(e.g., fitness, safety training by police and fire  
departments, ROTC, and Army groups).**

Training activities within recreation areas leased to the lessee and open to the public should be coordinated with the lessee. Training within Corps operations areas, including the Dam and spillway, requires a right-of-entry permit from the Corps, which constitutes a “Federal action” requiring compliance with environmental laws including NEPA.

Certain types of training activities within operations areas have been assessed under the Environmental Assessment (EA) associated with this Master Plan. Training activities meeting the following conditions will generally not require a request-specific Environmental Assessment (EA):

- a. Training may not exceed 2 consecutive days.
- b. Training groups shall not exceed 100 individuals.
- c. No major equipment shall be used.
- d. No physical stunts, pyrotechnics, weapons, firearms, fire, aircraft, animals, building of structures, and/or water contact is/are permitted. No ground disturbance or physical alteration (cutting of vegetation, moving rocks, etc.) is permitted.
- e. Activities including setup and takedown are limited to 2 hours before sunrise to 2 hours after sunset.
- f. A safety review must be completed by the Corps.
- g. The Corps must confirm there will be no effect on endangered species.
- h. No equipment may be left in the operations area overnight.
- i. Upon completion of training, the permittee must remove/properly dispose of all trash and restore the area to pre-filming condition.
- j. An evacuation plan is required.

Requests for training activities that propose to meet the above restrictions shall provide the required documentation to demonstrate compliance along with the request no less than 30 days prior to the proposed training activity. The Corps shall review and confirm that the request complies with the restrictions above.

Requests for training that do not meet the conditions above are subject to a more detailed request-specific review including an EA for NEPA compliance. All requests not meeting the above restrictions must be received no less than 90 days before the proposed training date. All training requests are subject to Corps requirements including acceptance of liability. All training requests are subject to a clear weather forecast.

**APPENDIX A7:  
CORPS POLICY ON BIOLOGICAL SURVEYS  
IN OPERATIONS AREAS**

Non-invasive biological surveys within recreation areas open to the public may be undertaken without additional review and approval from the Corps; survey requestors should coordinate with the lessee as appropriate.

Biological surveys within operations areas require a right-of-entry permit from the Corps, which is a “Federal action” requiring review under NEPA. The potential impacts associated with certain types of biological surveys within operations areas have been evaluated under the Environmental Assessment (EA) associated with this Master Plan and determined to be no more than minimal when the conditions below are met. All other requests for rights-of-entry to operations areas to conduct biological surveys will require a request-specific Environmental Assessment (EA).  
Vegetation surveys (e.g., botany classes learning sampling methods, etc.):

- a. Surveys must occur outside the breeding season (15 March - 15 August).
- b. Surveyors may leave established trails and roads.
- c. Surveyors may take small samples of vegetation, excluding any species subject to protection under Federal or state law.
- d. Requestors shall provide a brief description of the proposed survey, including number of attendees, length of activity, methods, etc., for review and confirmation by the Corps that it meets the conditions above.

Animal species surveys:

- a. Surveys must be non-invasive and must remain on existing trails, roads, or in open areas (no breaking new trails or creating pathways through tall vegetation).
  - b. For example, surveys may not involve banding, netting, clipping, trapping, transects that involve leaving existing roads, trails or open areas, or stratified random sampling that involves leaving existing roads, trails or open areas.
  - c. Surveys must have no effect on endangered species under the Endangered Species Act.
  - d. Surveys off trails during breeding season, such as protocol surveys or banding/trapping requires a Section 10(a)(1)(a) permit or California Department of Fish and Game (CDFG) permit for listed species.
  - e. Requestors shall provide a proposal for review and confirmation by the Corps that it meets the conditions above and accepted standards for surveys.
  - f. Requests for right-of-entry must be received no less than 60-days prior to the start of the survey.
- Following the completion of a survey, a summary report shall be sent to the Corps documenting the survey results with backup data within 90 days of the survey, prior to forwarding to other Federal or state agencies.
  - Requests for surveys that propose to meet the restrictions in one of the categories above shall provide documentation to demonstrate compliance with the restrictions along with the

request no less than 30 days prior to the proposed survey activity. The Corps shall review and confirm that the request complies with the restrictions above.

- Surveys that do not fall within one of the categories above will require a request-specific EA. The applicant should contact the Corps for detailed information on the review process including NEPA requirements. For all surveys that do not meet the conditions above (including, but not limited to, listed species surveys, surveys requiring a permit from the U.S. Fish and Wildlife Service or CDFG, or animal surveys that require leaving existing trails, roads and open areas or vegetation surveys within the breeding season), applicants shall submit a proposal for review by the Corps no less than 90 days prior to the proposed survey date.
- Water sampling and similar requests generally are not dependent on access to operations areas and should be conducted in publicly accessible areas.
- Access to operations areas for such activities will only be granted in exceptional circumstances.

**APPENDIX A8:  
CORPS POLICY  
ON VOLUNTEER ACTIVITIES**

1. One-time volunteer activities within areas normally open to the public may be undertaken without additional review and approval from the Corps and the lessee if applicable, within environmentally sensitive areas if requested no fewer than 21 days in advance under the following conditions:
  - Weeding and trash pick-up activities may not cause “take” of an endangered species.
  - If a storm event is forecast within 48-hours, all activities shall halt.
  - Volunteer organizations shall provide trash bags and appropriate tools for their use. All trash bags shall be removed from the area by the close of the day.
  - No vehicles may enter the environmentally sensitive areas except for the removal of trash bags and large debris, remaining on existing roads/paths at all times.
  - No water deeper than 12 inches may be entered at any time to collect trash or debris by hand.
  - Request shall include name of organization, insurance coverage or bond information, day or days of the activity, approximate area of activity, number of people involved, and how the trash bags will be removed, and where taken to for disposal.
  - A report delineating the number of trash bags removed and the final area covered shall be submitted to the Corps within 30 days.
2. Continuous trash, debris, and weeding volunteer programs shall submit a yearly request to the Corps with a description of estimated number and location of clean-up activity days, estimated number of people, and how trash will be removed from the area, and where taken to for disposal. A report delineating the number of trash bags removed, and the final area covered shall be submitted to the Corps every 60 days.



**APPENDIX A9:  
CORPS POLICY  
ON DISTRIBUTION OF PRINTED MATERIAL  
AT WHITTIER NARROWS DAM BASIN**

1. Advertisement and the distribution of printed matter is allowed within project land and waters provided a permit to do so has been issued by the District Commander and provided that this activity is not solely commercial advertising.
2. An application for such a permit shall set forth the name of the applicant, the name of the organization (if any), the date, time, duration, and location of the proposed advertising or the distribution of printed matter, the number of participants, and any other information required by the permit application form. Permit conditions and procedures are available from the District Commander.
3. Vessels and vehicles with semi-permanent or permanent painted or installed signs are exempt as long as they aren't used for authorized recreational activities and comply with all other rules and regulations pertaining to vessels and vehicles.
4. The District Commander shall, without unreasonable delay, issue a permit on proper application unless:
  - A prior application for a permit for the same time and location has been made that has been or will be granted and the activities authorized by that permit do not reasonably allow multiple occupancy of the particular area; or
  - It reasonably appears that the advertising or the distribution of printed matter will present a clear and present danger to public health and safety; or
  - The number of persons engaged in the advertising or the distribution of printed matter exceeds the number that can reasonably be accommodated in the particular location applied for, considering such things as damage to project resources or facilities, impairment of a protect protected areas atmosphere of peace and tranquility, interference with program activities, or impairment of public use facilities; or
  - The location applied for has not been designated as available for advertising or distribution of printed matter; or
  - The activity would constitute a violation of an applicable law or regulation.
5. If the permit is denied, the applicant shall be so informed in writing, with the reason(s) for the denial set forth.
6. The District Commander shall designate on a map, which will be available for inspection in the applicable project office, the locations within the project that are available for the advertising and distribution of printed matter. Locations may be designated as not available only if the advertising or that the distribution of printed matter would:
  - Cause injury or damage to project resources; or
  - Unreasonably impair the atmosphere the atmosphere of peace and tranquility maintained in natural, historic, or commemorative zones; or
  - Unreasonably interfere with interpretive, visitor services, or other program activities, or with the administrative activities of the Corps of Engineers; or
  - Substantially impair the operation of public use facilities or services of Corps of Engineers concessionaires or contractors.

- Present a clear and present danger to public health and safety.
7. The permit may contain such conditions as are reasonably consistent with the protection and use of the project area for the purpose for which it is established.
  8. No permit shall be issued for a period in excess of 14 consecutive days, provided that permits may be extended for like periods, upon a new application, unless another applicant has requested using the same location and multiple occupancy of that location is not reasonably possible.
  9. It is prohibited for persons engaged in the activity under this section to obstruct or impede pedestrians on vehicles, harass project visitors with physical contact or persistent demands, misrepresent the purposes or affiliations of those engaged advertising or the distribution of printed matter, or misrepresent whether the printed matter is available without cost or donation.
  10. A permit may be revoked under any of these conditions, as listed in paragraph 4 of this section that constitutes grounds for denial of a permit, or for violation of the terms and editions of the permit. Such a revocation shall be made in writing, with the reason(s) for revocation clearly set forth, except under emergency circumstances, when an immediate verbal revocation or suspension may be made, to be followed by written confirmation within 72 hours.
  11. Violation of the terms and conditions of a permit issued in accordance with this section may result in the suspension or revocation of the permit.

## **APPENDIX B:**

### **LEASES**

24380

SUPPLEMENT 7

SUPPLEMENTAL AGREEMENT NO. 7

TO THE

CONTRACT BETWEEN

THE UNITED STATES OF AMERICA

AND

THE COUNTY OF LOS ANGELES

FOR

RECREATION DEVELOPMENT

AT THE

WHITTIER NARROWS FLOOD CONTROL BASIN

THIS SUPPLEMENTAL AGREEMENT NO. 7 entered into this 17th day of April 19 79, by and between the UNITED STATES OF AMERICA (hereinafter called the "Government"), represented by the Contracting Officer executing this contract, and the County of Los Angeles, a body politic and corporate of the State of California (hereinafter called the "County"), WITNESSETH THAT

WHEREAS, on 14 January 1975, a contract was entered into by and between the Government and the County for Recreation Development at the Whittier Narrows Flood Control Basin, Los Angeles County, California, and

WHEREAS, by Supplemental Agreement No. 1, dated 27 May 1975, fifty percent (50%) of the estimated separable first costs of initial recreation development was increased by \$30,000.00 for development of the Whittier Narrows Bike Path Extension, and

WHEREAS, by Supplemental Agreement No. 2, dated 17 February 1976, fifty percent (50%) of the estimated separable first costs of initial

recreation development was increased by \$1,000,000.00 for development of the Whittier Narrows Area "B" - Phase I, and

WHEREAS, by Supplemental Agreement No. 3, dated 16 July 1976, an estimated \$298,000.00 amount of the \$594,000.00 in excess of the basic contract dated 14 January 1975 was used for development of the Whittier Narrows Model Hobby Area, and

WHEREAS, by Supplemental Agreement No. 4, dated 16 March 1977, fifty percent (50%) of the estimated separable first costs of initial recreation development was increased by \$22,950.00, and

WHEREAS, by Supplemental Agreement No. 5, dated 14 April 1977, fifty percent (50%) of the estimated separable first costs of initial recreation development was increased by \$22,600.00, and

WHEREAS, By Supplemental Agreement No. 6, dated 5 October 1978, fifty percent (50%) of the estimated separable first costs of initial recreation development was increased by \$1,700,000.00, and

WHEREAS, in accordance with paragraph (b) of Article 3 of said contract, the Government was notified by letter dated 6 December 1978 that the County desires to participate in the development of urban trails along the Los Angeles River, Rio Hondo, and San Gabriel River, on a cost sharing basis, and the Government and the County are agreeable thereto; and

WHEREAS, the recreation development at Federal non-reservoir water resources projects shall be in accordance with the cost sharing provisions contained in the Federal Water Resources Project Recreation Act of 1965 (Public Law 89-72).

NOW, THEREFORE, in consideration of the premises, effective upon the date of approval of this Supplemental Agreement No. 7 by the Secretary of the Army or his authorized representative, the parties hereto mutually agree that the said contract is modified in the following particulars:

1. With regard to the recreational facilities constructed hereunder, all terms and conditions of the basic cost sharing agreement and Supplements 1 through 6 thereto shall remain in full force and effect except as they are amended or supplemented by this Supplemental Agreement No. 7.

2. That the statement in Article 3, paragraph (a), reading as follows: "Fifty percent (50%) of the estimated separable first costs of initial recreation development is estimated to be \$4,975,550.00" is hereby deleted and the following statement is inserted in lieu thereof:

"Fifty percent (50%) of the estimated separable first costs of initial recreation development is estimated to be \$7,581,250.00. The construction contract for Supplemental Agreement No. 7 will be advertised and awarded as a civil works continuing contract in FY 1979. The County of Los Angeles will contribute \$1,906,300.00 of their total cash contribution for this contract prior to advertising for bids. The balance of \$214,500.00 of their total cash contribution will be paid within 15 days following 1 October 1979 (FY 1980)."

3. That there is hereby added to said contract, Exhibit A-7, entitled Estimated Separable Recreation Costs, Los Angeles River - Rio Hondo - San Gabriel River Trail System, said Exhibit A-7 being attached hereto and made a part thereof, and that a separate cost accounting will be performed for items so designated in said Exhibit A-7.

4. The "Project" will be defined as "The Los Angeles River, Rio Hondo and San Gabriel River."

5. Details on lands acquired and proposed improvements to be constructed thereon are shown on the General Development Plan (GDP) for the Project, as concurred in by the County and incorporated herein by reference.

6. The County has heretofore acquired and now owns the fee simple title or will have prior to construction an irrevocable recreation lease or easement for at least fifty years to all of the lands on which the proposed improvements are to be constructed pursuant to this contract, and all of the lands, for the Project, on which improvements have been made pursuant to this contract excepting those lands that are presently owned in fee by the Government.

7. Title to all lands and facilities developed or constructed by or with Government assistance to enhance the recreation potential of the project will be in the County and/or its lessor, with the exception of those lands that are presently owned in fee by the Government, and the facilities located thereon.

8. If at any time the County wishes to undertake further development of the Project facilities, it may do so at its expense provided prior approval of the Contracting Officer is obtained, but the Government shall not be obligated to reimburse the County for any portion of such expense in the absence of a Supplemental Agreement.

9. The County shall maintain all Project lands, waters, and facilities in a manner satisfactory to the Contracting Officer.

IN WITNESS WHEREOF, the parties hereto have executed this Supplemental Agreement No. 7 as of the day and year first written above.

THE UNITED STATES OF AMERICA  LOS ANGELES COUNTY

By \_\_\_\_\_  
Colonel, Corps of Engineers  
District Engineer  
Contracting Officer

By James C. Hayes  
Chairman, Board of Supervisors  
PRO TEM

By Marva Blakely  
Deputy

Date \_\_\_\_\_

APPROVED:

APPROVED AS TO FORM

COUNTY COUNSEL

By \_\_\_\_\_  
B.C. BURNELL, Major General, USA  
Deputy Chief of Engineers

By \_\_\_\_\_  
Special Assistant

Date \_\_\_\_\_

**ADOPTED**  
BOARD OF SUPERVISORS  
COUNTY OF LOS ANGELES

59

APR 17 1979

James S. Nize  
JAMES S. NIZE  
EXECUTIVE OFFICER

I hereby certify that this agreement was approved by the Board of Supervisors of the County of Los Angeles at its meeting of 4-17-79 at which time the Chairman was instructed to sign the agreement.

JAMES S. NIZE, Executive Officer-  
Clerk of the Board of Supervisors  
of the County of Los Angeles,  
State of California



By Marva Blakely  
Deputy



CERTIFICATION

I, \_\_\_\_\_ as Chief legal officer for the County of Los Angeles, hereby certify that the foregoing agreement executed by \_\_\_\_\_ Chairman, Board of Supervisors, is within the scope of his authority to act upon behalf of the County of Los Angeles and that in my capacity as Chief legal officer for the County of Los Angeles, I have considered the legal effects of Section 221 of the Flood Control Act of 1970 (42 USC 1962d-5b) and find that the County of Los Angeles is legally and financially capable of entering into the contractual obligations contained in the foregoing agreement and that, upon acceptance, it will be legally enforceable.

Given under my hand, this \_\_\_\_\_ day of \_\_\_\_\_, 197\_\_.

County Counsel  
County of Los Angeles

*John H. Jensen*  
By *John B. [Signature]*

ESTIMATED SEPARABLE RECREATION COSTS  
LOS ANGELES RIVER - RIO HONDO - SAN GABRIEL RIVER TRAIL SYSTEM

<u>ITEM NO.</u>	<u>DESCRIPTION OF WORK</u>	<u>ESTIMATED COST</u>
<u>CASH CONTRIBUTIONS (Cost Shared Work)</u>		
<u>Upper San Gabriel River</u>		
1	San Gabriel Canyon Rest Stop	\$197,000
2	Trail Connection (PERR Bridge to Santa Fe Dam)	65,100
3	Foothill Boulevard Ramp	58,300
4	Foothill Freeway and Santa Fe Railroad Ramp	79,400
5	Santa Fe Dam Trail Connection	31,200
6	Santa Fe Dam Staging Area	125,000
	Total (Upper San Gabriel River)	\$556,900
<u>San Gabriel River</u>		
7	Live Oak Boulevard Ramp	\$ 64,000
8	Lower Azusa Road Ramp	77,100
9	Ramona Boulevard Ramp	64,500
10	Ramona Boulevard Rest Stop	25,300
11	San Bernardino Freeway Ramp	18,200
12	Southern Pacific Railroad Ramp	48,500
13	Valley Boulevard Ramp	10,200
14	Valley Boulevard Rest Stop	33,200
15	Thienes Street Access	12,400
16	San Gabriel River Trail Connection	113,900
17	Pomona Freeway Ramp	137,500
18	Peck Road Ramp	137,900
	Total (San Gabriel River)	\$742,700
<u>Upper Rio Hondo</u>		
19	Santa Anita Wash Access Trail	\$ 57,400
20	Santa Anita Avenue Ramp	62,700
21	Lower Azusa Road Ramp	55,100
22	El Monte Airport Rest Stop	12,100
23	Valley Boulevard Ramp	104,900
24	SCRTD Rest Stop	30,800
25	Rush Street Access	47,300
26	Whittier Narrows Dam Bicycle Trail Connection	72,200
	Total (Upper Rio Hondo)	\$442,500

Exhibit A-7

<u>ITEM NO.</u>	<u>DESCRIPTION OF WORK</u>	<u>ESTIMATED COST</u>
<u>Lower Rio Hondo</u>		
27	Equestrian Bridge Earthwork	\$ 5,900
28	Equestrian Bridge Structure	167,000
29	Southern Pacific Railroad Ramp	92,300
30	Southern Avenue Ramp	89,700
31	Firestone Boulevard Ramp	67,500
32	Garfield Avenue Ramp	140,600
33	Union Pacific Ramp	131,900
	Total (Lower Rio Hondo)	\$694,900
<u>Lower Los Angeles River</u>		
34	Southern Pacific Railroad Ramp	\$149,600
35	72nd Street Staging Area (cost-shared work only)	174,300
36	Long Beach Boulevard Access	26,300
37	Del Amo Avenue Ramp	154,200
38	Rosecrans Boulevard Ramp	105,000
39	Compton Boulevard Ramp	125,000
40	Alondra Boulevard Ramp	110,000
	Total (Lower Los Angeles River)	\$844,400
<u>Lower San Gabriel River</u>		
41	Wardlow Road Ramp	\$ 22,400
42	Spring Road Ramp	20,900
43	Willow Road Ramp	24,800
44	Bicycle Bridge	190,200
	Total (Lower San Gabriel River)	\$258,300
	Subtotal (LA River, Rio Hondo, San Gabriel River)	\$3,539,700
	Contingency	484,545
	Subtotal	\$4,024,245
	Engineering and Design	429,700
	Supervision and Administration	241,455
	Subtotal (Cost-Shared Work)	\$4,695,400

Exhibit A-7

<u>ITEM NO.</u>	<u>DESCRIPTION OF WORK</u>	<u>ESTIMATED COST</u>
<u>CASH CONTRIBUTIONS (100% Locally Funded Work)</u>		
<u>Lower Los Angeles River</u>		
45	72nd Street Staging Area (Viewing Stands and Snack Bar/Announcer's Booth)	\$ 22,400
	Subtotal	\$ 22,400
	Contingency	<u>3,400</u>
	Subtotal	\$ 25,800
	Engineering and Design	3,800
	Supervision and Administration	<u>1,500</u>
	Subtotal (100% Locally Funded Work)	\$ 31,100
	PROJECT TOTAL (Cash Contributions)	\$4,726,500

IN KIND CONTRIBUTIONS

<u>Upper Rio Hondo</u>		
46	Clearing, Grubbing and Site Preparation	\$ 59,300
47	Bicycle Trail (6.0 mi.)	125,500
48	Site Concrete Work	200,400
49	Storm Drainage System	15,500
50	Site Equipment	53,300
51	Security Fencing - Incl Accessories	11,500
52	Earthwork (10,000 C.Y.)	<u>50,500</u>
	Project Total (In Kind Contributions)	\$ 516,000
	GRAND TOTAL	\$5,242,500

FUNDING SUMMARY

Federal Contribution	Cash	\$2,605,700
Local Contribution	Cash (Cost-sharing)	\$2,089,700
	Cash (100% Local)	31,100
	In Kind	<u>516,000</u>
	Subtotal (Local)	\$2,636,800
GRAND TOTAL		\$5,242,500

Exhibit A-7

ITEMS REQUIRING A SEPARATE COST ACCOUNTING

<u>Item Nos.</u>	<u>Local Funding Source</u>
7, 8, 9, 10, 11, 13, 14, 27, 28, 32, 35	State Bond Act of 1976
19, 23	State Bicycle Lane Account (Upper Rio Hondo)
41, 42, 43, 44	State Bicycle Lane Account (Lower San Gabriel and Senate Bill 821 River)

Exhibit A-7

AGREEMENT NO. 84-246

DEPARTMENT OF THE ARMY  
LEASE  
FOR PUBLIC PARK AND RECREATIONAL AND/OR  
FISH AND WILDLIFE PURPOSES

PROJECT AREA: WHITTIER NARROWS FLOOD CONTROL BASIN

NO. DACW09-1-82-13

85-4-

THE SECRETARY OF THE ARMY under authority of Section 4 of the Act of Congress approved 22 December 1944, as amended (16 USC 460d), and the Federal Water Project Recreation Act, 79 Stat. 214 (16 USC 460L-13), and pursuant to a contract entered into on 3 February 1975, by and between the United States of America, and the City of Pico Rivera, (hereinafter referred to as the Contract), hereby grants to the City of Pico Rivera, hereinafter referred to as Lessee, a lease for a period of fifty (50) years commencing on 1 December 1984, and ending on 30 November 2034 to use and occupy approximately 120.44 acres of land and water areas under the primary jurisdiction of the Department of the Army in the Project Area, hereinafter referred to as the premises, as shown on attached Exhibit "A", Drawing No. 142-K-229.2, dated 7 March 1975, Revised 9 June 1978 and 17 September 1979, and described in Legal Description File No. 142-K-229.2, dated 18 September 1979, marked Exhibit "B", both Exhibits being attached hereto and made a part hereof.

THIS LEASE is granted subject to the following conditions:

1. The Lessee shall conform to such regulations as the Secretary of the Army may issue to govern the public use of the project area, and shall comply with the provisions of the above-cited Acts of Congress. The Lessee shall protect the premises from fire, vandalism, and soil erosion, and may make and enforce such regulations as are necessary and within its legal authority, in exercising the privileges granted in this lease, provided that such regulations are not inconsistent with those issued by the Secretary of the Army or with provisions of the above-cited Acts of Congress.
2. The Lessee agrees to administer the land and water areas included in the lease for recreation, and to bear the costs of operation, maintenance and replacement of all facilities and improvements on the premises at the commencement of this lease or added during its term. As used in this lease the term "replacement" shall be construed to mean the replacement in whole or in part of any structure or improvement so worn or damaged by any cause as to no longer adequately serve its designed function with normal maintenance. The Lessee shall be guided by an Annual Plan of Operation and Maintenance adopted pursuant to Article 2(c) of the Contract (Exhibit C), by this reference made a part hereof. On or before the anniversary date of the lease each year, the parties shall agree on the Annual Plan which shall include but is not limited to the following:

Agreement No. 84-246

a. Plans for management activities to be undertaken by the Lessee including improvements and other facilities to be constructed thereon in accordance with the Contract.

b. Report of the Management, maintenance and development accomplishments of the Lessee for the preceding year.

c. Significant modifications of policies or procedure which have developed or are to be applied.

d. Minor modifications to the Plan of Recreation Development and Management (major modifications to be accomplished by amendment of the Plan).

3. In addition to the fees and charges authorized under the provisions of Article 5 of the Contract, the Lessee and his sublessees may conduct such revenue producing activities as are within the scope of Article 4 of the Contract.

4. That upon the commencement of this lease the parties hereto shall cause to be made an inventory (EXHIBIT D) of all improvements constructed in whole or in part with Federal funds under the terms of the Contract. From time to time, there shall be added to said inventory such additional improvements as may be constructed pursuant to the aforesaid Contract. Certain types of "Additional Facilities," including but not limited to restaurants, golf courses, clubhouses, overnight or vacation type structures, stables, marinas, swimming pools, commissaries, and such similar revenue producing facilities constructed under the authority of Article 4 of the Contract shall not be added to this inventory. The inventory of improvements shall include descriptions and drawings sufficient to permit their identification and condition, and to replace them if required during the term or on the expiration or termination of this lease. Said inventory and all amendments thereto shall be approved in writing by authorized representatives of the parties hereto and shall thereupon become a part of this lease as if originally annexed.

5. The Lessee may grant permits and licenses, and sublease all or portions of the leased property for purposes which are consistent with the terms and conditions of this lease and with the Plan of Recreation Development and Management. All such grants shall state that they are granted subject to the provisions of this lease. On reservoirs where concessions are operated under leases granted by the Government or by its other grantees, the terms and conditions of permits, licenses, and subleases granted by the lessee for revenue producing purposes shall first be approved by the Commander, US Army Engineer District, Los Angeles, Corps of Engineers, in writing. In order to protect the investments of sublessees, the said Commander is authorized to approve subleases which require the Government to continue to honor such parts of the subleases which may be necessary to assure the continuation of the subleased activities upon a default which would result in a revocation of prime lease under Condition 15 thereof.

6. No permits, licenses or subleases will be granted to adjacent private property owners for use, alteration, improvement, addition of facilities, or

any other purpose which would confer upon them privileges not available to the general public or which would infer or imply exclusive private use of public lands. Any permits, licenses or subleases granted to adjacent private property owners for use, alteration, improvement, addition of facilities, or any other purpose will be conditioned such as:

- a. Not to restrict use thereof by the general public.
- b. To permit free and unimpeded passage.
- c. To be compatible with the Environmental Impact Statement adopted for the project.
- d. To have signs posted to the effect that "This is public property open to general public use."

7. The Lessee shall establish and maintain adequate records and accounts and render annual statements of receipts and expenditures to the Commander, except for annual or weekly entrance fees which also are honored at other recreational areas operated by the Lessee. The Commander shall have the right to perform audits of the Lessee's records and accounts, and to require the Lessee to audit the records and accounts of sublessees and furnish the Commander a copy of the result of such an audit.

8. The rates and prices charged by the Lessee or its grantees for revenue producing activities shall be reasonable and comparable to rates charged for similar goods and services by others in the community and on the reservoir. The Government shall have the right to review such rates and prices and require an increase or reduction where it finds the objective of this paragraph has been violated.

9. The right is reserved to the United States, its officers, agents, and employees, to enter upon the premises at any time to make inspections concerning the operation and maintenance of the lands and facilities provided hereunder, and for any purpose necessary or convenient in connection with river and harbor and flood control work, and to remove timber or other materials required for such work, to flood the premises when necessary, and/or to make any other use of the land as may be necessary in connection with public navigation and flood control, and the Lessee shall have no claim for damages of any character on account thereof against the United States or any agent, officer or employee thereof.

10. The United States shall not be responsible for damages to property or injuries to persons which may arise from or be incident to the exercise of the privileges herein granted, or for damages to the property of the Lessee, or for damages to the property or injuries to the person of the Lessee's officers, agents, servants, or employees or others who may be on the premises at their invitation or the invitation of any one of them, arising from or incident to the flooding of the premises by the Government or flooding from any other cause, or arising from or incident to any other governmental activities, and the Lessee shall hold the United States harmless from any and all such claims.



11. \*That at the time of the commencement of this lease, the Lessee will obtain from a reputable insurance company, acceptable to the Government, liability or indemnity insurance providing for minimum limits of \$50,000.00 per person in any one claim, and an aggregate limit of \$1,500,000.00 for any number of persons or claims arising from any one incident with respect to bodily injuries or death resulting therefrom, and \$5,000.00 for damages to property suffered or alleged to have been suffered by any person or persons resulting from the operations of the Lessee under the terms of this lease.

12. The Lessee or its grantees shall not discriminate against any person or persons because of race, creed, color, sex, or national origin in the conduct of its operations hereunder. The Lessee has furnished as part of the Contract an assurance that it will comply with Title VI of the Civil Rights Act of 1964 (78 Stat. 241) and Department of Defense Directive 5500.11 issued pursuant thereto and published in Part 300 of Title 32, Code of Federal Regulations, and all grantees shall supply like assurances.

13. This lease is subject to all existing easements, and easements subsequently granted for roadways, and utilities and for other purposes located or to be located on the premises, provided that the proposed grant of any easement will be coordinated with the Lessee and easements will not be granted which will, in the opinion of the Commander, interfere with developments, present or proposed, by the Lessee.

14. The Lessee shall comply promptly with any regulations, conditions or instructions affecting the activity hereby authorized if and when issued by the Environmental Protection Agency and/or a State Water Pollution Control Agency having jurisdiction to abate or prevent water pollution. Such regulations, conditions or instructions in effect or prescribed by the Environmental Protection Agency or State Agency are hereby made a condition of this lease.

15. This lease may be revoked by the Secretary of the Army in the event the Lessee violates any of the terms and conditions of this lease and continues and persists therein for thirty (30) days after notice thereof, in writing, by the Commander. Such a termination shall not derogate or diminish such other remedies in law as may be available to the Government and in no way shall it act to relieve the Lessee of its responsibilities and obligations under the Contract. In lieu of revocation, the Commander, in his discretion, upon finding that a violation constitutes a health or safety hazard may suspend the use of that operation or facility until such deficiency is rectified.

16. On or before the date of expiration of this lease, the Lessee shall vacate the premises, remove its property therefrom, and restore the premises to a condition satisfactory to the Commander. If however, this lease is revoked the Lessee shall vacate the premises, remove its property therefrom, and restore the premises as aforesaid within such time as the Secretary of the Army may designate. In either event, if the Lessee shall fail or neglect to remove its property and so restore the premises, then its property shall become the property of the United States without compensation therefor, and no

claim for damages against the United States, or its officers or agents shall be created by or made on account thereof.

17. All notices to be given pursuant to this lease shall be addressed, if to the Lessee, to the city of Pico Rivera; if to the Government, to Commander, US Army Engineer District, Los Angeles, P.O. Box 2711, Los Angeles, California 90053, or as may from time to time be directed by the parties. Notice shall be deemed to have been duly given if and when inclosed in a properly sealed envelope or wrapper, addressed as aforesaid and deposited postage prepaid (or, if mailed by the Government, deposited under its franking privilege) in a post office regularly maintained by the United States Government.

18. That the areas initially made available to the Lessee for public park and recreational purposes by this lease, and any additional areas which may be made available to the Lessee from time to time hereafter, shall be known as the Whittier Narrows Reservoir Corps of Engineers-City of Pico Rivera Recreational Area, and said areas shall hereafter be referred to as the "recreational areas."

19. The Lessee shall not grant any concession privileges, permits, or leases of any portion of the recreational areas covered by this lease for private farming or private agricultural use.

20. That in order to protect the United States and the City of Pico Rivera against claims for damages which might arise out of the use and occupation of said recreational areas by persons to whom the Lessee may grant concessions or licenses, the Lessee herein agrees to insert a condition in such concessions or licenses which it grants pursuant to Condition No. 5. hereof, which shall be in substantially the following form:

"The concessionaire or licensee, in consideration of the granting of this concession or license, agrees to hold the United States and the City of Pico Rivera harmless from any and all claim or rights of action for damages which may or might arise or accrue to said concessionaire or licensee, his officers, agents, servants, employees, or others who may be on the licensed premises at his invitation or the invitation of any one of them, by reason of injury to the property, or the person of any of them resulting from the entry upon or the use of the licensed premises by the United States, the City of Pico Rivera, or any of them, for any purpose necessary or convenient in connection with river and flood control work, or for the removal of timber required or necessary for such work, or by reason of the flooding of the licensed premises, or any part thereof, when in the judgement of any of them, such flooding is necessary in connection with flood control work."

A proposed copy of each concession agreement or license granted by the Lessee herein shall be submitted to the Commander for approval prior to its execution.

21) That the Lessee will remove all debris within the perimeter of this lease and will maintain the property at all times in a clean condition, free from weeds, brush, and gullies at its own expense. Refuse receptacles shall

be nonfloatable and refuse disposed of in a manner approved by local health agencies.

22. That the Lessee shall cut no timber, except in furtherance of the plans for public park and recreational area approved in writing by said Commander, and shall conduct no mining or drilling operations, remove no sand, gravel, or kindred substances from the ground, except such sand, gravel, or kindred substances as may be used in connection with buildings, filling, landscaping, and improvement operations on the leased premises by the Lessee in accordance with the plan approved in writing by said Commander, and shall commit no waste of any kind or in any manner substantially change the contour or condition of the leased premises except in accordance with the plans approved in writing by said Commander, but the Lessee may salvage such fallen or dead timber as may be required for use as firewood.

23. That the Lessee shall not permit gambling on the said leased premises, or install or operate, or permit to be installed or operated, on the leased premises, any device which, in opinion of the said Commander is contrary to good morals or is otherwise objectionable; or sell or permit to be sold on the said leased premises intoxicating liquors, excepting beer and light wines; or use the said leased premises or permit them to be used for any illegal or immoral business or purpose; there shall not be carried on or permitted upon the said premises any activity which would constitute a nuisance.

24. That it is understood that this instrument is effective only insofar as the rights of the United States in the property covered by this lease are concerned, and the Lessee shall obtain such permission as may be necessary on account of any other existing rights.

25. For the purpose of maintaining attendance records, the Lessee shall obtain and submit public use visitation data to said leased premises, in compliance with such use regulations, and shall furnish such data on attendance and use as may be requested by the Commander.

26. All monies received by the Lessee from operations conducted on the leased premises, including, but not limited to, entrance and admission fees, and user fees and rental or other consideration received from its concessionaires, may be utilized by the Lessee for the administration, maintenance, operation, and development of the leased premises. Any such monies not so utilized or programmed for utilization in a reasonable time by the Lessee shall be paid to the Commander at the expiration of each 5-year period of this lease. The Lessee shall establish and maintain adequate records and accounts and render annual statements of receipts and expenditures to the Commander.

27. That no member of or delegate to Congress or resident commissioner shall be admitted to any share or part of this lease or to any monetary benefit to arise therefrom. Nothing, however, herein contained shall be construed to extend to any incorporated company, if the lease is for the general benefit of such corporation or company.

28. That the lease shall construct perimeter fencing of such design and at locations required and approved by the Commander.

29. That the city of Los Angeles Department of Water and Power Boulder Transmission Line is located on a portion of the lands herein leased. The Lessee shall not construct any facilities on the power line right-of-way that have not been approved in writing by the City of Los Angeles. There are two existing steel towers on the said right-of-way which present an attraction for climbing. Fencing shall be constructed around the towers to prevent such activity. Golf balls which may fall within the said fenced areas may be retrieved by Golf Course officials by means of entrance through a locked gate.

30. That all structures shall be constructed and landscaping accomplished in accordance with plans approved by the Commander. Further, the Lessee shall not discharge waste or effluent from the premises in such a manner that such discharge will contaminate streams or other bodies of water or otherwise become a public nuisance.

31. That no changes will be made in the topography which would deplete the storage capacity of the reservoir.

32. That no human habitation shall be permitted on the premises. This shall not be construed to prohibit the Lessee from providing properly designed and approved guard stations for night watchman or other patrolmen.

33. That the Lessee shall exercise control of the area to insure compliance with all applicable laws, ordinances, and regulations of the state, county, and municipality wherein said premises are located, including the Fish and Game Commission laws of the State of California.

34. That any and all taxes which may be lawfully imposed by the state, or any of its subdivisions upon the premises, the concessions, or other improvements placed upon the premises by the Lessee or by third parties under agreement with the Lessee, shall be promptly paid by the Lessee or such third parties as their interest may appear.

35. That the United States acquired no mineral rights within the leased area; and nothing within this lease shall be construed to indicate that the United States, in granting this lease, prohibits drilling or exploration work by owners of mineral rights or their lessees.

36. That, except as otherwise provided in this lease, any dispute concerning a question of fact arising under this lease which is not disposed of by agreement shall be decided by the Commander, who shall reduce his decision to writing and mail or otherwise furnish a copy thereof to the Lessee. The decision of the said officer shall be final and conclusive unless, within 30 days from the date of receipt of such copy, the Lessee mails or otherwise furnishes to the said officer a written appeal addressed to the Secretary of the Army. The decision of the Secretary or his duly authorized representative for the determination of such appeals, shall be final and conclusive unless determined by a court of competent jurisdiction to have been

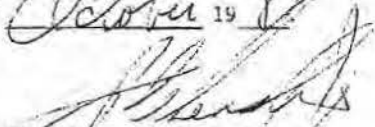
Agreement No. 84 5

fraudulent, or capricious, or arbitrary, or so grossly erroneous as necessarily to imply bad faith, or not supported by substantial evidence. In connection with any appeal proceeding under this condition, the Lessee shall be afforded an opportunity to be heard or to offer evidence in support of its appeal. Pending final decision of a dispute hereunder, the Lessee shall proceed diligently with the performance of the contract and in accordance with the said officer's decision.

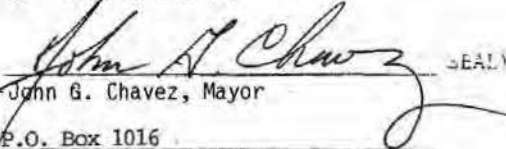
37. That this condition does not preclude consideration of law questions in connection with decisions provided for in paragraph 36 above, provided that nothing in this condition shall be construed as making final the decision of any administrative official, representative, or board on a question of law.

38. That this lease supersedes Lease No. DA-04-353-CIVENG-66-137.

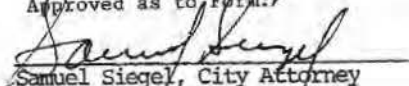
IN WITNESS WHEREOF I have hereto set my hand by authority of the Secretary of the Army this 15<sup>th</sup> day of October 19 84

  
WILLIAM P. CHEADLE, JR.  
Chief, Real Estate Division  
US Army Engineer District, Los Angeles

THIS LEASE IS also executed by the Lessee this 1st day of October 19 84

CITY OF PICO RIVERA  
 (SEAL)  
John G. Chavez, Mayor  
P.O. Box 1016  
(Post Office Address)  
Pico Rivera, California 90660

Signed and sealed in the presence of:  
Thelma M. Kail  
Thelma M. Kail, City Clerk

Approved as to Form:  
  
Samuel Siegel, City Attorney

DATE: 18 September 1979  
UNIT: "A-136"  
ACREAGE: 120.44  
PROJECT: Whittier Narrows Flood Control Basin  
LOCATION: Los Angeles County, California  
FILE: 142-K-229.2

OUTGRANT TO CITY OF PICO RIVERA FOR RECREATIONAL PURPOSES

Four parcels of land situate in the County of Los Angeles, State of California, described as follows:

PARCEL NO. 1

Lots 1, 2, 3 and 4, of Tract No. 9533, as shown on Map recorded in Book 132, pages 78 to 80 of Maps, in the office of the Recorder of said County.

Containing 0.52 acre, more or less.

PARCEL NO. 2

That portion of the Rancho La Merced, as shown on Map recorded in Book 12, page 24 of Patents, in the office of the Recorder of said County, described as follows:

Beginning at the intersection of the Compromise Line between Rancho La Merced and the Rancho Paso de Bartolo, as established by Case No. 19464 in the Superior Court of said County and shown on Map filed in Book 1, page 73, Record of Surveys, in the office of the Recorder of said County, with the Northwesterly line of Durfee Avenue, 40 feet wide, as described in a Deed to the County of Los Angeles, Recorded in Book 1207, page 74 of Deeds in the Office of said Recorder; thence along said Compromise Line North  $77^{\circ} 59' 51''$  West 1048.00 feet to the Northerly terminus of that certain course described as South  $58^{\circ} 15' 14''$  West 539.35 feet in Declaration of Taking No. 44, filed 21 March 1951 in Case No. 9103-WN, Civil, in the District Court of the United States, Southern District of California, Central Division; thence along the Northeasterly prolongation of said certain course North  $58^{\circ} 15' 14''$  East 341.32 feet; thence North  $89^{\circ} 15' 00''$  East 3208.00 feet; thence North  $02^{\circ} 28' 52''$  West 125.00 feet; thence North  $87^{\circ} 31' 08''$  East 1688.82 feet to the beginning of a tangent curve concave Southwesterly and having a radius of 375.20 feet; thence Southeasterly along said curve through a central angle of  $33^{\circ} 21' 05''$ , an arc length of 207.92 feet; thence tangent to said curve South  $59^{\circ} 07' 47''$  East 120.13 feet; thence South  $42^{\circ} 04' 33''$

West 45.68 feet; thence South  $61^{\circ} 39' 27''$  East 124.33 feet; thence South  $29^{\circ} 02' 06''$  West 98.58 feet to the beginning of a tangent curve concave Northerly and having a radius of 75.50 feet; thence Southwesterly and Westerly along said curve through a central angle of  $90^{\circ} 10' 39''$ , an arc length of 118.83 feet; thence tangent to said curve North  $60^{\circ} 47' 15''$  West 88.50 feet; thence South  $42^{\circ} 04' 33''$  West 1902.99 feet; thence North  $46^{\circ} 00' 45''$  West 81.92 feet; thence North  $32^{\circ} 03' 21''$  East 380.00 feet; thence North  $45^{\circ} 00' 00''$  East 313.44 feet; thence North  $27^{\circ} 45' 28''$  West 686.71 feet; thence South  $84^{\circ} 29' 30''$  West 340.42 feet; thence North  $64^{\circ} 36' 35''$  East 314.38 feet; thence North  $28^{\circ} 13' 57''$  West 117.97 feet; thence South  $86^{\circ} 40' 44''$  West 2782.05 feet to the Westerly line of Durfee Avenue; thence along said Westerly line South  $26^{\circ} 14' 00''$  East 389.27 feet to the Point of Beginning.

Containing 41.18 acres, more or less.

PARCEL NO. 3

That portion of Lots 2, 5, 35 and 39 of Tract No. 3159, in the County of Los Angeles, State of California, as shown on Map recorded in Book 35, page 73 of Maps in the Office of the County Recorder of said County, described as follows:

Beginning at a point in the Southwesterly line of said Lot 2, distant South  $50^{\circ} 41' 00''$  East 149.33 feet from the most Westerly corner of said lot; thence Northeasterly in a direct line to the most Easterly corner of said Lot 2; thence South  $82^{\circ} 15' 00''$  East 572.63 feet; thence North  $67^{\circ} 40' 00''$  East 272.30 feet; thence North  $53^{\circ} 11' 00''$  East 430.90 feet; thence North  $49^{\circ} 49' 51''$  West 496.95 feet; thence North  $19^{\circ} 34' 09''$  East 1019.84 feet; thence South  $70^{\circ} 25' 51''$  East 205.00 feet; thence South  $38^{\circ} 25' 51''$  East 800.84 feet; thence South  $70^{\circ} 25' 51''$  East 770.43 feet; thence South  $35^{\circ} 53' 13''$  East 124.26 feet; thence South  $53^{\circ} 47' 35''$  West 1297.18 feet; thence South  $54^{\circ} 12' 47''$  West 2239.61 feet; thence South  $60^{\circ} 30' 47''$  West 133.47 feet; thence North  $51^{\circ} 23' 23''$  West 258.87 feet to the Point of Beginning.

EXCEPTING therefrom that portion within Parcel No. 4.  
Containing 75.64 acres, more or less.

PARCEL NO. 4

A strip of land, 30 feet wide, in the City of Pico Rivera, lying 15 feet on each side of the following described centerline, basis of bearings being the California Coordinate System, Zone 7, (Chapter 1307, Statutes of 1947):

FILE: 142-K-229.2

Copy to Joe L. Gamarillo  
Jim Guild

DEPARTMENT OF THE ARMY

LEASE

No. DACW09-1-86-43

FOR PUBLIC PARK AND RECREATIONAL PURPOSES

WHITTIER NARROWS FLOOD CONTROL BASIN  
LOS ANGELES COUNTY, CALIFORNIA

PROJECT AREA

THE SECRETARY OF THE ARMY under authority of Section 4 of the Act of Congress approved 22 December 1944, as amended (16 U.S.C. 460d), hereby grants to the COUNTY OF LOS ANGELES, a political subdivision of the state of California, hereinafter referred to as Lessee, a lease for a period of fifty (50) years commencing on 1 June 1986, and ending on 31 May 2036, to use and occupy approximately 1,258.00 acres of land and water areas under the primary jurisdiction of the Department of the Army in the Whittier Narrows Project Area, hereinafter referred to as the premises as shown on attached Exhibit "A", numbered 142-K-122.5, dated 11 February 1957, for public park and recreational purposes.

THIS LEASE is granted subject to the following conditions:

1. The lessee shall conform to such regulations as the Secretary of the Army may issue to govern the public use of the project area, and shall comply with the provisions of the above cited Act of Congress. The lessee shall protect the premises from fire, vandalism, and soil erosion, and may make and enforce such regulations as are necessary, and within its legal authority, in exercising the privileges granted in this lease, provided that such regulations are not inconsistent with those issued by the Secretary of the Army or with provisions of the above cited Act of Congress.

2. The lessee shall administer and maintain the premises in accordance with the U.S. Army Engineers' Master Plan and the implementing General Development Plan for the premises and with an Annual Management Program to be mutually agreed upon between the lessee and the U.S. Army District Engineer in charge of the administration of the project, which may be amended from time to time as may be necessary. Such Annual Management Program shall include, but is not limited to, the following:

a. Plans for management activities to be undertaken by the lessee or jointly by the U.S. Army Engineers and the lessee, including improvements and other facilities to be constructed thereon.

b. Budget of the lessee for carrying out the management activities.

c. Personnel to be used in the management of the area.

3. The lessee shall provide the facilities and services necessary to meet the public demand either directly or through concession agreements with third parties. All such agreements shall state that they are granted subject to the provisions of this lease and that the concession agreement will not be effective until approved by the District Engineer.

4. Admission, entrance or user fees may be charged by the lessee for the entrance to or use of the premises or any facilities constructed thereon, PROVIDED, prior written approval of the District Engineer is obtained.

(00000)



NOT APPLICABLE

12. This lease may be relinquished by the lessee at any time by giving to the Secretary of the Army, through the District Engineer, at least 30 days' notice in writing.

13. This lease may be revoked by the Secretary of the Army in the event the lessee violates any of the terms and conditions of this lease and continues and persists therein for a period of 30 days after notice thereof in writing by the District Engineer.

14. On or before the date of expiration of this lease or its relinquishment by the lessee, the lessee shall vacate the premises, remove its property therefrom, and restore the premises to a condition satisfactory to the District Engineer. If, however, this lease is revoked, the lessee shall vacate the premises, remove its property therefrom, and restore the premises as aforesaid within such time as the Secretary of the Army may designate. In either event, if the lessee shall fail or neglect to remove its property and so restore the premises, then its property shall become the property of the United States without compensation therefor, and no claim for damages against the United States or its officers or agents shall be created by or made on account thereof.

15. The lessee or its concessionaires shall not discriminate against any person or persons because of race, creed, color or national origin in the conduct of its operations hereunder. The grantee furnishes as part of this contract an assurance (Exhibit ) that he will comply with Title VI of the Civil Rights Act of 1964 (78 Stat. 241) and Department of Defense Directive 5500.11 issued pursuant thereto and published in Part 300 of Title 32, Code of Federal Regulations, and that it will obtain such assurances from all its concessionaires.

16. All notices to be given pursuant to this lease shall be addressed, if to the lessee, to the County of Los Angeles, 433 South Vermont Avenue, Los Angeles, CA 90020, if to the Government, to the District Engineer, U.S. Army Engineer District, L. A., P.O. Box 2711, L.A., CA 90053-2325, ATTN: Real Estate Division, or as may from time to time be directed by the parties. Notice shall be deemed to have been duly given if and when inclosed in a properly sealed envelope or wrapper, addressed as aforesaid and deposited postage prepaid (or, if mailed by the Government, deposited under its franking privilege) in a post office or branch post office regularly maintained by the United States Government.

17. This lease is subject to all existing easements, and easements subsequently granted, for roadways, and utilities located or to be located on the premises, provided that the proposed grant of any easement will be coordinated with the lessee and easements will not be granted which will interfere with developments, present or proposed, by the lessee.

NOTE: Conditions 18-34 are set out on pages 4-7, attached.

IN WITNESS WHEREOF I have hereunto set my hand this 14th day of JUNE, 1988

*Gordon M. Hobbs*

Gordon M. Hobbs  
Assistant for Real Property  
QASA(L&L)

The above instrument, together with the provisions and conditions thereof, is hereby accepted this 14th day of April, 1987.

ATTEST:  
LARRY J. MONTEILH  
Executive Officer-Clerk  
of the Board of Supervisors



COUNTY OF LOS ANGELES  
*Mike Orland*  
Chairman, Board of Supervisors

BY: *John S. Harris*  
Deputy  
APPROVED AS TO FORM:  
BY: *W. N. Clinton* County Controller  
BY: *Ernie R. Young*

U.S. GOVERNMENT PRINTING OFFICE: 1987 O-247-117

NOT RECORDED

**ADOPTED**  
BOARD OF SUPERVISORS  
COUNTY OF LOS ANGELES

68 APR 14 1987

*Larry J. Monteilh*  
LARRY J. MONTEILH  
EXECUTIVE OFFICER

I hereby certify that pursuant to  
Section 25103 of the Government Code,  
delivery of this document has been made.  
LARRY J. MONTEILH  
Executive Officer  
Clerk of the Board of Supervisors



By *Joyce Harris*  
DEPUTY

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Secretary of the Army  
Lease No. DACW09-1-86-43  
Whittier Narrows Flood Control  
Basin  
Los Angeles County, California  
County of Los Angeles

18. That in order to protect the United States and the Los Angeles County Flood Control District and the lessee against claims for damages which might arise out of the use and occupation of said leased premises by persons to whom the lessee may grant concessions, licenses or subleases, the lessee herein agrees to insert a condition in each such concession, or license which it grants pursuant to Condition No. 10 hereof, which shall be in substantially the following form:

The concessionaire, licensee or sublessee, in consideration of the granting of this concession, license or sublease, agrees to hold the United States, the Los Angeles County Flood Control District, and the County of Los Angeles harmless from any and all claims or rights of action for damages which may or might arise or accrue to said concessionaire, licensee or sublessee, his officers, agents, servants, employees, or others who may be on the leased premises at his invitation or the invitation of any one of them, by reason of injuries to the property, or the person of any of them resulting from the entry upon or the use of the leased premises, by the United States, the Los Angeles County Flood Control District, the County of Los Angeles, or any one of them, at any time, for any purpose necessary or convenient in connection with river and flood control work, or for the removal of timber required or necessary for such work, or by reason of the flooding of the leased premises, or any part thereof, when in the judgment of any of them, such flooding is necessary in connection with flood control work.

19. Signed copies of each concession, license or sublease granted by the lessee herein shall be furnished to and filed with the said District Commander.

20. The lessee and its sublessees may conduct such revenue-producing activities as are within the scope of Condition 2 above. Except for timber salvaged and sold by the county when in the way of construction, all sales of forest products will be conducted by the Government and the proceeds therefrom shall not be available to the lessee under the provisions of this lease. Non-price supported crops may be cultivated either directly, or on a share-cropping basis to the extent the crop is required to

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Lease No. DACW09-1-86-43  
Whittier Narrows FCB  
County of Los Angeles

provide food and habitat for wildlife. The Government reserves the right to lease lands covered by this instrument for agricultural or grazing purposes, unless the enhancement of the fish/wildlife habitat is essential to the conservation and development of the premises by the lessee. In the latter event, the sublease will be approved in writing by the Government. The lessee will reserve at least one area at which access to the project may be reached without imposition of fees of any kind. No facilities need be provided at this area by the lessee, but normal maintenance and clean-up will be provided.

21. The rates and prices charged by the lessee or its grantees for revenue-producing activities shall be reasonable and comparable to rates charged for similar goods and services by others in the area and on the reservoir. The Government shall have the right to review such rates and prices and require an increase or reduction where it finds the objective of this condition has been violated.

22. In acting under its rights and obligations hereunder, the lessee agrees to comply with all applicable Federal and State laws and regulations.

23. The lessee shall be responsible for operation, maintenance and replacement without cost to the Government, of all facilities developed on the premises for recreational opportunities. As used in this lease, the term "replacement" shall be construed to mean the replacement in whole or in part of any structures or improvement so worn or damaged by any cause as to no longer adequately serve its designed function with normal maintenance. The lessee shall maintain all lands, waters and facilities on the premises in a manner satisfactory to the Government. If any other property of the Government is damaged or destroyed by the lessee incident to the exercise of the privileges herein granted it shall be promptly repaired or replaced by the lessee to the satisfaction of the Government.

24. The Government or its assignees will operate and maintain those lands, structures, and facilities such as but not limited to the inlet structure, outlet works, service roads and any facilities required for control and regulation of waters passing through the project.

Lease No. DACW09-1-86-43  
Whittier Narrows FCB  
County of Los Angeles

25. That no human habitation will be permitted on the premises. This will not be construed to prohibit the lessee from providing properly designed and approved guard-stations for night watchman or other patrolmen.

26. That the right is reserved to the United States to renew or enter into leases for agricultural use of any of the lands covered by this lease and not being developed by the lessee for park and recreational purposes, pending written notice by the lessee to the District Commander prior to 1 July of any given year of its desire to develop such lands for said purposes, such desired lands to be generally contiguous to lands already developed for park and recreational purposes, and the District Commander shall terminate or modify said agricultural leases, effective 31 December of the year notice is given.

27. That the right is hereby reserved to the United States to conduct sales of its remaining surplus improvements on unimproved land within the demised premises and to construct, or to permit the construction of, facilities for military requirements and for communications, electrical distribution or transmission, water supply, flood channels, sewage disposal and similar purposes on the premises, and the lessee shall have no claim for compensation or damages of any character on account thereof.

28. That the lessee shall not permit on the premises gambling or any games of chance, or install or operate, or permit to be installed and operated, any devices where money is exchanged for money, or any devices or concessions which are contrary to good morals or are otherwise objectionable.

29. That it is understood that this instrument is effective only insofar as the rights of the United States in the property covered by this lease are concerned, and the lease shall obtain such permission as may be necessary on account of any other existing rights.

30. That the United States acquired no mineral rights within the leased area and nothing within this lease shall be construed to indicate that the United States, in granting this lease prohibits drilling or exploration work by owners of mineral rights or their lessees.

31. That any and all references to the term District Engineer is changed to read District Commander.

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Lease No. DACW09-1-86-43  
Whittier Narrows FCB  
County of Los Angeles

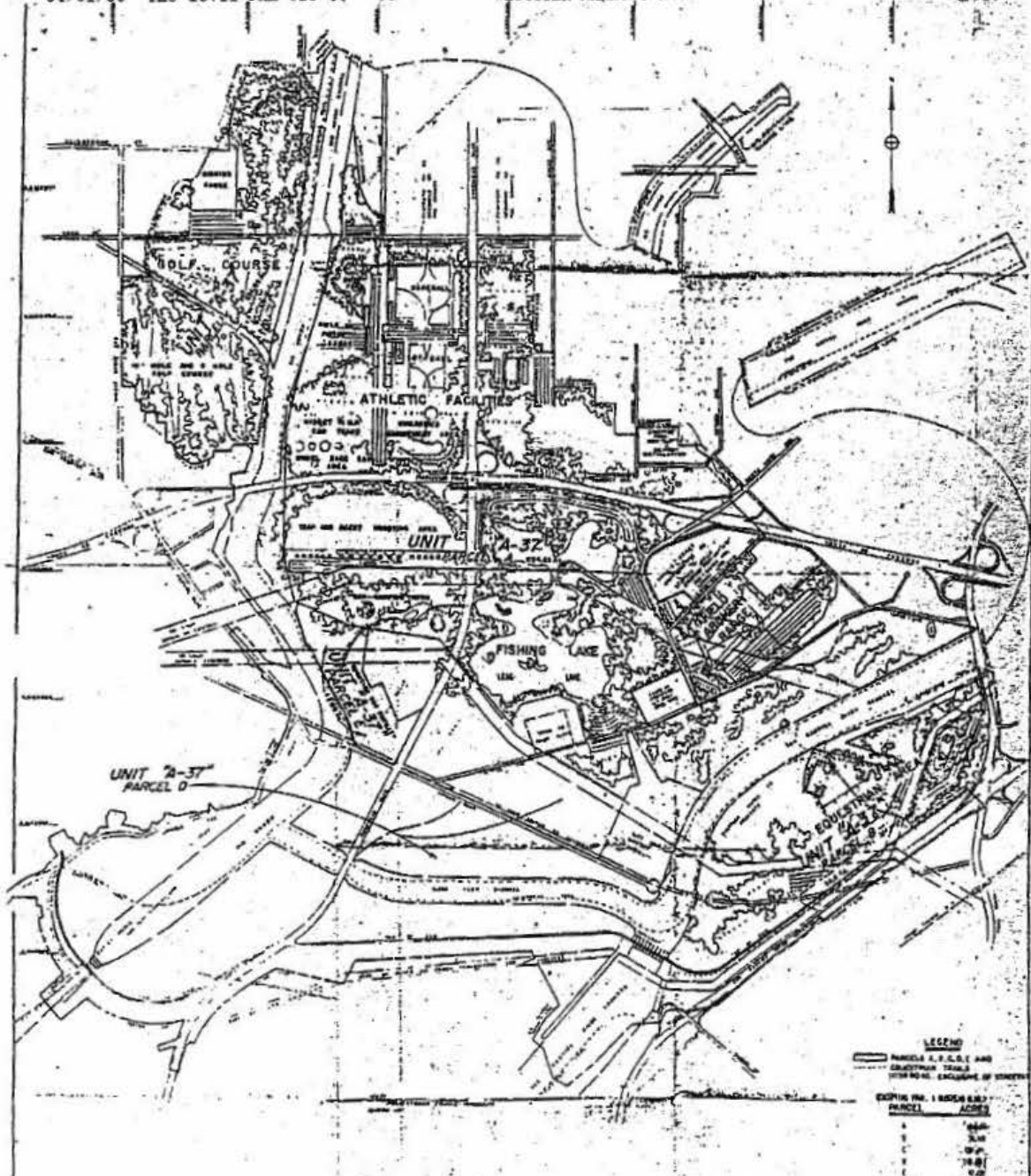
32. The lessee shall not unlawfully pollute the air, ground, or water or create a public nuisance. The lessee shall at no cost to the United States promptly comply with present and future Federal, state and local laws, ordinances, regulations, or instructions controlling the quality of the environment. The lessee shall not be responsible for pollution caused by others.

33. The lessee shall not remove or disturb or cause or permit to be removed or disturbed, any historical, archaeological or other cultural artifacts, relics, vestiges, remains or objects of antiquity. In the event such items are discovered on the premises, the lessee shall immediately notify said officer and protect the site and material from further disturbance until said officer gives clearance to proceed.

34. That before execution of this lease, the following changes were made:

- Revised: Condition Nos. 7, 11 and 15.
- Deleted: Condition No. 12.
- Added: Condition Nos. 18 through 34. Condition Nos. 18 through 34 are contained on pages 4, 5, 6 and 7, attached hereto and made a part hereof.

This lease supersedes License No. DA-04-353-CIVENG-57-198.



# WHITTIER NARROWS DAM RECREATIONAL AREA

**LEGEND**

PARCELS A, B, C, D, E AND  
 EXISTING TRAILS  
 WITH NO. 1 EXCLUSION OF STREET

EXISTING TRAIL	PARCEL	AREA
A	1000	
B	2000	
C	3000	
D	4000	
E	5000	
10A	1000	

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APPROVED FOR THE CITY OF LOS ANGELES  
 COUNTY OF LOS ANGELES  
 SUPERVISOR TO THE BOARD OF SUPERVISORS  
 COUNTY OF LOS ANGELES  
 UNIT "A-37"

ASSURANCE OF COMPLIANCE WITH THE DEPARTMENT OF DEFENSE DIRECTIVE UNDER TITLE VI OF THE CIVIL RIGHTS ACT OF 1964

The County of Los Angeles (hereinafter called "Applicant-Recipient") HEREBY AGREES THAT it will comply with Title VI of the Civil Rights Act of 1964 (P.L. 88-352) and all requirements imposed by or pursuant to the directive of the Department of Defense (32 CFR Part 300, issued as Department of Defense Directive 5500.11, December 28, 1964) issued pursuant to that title, to the end that, in accordance with Title VI of that Act and the Directive, no person in the United States shall, on the ground of race, color, sex, or national origin be excluded from participation in, be denied the benefits of, or be otherwise subjected to discrimination under any program or activity for which the Applicant-Recipient receives Federal financial assistance from the Department of the Army and HEREBY GIVES ASSURANCE THAT it will immediately take any measures necessary to effectuate this agreement.

If any real property or structure thereon is provided or improved with the aid of Federal financial assistance extended to the Applicant-Recipient by the Department of the Army, assurance shall obligate the Applicant-Recipient, or in the case of any transfer of such property, any transferee, for the period during which the real property or structure is used for a purpose for which the Federal financial assistance is extended or for another purpose involving the provision of similar services or benefits. If any personal property is so provided, this assurance shall obligate the Applicant-Recipient for the period during which it retains ownership or possession of the property. In all other cases, this assurance shall obligate the Applicant-Recipient for the period during which the Federal financial assistance is extended to it by the Department of the Army.

THIS ASSURANCE is given in consideration of and for the purpose of obtaining any and all Federal grants, loans, contracts, property, discounts or other Federal financial assistance extended after the date hereof to the Applicant-Recipient by the Department, including installment payments after such date on account of arrangements for Federal financial assistance which were approved before such date. The Applicant-Recipient recognizes and agrees that such Federal financial assistance will be extended in reliance on the representations and agreements made in this assurance, and that the United States shall have the right to seek judicial enforcement of this assurance. This assurance is binding on the Applicant-Recipient, its successors, transferees, and assignees and the person or persons whose signatures appear below are authorized to sign this assurance on behalf of the Applicant-Recipient.

Date APR-14 1987

County of Los Angeles (Applicant-Recipient)



By [Signature] (President, Chairman of Board, or comparable authorized official)

EXHIBIT B

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Lease No. DACW09-1-86-43  
Whittier Narrows FCB  
County of Los Angeles, Department  
of Parks & Recreation

WHEREAS, by Amendment No. 3, License No. DA-04-353-CIVENG-57-198 was revised to delete 7.42 acres, more or less, leaving a total of 1,151.38 acres, more or less, under said license; and

WHEREAS, by Amendment No. 4, an additional 114.05 acres, more or less, were added to License No. DA-04-353-CIVENG-57-198, for use as a nature center, making a total of 1,265.43 acres, more or less, under said license; and

WHEREAS, by Amendment No. 5, 13.39 acres, more or less, were deleted from License No. DA-04-353-CIVENG-57-198, leaving a total of 1,252.04 acres, more or less, under said license; and

WHEREAS, on 14 June 1988, said License No. DA-04-353-CIVENG-57-198 was changed and incorporated into Lease No. DACW09-1-86-43, and executed by the Office of the Secretary of the Army; and

WHEREAS, by letter dated 12 September 1989, the County of Los Angeles, Department of Parks & Recreation, has requested that 4.8 acres, more or less, be added to their Lease No. DACW09-1-86-43, and the Government is agreeable thereto.

NOW, THEREFORE, in consideration of the premises, the parties hereto do mutually agree that Lease No. DACW09-1-86-43 is amended in the following particulars:

1. That an additional area of land, consisting of approximately 4.80 acres, more or less, as is more particularly described in legal description marked Exhibit A, attached hereto and made a part hereof, and as is shown on Drawing No. 142-K-278 marked Exhibit B, attached hereto and made a part hereof, is hereby added to said lease, making a total of 1,256.84 acres, more or less, outgranted to the County of Los Angeles, Department of Parks & Recreation under Lease No. DACW09-1-86-43.

*Handwritten initials and date: JTB 4/30*

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Lease No. DACW09-1-86-43  
Whittier Narrows FCB  
County of Los Angeles, Department  
of Parks & Recreation

2. That in all other respects the terms and conditions of  
Lease No. DACW09-1-86-43 remain unchanged and in effect.

IN WITNESS WHEREOF, I have hereunto set my hand by authority  
of the Secretary of the Army this 26 day of January ~~1989~~ <sup>1990</sup>.

*Virgil D. Taylor*  
VIRGIL D. TAYLOR  
Chief, Real Estate Division  
U.S. Army Engineer District, L.A.

THIS AMENDMENT NO. 1, together with all the conditions  
thereof, is accepted this 16<sup>th</sup> day of January 1990.

ATTEST:  
LARRY J. MONTEILH  
Executive Officer-Clerk  
the Board of Supervisors

COUNTY OF LOS ANGELES

BY: *Pat F. Schaban*  
Chairman, Board of Supervisors

BY: *Lurma C. Walton*  
Deputy



APPROVED AS TO FORM:

DE WITT W. CLINTON  
County Counsel

By *Heleen Parker*  
Deputy  
County Counsel

**ADOPTED**  
BOARD OF SUPERVISORS  
COUNTY OF LOS ANGELES

15 JAN 16 1990

*Larry J. Montelh*  
LARRY J. MONTEILH  
EXECUTIVE OFFICER

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## **APPENDIX C:**

# **PUBLIC PARTICIPATION**

## **APPENDIX C: PUBLIC PARTICIPATION**

Public participation was an essential element in the development of Whittier Narrows Dam Basin (Basin) Master Plan. Community involvement offers an opportunity for the public to voice their concerns and desires for activities permitted in the Basin and also enriches the process with local knowledge of the Basin area. The goal of public involvement and coordination is to open and maintain channels of communication with the public in order to give full consideration to public views and information in the planning process. The objectives of public involvement are to:

- Provide information about proposed Corps activities to the public;
- Make the public's desires, needs, and concerns known to decision-makers;
- Provide for consultation with the public before decisions are reached; and
- Consider the public's views in reaching decisions.

The public has increasingly expressed a strong desire for public spaces to meet the diverse and evolving needs of the surrounding communities. Reaching consensus among user groups takes a balanced approach that recognizes all parties and allows for all voices to be heard, but manages the process in such a way that the limitations of capital improvement and maintenance budgets are recognized, and within the context of the regulations of the Corps and the original purpose of the Dams to manage flood risk. The approach taken in conducting the community workshops was to acknowledge the public's expectations but making clear from the outset the framework in which the Corps and other land managers of the property must operate.

In the development of this Master Plan, one community workshop was held to educate the community and receive feedback about the Corps Master Plan development process. It was important at this workshop to stress how the work of the Watershed Conservation Authority's (WCA) *Visioning Whittier Narrows* both informs and differs from this Master Plan. Input was recorded via written comments by participants and on maps during the workshop process. All verbal comments were recorded on flip charts and later transcribed. Workshop attendees' views may not necessarily reflect the views of the broader public.

One workshop was held for the Whittier Narrows Master Plan on Wednesday, 21 April 2010 from 5:00 pm to 7:00 pm at the City of Pico Rivera Sports Arena. There were approximately 20 people in attendance at this workshop.

The outreach process that was conducted by the WCA and its partners is summarized in Section 1.1.1.2 since it provides valuable input in gauging public and government staff opinion on Whittier Narrows Basin.

At the 21 April 2010 workshop, a Power Point presentation was given that presented the Corps Master Plans, their purpose and the process for developing them. The resource objectives were reviewed along with the meaning of the land use classifications and the proposed land use classifications for the Basin. Color maps were distributed along with comment sheets. All comments throughout the meeting were recorded and participants were invited to fill out comment sheets.

The *Visioning Whittier Narrows* process was officially launched in September 2008, with a variety of activities to gather input from surrounding community officials, user groups, and members of the public. Activities included:

- A needs assessment survey that identified patterns of use, desired activities, and awareness on non-recreational aspects of the Basin's function (for example, water conservation). Both English and Spanish versions of the survey were developed, with the first administration at Fiestas Patrias, held at Whittier Narrows Dam Basin on 14 September 2008.
  - The survey was also administered at the October Fall Festival and distributed through City offices in South El Monte, El Monte, Rosemead, Montebello, Pico Rivera, Whittier, La Puente, and Baldwin Park. Almost 900 surveys were completed.
- Interviews with City officials in Pico Rivera, Rosemead, South El Monte, Montebello, Whittier, and La Puente, which focused on community needs for recreation and improving connectivity to the Basin.
- A Visioning Whittier Narrows public workshop was held in October 2008 to review the scope and background for the study and to identify key issues and potential opportunities. After an initial presentation, participants worked in small groups on a mapping exercise to describe their observations, issues and opportunities and each of the nine groups presented their findings to the larger audience. A total of 109 people signed in at the meeting with many user groups well represented.
- A project website, [www.visioningwhittiernarrows.org](http://www.visioningwhittiernarrows.org) was launched in October 2008 and provided another method for posting project updates as well as for the public to provide feedback.
- A follow-up public meeting/event, Experience Whittier Narrows! was held at the Basin in August 2009. The purpose of this event was to obtain feedback on preliminary concepts and ideas and to introduce visitors to parts of the Basin that they might not have otherwise experienced. Approximately 500 people attended with about 350 completed a brief survey to provide feedback on plan concepts.

### **Community Workshop: Wednesday, 21 April 2010**

Summary This was the only community workshop scheduled for the Basin since the WCA had already been holding a series of public meetings for development of a Master Plan. The meeting was held at the Pico Rivera Sports Arena. Poor weather conditions may have affected the number of people who turned out for the meeting. Nonetheless, the model airplane fliers and gun and rifle participants were there along with representatives from the County, WCA and some nearby cities.

Following a Power Point presentation introducing the Master Plan process and status, color aerial maps of the Basin were distributed throughout the room, along with comments sheets. Participants were invited to fill out the comment sheets and mark their ideas, concerns, and suggestions directly onto maps. All verbal comments were recorded during the meeting.

The main comments received were in relation to the location of the rifle and revolver clubs and the model airplane club. These groups expressed a desire for their facilities to remain in their current locations. A report was submitted that outlined the history and programs of the model airplane fliers. Both groups stressed how young people were part of their programs and how they practiced stewardship of their areas by cleaning them up and respecting wildlife. There was also public recognition of the excellent job that the County does in running and maintaining the Basin.

Participants were pleased to be part of the process, with attendees expressing gratitude to the County and the Corps for allowing them to use the Basin for their particular sports. Representatives from the WCA were present and answered questions about their planning effort directly.

Issues and comments raised by attendees at the Corps' workshop included:

- Retaining golf courses and the model airplane field in their current location and configuration.
- Recognition of the quality of the facilities that are here and that they are not available in many places.
- Information about the training provided here for young people.
- Understanding of the integration of the WCA process with the Corps Master Plan development.

### Transcription of Workshop Notes

Educational:

- Three hundred (300) boy scouts come through for shooting experiences (junior instruction) every Saturday afternoon.
- We (shooters and fliers) pass on training resources to next generation.
- Children in the flying fields will learn about science and math.

Timeline:

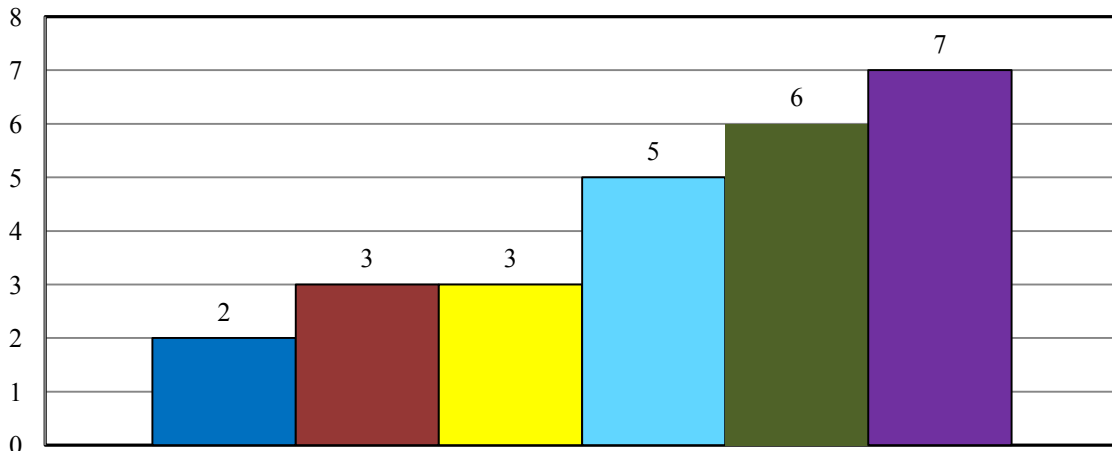
- Are you adopting the WCA Whittier Narrows plan? Answer: We are considering it as part of our process.
- Moving existing recreational areas, should we be concerned? Answer: We do not necessarily recommend moving existing recreational facilities.
- The WCA plan is in draft form. It will be out for public review in June. There will be a public meeting and comments taken and may be able to get integrated with the Corps planning process.
- Will the Corps approve the WCA plan and attend the public meeting to discuss integration? Answer: The Corps has been part of the WCA process and will likely attend but no dates have yet been set.
- Total timeline for Corps final Master Plan? Answer: A Final Plan is submitted in August, and then it receives technical review. That is responded to, and it is put out for public comments. A final plan is then drafted and it would likely be approved next summer.
- Corps Master Plan is just a framework for planning. Any new uses would be in coordination with the local sponsors.
- County did several workshops with the rifle and revolver club members. The Corps should utilize this for comprehensive process.
  - The outreach process needs local help.
- Overall cost for Master Plan and who is responsible for it? Answer: A total of \$1.8 million was authorized through stimulus funding and was given to the contractor to do 9 Master Plans including this one.
  - What are the other Master Plans? Answer: Sepulveda, Santa Fe, Hansen, San Antonio, Brea, Carbon Canyon, Fullerton, and one in Arizona, Whitlow Ranch.
- We should give credit to LA County's running of park operations, they do an outstanding job.

Land Use:

- Some are petitioning for a dog park near the Dam. Is it possible to put a dog park there? Answer: We would need to look at this and talk to the local sponsor.
- Many of us are opposed to the County's proposal for moving the flying field and rifle range, it is not feasible.
  - The current land use is suitable.
  - The Corps should consider social preservation (people) rather than just environmental preservation.

- Soccer fields may be polluting to groundwater, limit those uses or keep away from streams.
- Document historic groves.
- Model airplane fliers work in partnership with raptors.
- The Corps has provided us a great venue, the people are grateful.
- Festival, people came from all over the world.
- Difficult to tie together trails because of river beds.
- Let users decide on what to do.
- Reconsider relocation of existing uses as recommended in the WCA plan.
- There is plenty of room for soccer fields over on Rosemead.

**Top 5 Comments Whittier Narrows Dam Basin Workshop**



- Model airplanes are historically beneficial to the regional community
- Ensure the continuation of the flying fields.
- Do not move the model airplane facility to the P.R. Sports Arena, major flaws.
- If the LA Rifle and Revolver Club is removed, habitat will have a negative outcome.
- All other comments.
- Opposed the proposal of relocating the LA Rifle and Revolver Club.

### Synopsis of Comment Sheets

Sheet #	Comment
1	Wants improved access between areas of dam [for when water is high]. Suggests using recycled water for horses and arenas.
2	Wants shooting ranges to remain as is. Opposes construction of soccer fields.
3	Wants shooting range to remain as is [because it would be costly to relocate it]. Opposes construction of soccer fields [because it would destroy bird habitat].
4	Wants shooting range to remain as is. Opposes construction of soccer fields [because it would destroy bird habitat].
5	Wants shooting range to remain as is, claims it also benefits birds.
6	Wants shooting range to remain as is, wants LAR&R club policies maintained (?).
7	Wants model airplane flying field [north of 60 freeway] to remain as is.
8	Wants model airplane flying field to remain as is [because the relocation site has electrocution hazard].
9	Supports maintaining dams and the watershed environment. Wants model airplane flying field to remain as is.
10	Wants shooting range to remain as is. Wants model airplane flying fields to remain as is [because of the expense of relocating or modifying it]; claims it is not damaging to the environment.
11	City of Pico Rivera wants dog park near Streamline Park.



## **APPENDIX D:**

# **ENVIRONMENTAL ASSESSMENT**

**FINDING OF NO SIGNIFICANT IMPACT**  
**Master Plan for Whittier Narrows Dam Basin**  
**Los Angeles County, California**

I have reviewed the Environmental Assessment (EA) that has been prepared for the proposed Whittier Narrows Dam Basin Master Plan located in Los Angeles County, California. The EA has been prepared in compliance with applicable laws, regulations, and executive orders.

Coordination with the County of Los Angeles Department of Parks and Recreation and input from community workshop participants has resulted in the identification of proposed changes to land use classifications for Whittier Narrows Dam Basin lands in conformance with Corps policies and guidelines. The Master Plan provides guidance for stewardship and management of the recreation and natural resources of the Basin.

The EA analyzes the impacts of two alternatives for the Master Plan; the No Action Alternative and the Proposed Action Alternative, which is the approval of the Master Plan.

Under the No Action Alternative, the Master Plan would not be updated. The Basin would continue to be managed without an updated guidance document. Special events and other unique activities would continue to be analyzed on a case-by-case basis for environmental impacts. The No Action Alternative would not meet the goals, purpose, and need of the updated Master Plan, comply with Corps' policies and guidelines, nor meet the needs of the community.

A Finding of No Significant Impact (FONSI) approves the Proposed Action, updating the land use classification plan, recognizing changes in existing recreation amenities and uses, current Corps' policies and guidance, and the expressed needs and desires of the lessee and community for future development.


While the updated Master Plan does not implement a specific Federal Action, this EA acknowledges that certain events that meet conditions as described in Outgrant Policies and other District policies have been analyzed and found that there would be no significant impact on specific resources in the Basin.

A number of comments were received during the public review period, all requesting that the recommendation to phase out "gasoline" powered model airplanes be deleted as this is a popular activity and gasoline is not used, but the much cleaner methanol. The recommendation has been deleted.

Should development be proposed in the future in compliance with this Master Plan, a separate environmental resources analysis would need to be prepared in compliance with the National Environmental Protection Act (NEPA), other Federal laws, and Executive Orders.

I have considered the available information contained in the EA, and it is my determination that there are no impacts resulting from the Proposed Action (Approval of the updated Master Plan) that would have a significant effect upon the quality of the human environment. There are no unresolved environmental issues. Preparation of an Environmental Impact Statement (EIS), therefore, is not required.

28 SEP 2011  
Date

  
R. Mark Toy, P.E.  
Colonel, U S Army  
Commander and District Engineer

**COVER SHEET**  
**Whittier Narrows Dam Basin Master Plan**  
**and Environmental Assessment**

**Los Angeles County, California**

This Environmental Assessment (EA) is an Appendix to the Whittier Narrows Dam Basin Master Plan. Its purpose is to provide sufficient information on the potential environmental effects of the Proposed Action Alternative, which is the approval of the updated Whittier Narrows Dam Basin Master Plan, and the No Action Alternative, which is retaining the 1996 Whittier Narrows Dam Basin Master Plan.

Whittier Narrows Dam, located on the San Gabriel River and Rio Hondo, was authorized by the Flood Control Act of 1936 (P.L. 74-738) for flood risk management, and subsequently authorized for recreation development by P.L. 78-534, when said development does not interfere with the purposes of flood risk management. The Master Plan guides management and development of the Basin pursuant to Federal laws and regulations to preserve, conserve, restore, develop, maintain, and manage project lands, waters, and associated resources within the Brea Dam Basin.

The updated Master Plan has three primary objectives; 1) to provide a current and accurate description of existing conditions, 2) to prescribe revised land use classifications, and 3) to provide guidance for decision makers for future actions within the Basin. The proposed updated Master Plan is not anticipated to result in adverse impacts to the natural and human resources within Whittier Narrows Dam Basin.

Under the no action alternative, failure to implement the updated Master Plan would not result in immediate adverse impacts. Over time, however, the lack of a comprehensive guiding document for management of the Basin may inhibit development of the Basin in a way that meets the needs of the community and fosters sustainability.

The comment period was between 10 August and 10 September 2011. All comments received requested the recommendation for the phasing out of “gasoline” powered model airplane use be deleted. The recommendation has been deleted.

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# Whittier Narrows Dam Basin Master Plan

Los Angeles County, California

## Environmental Assessment

SEPTEMBER 2011

**U.S. Army Corps of Engineers**  
**Los Angeles District**  
**P.O. Box 532711**  
**Los Angeles, CA 90053-2325**

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**Error!**

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# 1

## INTRODUCTION

This Environmental Assessment (EA) has been prepared in conjunction with the updated Master Plan for the Whittier Narrows Dam Basin located in Los Angeles County, California. This EA has been prepared in compliance with the requirements of the National Environmental Policy Act (NEPA) 42 USC 4321 et seq), Council on Environmental Quality (CEQ) regulations published in 42 Code of Federal Regulations (CFR) part 1500, and the U.S. Army Corps of Engineers (Corps) *Implementing NEPA*, Engineering Regulation (ER) 200-2-2. The purpose of this EA is to provide sufficient information on potential environmental effects of the proposed update to the Whittier Narrows Dam Basin (Basin) Master Plan and alternatives for the purpose of determining whether to prepare an Environmental Impact Statement (EIS) or a Finding of No Significant Impact (FONSI).

The Master Plan is intended to guide the orderly and coordinated use, development, and management of resources within the Whittier Narrows Dam Basin consistent with Corps regulations, laws, and policies. The primary goals of a Master Plan are to prescribe an overall land and water management plan, resource objectives, land use classifications. Specific development plans, will require further study and analysis per the Corps' Recreation Outgrant Policy provided in Appendix A-1 of the Master Plan.

### 1.1 Project Location

Whittier Narrows Dam Basin lies within Los Angeles County (Map 1)<sup>1</sup> in a densely populated suburban area within and near the communities of South El Monte, Rosemead, Industry, Pico Rivera, and Montebello (Map 2). The Basin is located on the San Gabriel River and Rio Hondo approximately 15 miles east of downtown Los Angeles and 10 miles southeast of Pasadena. Interstates 10 (San Bernardino Freeway) and 605 (San Gabriel River Freeway) intersect several miles to the northeast of the Basin. State Route 60 (Pomona Freeway) and Interstate 605 intersect at the northeast corner of the Basin. State Route 19 (Rosemead Boulevard) and State Route 60 intersect within the Basin. The Dam and associated works are located between East Lincoln Avenue and Rosemead Boulevard. The purview of the Whittier Narrows Dam Basin Master Plan includes all Federally owned lands controlled by the Corps at the Basin (Map 3).

### 1.2 Authorized Purpose

Flood Risk Management Although the authorized Project purpose in the legislation for the Project was originally referred to as flood control, it is now referred to as flood risk management. The Project purpose is to provide flood risk management to the communities downstream of the Basin, and all other activities that may occur within the Basin must not impede or diminish the purpose of flood risk management.

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<sup>1</sup> Each map referenced within this DEA is provided in Appendix E. Maps in Appendix E are numbered as they are referenced within the Master Plan, and as a result, will not be in numerical order in this DEA. Not all maps in Appendix E will be referenced within this DEA.

The Flood Control Act of (FCA) of 1936 (Public Law (P.L.) 74-738), provided for the construction of the dam and related flood risk management works for the protection of metropolitan Los Angeles County, California. The FCA of 1938 (P.L. 75-761), amended the 1936 Act by providing for the acquisition of land, easements, and right-of-way for flood risk management projects, channel improvements, and channel rectification. The Project is an important part of a comprehensive system for flood risk management in Los Angeles County known as the Los Angeles County Drainage Area (LACDA). Whittier Narrows Dam was authorized 18 August 1941 in the Flood Control Act (FCA) of 1941 (Public Law (P.L.) 77-228).

Recreation Section 4 of the FCA of 1944, (P.L. 78-534), as amended authorizes the Corps to construct, maintain, and operate public park and recreation amenities at water resource development projects and to permit the construction, maintenance, and operation of such amenities. It authorizes the Corps to grant leases of lands, including structures or amenities that are suitable for public parks and recreation purposes to Federal, state, or local government agencies when such action is determined to be in the public interest. Currently, no water is impounded behind the Dam for purposes of recreation and no releases are made downstream for recreation purposes.

Under the authority of the FCA of 24 July 1946 (P.L. 78-534), as amended by the FCA of 1954 (P.L. 83-780), Los Angeles County (County) was issued an initial 50-year lease to develop a total of 1,160 acres within the Basin for park and recreation purposes which was increased to 1,283 acres reflecting the transfer of the Audubon Society's Nature Area to the County. An initial 25-year lease was granted to the City of Pico Rivera (City) in 1965 to develop 37.08 acres for recreation uses. A new lease was granted in 1989 which extends the lease to the City through 2034 and includes a total of 70 acres.

Water Conservation Although there is no Basin storage space allocation for water conservation, operation of Whittier Narrows Dam for water conservation was authorized by the Chief of Engineers in a letter dated 18 October 1956 to Los Angeles District, subject: Conservation Storage in Whittier Narrows Dam Project (Corps 1957). Water conservation operation is conducted in a manner that does not compromise flood risk management; water held temporarily for water conservation is released in time to ensure the entire storage capacity of the Dam is available if needed for controlling floods. Los Angeles County Department of Public Works (LACDPW) operates groundwater recharge areas adjacent the Rio Hondo and San Gabriel River downstream of the Dam. Releases to the San Gabriel River from the spillway gates are limited to the capacity of the LACDPW recharge amenities on the San Gabriel River during small flood events and the recession phase of larger flood events.

### **1.3 Need for and Purpose of this EA**

Federal lands are to be managed in conformance with current Corps' regulations, policy and guidance. A Corps' Master Plan is intended to capture the Corps' assessment of land management needs, expressed public desires, and provides guidance for evaluation of specific developments, uses and activities. The Master Plan defines land use classifications and provides guidance that allows the Basin to be managed that balances the needs and desires of the public with legal, policy, and resource constraints.

Federal laws, regulations, and Executive Orders have responded to increasing needs for environmental protection and conservation. Corps' policies recognize a greater need for environmental stewardship that includes conservation and protection of the Nation's natural resources. The updated Master Plan reflects these policies in order to guide future development and uses within the Basin

The Master Plan reviews existing land uses and resources within the Basin, describes the needs and desires of community stakeholders, prescribes land use classifications for Basin land based on Corps' guidance and identifies resource and land use objectives for guidance in management of the Basin's natural resources. This EA describes the existing natural and human resources in the Basin and analyzes the impacts of the Proposed Action (approval of the updated Master Plan) and the No Action Plan (maintaining the current Master Plan) on the resources.

The land and resource uses within the Basin and in the surrounding community have changed significantly since the original Master Plan was prepared in 1963. The growing population in the vicinity of the Basin utilizes the Basin for passive recreation activities. The Corps recognizes that a passive management strategy is not adequate to prevent recreational users in Corps' operations areas. This new information necessitates the Corps 1) update existing conditions, 2) assess current land rights, 3) re-evaluate the needs and desires in the community, and 4) identify potential recommendations for future management strategies and land uses that may be compatible with Corps operations areas.

## 2

## PROPOSED ACTION AND ALTERNATIVES

This section describes the alternatives considered that would meet the purpose and need of the proposed action. NEPA requires that Federal agencies consider a reasonable range of alternatives that may meet this need and, for alternatives eliminated from detailed study, provide a brief discussion of the reasons for their having been eliminated. In the following section, the proposed Action Alternative, No Action Alternative, and the reason for elimination of other alternatives are described.

<b>ACTION ALTERNATIVE</b> <b>Proposed Action</b>	<b>NO ACTION ALTERNATIVE</b>
Approval of the updated Whittier Narrows Dam Basin Master Plan with revised land use classifications  Includes revised land use classification plan, updated review of Basin conditions, recreation needs analysis, and guidance for future development.	Retention of existing 1996 Whittier Narrows Dam Basin Master Plan  Outdated information regarding Basin conditions, recreation needs, and guidance for future development and continued sustainability.  Does not meet current Corps' regulations and guidance

### 2.1 Proposed Action Alternative

The Proposed Action Alternative would be the approval of the updated Whittier Narrows Dam Basin Master Plan, to which this EA is an Appendix. Using current resource descriptions the existing land use classifications for the Basin were analyzed for compatibility with current land uses. Because the Master Plan for Whittier Narrows Dam Basin has not been updated since 1996, changes in land use, development of new recreation amenities, and revised Corps' regulations and policies have rendered the existing Master Plan obsolete. The updated Master Plan provides recommended land use classifications, that do not significantly change proscribed land uses, but rather add a layer of protection to areas that were deemed Environmentally Sensitive due to habitat structure for endangered species or are existing Wildlife Areas These land use classifications create a Basin land use plan that guides current and future environmental stewardship, yet optimizes recreation use, balancing the needs of people and wildlife that use the Basin. The updated Master Plan also provides recommendations to meet Basin resource and land use objectives for continued optimal use into the future.

#### 2.1.1 Significant Changes

Federal Laws, Regulations, and Executive Orders, and Corps Guidance and Policies Since the existing Master Plan was developed, Corps guidance and policy has changed as a result of new Federal legislation, evolving principles in environmental stewardship, and an improved

understanding of environmental conditions. The updated Master Plan summarizes current Corps' management guidance and policies.

Existing Conditions The updated Master Plan reviews the existing conditions within and around the Basin using current and best available data. Existing resource conditions are considered Baseline Conditions which may also be consider Future-Without-Project Conditions, if No Action were implemented , although against no condition is technically static. This EA provides additional existing natural, cultural, and social resources and conditions.

Resource Objectives Corps' water and land management objectives must reflect the evolving Corps vision and mission goals. Over the past several decades, the Corps has adopted an environmentally focused approach to managing Federal lands, such as the Sepulveda Dam Basin. The updated Master Plan presents resource objectives for environmentally sound and sustainable management practices. It indicates a move toward environmental stewardship and a responsibility for ensuring the sustainability of the natural resources within the Basin.

### **2.1.2 Recommended Land Use Classifications**

Following analysis of existing land use classifications, it was determined that the existing Master Plan does not implement current Corps guidance to the fullest benefit of the Basin. As a result, the land use classifications at Whittier Narrows Dam Basin were revised to improve compatible uses and to ensure social, economic, and environmental sustainability of Basin lands. Map 22 shows the types and extents of proposed land use classifications.

Project Operations Project Operations lands are those necessary to enable the Corps to operate and maintain the Dam for its primary purpose of flood risk management and include lands subject to frequent flooding within the Basin. Project Operations lands occur at and around the location of the Dam structure, and where access for operation and maintenance requirements is needed. While limited low impact recreation activities may occur within this classification, activities on this land must not interfere with flood risk management operations. Land extent and area identified under this classification have remained essentially unchanged since the previous Master Plan was implemented. The total area of operations land is 1,010.3 acres and includes 140.9 acres of roadways.

Recreation A total of 438.5 acres are recommended for classification into the Recreation category, reflecting a significant decrease in the total acreage of lands designated for high intensity recreation use in the existing Master Plan. Though the number of acres of land that is classified as Recreation has decreased, the updated Master Plan does not recommend changes to existing recreation amenities, regardless of their land use classification designation. Many areas previously identified as Recreation are now identified as MRM – Recreation – Low Density category. The Recreation land use classification allows the most intensive recreation uses and may be used for athletic fields, parking lots, restrooms and other amenities. Large special events may be held under this classification only after event-specific review in conformance with Corps policy.

At Whittier Narrows Dam Basin, several areas fall under this classification that reflects the current recreation amenities. There are no plans to change these uses, however the land use classification of these lands has changed to reflect the intensity of recreation occurring. The Whittier Narrows Golf Course and the areas around the lakes are proposed for the classification of MRM – Recreation - Low Density, which reflects the lower impacts these activities have on the land. Conversely, several areas that were designated as MRM – Recreation - Low Density or Inactive and/or Future recreation are now reclassified into Recreation, reflecting the high intensity activities occurring in these areas.

Areas identified as Recreation include the BMX Facility, Los Angeles Rifle and Revolver Club, model airplane area, athletic fields, the American Military Museum, the tennis center, the shotgun sports-park, archery range, equestrian center, Streamland Park, and sports arena complex. Areas no longer identified as Recreation include the golf courses, and the areas around the North, Center, and Legg Lakes. Please see Section 3 for a complete description of existing recreation amenities.

Mitigation The land recommended for this land use classification includes 150.8 acres divided into three areas on the proposed land use classification map (Map 22). Mitigation Area 1 was set aside as mitigation for the Water Reclamation Plant and functions as part of the Nature Area. Mitigation Area 2 was set aside as a buffer for the BMX facility and soccer fields. Area 3 was identified in the 1996 Master Plan as potential future mitigation for additional development in the Basin, and current plans are to expand the mitigation area further.

Environmentally Sensitive A total of 214.3 acres are recommended for classification as Environmentally Sensitive under the Proposed Action Alternative, and all proposed Environmentally Sensitive acres were previously identified as Recreation land in the 1996 Master Plan. The Environmentally Sensitive areas include the Nature Center and Museum, Whittier Narrows Nature Area, and the Bosque del Rio Hondo. These areas have ecological features that have been identified for additional protection, such as the presence of aquatic and wildlife habitat and known occurrences of the Federally protected least Bell's vireo, coastal California gnatcatcher, and Nevin's barberry. Environmentally Sensitive lands may have limited development and uses are restricted to non-consumptive activities that have no significant adverse impacts. No agricultural or grazing uses are permitted on this land.

MRM – Recreation – Low Density Multiple Resource Management (MRM) land use classifications are those that are managed primarily for a specific use, but have other compatible and acceptable uses. Low density recreation lands are primarily managed for low-impact recreation activities, such as hiking, primitive camping, picnic areas, open play areas, and wildlife observation. However, it is also necessary to manage the area to ensure sustainability of the qualities that make it a suitable hiking, camping, picnicking, or observing area.

In the current Master Plan, all recreation use areas were identified as Recreation regardless of the intensity of the use. Under the proposed Action Alternative, a total of 637.8 acres that were previously identified as Recreation land would be designated as MRM – Recreation – Low Density land. This reflects a qualitative change in the way the Corps identifies recreation uses.

For example, picnic areas are now considered to pose lower impacts to the Basin and are recognized by calling the recreation use “low density.”

Areas identified as MRM – Recreation – Low Density now include the Whittier Narrows Golf Course, Pico Rivera Municipal Golf Course, picnic areas around the lakes, Earthworks Community Gardens, and the Parks and Recreation Administration (Snail) Building.

MRM – Inactive and/or Future Recreation The updated Master Plan includes a total of 188.4 acres of MRM – Inactive and/or Future Recreation land. This land use classification refers to lands that are not currently used for recreation, but may be designated as Recreation or MRM – Recreation – Low Density in the future. Typically, these lands are agricultural, fallow, or are athletic fields that are closed to allow rejuvenation. The current Master Plan did not designate any land under this land use classification. MRM – Inactive and/or Future Recreation lands identified in the updated Master Plan include the Army Reserve Center, the empty lot east of Rosemead Boulevard used for overflow parking during special events, the agricultural lands within the Basin, and the former campground along the San Gabriel River.

Easement Lands A total of 186.5 acres of land have been divided into easements for four separate entities, and include parcels that are utilized by Texaco, South El Monte Association, City of Whittier, and Suburban Water Systems. Easements are lands which the Federal government acquired the right to utilize for Project Operations, but which the Federal government does not own in fee title. These flowage easements are not assigned a land use classification for land management under Corps policy (Map 4, 22). In addition, easements have been granted for storm drains, drainage ditches, pipelines, sewer lines, communication lines, gas lines access roads, and power lines.

### **2.1.3 Recommended Future Actions**

Working together with the lessees, neighboring communities, Basin visitors, and other stakeholders, the Corps identified a number of measures that are desired for ongoing improvement and management of the Basin. These measures have been listed in Table 2.1 and divided into 1) actions for which there may be an immediate need, 2) measures that could be taken throughout each land use classification to improve safety and sustainability within the Basin, and 3) potential uses of lands that are currently designated as MRM – Inactive and/or Future Recreation.

The associated measures described for each action are preliminary in nature and intended only to suggest possible courses of action. In the event that any of the recommended future uses described are formally proposed for implementation, site specific review and studies in compliance with Corps’ regulations and guidelines would be required, including but not limited to, feasibility studies, market studies, and NEPA documentation. Although Corps’ guidance recommends Master Plans be updated as regularly as every 5 years, this is often not possible.

## **2.2 No Action Alternative**

Under the No Action Alternative, the proposed updated Master Plan would not be approved. The 1996 Master Plan would continue to provide the management document for the Basin. The

current Master Plan is based on outdated information regarding current recreation demand and us, current qualities and characteristics of the Basin, and national objectives and other state and regional goals and programs.

Land use classifications do not reflect current uses and no longer recognized as a land use classification by the Corps. The land use and resource suitability and analysis in the updated Master Plan proposes the reclassification of several acres of land in order to reflect actual uses and to improve environmental, social, and economic sustainability in the Basin. If the updated Master Plan is not approved, outdated land use classifications that do not reflect current use would remain in effect. In particular, lands classified as Environmentally Sensitive would not benefit from added protection and sustainable management.

Without the approval of the updated Master Plan, the Corps Master Plan goal of “providing the best possible combination of responses to regional needs, resource capabilities and suitability, and expressed public interest and desires consistent with authorized project purposes” cannot be achieved. The No Action Alternative would not meet the purpose and need of the project, but is carried forward in this DEA for comparison purposes.

### **2.3 Alternatives Eliminated From Consideration**

Of the primary components of a Master Plan (Recommended Land Use Classifications and Recommended Future Actions), only the recommended land use classifications could be divided into multiple alternatives for analysis. The potential alternatives for land use classifications are constrained by: 1) existing development and use, 2) Corps guidance requirements, and 3) meeting the expressed desires of Basin stakeholders and facility operators.

Existing development and uses identify current land uses within the Basin, and categorize land use classifications based on use and guidance (EP 1130-2-550). If an area is currently developed for athletic fields, that land must be identified as Recreation.

Under the Proposed Action, lands not currently under a specific use are designated as MRM – Inactive and/or Future Recreation and include agricultural areas which are considered an interim use. These lands could also be fallow, an overused recreation facility closed for refurbishing, or slated for future development. Lands classified as MRM – Inactive and/or Future Recreation under the updated Master Plan would remain open for development (or reclassification) in the future.

Analysis indicated where lands were overused, where adjacent uses were incompatible, or areas in need of protection were identified, existing land use classifications did not adequately represent current conditions or needs.



## **3** BASELINE CONDITIONS

### **3.1 Physical Land Resources**

#### **3.1.1 Topography**

Whittier Narrows is named for a constriction in one of the Transverse Ranges that acts as a topographic divide between the San Gabriel Valley on the north and the coastal plain on the south (Corps 1996). The Whittier Narrows Dam was built in this natural constriction, where the San Gabriel River and Rio Hondo are forced to pass between the Puente Hills to the southeast and the Montebello Hills on the west (Map 16). The drainage area above the Basin is formed of rugged and steep mountains (60%), valleys (30%), and rolling hills (10%). Elevations in the drainage area vary from 184 feet<sup>2</sup> on the Rio Hondo side of Whittier Narrows Dam to 10,064 feet at San Antonio Peak on the northeast boundary, and from about 400 to 1,400 feet along the hills on the southern boundary (Corps 1957). The highest point within the Basin is approximately 245 feet where the Rio Hondo enters the Basin and the lowest point is at the foot of the Dam at approximately 190 feet (Map 16).

#### **3.1.2 Geology**

The Whittier Narrows Dam Basin is located on the wide alluvial cone of the San Gabriel River floodplain. These soils are associated with erosion from the nearby San Gabriel Mountains. Younger Alluvium (Q) is the geologic unit underlying the area (Map 17), which is a massive, unconsolidated, poorly to well-graded deposit consisting of sand, gravel, and cobbles (Corps 1957). The 1974 and 1996 Master Plans report that the Basin lies atop a syncline; where layers of rock have deposited and then folded downward. Above the syncline is an estimated 800 feet deep deposit of alluvial material.

#### **3.1.3 Soils**

Soils of the drainage area are alluvial and primarily residual, derived from metamorphic and igneous rocks. The mountain soil is coarse, porous, rocky, and generally shallow, with large areas of bare rock outcrop. The hill soils are shallow, but generally less pervious than mountain soil. The valley soils, classified as recent alluvium and older alluvium, vary from coarse sand and gravel in the stream channels and at the canyon mouths to silty clay and clay loam in the lower (southern) part of the valley, and clay on the east and west sides.

The Soil Survey Geographic STATSGO database is prepared by the Natural Resources Conservation Service (NRCS 2006). NRCS STATSGO Hydrologic Groups are classified as A, B, C, and D based on soil infiltration rates. The deep alluvial soils in the vicinity of the Basin have a moderate infiltration rate and are categorized as Hydrologic Group B (Map 18).

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<sup>2</sup> Elevations are based on National Geodetic Vertical Datum (NGVD) unless otherwise specified.

### 3.1.4 Sediment

No allowance was made in the Whittier Narrows Dam and Basin original water storage design for sediment deposition. The rate of sediment inflow and deposition was expected to be small because debris flows from the mountain and foothill areas are largely controlled by the Santa Fe Dam and numerous other upstream flood management and debris basins. Only 178 square miles of low sediment-producing valley area contributes sediment to Whittier Narrows Dam Basin (Corps 1957). Based on the topographic survey of the Basin in August 1995, the flood storage capacity at elevation 229 feet (top of spillway gates in the closed position) was 34,596 acre-feet versus the original storage capacity of 36,160 acre-feet. The relatively small loss of storage space (1,564 acre-feet) over a period of 38 years confirms the original design assumption of a low sedimentation rate. Despite this slow accumulation, over time it may become necessary to remove sediment to maintain flood water storage capacity.

### 3.1.5 Seismicity

The Alquist-Priolo Earthquake Fault Zoning Act (Section 7.5, Division 2 of the California Public Resources Code) was passed in 1972 in order to identify hazard areas along active faults (fault zones) that should be avoided when planning areas of human occupancy. This California state law was chiefly influenced by the devastating impacts of the 1971 San Fernando Earthquake (CADC 2010).

The Whittier Narrows Dam Basin lies within the East Montebello fault zone. Several additional active Quaternary faults, defined by the USGS as faults less than 1.6 million years old (USGS 2010) are also present in the immediate area, including the following (Treiman *et al.* 1998):

- East Montebello Fault – Runs immediately through the Whittier Narrows Dam Basin and is less than 15,000 years old.
- Whittier Fault (Elsinore Fault Zone) – 1 mile southeast of the Whittier Narrows Dam Basin, 22.5 miles in length, strike slip fault with a slip rate of 1-5 mm per year.
- Raymond Fault – Approximately 5 miles north of the Whittier Narrows Dam, 16 miles in length, left lateral (only minor reverse slip) with a 0.1 to 0.22 mm slip rate per year.

The most recent surface rupture activity for Whittier and Raymond Faults is estimated to be in the Late Quaternary period, most likely less than 130,000 years ago. Interval between major ruptures is less than 15,000 years for the Whittier Fault and approximately 4,500 years for the Raymond Fault. The probable magnitude of previous ruptures is estimated between 6.0 to 7.0 magnitude on the Richter Scale ( $M_L$ ) and 6.0 to 7.2  $M_L$  for the Whittier and Raymond Faults, respectively (SCEDC 2010).

The Whittier Narrows Dam Basin lies within the state of California's designated Seismic Zone; these are areas that, based on historic occurrences of liquefaction, or local geological, geotechnical, and groundwater conditions, have the potential for permanent ground displacements (CDCDMG 1999).

## **3.2 Water Resources**

### **3.2.1 Los Angeles River and San Gabriel River Watersheds**

The Whittier Narrows Dam Basin receives flow from the San Gabriel River and Rio Hondo, which have their headwaters in separate watersheds (Map 5). The San Gabriel River forms in the precipitous canyons of the upper San Gabriel Mountains, flows across the San Gabriel Valley, into the Whittier Narrows Dam Basin, passes through the Dam, and empties into the Pacific Ocean. The Rio Hondo headwaters are in the Los Angeles River watershed to the west of the San Gabriel River watershed. The Rio Hondo flows into Whittier Narrows Dam Basin, through the Dam outlet works, and joins with the Los Angeles River at a point approximately 1.5 miles north of Interstate 105. The drainage area of the combined watersheds covers a total of 554 square miles.

Though these two rivers have separate watersheds, they are both forced to pass through the Whittier Narrows constriction. Historically, during large flood events, the two rivers passing through Whittier Narrows would rise and join together. As a result, waters from the San Gabriel River periodically enter the Rio Hondo channel and drain through the Los Angeles River. During low flow conditions the rivers remain separate and drain to the Pacific Ocean through their respective water courses. The longest watercourse above Whittier Narrows Dam Basin is 39.5 miles. The average gradient of the San Gabriel River in the mountains is 260 feet per mile. The average gradients of San Gabriel River and the Rio Hondo in the valley are 41 and 27 feet per mile, respectively. All principal channels of the river system below the mountain front have been channelized for flood risk management.

### **3.2.2 Hydrology**

The mean seasonal precipitation in the drainage area ranges from 16 inches at the Dam to more than 45 inches at the higher elevations of the watershed. Most of the precipitation falls during the months of November to April. Rainless periods of several months during the summer are common. Snow falls frequently during the winter at elevations above 5,000 feet but melts rapidly except on the protected northern slopes and on the higher peaks. Snow rarely falls in the valley at lower elevations and snowmelt contributes a negligible amount to surface runoff.

Most precipitation in the drainage area is associated with general winter storms that result from extra-tropical cyclones of north Pacific origin during the months of November through April. Thunderstorms, which may result in intense precipitation over small areas during short periods, occasionally occur either in association with general winter storms or independently, and summer thunderstorms are infrequent (Corps 1957). The largest floods have resulted from general winter storms, although isolated thunderstorms have resulted in localized flooding.

Most streams in the drainage area are intermittent. During normal dry weather the discharge of many streams is increased by regulated outflow from dams in the mountains (Corps 1957). During periods of heavy rainfall, the physiographic features of the region serve to intensify runoff rates. High rainfall intensities, combined with effect of shallow surface soils underlain by impervious bedrock, fan-shaped collecting systems, periodic fire which reduces vegetative cover, and steepness of gradients, produce floods heavily laden with debris and sediment.

Vegetation type, density, and condition influence the rate of surface water runoff and sediment production within the watershed. Higher in the watershed, vegetation is native and largely undisturbed, and functions as expected in terms of intercepting rainfall and slowing the rates of surface water runoff and erosion. Along the summits and in the higher ravines of the mountains there is a fairly well-developed growth of ponderosa pine, incense cedar, juniper, and oak. At lower elevations, disturbances are more common. Cottonwoods, box elders, sycamores, oaks, willows, and alders are native to riparian habitats, but have been degraded, cleared, and invaded with non-native species, resulting in less natural erosion and runoff rates. In general, the remainder of the watershed is covered with brush and grasses, varying in density from scattered grasses and bushes to nearly impenetrable thickets. These consist of California lilac, scrub oak, mountain mahogany, sumac, laurel, sage, and manzanita. On much of the hills and nearly all valley land, the natural vegetation has been replaced by urban and suburban development. As a result, much of the San Gabriel and Los Angeles River watersheds have a high percentage of impervious cover that eliminates rainfall infiltration and storm-runoff percolation (Corps 1957).

Wildfire also affects runoff and erosion throughout the watershed. Dense chaparral growth, low continuous grass cover, and long dry summers render the region extremely susceptible to fires, which are difficult to control and can result in a significant loss of vegetation.

Runoff from the drainage area is characterized by unusually high flood peaks of short duration. Flood hydrographs are typically of less than 24 hours duration and are usually less than 48 hours duration, with inflow rates dropping rapidly between storms. Based on the USGS streamgage record for Rio Hondo below Whittier Narrows Dam Basin, California (#11102300), the long-term average outflow into the Rio Hondo from Whittier Narrows Dam for the period 1967 through 2008 is 122,600 acre-feet per year, or 169.7 cubic feet per second (cfs). The mean annual outflow varied from a high of 638.1 cfs in water year 1969 to the lowest runoff of 40.9 cfs in water year 1972. Although there is a significant amount of water released into the San Gabriel River from Whittier Narrows Dam, most of the water released from the Dam is through the outlet works on the Rio Hondo. Channel flow below the Dam is characterized by water releases of relatively long duration with occasional sharp peaks from the tributary urban areas downstream.

### **3.2.3 Dam Operation**

Water passing through Whittier Narrows Dam can be released into both the earth-bottom San Gabriel River channel and the Rio Hondo concrete channel. Releases from the Dam outlet works to the Rio Hondo are limited to a maximum of 41,000 cfs. The gated spillway on the San Gabriel River side of the Dam embankment is capable of releases up to 308,000 cfs with a Basin pool elevation at top of Dam (239 feet). Dam and Basin pertinent data are provided in Table 3.1 (Corps 2010a).

The basic flood risk management operation described in the Reservoir Regulation Manual (Corps 1957) uses the Basin storage space (33,465 acre-feet at elevation 228.5 feet) in conjunction with a maximum Rio Hondo outlet release of 41,000 cfs, and a spillway release into the San Gabriel River of about 5,000 cfs, to control flood inflow events to the safe flow carrying capacity of the

downstream Rio Hondo and San Gabriel River channels, respectively. The safe flow carrying capacity of the downstream channels vary throughout flood events depending on rainfall and flood runoff downstream of the Dam that use up a portion of the channel conveyance capacities, as well as the physical condition of the channel. Flood releases from Whittier Narrows Dam may be reduced as necessary so as not to exceed the flow conveyance capacity of the downstream flood risk management channels. An extensive system of Corps and LACDPW telemetered rain gages and stream gages monitor precipitation and stream flow throughout the watershed on a continuous basis to aid in Dam operation decision-making.

The current operations plan has no provision for the temporary or permanent storage of flood waters for recreation purposes. However, when not used for storing floodwaters, lands behind Whittier Narrows Dam are utilized for other purposes such as recreation and transportation corridors. Recreation uses within the Basin include picnic areas, sports fields/courts, recreation lakes, concession stands, wildlife nature areas, golf course, equestrian area, and hiking and biking trails. During flood risk management operations these areas and amenities can be inundated (Corps 1998).

### **3.2.4 Floodplain Management**

Executive Order 11988, Flood Plain Management, requires Federal agencies to recognize the significant values of floodplains and to consider the public benefits that would be realized from restoring and preserving floodplains. The objective is the avoidance, to the extent possible, of long-and short-term adverse impacts associated with the occupancy and modification of the base (100-year) floodplain and the avoidance of direct and indirect support of development in the base floodplain wherever there is a practicable alternative.

There is no human habitation permitted within the Basin, and existing structures and improvements are either floodable, flood-proofed, or above the base flood (100-year) water surface elevation.

### **3.2.5 Dam Safety**

During storm and flood events, inflow to the Basin can create hazardous conditions related to flowing water, erosion of soil from stream banks, inundation of Basin lands, and potential for Dam failure. Corps review of Whittier Narrows Dam has identified a deficiency of the Dam in controlling the largest potential flood and has given the Dam a high risk level.

In 1978, the Corps reviewed the hydrologic and hydraulic design aspects of Whittier Narrows Dam using the latest hydrologic criteria available at that time. The hydrologic and hydraulic evaluation of the safety and functional adequacy of the Dam found a deficiency in the capacity of the spillway (Corps 1978). If a Probable Maximum Flood (PMF), theoretically the largest flood possible on the watershed, were to occur, the maximum Basin pool (surface water) elevation would be 0.1 feet below the top of the Dam. In order to provide an adequate margin of safety from overtopping of the Dam during the PMF, according to Corps engineering guidance, the Dam would have to be raised 5.9 feet, or the spillway crest lengthened from the existing 450 feet to 650 feet and the number of spillway gates increased from 9 to 13. The design flood (Standard Project Flood) can be safely controlled by the existing Dam configuration.

The Corps has recently performed a risk-based safety evaluation of Los Angeles District dams in accordance with Corps Engineering Circular 1165-2-210 (Water Supply Storage and Risk Reduction Measures for Dam Safety). Corps dams are classified into Dam Safety Action Classes (DSAC) 1 through 5, based on individual dam safety risk (DSAC 1 being the highest risk level). DSAC classifications consider event probability, probability of failure, and consequences, given the physical properties of the Dam. Whittier Narrows Dam was rated DSAC 2 using this classification system (Chitwood 2010).

The Corps has prepared a formal plan to address the actions to be taken during emergency situations at the Basin resulting from an earthquake, large flood, or security alert. The Emergency Action and Notification Subplan for Whittier Narrows Dam Basin prescribes notifications necessary for 1) prompt evacuation of downstream residents; 2) ensuring safety; 3) vacating the Basin where emergency operations may be conducted; and 4) coordination with Federal agencies and non-Federal units of government (Corps 2008). The primary focus of the Emergency Action and Notification Subplan is to provide information describing the downstream areas likely to be inundated from a Dam failure and to facilitate communications among agencies with public safety responsibilities.

### **3.2.6 Surface Water Quality**

Water quality throughout the state of California is protected by the State Water Resources Control Board's (SWRCB) water quality objectives. Water quality objectives are designated to protect Beneficial Uses, which determine the degree of water quality protection needed to support current and future human and wildlife utilization. The Los Angeles Regional Water Quality Control Board (LARWQCB) Region 4 has designated Beneficial Uses for streams in the Basin and vicinity (LARWQCB 1995).

- Municipal (MUN) – Water used for military, municipal, individual water systems, and may include drinking water.
- Industrial Process Supply (PROC) – Uses of water for industrial activities that depend primarily on water quality.
- Industrial Service Supply (IND) – Water supply for industrial uses that do not depend on water quality.
- Agricultural (AG) – Uses of water for farming, horticulture, or ranching including, but not limited to, irrigation, stock watering, or support of vegetation for range grazing.
- Hydro Power Generation (POW) – Water used for hydropower electricity generation.
- Ground Water Recharge (GWR) – Natural or artificial Ground Water Recharge for future extraction, to balance natural hydrologic processes, and to maintain navigable channels.
- Recreation Contact 1 (REC1) – Recreation Contact 1 is protective of activities where body with water contact or possible ingestion may occur. Examples of these activities include wading, swimming, diving, surfing, white water rafting, etc.
- Recreation Contact 2 (REC2) – Recreation Contact 2 is protective of activities near water, but not occurring in water. Examples of these activities include picnicking, sunbathing, hiking, beach-combing, camping, boating, tide pool exploration, etc.

- Warmwater Habitat (WARM) – Water used for the support of warm water ecosystems for the preservation and maintenance of aquatic habitat and wildlife species (flora and fauna).
- Coldwater Habitat (COLD) – Uses of water that support cold water ecosystems for the preservation and maintenance of aquatic habitat and wildlife species (flora and fauna).
- Wildlife Habitat (WILD) – Waters that support wildlife habitats that may include, but are not limited to, the preservation and enhancement of vegetation and prey species used by waterfowl and other wildlife.
- Rare, Threatened or Endangered Species (RARE) – Habitat types that are necessary for the survival and livelihood of plant and animal species listed by the state/Federally as rare, threatened, or endangered.
- Wetlands (WET) – Water used for the support of wetland ecosystems and habitat for the preservation of species of flora and fauna. WET beneficial uses also include flood and erosion control, natural treatment of impaired water quality, and stream bank restoration.

### Surface Water Quality Impairments

Regular water quality monitoring within the Basin is conducted by the County and continuous sampling here has revealed the presence of several pollutants. Baseline water quality monitoring assessments conducted by watershed stakeholders and the state have characterized Legg Lake as the only water body within the Whittier Narrows Dam Basin boundaries that is not in compliance with state water quality objectives established to protect designated Beneficial Uses. Under the CWA, water quality issues must be reported on the 303(d) list of water quality impairments (CEPA 2006a). Legg Lake has been listed as impaired on the CWA 303(d) list for the following impairments (CEPA 2006a);

- Trash – conveyed into water bodies via urban run-off from dumping and improper land use management activities. Trash contributes to the degradation of habitat, flora and fauna, and coastal resources downstream.
- Ammonia – primarily conveyed to water bodies via municipal dischargers, and agricultural and residential application of fertilizers. Ammonia does not bio-accumulate in aquatic species, but has been shown to impair aquatic organisms ability to reproduce and develop (especially in fish species).
- Copper – A majority of copper is introduced to streams and water bodies from copper deposition on highways and roads originating from vehicle brake pads. Copper residue transferred to roadway surfaces from vehicle brakes is washed into streams, creeks, and rivers via rainfall. Copper may damage the gills, liver, and kidneys of aquatic organisms. It can also interfere with aquatic organisms' sense of smell, which is necessary for reproduction and migration.
- Lead – A majority of lead is introduced to streams and water bodies from non-point sources including lead fishing weights, air pollution, batteries, lead shot from target ranges, and mine tailings. Primary health effects from lead poisoning in fish include anemia, depressed blood enzyme levels, growth inhibition in young, and kidney and liver damage (Eisler 1998).
- Potential Hydrogen (pH) – a measure of acidity in a water body. A healthy range for aquatic organisms is between 6 and 8 pH. Acidic conditions in water bodies (pH less than

6) can interfere with aquatic organisms' ability to reproduce, and in extreme conditions can cause death. High pH levels (above 8) result in alkaline conditions, which can cause death and damage the surfaces of fish gills, eyes, and skin.

- Odors – primarily caused by decaying bio-matter and can cause unpleasant, or unbearable odors that impact beneficial uses within a water body.

The CWA also requires that jurisdictions responsible for CWA 303(d) listed waters develop a Total Maximum Daily Load (TMDL) plan for each impairment. A TMDL quantifies the amount of the impairment that a water body can receive and still safely meet established water quality objectives and ensure protection of Beneficial Uses. In February 2008, a trash TMDL was developed for Legg Lake (CEPA 2006b). Additional TMDL plans have not been developed for ammonia, copper, lead, and pH impairments.

### **3.2.7 Groundwater**

The Whittier Narrows Dam Basin is located on top of the San Gabriel Valley Groundwater Basin (SGVGB) in eastern Los Angeles County, which includes a portion of the upper Santa Ana Valley. The groundwater basin is confined and bounded in the north by the Raymond Fault and the San Gabriel Mountain consolidated basement rocks. To the south and the west the groundwater basin is bounded by consolidated rocks of the Repetto, Merced, and Puente Hills. The Chino and the San Jose fault form the eastern boundary of the groundwater basin (California Department of Water Resources (CDWR) 1966).

The SGVGB is 170 square miles and underlies the San Gabriel River floodplain. There are two sub-basins in the SGVGB; the lower San Gabriel Canyon Basin (northernmost) and the San Gabriel Basin (southernmost). In addition to natural infiltration of rainfall and runoff, the SGVGB is recharged with fresh water by the Metropolitan Water District of Southern California connection to Morris Dam and Santa Fe Dam. Groundwater quality is under the jurisdiction of the LARWQCB Region 4. The LARWQCB has designated Beneficial Uses for the San Gabriel Valley Groundwater Basin including (LARWQCB 1995):

- Municipal (MUN) – Water used for military, municipal, individual water systems, and may include drinking water.
- Industrial Service Supply (IND) – Water supply for industrial uses that do not depend on water quality.
- Industrial Process Supply (PROC) – Uses of water for industrial activities that depend primarily on water quality.
- Agricultural (AGR) – Uses of water for farming, horticulture, or ranching including, but not limited to, irrigation, stock watering, or support of vegetation for range grazing.

### **Groundwater Quality**

Monitoring efforts in the SGVGB Basin including responsible agencies, parameters, number of wells, and the frequency of measurements are illustrated in Table 3.4 (CDWR 2003). Water quality assessment for the LARWQCB Region 4 classifies 70 square miles of the SGVGB as "Impaired" and 100 square miles as "Unknown." The quality of water used to recharge the Basin



is classified as "Good," and the water quality of the upper 42 miles of the San Gabriel River is classified as "Intermediate" (LARWQCB 1995). The water quality assessment for the Santa Ana RWQCB Region 8 classifies water quality of the Seal Beach area, where the San Gabriel River ultimately drains, as "Good" (Corps 1996).

Currently, the VOCs and SVOCs constituent group is not listed as a 303 (d) impairment for the Whittier Narrows Dam Basin, nor for adjoining drainages (CEPA 2006a).

### **3.2.8 Wetlands**

Wetlands compiled by the National Wetland Inventory (NWI 2010) for Whittier Narrows cover a sizeable area of the Basin and are primarily located along the Rio Hondo and San Gabriel River. However, due to hydrologic, topographic, and vegetation alterations in the Basin, it is likely that these wetlands have changed significantly in size, location, and function since the aerial photography used for the inventory was captured.

Protection of any existing wetlands is important for ecological function within the Basin. Thorough and comprehensive wetland delineation would be required prior to alteration or development of lands within the Basin that may contain jurisdictional wetlands.

## **3.3 Air Quality**

### **3.3.1 Regional Climate**

Whittier Narrows Basin lies within the boundaries of the South Coast Air Basin (SCAB), which is managed by the South Coast Air Quality Management District (SCAQMD). The SCAB, which covers an area of approximately 6,745 square miles, is bounded by the Pacific Ocean to the west and the San Gabriel, San Bernardino, and San Jacinto Mountains to the north and east, and encompasses all of Orange County, Riverside County, Los Angeles County except for Antelope Valley, and the non-desert portion of San Bernardino County.

#### **Regional Climate Factors**

The SCAB is primarily a coastal plain with interconnected valleys and low hills progressing into high mountain ranges on the perimeter. The region is located within a semi-permanent high-pressure system that lies off the coast. As a result, the weather is mild, tempered by a daytime sea breeze and a nighttime land breeze. This mild climate is infrequently interrupted by periods of extremely hot weather, winter storms, and Santa Ana winds. Rainfall in the SCAB mainly occurs from November through April, with rainfall totals usually within a range of 15 to 18 inches.

The SCAB has a low average wind speed of 4 miles per hour, and as a result, air contaminants in the SCAB do not readily disperse. On spring and summer days, most pollution is moved out of the SCAB through mountain passes or is lifted by the warm vertical currents produced by the heating of the mountain slopes. From late summer through the winter months, lower wind speeds and the earlier appearance of offshore breezes combine to trap pollution in the SCAB. Strong,

dry, north or northeasterly winds, known as Santa Ana winds, occur during the fall and winter months, dispersing air contaminants. These conditions tend to last for several days at a time.

In summer, the longer daylight hours and bright sunshine combine to cause a reaction between hydrocarbons and oxides of nitrogen to form ozone. In winter, the greatest pollution problems are carbon monoxide and nitrogen oxides, which are trapped and concentrated by the inversion layer.

Periodically, the SCAB experiences an intermittent weather condition known as El Niño-Southern Oscillation (ENSO) and its counterpart La Niña. During El Niño years, the SCAB experiences warmer air and ocean temperatures, and higher than normal precipitation. ENSO occurs in the tropical Pacific Ocean on an average of every 5 years, but varies from 3 to 7 years. The driving factor in ENSO conditions is warmer-than-normal ocean surface temperatures in the tropical Pacific, which causes the reversal, or in milder years the slowing or stopping of circulation patterns between Asia and the Americas. This change in circulation patterns shifts the “normal” pattern of rising warm wet air and rainfall from Southeast Asia to South and North America. La Niña is the counterpart to El Niño and usually has an opposite effect on weather patterns; wetter than normal conditions across the Pacific Northwest and dryer and warmer than normal conditions across much of the southern tier. La Niña brings dry weather to the SCAB and the southwest and southeastern states, usually prevailing strongest from November to January (CDFG 2010a).

### **3.3.2 Air Quality Standards**

Regulation of air pollution is achieved through both national and state ambient air quality standards and emission limits for individual sources of air pollutants. As required by the Federal Clean Air Act, the EPA has identified criteria pollutants and has established national ambient air quality standards (NAAQS) to protect public health and welfare. The NAAQS are defined as the maximum acceptable concentration that may be reached, but not exceeded more than once per year. The EPA has established the NAAQS for ozone (O<sub>3</sub>), carbon monoxide (CO), nitrogen dioxide (NO<sub>2</sub>), sulfur dioxide (SO<sub>2</sub>), particulate matter (PM<sub>10</sub>, PM<sub>2.5</sub>), and lead. These pollutants are called “criteria” pollutants because standards have been established for each of them to meet specific public health and welfare criteria.

The California Ambient Air Quality Standards (CAAQS) are more restrictive than the national standards in some cases. Table 3.6 presents the national and state ambient air quality standards and provides a brief description of the related health effects and principal sources for each pollutant.

**Table 3.1 Ambient Air Quality Standards for Criteria Pollutants**

<b>Pollutant</b>	<b>Averaging Time</b>	<b>State Standard</b>	<b>National Standard</b>	<b>Health Effects, Pollutant Characteristics and Major Sources</b>
Ozone (O <sub>3</sub> )	1 Hour	0.090 ppm	NA	Short term exposures to high concentrations can irritate eyes and lungs. Long-term exposure may cause permanent damage to lung tissue. Ozone is a secondary pollutant that is formed in the atmosphere through reactions between reactive organic gases (ROGs) and nitrogen oxides (NO <sub>x</sub> ) in the presence of sunlight. Major sources of ROGs and NO <sub>x</sub> include combustion processes (including motor vehicle engines) and evaporative solvents, paints and fuels.
	8 Hour	0.070 ppm	0.075 ppm	
Carbon Monoxide (CO)	1 Hour	20 ppm	35 ppm	Classified as a chemical asphyxiant, CO interferes with the transfer of fresh oxygen to the blood and deprives sensitive tissues of oxygen. Exposure to high CO concentrations can cause headaches, dizziness, fatigue, unconsciousness, and even death. CO is an odorless, colorless gas that is formed by incomplete combustion of fuels. The primary source of CO is the internal combustion engine, primarily gasoline-powered motor vehicles.
	8 Hour	9.0 ppm	9 ppm	
Nitrogen Dioxide (NO <sub>2</sub> )	1 Hour	0.18 ppm	NA	Irritating to eyes and respiratory tract. NO <sub>2</sub> is a reddish brown gas that is a by-product of combustion. Motor vehicles and industrial operations are the main sources of NO <sub>2</sub> .
	Annual	0.030 ppm	0.053 ppm	
Sulfur Dioxide (SO <sub>2</sub> )	1 Hour	0.25 ppm	NA	Irritates upper respiratory tract; injurious to lung tissue. Can yellow the leaves of plants, destructive to marble, iron, and steel. Limits visibility and reduces sunlight. SO <sub>2</sub> is a colorless acid gas with a strong odor. Fuel combustion, chemical plants, sulfur recovery plants, and metal processing are the main sources of this pollutant.
	3 Hour	NA	0.5 ppm	
	24 Hour	0.04 ppm	0.14 ppm	
	Annual	NA	0.03 ppm	
Respirable Particulate Matter (PM <sub>10</sub> )	24 Hour	50 µg/m <sup>3</sup>	150 µg/m <sup>3</sup>	May irritate eyes and respiratory tract, decreases in lung capacity, cancer and increased mortality. Produces haze and limits visibility. Solid or liquid particles in the atmosphere. Sources include dust and fume-producing industrial and agricultural operations, combustion, atmospheric photochemical reactions, and natural activities (e.g., wind-raised dust and ocean sprays).
	Annual	20 µg/m <sup>3</sup>	50 µg/m <sup>3</sup>	

Fine Particulate Matter (PM2.5)	24 Hour	NA	35 µg/m <sup>3</sup>	Increases respiratory disease, lung damage, cancer, and premature death. Reduces visibility and results in surface soiling. Solid or liquid particles in the atmosphere. Major sources include fuel combustion in motor vehicles, equipment, and industrial sources; residential and agricultural burning. PM2.5 may also be formed from photochemical reactions of other pollutants, including NO <sub>x</sub> , SO <sub>2</sub> , and organics.
	Annual	12 µg/m <sup>3</sup>	15.0 µg/m <sup>3</sup>	
Lead (Pb)	Monthly	1.5 µg/m <sup>3</sup>	– 1.5	Disturbs the nervous system, kidney function, immune system, reproductive and developmental systems, and the cardio vascular system. Present source: lead smelters, battery manufacturing and recycling facilities. Past source: combustion of leaded gasoline.
	Quarterly	NA	µg/m <sup>3</sup>	
Source: CARB 2010; EPA 2010c.				

### 3.3.3 Local Air Quality

The California Air Resources Board (CARB) coordinates and oversees state and Federal air pollution control programs in California, including local air quality management agencies, and maintains air quality monitoring stations throughout the state in conjunction with the EPA and local air districts. The air quality monitoring station closest to the Basin is in the Western San Fernando Valley, station number (state ID) #70074. This station monitors most of the criteria pollutants except for suspended particulate matter (PM10). The ambient air quality data from this station for 2006, 2007, and 2008 is shown in Table 3.2. It should be noted that a full year of data was not collected in 2006 and may not be representative for Ozone (O<sub>3</sub>), carbon monoxide (CO), and nitrogen dioxide (NO<sub>2</sub>) concentrations.

Pollutant	Averaging Time	Maximum Concentration by Year			Number of Days Standard Exceeded		
		2006	2007	2008	2006	2007	2008
Ozone	1-hour (ppm)	.13	.135	.107	9s	6s	7s
	8-hour (ppm)	.095	.100	.093	5s	9s	13s
Carbon Monoxide	1-hour (ppm)	3	5	3	-	-	-
	8-hour (ppm)	2.7	2.9	2.1	-	-	-
Nitrogen	1-hour (ppm)	.10	.11	.11	-	-	-

Dioxide	24-hour (ppm)	.06	-	-	-	-	-
PM 2.5	24-hour (µg/m)	72.2	63.6	47.3	7 F	5 F	4F
Sulfate	24-hour (µg/m)	28.6	25.4	14.4	-	-	-
Lead	MMA (µg/m)	.03 <sup>1</sup>	.05 <sup>1</sup>	.02 <sup>1</sup>	-	-	-
Source: AQMD 2006; 2007; 2008. S: State Standards exceeded, F: Federal Standards exceeded, <sup>1</sup> Recorded following fireworks display.							

The existing levels of criteria pollutants in the Basin vicinity summarized in Table 3.3 show regular exceedance of state standards for O<sub>3</sub> for the 2007 and 2008 sampling years. Particulate Matter 2.5 (PM 2.5) had a high number of Federal exceedences in the 2008 sampling year and one in both 2006 and 2007.

Data collected at monitoring stations are used by the CARB to classify air basins as “attainment” or “nonattainment” with respect to each pollutant and to monitor progress in attaining air quality standards. Table 3.4 identifies the attainment status for the criteria pollutants in the SCAB.

<b>Table 3.2 Attainment Status of Criteria Pollutants</b>		
<b>Pollutant</b>	<b>State</b>	<b>Federal</b>
Ozone	Nonattainment	Severe 17 Nonattainment
PM <sub>2.5</sub>	Nonattainment	Nonattainment
PM <sub>10</sub>	Nonattainment	Serious Nonattainment
Carbon Monoxide	Attainment	Unclassified/Attainment
Nitrogen Dioxide	Attainment	Unclassified/Attainment
Sulfur Dioxide	Attainment	Attainment
Sulfates	Attainment	Not Available
Lead	Attainment	Attainment
Source: CARB 2006, EPA 2010d.		

### 3.3.4 Greenhouse Gas Emissions

Greenhouse gases are compounds in the atmosphere that absorb infrared radiation and re-radiate a portion of that back toward the earth’s surface, thus trapping heat and warming the earth’s atmosphere. The most important naturally occurring greenhouse gas (GHG) compounds are carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), nitrous oxide (N<sub>2</sub>O), ozone, and water vapor. CO<sub>2</sub>, CH<sub>4</sub>, and N<sub>2</sub>O are produced naturally by respiration and other physiological processes of plants, animals, and microorganisms; by decomposition of organic matter; by volcanic and geothermal activity; by naturally occurring wildfires; and by natural chemical reactions in soil and water.

Ozone is not released directly by natural sources, but forms during complex chemical reactions in the atmosphere among organic compounds and nitrogen oxides in the presence of ultraviolet radiation. While water vapor is a strong greenhouse gas, its concentration in the atmosphere is primarily a result of, not a cause of, changes in surface and lower atmospheric temperature conditions.

Although naturally present in the atmosphere, concentrations of CO<sub>2</sub>, CH<sub>4</sub>, and N<sub>2</sub>O also are affected by emissions from industrial processes, transportation technology, urban development, agricultural practices, and other human activity. The Intergovernmental Panel on Climate Change (IPCC) estimates the following changes in global atmospheric concentrations of the most important greenhouse gases (IPCC 2001, 2007):

- Atmospheric concentrations of CO<sub>2</sub> have risen from a pre-industrial background of 280 ppm by volume (ppm) to 379 ppm in 2005.
- Atmospheric concentrations of CH<sub>4</sub> have risen from a pre-industrial background of about 0.70 ppm to 1.774 ppm in 2005.
- Atmospheric concentrations of N<sub>2</sub>O have risen from a pre-industrial background of 0.270 ppm to 0.319 ppm in 2005.

The IPCC has concluded that these changes in atmospheric composition are almost entirely the result of human activity, not the result of changes in natural processes that produce or remove these gases (IPCC 2007).

CO<sub>2</sub>, CH<sub>4</sub>, and N<sub>2</sub>O have atmospheric residence times ranging from about a decade to more than a century. Several other important GHG compounds with long atmospheric residence times are produced almost entirely by various industrial processes; these include sulfur hexafluoride (SF<sub>6</sub>) and a wide range of fluorinated hydrocarbons (HFCs). Fluorinated compounds typically have atmospheric residence times ranging from a few decades to thousands of years.

The overall global warming potential of GHG emissions is typically presented in terms of carbon dioxide equivalents (CO<sub>2</sub>e), using equivalency factors developed by the IPCC. The IPCC has published sets of CO<sub>2</sub>e factors as part of its periodic climate change assessment reports issued in 1995, 2001, and 2007. The latest IPCC data assign global warming potential multipliers of 1 to CO<sub>2</sub>, 25 to CH<sub>4</sub>, and 298 to N<sub>2</sub>O (IPCC 2007). The global warming potential multiplier for SF<sub>6</sub> is 22,800; global warming potential multipliers for HFCs vary widely according to the specific compound.

### **3.3.5 Climate Change**

Climate change (CC) is a shift in the average weather patterns observed on earth, which can be measured by such variables as temperature, wind patterns, storms, and precipitation. Scientific research to date indicates that observed climate change is most likely a result of increased emission of GHGs associated with human activity (IPCC 2007). In California, the transportation sector is the largest emitter of GHGs (accounting for 40.7% of the total GHG emissions in the state in 2004), followed by electricity generation (California Energy Commission 2006). If California were a country, it would rank between the 12th and 16th largest emitters of CO<sub>2</sub> in the

world. California produced 492 million gross metric tons of CO<sub>2</sub> equivalents<sup>1</sup> in 2004 (California Energy Commission 2006).

The many effects of GHG emissions are still being researched and are not fully known, but are expected to include increased temperatures, which could reduce snowpack, which in most areas is a primary source of fresh water. Climate change is expected to exacerbate air quality problems and adversely affect human health by increasing heat stress and related deaths; increase the incidence of infectious diseases, asthma and respiratory health problems; cause sea level rise threatening urban and natural coastal areas; cause variations in natural plant communities affecting wildlife; and cause variations in crop quality and yields. CC is also expected to result in more extreme weather events and heavier precipitation events that can lead to flooding as well as more extended drought periods.

## **Water Resources**

There is evidence that the amount of precipitation that occurs on an annual basis is becoming more variable (i.e., periods of both high and low rainfall are becoming more common). A study by CDWR (2006) indicates that present day variability in annual precipitation is about 75 % greater than that of the early 20th century. Precipitation across California appears to have increased over the past century and individual water years have become more variable in terms of the amount of precipitation that occurs. Similar trends are observed for runoff. Annual runoff (i.e., runoff measured from October 1 through September 30) and peak runoff (i.e., typically measured for individual storm events) include flows derived from precipitation events, snowmelt, and river base flow. However, most of the water mass present during a peak runoff event is typically derived from concurrent precipitation and/or snowmelt.

A CDWR (2006) study compares pre and post-1955 annual average water year unimpaired runoff<sup>3</sup> for 24 watersheds across northern, central, and southern California. The study indicates an annual increase in runoff of up to 27% for 21 of the 24 watersheds, with an overall average increase of 9%. However for summer months the runoff from April to July is decreasing

## **California Wildlife**

Rising temperatures, increases in storm events, prolonged droughts, and sea level rise will likely change the makeup of entire ecosystems, increasing adaptation pressures that would shift wildlife distributions and in some cases, increase the frequency of local extinctions (Moser *et al.* 2009, Midgly *et al.* 2010). While some species adapted to arid environments may increase their ranges or densities or both, species closely tied to the dwindling natural water resources in southern California may be particularly at risk. Stream systems supporting aquatic would be degraded by loss of cold-water habitat and reduced stream flows for spawning, incubation, and rearing. Increased scouring of stream channels by surges of storm runoff could damage eggs and egg laying habitat (Battin *et al.* 2007).

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<sup>3</sup> Unimpaired runoff refers to the runoff that occurs within a river above major regulation impoundments such as major dams.

Amphibians may also be directly impacted by these changes, although secondary effects related to climate change such as increases in infectious diseases and increased input of pollutants and sediments through storm runoff may have the greatest impacts (Davidson *et al.* 2001, Carey *et al.* 2003).

Bird species that rely on remnant patches of riparian habitat in southern California may also be at risk from climate change. Shifts in timing and rate of migration (summarized by Marra *et al.* 2005), habitat loss, increased frequency of punctuated storm events (Preston *et al.* 2008), loss of prey base, and shifts in plant species regimes (Kerns *et al.* 2009) are all predicted to occur and would negatively impact local populations. In many cases, the severely degraded riparian habitat currently present in southern California has already led to some riparian bird populations to be depressed or even threatened, making them increasingly susceptible to future environmental changes brought upon by climate change.

CC, at a regional level, could contribute to more frequent and intense El Niño events, triggering a number of large-scale environmental changes. Warmer waters drive toxic algae blooms in bays and estuaries and depress offshore ocean productivity, affecting wildlife throughout the food web. The frequency of environmental catastrophes such as those caused by the 1997-98 and 2009-2010 El Niño events would be expected to increase. In inland areas, the frequency and intensity of droughts and wildfires increased, substantially altering upland vegetation. Subsequent heavy rains triggered extensive erosion in the burned areas, which removed topsoil from the upper reaches of local watersheds. Powerful storm runoff events moved high sediment loads downstream where they scoured and buried riparian vegetation and physically altered floodplains, fundamentally impacting local ecosystems.

The heavily altered natural environment of the Whittier Narrows Dam Basin and its geographic location within an arid, water-stressed biome, make it particularly susceptible to future impacts from climate change. These impacts would undoubtedly stress local wildlife populations, and in particular, further impact sensitive species already susceptible to environmental shifts and stochastic events.

### **3.4 Noise**

Noise can be defined as unwanted sound or combination of sounds that may interfere with conversation, work, rest, recreation, and sleep, or in the extreme may produce physiological or psychological damage. Sound travels from a source in the form of wave, which exerts a pressure on a receptor such as a human ear. The amount of pressure a sound wave exerts is referred to as sound level, commonly measured in decibels (dB). As a reference, a sound level of zero dB corresponds roughly to the threshold of human hearing, and a sound level in the range of 120 to 140 dB can produce human pain.

Sound has two main components to a human ear; pitch and loudness. While the pitch of a sound is generally associated with an annoyance, sound loudness can interfere with activities such as conversation, sleep, and learning, and can even have lasting physiological effects, such as hearing loss. Those who are more sensitive to noise such as children and the elderly are at higher



risk of being adversely affected by excessive noise levels. Table 3.9 lists some of the sources and effects associated with a typical range of noise levels.

<b>Table 3.3 Sources and Effects of Common Noise Levels.</b>						
<b>Noise Level</b>	<b>Effects</b>	<b>Evidence</b>	<b>Source</b>			
130	Hearing Loss	Pain Threshold	Hard Rock Band Thunder			
120		Deafening		Jet Take-Off		
110				Loud Auto Horn at 10 feet		
100		Very Loud		Noisy City Street		
90				School Cafeteria		
85				Physiological Effects	Loud	Vacuum Cleaner at 10 Feet
80						Interference with Conversation
75		Sleep Interruption	Moderately Loud	Average Office Dishwasher in Next Room		
70	Soft Radio Music			Quiet Residential Area		
65					Interior of Average Residence	Average Whisper at 6 Feet
60	Sleep Disturbance			Faint		
55			Very Faint		Human Breathing	
50						Hearing Threshold
45						
40						
35						
30						
20						
10						
5						
0						

Source: Los Angeles County 2008.

Noise can be one of the most widespread environmental pollutants affecting communities. “Community noise,” or environmental noise, in any given area varies continuously over a period of time depending on the contributing sound sources within and surrounding the area. This community noise is typically made up of a combination of relatively stable background noise, where individual contributors are not identifiable, and the periodic addition of short duration noise sources such as aircraft flyovers, motor vehicles, sirens, etc. Some land uses can be considered more sensitive to community noise levels than others, and are often referred to as sensitive receptors. These include residences, schools, hotels, hospitals, nursing homes, churches, libraries, and cemeteries. Shopping centers, commercial parks, strip malls, industrial areas, and active recreation areas can be considered less noise-sensitive receptors.

In addition, wildlife may be sensitive receptors to noise and vibrations. Animals rely on meaningful sounds for communication, navigation, avoiding danger and finding food. Noise may be defined for wildlife as “any human sound that alters the behavior of animals or interferes with their functioning” (Bowles 1995). The level of disturbance may be qualified as damage, which may harm health, reproduction, survivorship, habitat use, distribution, abundance or genetic

distribution, or disturbance which causes a detectable change in behavior. Behavioral and physiological responses of wildlife to noise have the potential to cause injury, energy loss, decrease in food intake, habitat avoidance and abandonment, and reproductive losses (National Park Service 1994).

### **3.4.1 Existing Noise Environment in Whittier Narrows Dam Basin**

Ambient levels within the Whittier Narrows Dam Basin are generally low. Major off-site noise sources in the area include traffic on the Pomona Freeway (SR-60), which bisects the Basin in an east-west direction, Rosemead Boulevard (SR-19), which bisects the Basin in a north-south direction, and the San Gabriel River Freeway (I-605).

Noise is generated from activities within the Basin itself. Under provisions of a recreation lease by the County and the City, approximately 1,200 acres (86%) of the area within the Basin has been set aside for recreation purposes (WCA 2010). The Whittier Narrows Recreation Area is comprised of low noise level uses, such as picnicking, golf courses, a nature center, equestrian area, museums, community gardens, camping, hiking, and bird watching. Some areas may generate a greater level of noise, such as the Pico River Sports Arena, sporting fields, shooting range, BMX bicycle track, radio-controlled aircraft landing strip, and remote control race car track.

Sensitive noise receptors located within 1 mile from the Basin include schools, places of worship, a hospital (City of Hope), hotels, libraries, and community parks. The Dam embankment attenuates noise from south of the Basin to a considerable degree, and buffers the residential areas to the south and southwest from noise generated on the site (Corps 1996).

### **3.4.2 Relevant Noise Regulations**

Under the authority of the Noise Control Act of 1972, the EPA established noise emission criteria and testing methods that apply to interstate rail carriers and some construction and transportation equipment such as portable air compressors and medium- and heavy-duty trucks 40 CFR Part 204. The EPA has also issued guidance levels for the protection of public health and welfare in residential land use areas.

Under the Occupational Safety and Health Act (OSHA) of 1970 (29 USC §1919 et seq.), regulations designed to protect workers against the effects of occupational noise exposure were approved. The Noise Control Act of 1972 was amended by the Quiet Communities Act of 1978, which provides guidance for the development of noise control programs through the Quiet Communities Program.

## **3.5 Biological Resources**

### **3.5.1 Plant Resources**

A reconnaissance-level vegetation survey was performed within Whittier Narrows Dam Basin on 7 January 2010. The vegetation survey was intended to capture sufficient detail to fully describe each vegetation alliance and any other dominant vegetation features present within the Basin.

However, surveys were not exhaustive and not all species within the Basin were inventoried. Vegetation features were determined in the field using tools such as current aerial photography, regionally appropriate plant identification keys, and data from other available sources. All areas of the Basin were surveyed, including all Federally owned lands and lands with flowage easements (Map 4). Common plant species were identified and listed in Appendix D1 and vegetation alliances were determined and mapped using Sawyer *et al.* (2009). Non-native habitat types, which are defined here as human-altered areas dominated by non-native vegetation features, were also identified and mapped.

Native vegetation alliances identified in the Basin included only the *Salix exigua* Shrubland Alliance, as defined by Sawyer *et al.* (2009). Several non-native habitat types are also present in the Basin and include ornamental tree/maintained lawn, disturbed riparian, agriculture, and ruderal land. Map 19 shows the distribution of each vegetation alliance and non-native habitat type found in the Basin.

Vegetation in the Whittier Narrows Dam Basin was altered from its historic condition by the construction of the Dam and associated works. Since construction, vegetation communities have been further altered by several factors, including drought (CDWR 2009), natural and human-caused erosion, planting of non-native species, and ongoing maintenance of lawn and ornamental trees (Los Angeles County 2010). At the time of surveys, California was in its third year of drought, causing many of the species to be in a drought-induced dormancy (CDWR 2009). Disturbances have allowed invasive plant species to become established, and these have become widespread. Overall, native plant communities are fragmented, degraded, frequently dominated by invasive species, and small in size. All other areas are dominated by urban landscaping and non-native plant species.

### 3.5.2 Vegetation Communities

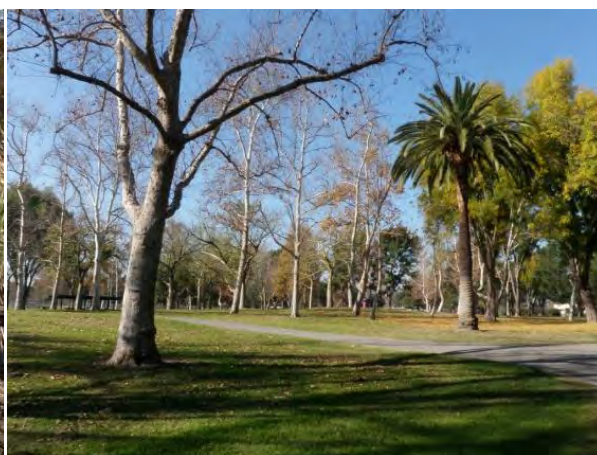
*Salix exigua* Shrubland Alliance *Salix exigua* Shrubland Alliance is composed of dense, broadleaved, winter-deciduous riparian thickets dominated by several willow species including sandbar willow (*Salix exigua*), red willow (*S. laevigata*), and arroyo willow (*S. lasiolepis*), with scattered emergent Fremont cottonwood (*Populus fremontii*) and western sycamore (*Platanus racemosa*) (Sawyer *et al.* 2009). Most stands of *Salix exigua* Shrubland Alliance are too dense to allow much understory development. Soils in this vegetation alliance are loose, sandy or fine gravelly alluvium deposited near stream channels during flood flows (Sawyer *et al.* 2009). This early seral type requires repeated flooding to prevent succession to *Populus fremontii* Forest Alliance. Other plant species common to this alliance within the Basin include mule fat (*Baccharis salicifolia*), southern California black walnut (*Juglans californica*), and non-native invasive species such as giant reed (*Arundo donax*), tobacco tree (*Nicotiana glauca*), and castor bean (*Ricinus communis*). The distribution of *Salix exigua* Shrubland Alliance in the Basin, is restricted to a remnant patch located upstream of the Dam along the Rio Hondo and San Gabriel River. The area of *Salix exigua* Shrubland Alliance found immediately upstream of the toe of the Dam hosts several non-native species, primarily giant reed, which dominates this area. This vegetation alliance comprises approximately 580.1 acres or 22.0% of the Basin (Map 19).

Ornamental Tree/ Maintained Lawn Ornamental tree/maintained lawn is found throughout the Basin in areas where there are parks, athletic fields, or golf courses, and all other landscaped

urban areas. Most of these areas are dominated by planted and maintained lawns interspersed with a mostly even distribution of ornamental trees. Dominant tree species include Canary Island pine (*Pinus canariensis*), Peruvian pepper tree (*Schinus molle*), eucalyptus (*Eucalyptus* sp.), various palms (*Washingtonia* sp.), common olive (*Olea europaea*), toyon (*Heteromeles arbutifolia*), western sycamore, sweetgum (*Liquidambar styraciflua*), and Chinese elm (*Ulmus parvifolia*). Invasive weedy species such as common ice plant (*Mesembryanthemum crystallinum*), castor bean, English ivy (*Hedera helix*), English holly (*Ilex aquifolium*), and black locust (*Robinia pseudoacacia*) are also found throughout these areas. Tree canopy is partly open and large gaps exist around open water and golf course features. Some park areas with sports fields are dominated entirely by maintained lawns. With the exception of Pico Rivera Bicentennial Park, all areas of ornamental tree/maintained lawn appear to be regularly maintained, resulting in few native plant species and little native habitat to currently exist. This non-native habitat comprises approximately 804.2 acres or 30.5% of the Basin (Map 19).



*Salix exigua* Shrubland Alliance



Ornamental Tree/Maintained Lawn

Disturbed Upland Disturbed upland includes all upland habitats located within the Basin which have been disturbed (often frequently) in the recent past, altering the native vegetation communities. Dominant species include a mix of native and introduced species such as black mustard (*Brassica nigra*), telegraph weed (*Heterotheca grandiflora*), tobacco tree, castor bean, prickly Russian thistle (*Salsola tragus*), white nightshade (*Solanum douglasii*), and giant wildrye (*Elymus condensatus*). Other species occur in lower densities and include native upland species such as Southern California black walnut, Indian fig (*Opuntia ficus-indica*), California buckwheat (*Eriogonum fasciculatum*), California sagebrush (*Artemisia californica*), white sage (*Artemisia ludoviciana*), and poison oak (*Toxicodendron diversilobum*); and introduced invasive species such as sacred thorn-apple (*Datura wrightii*), perennial pepperwood (*Lepidium latifolium*), fennel (*Foeniculum vulgare*), cocklebur, and poison hemlock (*Conium maculatum*). Disturbed upland is primarily found between Durfee Avenue and the San Gabriel River, although a small patch is also found north Pico Rivera Bicentennial Park. This non-native habitat comprises approximately 333.0 acres or 12.6% of the Basin (Map 19).

Agricultural Land Three areas of agriculture are found in the Basin: 1) near the junction of the Pomona Freeway and Santa Anita Avenue, 2) between Rosemead Boulevard and Durfee Avenue, and 3) on the north end of the Basin, east of the Rio Hondo. All three areas are nurseries

growing various non-native species and native cultivars. This non-native habitat comprises approximately 76.2 acres or 2.9% of the Basin (Map 19).

**Ruderal Land** Ruderal lands are areas that have been substantially altered by maintenance or construction causing them to be generally devoid of vegetation. Ruderal land is found throughout the Basin in areas surrounding the Dam, near residential and commercial developments, and wherever undeveloped areas receive heavy use. Specific features of ruderal land are various graded access roads and trails, dirt parking areas, and annual flood basins. High frequency of disturbance and poor quality soils found in these areas prevents most plants from becoming established; however, hardy herbaceous invasive plants such as prickly Russian thistle and cocklebur are both present. This non-native habitat comprises approximately 573.9 acres or 21.7% of the Basin (Map 19).



**Disturbed Upland**

**Ruderal Land**

### 3.5.3 Non-Native and Exotic Plants

Significant non-native plant infestations are considered in this document to be areas with approximately 40% or more of the total vegetation cover dominated by a non-native species. This threshold was determined based on patterns noted in canopy cover estimates quantified in the field. Infestations within Whittier Narrows Dam Basin include those caused by black mustard, shortpod mustard, and giant reed. There are five discrete areas of giant reed infestation with each being located along the Rio Hondo or San Gabriel River (Map 19). One large infestation is located immediately upstream of the Dam. Shortpod and black mustards, which co-occur, infest two areas including the Nature Area south of Durfee Avenue and along the San Gabriel River. In these areas, shortpod and black mustards almost completely dominate the herbaceous and shrub layers. All areas of significant non-native plant infestations were disturbed in the recent past either by agricultural activities, flooding, or earthmoving and then left fallow, which created ideal conditions for the establishment of these disturbance-adapted species.

Other invasive non-native plant species are found within the Basin but occur at densities below the infestation level. Tobacco tree and castor bean are distributed throughout the Basin but have the highest densities on disturbed slopes near wet areas such as ponds, lakes, and streambeds. Poison hemlock, stinging nettle, cocklebur, and giant wild rye are all common in riparian habitats where they grow within areas of *Salix exigua* Shrubland Alliance found in the Basin. Prickly Russian thistle and white nightshade are found throughout the Basin in upland areas with frequent disturbance.

### 3.5.4 Animal Resources

The Basin is comprised of a variety of habitat types, including native communities (Sawyer *et al.* 2009), disturbed vegetation communities, agricultural land, constructed open water, disturbed wetlands (NWI 2010), and developed parks or urbanized areas (Map 19). Animal species observed during vegetation surveys conducted on 7 January 2010 were recorded and a list of species is presented in Appendix D2. However, no formal wildlife surveys were conducted in preparation of this EA. Not all species potentially present in the Basin were observed during surveys.

Species common to the Basin include native and non-native fishes, amphibians, reptiles, mammals, and birds. Over 100 bird species use the Basin for breeding, wintering, or are residents (Corps 1996). The open water areas found in the Basin attracts waterfowl and shorebirds. Upland habitats host a diversity of passerine species. Bat species are also present and use the Basin for roosting, breeding, or are year-round residents. Only two amphibians are common, including the California toad and Pacific treefrog. Dry upland areas host common lizard and snake species. Non-native species such as feral cats and dogs are also found in the Basin.

The altered seasonal flows and existing barriers to fish passage severely limit fish presence in the Basin. According to Moyle (2002), the native freshwater fishes historically found in waters of the Basin include arroyo chub, Santa Ana speckled dace, Santa Ana sucker, threespine stickleback, and rainbow trout. Common non-native species of unknown origin that may occur in the Basin include largemouth bass, bluegill, western mosquito fish, channel catfish, fathead minnow, common carp, and goldfish (Moyle 2002). No fish data were collected during field surveys within the Basin.

### 3.5.5 Threatened and Endangered Species

Species status taxa include those protected by the Endangered Species Act (ESA). Each Federally protected species that may potentially occur within the Basin is described per NEPA compliance, along with an assessment of whether that species is likely or not likely to currently occur within the Basin.

The USFWS maintains a database of Federally protected special status taxa, which reports over 20 species as occurring in Los Angeles County (USFWS 2010). The California Department of Fish and Game (CDFG) maintains the California Natural Diversity Database (CNDDDB), which compiles reported observations of special status species (CDFG 2010b). The CNDDDB maintains records of each recorded occurrence of a species provided by any agency or private entity, and as such, is not intended to provide conclusive confirmation of the presence of any species. Furthermore, field surveys were not conducted to determine the presence of special status taxa, which would be necessary to conclusively determine the absence of a species. In lieu of field surveys, data from the CNDDDB and field studies, if available, provide the starting point for determining the potential presence of a species. Assessment of existing habitat conditions within the Basin further informs the potential for a species to be present; if suitable habitat exists within or nearby the Basin, the potential for a species to occur there increases.

According to the CNDDDB, there are three special status species that have been recently observed within Whittier Narrows Dam Basin.

<b>Table 3.4 Special Status Species Observed within the Basin</b>					
<b>Common Name Scientific Name</b>	<b>Federal Status</b>	<b>Critical Habitat<sup>1</sup></b>	<b>CDFG<sup>2</sup></b>	<b>Federal Register</b>	<b>Year Listed</b>
Nevin's barberry <i>Berberis nevinii</i>	Endangered	2008	2009	63:54956	13-Oct-98
Coastal California gnatcatcher <i>Polioptila californica californica</i>	Threatened	2007	2008	58:16757	30-Mar-93
Least Bell's vireo <i>Vireo bellii pusillus</i>	Endangered	1994	2003 (2009 <sup>4</sup> )	51:16482	2-May-86
<sup>1</sup> Year designated, <sup>2</sup> Last observed in Basin, <sup>3</sup> Year proposed. <sup>4</sup> Last observed according to Corps data, Source: USFWS 2010, CDFG 2010b.					

Nevin's Barberry *Berberis nevinii* is a rhizomatous evergreen shrub 3 to 12 feet tall. It is found in gravelly wash margins in alluvial scrub, and on coarse soils in chaparral (CDFG 2010b). This species is typically found between 900 and 2,000 foot elevations. The native range of this barberry currently extends from the San Gabriel Mountains foothills to the Peninsular Ranges of southwestern Riverside County. The total number of individuals is reportedly fewer than 1,000, and possibly fewer than 500 (USFWS 2009). The largest remaining cluster of native populations, which collectively contain about 200 individuals, occurs in Riverside County in the Vail Lake/Oak Mountain area. Critical habitat was designated in 2008, but does not include land within the Basin. A single Nevin's barberry was found in the natural area south of Durfee Avenue and north of the San Gabriel River in 2009 (CDFG 2010b). It is possible that this species is still present.

Coastal California Gnatcatcher The coastal California gnatcatcher (*Polioptila californica californica*) is a small, long-tailed member of the thrush family. This species is restricted to coastal southern California and occurs almost exclusively in the coastal sage scrub plant community, and less often in chaparral habitat (USFWS 2007). This gnatcatcher is non-migratory and breeds from late February through July. Home ranges vary from as little as 13 acres to as many as 39 acres. Population decline is widely attributed to habitat destruction and as few as 30 pairs were estimated to exist in Los Angeles County (none in San Bernardino County) in 1992 (USFWS 1993). There are several recorded occurrences of this gnatcatcher within or near to the Whittier Narrows Dam Basin (CDFG 2010b) and it is likely to be present. The most recent observation within the Basin was in 2000 (CDFG 2010b). Critical habitat for this species includes several acres of land in the southwest portion of the Basin.

Least Bell's Vireo The least Bell's vireo (*Vireo bellii pusillus*) was listed as endangered in May 1986. Critical habitat for the species was designated in 1994, though it does not extend into the Basin. The least Bell's vireo is a spring and summer breeding resident, migrating south for fall and winter. It primarily inhabits riparian woodlands, scrublands, and thickets for breeding. Population declines are due to urban and agricultural development, habitat alteration, and brood parasitism by the brown-headed cowbird. Preferred habitat features of the least Bell's vireo do exist in or adjacent to Whittier Narrows Dam Basin. In 2002, nine single male vireos were

observed in the natural area of the Basin south of Durfee Avenue (CDFG 2010b). Additional data collected reports the presence of a single pair of least Bell's vireo at Whittier Narrows Dam Basin from years 2006 to 2008, and 3 pairs in 2009 (Corps 2010c). It is likely that the least Bell's vireo is present within the Basin.

The yellow billed cuckoo has been recorded within the Basin or vicinity as well, but records are not recent and this species is now considered to be extirpated from the region and not a potentially occurring species (CDFG 2010b).

### **3.5.6 Wildlife Corridors**

The nearest area of non-urbanized, relatively natural wildlife habitat to the Basin is within the Puente Hills to the east of the Basin, and the Montebello Hills to the west. Whittier Narrows Dam Basin is located directly in this Chino-Puente Hills wildlife corridor pathway, and as such, plays a decisive role in determining wildlife connectivity throughout the length of the Puente Hills (Spencer 2005). Due to the highly urbanized condition of Whittier Narrows, however, the Basin is ineffective as a wildlife corridor and is likely to prevent wildlife passage through the larger Chino-Puente Hills corridor. Several major high occupancy highways and freeways pass through the Basin, including Rosemead Boulevard, Pomona Freeway, Durfee Avenue, and the San Gabriel Blvd.

Movement of wildlife between two areas varies by species and each species may require differing corridor characteristics. Spencer (2005) identifies two types of barriers; a barrier that is impassable under any circumstances for a particular species, and a filter barrier, which may be utilized by a species under some circumstances. For example, most ground-dwelling species will not pass over a busy roadway, particularly if it has several lanes of traffic, retaining walls, a large area with no vegetation, fences, or other physical barriers. In general, smaller ground-dwelling species, such as amphibians, reptiles, and small mammals, are more reluctant to pass over barriers or through filters, and are therefore less mobile than other species. Large mammals and birds are less sensitive to barriers. Fish barriers include low or no streamflow, culverts, dams, concrete channels, felled trees and other natural and man-made obstacles.

Both barriers and filters are present throughout the Basin meaning that connectivity through the Basin, as well as within the Basin, are limited. Roadways, as mentioned above, discourage movement through and within the Basin for most species, excepting birds and bats. Areas of development and high-intensity recreation are also significant barriers. Even where areas of native habitat still remain, their small size, disturbance level, and disconnection from the adjacent Puente Hills result in few, if any, ground-dwelling and small mammal taxa being able to disperse to the Puente Hills. Aquatic passage within the Rio Hondo and San Gabriel River is precluded by the presence of the Dam and flood risk management grade control structures. The natural area south of Durfee Avenue is connected along the channel beneath Rosemead Boulevard.

Overall, connectivity within and through the Basin is severely limited for megafauna as well as reptiles and small mammals. Migrating or resident songbirds, waterfowl, shorebirds, and wading birds easily move between habitats within the Basin and readily disperse to outside habitats.



### 3.6 Cultural Resources

Cultural resources are locations of human activity, occupation, or use. They include expressions of human culture and history in the physical environment, such as archaeological sites, historic buildings and structures, or other culturally significant places. Cultural resources can also be natural features, plants, and animals or places that are considered to be important or sacred to a culture, subculture, or community. Resources may be important individually or as part of a grouping of complementary resources, such as a historic neighborhood. Cultural resources that may be present include three general categories: archaeological resources, historic buildings and structures, and traditional cultural properties.

Historic buildings and structures are architecturally, historically, or artistically important individual and groups of residential, commercial, industrial, transportation or water control properties. Historic building and structures are typically identified through archival and library research, followed by field reconnaissance and recordation.

Consideration of “important historic, cultural, and natural aspects of our natural heritage” is required through NEPA and principally regulated by the National Historic Preservation Act (NHPA) of 1966, as amended (16 USC Section 470).

Under Section 110 of the NHPA, Federal agencies are required to fully integrate the management of cultural resources in ongoing programs and to proactively identify, evaluate, nominate and protect historic properties. Historic properties are cultural resources that meet specific criteria for listing on the National Register of Historic Places (NRHP). Agencies are not required to preserve all historic properties, but agencies must follow a process to ensure that their decisions concerning the treatment of these places result from meaningful consideration of cultural and historic values and the options available to protect the properties.

Section 106 of the NHPA describes the procedures for identifying and evaluating historic properties, for assessing the effects of Federal actions on historic properties, and for project proponents consulting with appropriate agencies, including the State Historic Preservation Officer (SHPO), to avoid, reduce, or minimize adverse effects.

#### 3.6.1 Cultural Resources within the Basin

The Whittier Narrows Dam Basin is located in an important area for the Tongva. The Tongva living in the Whittier Narrows area called themselves *Kichireños*, and occupied smaller settlements named *Iisanchanga* and *Wiichinga* whose specific locations are not known. Mission San Gabriel Archangel was founded in 1771, near the present-day city of Montebello, just west of Whittier Narrows.. In 1775, the mission was moved to higher ground five miles to the northwest. According to the Mission records the *Wiichinga* was noted to be “to the east of [the old San Gabriel] Mission on a plain closed by water on all sides and may have been within the Whittier Narrows Dam Basin” (EDAW 2009).

The Whittier Narrows Dam Basin was surveyed for cultural resources in 1987, and included a literature survey, records search and a brief field reconnaissance (Roberts *et al.* 1987). In 1991 an additional study was conducted by Scientific Resource Surveys which resulted in a sensitivity analysis that was used by the preparers of the 1996 Master Plan. There were no pedestrian surveys conducted in support of the sensitivity analysis, but several areas were considered to be moderate to highly sensitive for cultural resources (Scientific Resource Surveys, Inc. 1991). The preparation of a cultural resource management plan was also referenced, but it is not clear whether this document was completed. Recorded cultural resources include historic-era remains of homes and structures and artifact scatters (Corps 1996). No information was available in the previous Master Plans regarding SHPO concurrence with Corps findings or Native American consultation.

### **3.7 Hazardous Materials and Wastes**

A preliminary hazardous and toxic waste and materials (HTWM) investigation was conducted to determine the presence of current or historical contamination within Whittier Narrows Dam Basin. The preliminary investigation was based on a database review of relevant environmental information maintained by Environmental Data Resources, Inc. (EDR 2010). The EDR database search included lists compiled by the EPA and the state of California for sites within or near to the Whittier Narrows Dam Basin that have had recent or historical unauthorized releases of hazardous materials or hazardous waste, may store and use hazardous materials, or be generators and/or transporters of hazardous wastes. The following government databases were included in the EDR search in accordance with ASTM Standard E 1527-05 search distances:

- Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) – This is a nationwide database of sites identified by EPA as abandoned, inactive, or uncontrolled hazardous waste sites that may require cleanup.
- National Priorities List (NPL) – This is a database maintained by EPA under the Comprehensive Environmental Response Compensation and Liability Act of 1980 (CERCLA). Those CERCLIS sites that contain the greatest potential risk to human health and the environment become part of the NPL.
- Resource Conservation and Recovery Information System (RCRIS) – In this database, EPA maintains information on those sites across the Country that may generate, transport, store, treat, and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA).
- Emergency Response Notification System (ERNS) – This database is maintained by EPA that covers reported unauthorized releases of oil and hazardous substances.
- ENVIROSTOR – The California Department of Toxic Substance Control (DTSC) manages information on this list of known hazardous waste sites that are present throughout California. This list is California’s equivalent of EPA’s CERCLIS. On this list, priority sites planned for cleanup; to be paid either by the state or by potentially responsible parties.
- CERCLIS-NFRAP – This database tracks those sites where EPA has determined that no further action is needed. However, hazardous material may still be present but in a manageable form.

- CAL FID UST – This system, maintained by the California Water Resources Control Board (WRCB), keeps track of active and inactive underground storage tanks.
- Leaking Underground Storage Tanks (LUST) – Information is maintained at the (WRCB) on reported leaking underground storage tank incidents. The information is typically collected quarterly by regional offices of the WRCB.
- Solid Waste Information System (SWIS) – The California Integrated Waste Management Board (IWMB) maintains a list of, and information on solid waste amenities and landfills in the state. Data maintained include location, type and age of landfill, if it is a permitted facility, and the status of its permit.
- CAL Voluntary Cleanup Program (VCP) – These are sites listed by DTSC that have confirmed or unconfirmed releases where a project proponent has requested the state to oversee investigation and/or cleanup activities at the proponent’s expense.
- National Pollutant Discharge Elimination System (NPDES) – The WRCB maintains a listing of all NPDES permits within the state, including stormwater.

### **Sites of Interest**

Four preliminary sites of interest were identified. One of these sites was reported in the Federal NPL - CERCLIS database as a site under ongoing investigation that contains the greatest potential risk to human health and the environment. Another site was reported in the ENVIROSTOR database as a site of known contamination or a site that may need to be investigated further. The other two sites were reported in the LUST database as leaking underground storage tanks. Closer review indicated that two of the preliminary sites of interest did not require additional investigation. The remaining two sites are described below.

#### **Former Cooper Drum Company**

This site is located at 9630 El Poche Street in South El Monte. The EDR report information is very limited, and does not indicate the size and type of business enterprise, the nature of potential contamination, or if the company is still in operation at this time. The status of the site is listed in the database as “Open – Site Assessment” with soil and ground water listed as the affected media. The lead agency is listed as LARWQCB (Region 4). Though no incidents have been reported for this site in the database search, discussion with knowledgeable personnel regarding the extent and nature of business operations is necessary to determine the types and quantities of hazardous materials and wastes that potentially may be, or have been, stored and/or generated on site, and the status of any cleanup actions.

#### **San Gabriel Valley (Area 1)**

This site of interest is a ground water plume located in the general vicinity of Peck Road and Real, El Monte. The site was designated by EPA in 1983 as a CERCLA - NPL listed site that posed considerable risk to human health and the environment. The site is a ground water plume that was initially estimated to be approximately 4 miles long and 1.5 miles wide and running along the axis of the Rio Hondo Wash and the Salt Pit Wash, generally parallel to the west side of the San Gabriel River in the El Monte area of Los Angeles County. Ground water testing by state agencies and water companies indicated that the primary types of contamination were

chlorinated solvents including TCE, PCE, and carbon tetrachlorine. It was reported that many area public wells were affected that could impact 200,000 people in the area.

The EPA began enforcement efforts in the area in 1983 by assisting three communities in the area whose water systems were most at risk with remedial measures. Also at that time the state began a well testing and monitoring program to help identify the sources of contamination and levels of contamination. During the twenty-five year period since the remediation efforts began, the EDR report indicates that there have been numerous subsequent investigations; tests; assessments; monitoring and public involvement programs; Notice Letters; court cases; Consent Decrees; as well as ongoing remediation efforts undertaken involving Potentially Responsible Parties (PRPs). Funds for this array of remediation actions have come from Federal and state government and PRPs.

Because the information provided in the EDR database report regarding the site stops at year 2008, and because the information in the report is considered insufficient to reach a conclusion regarding the current status of the clean-up efforts and potential influence that existing (remaining) contamination may have on future projects proposed in the Whittier Narrows Dam Basin, it is suggested that periodic ongoing discussion with knowledgeable Federal and state agency (e.g., EPA, RWQCB) and County personnel be pursued in order to obtain relevant information relating to clean-up status.

### **3.8 Socioeconomics and Environmental Justice**

Federal agencies are required, by Executive Order 12898, Environmental Justice, 1994, to “make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low income populations.”

The Council on Environmental Quality (CEQ), identifies minority groups as Asian, American Indian or Alaskan Native, Pacific Islander, Black not of Hispanic origin, and Latino (CEQ 1997). It defines a “minority population” as any group of minorities that exceed 50% of the existing population within the market area or where a minority group comprises a meaningfully greater percentage of the local population than in the general population. Additionally, the CEQ (1997) identifies “low income” using 2000 Census data for “individuals living below the poverty level.” For the purposes of this study, a low income population will be defined similarly as a local or market area population with more than 50% of people living below the poverty level.

Ensuring environmental justice means protecting existing local and market area minority and low income populations from adverse human health or environmental effects of any management strategy undertaken or authorized in this Master Plan.

The communities adjacent to the Whittier Narrows Dam Basin are primarily white, but also have sizeable Latino populations. Although the larger market area of Los Angeles and San Bernardino Counties does not have a significant minority population, the nearby communities do have a Latino population that exceeds 50%.

The number of individuals living below the poverty level is less than 20% for the larger market area, and none of the local communities exceed a total of 26.1% of the total population. The market area does not have a significant low income population.

<b>Table 3.5 Market Area Demographics</b>			
<b>Census Data</b>	<b>Los Angeles County</b>	<b>San Bernardino County</b>	<b>Local Communities<sup>1</sup> Average</b>
Asian	11.9%	4.7%	33.3%
Black	9.8%	9.1%	2.1%
Latino	44.6%	39.2%	63.8%*
Native American	0.8%	1.2%	1.1%
Native Islander	0.3%	0.3%	<1.0%
White	48.7%	58.9%	47.5%
	23.5%	20.8%	30.5%
Individuals Living Below Poverty Level	17.4%	15.8%	16.8%

<sup>1</sup>Local Communities include El Monte, Montebello, Monterey Park, Rosemead, West Covina, and Whittier. Note: Mixed-race ethnicities reported resulting in a total greater than 100%. \*Communities that qualify for environmental justice protections. Source: U.S. Census Bureau 2000.

### 3.9 Traffic and Transportation

Travel to Whittier Narrows Dam Basin occurs through a multi-modal transportation network in and around Los Angeles County including car, bicycle, train and pedestrian roads, trails, and pathways (Map 21). All freeways are operated by California’s Department of Transportation (Caltrans).

Roadway Linkages State Route 60 (Pomona Freeway) and the Interstate 605 intersect at the northeast corner of the Basin and State Route 19 (Rosemead Boulevard) runs north-south through the middle of the Basin streets connecting Long Beach to Rosemead, a distance of approximately 30 miles. The Basin is surrounded by residential and arterial streets. San Gabriel Boulevard originates just west of the Basin and continues north to Altadena, a distance of approximately 10 miles. Table 3.12 lists the major access roadways associated with the Basin and their average traffic volumes.

Transit Linkages Visitors who prefer to use public transit to access the Basin have the option of taking a bus or a train to nearby El Monte Metrolink Station, which is the nearest transit hub to the site, and served by Amtrak, Metrolink, and Metro bus lines. Once in El Monte, both bus and train passengers may take a bus connection south using routes 266 or 287. Numerous bus stops are located around the Basin along Rosemead and San Gabriel Boulevards.

**Table 3.6 Average Traffic Volumes on Nearby Roadways**

Roadway Name	Average Daily Two-way Traffic (in thousands of cars)	Roadway Designation	Number of Lanes
Interstate 605	242,000	Freeway	12
State Route 60	235,000	Freeway	10
Rosemead Boulevard	21,000	Arterial	4
San Gabriel Boulevard	31,000	Arterial	4

Source: Los Angeles County 2009, Caltrans 2009.

Pedestrian and Bikeway Linkages Visitors traveling to the Basin on bicycle can make use of a network of designated bikeways and trails. Los Angeles County has developed a bicycle master plan and maintains a bikeways map online, which differentiates between the following three types of bike paths (Metro 2010b):

- Class I – Separate off-road paved bike path.
- Class II – On-road bikeway with lane striping.
- Class III – On-road bikeway with signage only.

The Basin is accessible by bicycle and foot via several different routes. Bicycle paths to the Basin include: (a) the San Gabriel River Bike Trail, a 38-mile Class I bike path that runs north from Seal Beach and along the San Gabriel River to the San Gabriel Mountains; (b) the Los Angeles River Bike Trail, Rio Hondo Bike Trail, and Upper Rio Hondo Bike Trail, which together form 30 miles of Class I bike path and run from Long Beach to Temple City along the Los Angeles River and the Rio Hondo, known as the LARio Trail; and (c) a network of Class III bike paths that access the Basin from the north through El Monte (Norberg 2010, Metro 2010b). For visitors who prefer to walk to the Basin, there are continuous sidewalks on most connecting streets. Pedestrians and equestrians may also access the park from the bike paths (Gibson 2010).

In-Park Roadways and Trails Approximately 11 miles of roadways and several parking lots provide access to recreation amenities throughout the Basin. Approximately 6 miles of paved trails and 6 miles of unpaved trails with no regional connectivity are available for use by pedestrians, equestrians, and mountain bikes, with numerous looping options available throughout the park (NAIP 2009). An additional 7.2 miles of unpaved Los Angeles County multi-use trails with regional connectivity are also accessible (Baldwin 2010). With the exception of Rosemead Boulevard, in-Basin roadways and trails are maintained by the County. Rosemead Boulevard, a state highway, is maintained by Caltrans, with occasional assistance from the Department of Recreation and Parks (Moreno 2010).

Emergency Access Access into the Basin can be attained through ten public entrances. The northwestern area of the Basin can be accessed through two entrances at Rosemead Boulevard and at Rush Street. The northeastern area can be accessed from four entrances, at Rosemead Boulevard, Chico Avenue, Potrero Avenue, and Loma Avenue. The southern half of the Basin can be accessed from three main entrances, along Rosemead Boulevard, Santa Anita Avenue,

and Durfee Avenue. An additional emergency vehicle access point is available from the corner of Durfee Avenue and Rosemead Boulevard (Moreno 2010).

### **3.10 Utilities**

A variety of utilities such as water, electrical power, heating fuel, and sanitary sewerage services are provided to various lessees and utility owners of the Basin, including the County, the City of Pico Rivera, LADPW, the South El Monte Association, the U.S. Army Reserve, and the Sanitation Districts of Los Angeles County, the City of Whittier, and Suburban Water Systems (Map 25) (Gibson 2010). Numerous amenities are associated with these lessees, which include a water reclamation plant, a rodeo complex, and a nursery that utilizes reclaimed water from the adjacent reclamation plant.

Utility Owners Utility owners are represented in the Basin include Southern California Edison, which owns power lines, San Gabriel Valley Water Company, and the Southern California Gas Company, which manages gas lines passing through the Basin (Gibson 2010).

Utility Easements Three utility easements are present in the Basin. These include an easement along East Lincoln Avenue, a City of Pico Rivera easement along Rosemead Boulevard, and a Southern California Edison corridor easement crossing the lower half of the Basin on a west-southeast alignment (Gibson 2010).

Energy Use Energy use within the Basin includes lighting, heating, and air conditioning for various park and recreation amenities including restrooms, sports complex, tennis center, equestrian center, museum, buildings associated with the golf course, the BMX moto-cross track, and the shooting and archery ranges. Outdoor security lighting is available throughout the park, and outdoor sports fields are also lit at night (Moreno 2010). The additional amenities operated by lessees as described previously also require energy use for lighting, heating, and air conditioning (Gibson 2010).

### **3.11 Aesthetics**

Aesthetic value within the Basin is provided by the sweeping lawns and ornamental trees of the golf courses and picnic areas, as well as the disturbed but more natural riparian and riverine habitats along the San Gabriel River and Rio Hondo. Of particular aesthetic value to Basin visitors is the manmade lake area, which includes North, Center, and Legg Lakes. This area has expansive, well-maintained lawns, paved and dirt trails, tot lots, and picnic areas. Legg and Center Lakes have grassy sloping shores and Center Lake has some shoreline with aquatic vegetation. North Lake is less aesthetically pleasing, due to an absence of lawn along much of its shore and the presence of many eroding banks. It is also the preferred grounds of a large population of waterfowl that inhabit the area and leave an abundance of fecal material behind.

A large area east of Rosemead Boulevard is used for overflow parking during large events. This area is a wide swath of land devoid of vegetation, which is unpaved, and occupies a portion of the Basin that can be viewed from Rosemead Boulevard, the recreation complex across the street, and the picnic area to the south.



**Legg Lake**



**Pathway through Picnic Areas**



**Bicentennial Park Sports Arena**



**Covered Trail near Model Airplane Field**



**Whittier Narrows Dam**



**Playground**

### **3.12 Recreation Resources**

A variety of recreation resources are available within the Basin, including passive and active uses. All recreation uses are non-consumptive. The Basin was divided into sections in the



existing Master Plan and labeled by letter and defined by the intersection of Rosemead Boulevard and Highway 60. From this roadway intersection, Area A is in the northwest, Area B is in the northeast, Area C is southwest, Area D is in the southeast, and Area E is to the west of Area D. As these have historically been used to describe the Basin areas, they will serve well in defining the areas herein.

### **Recreation Area A**

Area A is located in the northern portion of the Basin and is east of the Rio Hondo Channel and north of the Pomona Freeway (I-60). The Area covers 144 acres. There are two main points of entry into Area A, one located on the east side of the area from Rosemead Boulevard and one from the north from Loma Avenue. Parking for approximately 450 cars is available in Area A. Existing recreation includes baseball and soccer fields, a park administration building, a BMX facility, the Los Angeles Rifle and Revolver Range, a model airplane/hobby area, seven restrooms, four picnic pavilions with barbecues and approximately 100 picnic tables, and four tot lots.

### **Recreation Area B**

Area B is located in the northern part of the Basin and has two main points of entry, one from Rosemead Boulevard, located to the west of the area, and one from Chino Avenue, located on the east side of the area. There is an open field to the south of the museum which is used as an overflow parking area for large events. Present amenities operated by the County of Los Angeles include a family picnic area with playing fields and a sixteen-court tennis center concession. Three paved lots provide parking for approximately 550 cars in Area B. Parking is also available on an unpaved area in the northern portion of Area B when special events are held in the area. Southeast of the tennis center there is an open space used as a Dog Show Area. An abandoned Nike Missile Site is also located in Area B, and is currently used by the County for maintenance storage. The American Military Museum, operated by concession (subleased by the primary lessee), is located in the northernmost portion of Area B, immediately south of Rush Street

### **Recreation Area C**

This area consists of 152 acres south of the Pomona Freeway and west of Rosemead Boulevard. The area includes the Triple B Clays trap and skeet shooting amenities and Archery Range. The Bosque del Rio Hondo and the Sporting Dog Training facility are located in the southern portion of Area C. The Whittier Narrows Water Reclamation Plant is located south of the Archery Range. A Southern California Edison Company easement runs through the area.

### **Recreation Area D**

This area is located in the center of the Basin and is bounded by the Pomona Freeway on the north, Rosemead Boulevard on the west, Durfee Avenue on the south, and Santa Ana Avenue on the east. Area D covers 214 acres and contains three lakes (Legg Lake, Center Lake, and North Lake) with a total of 77 acres of water surface. Amenities in this area provide for picnicking, including a group picnic area, tot lots, fishing, boating, and bicycling activities. The level of the lakes is maintained by pumping water from existing wells. CDFG stocks the lakes with trout,

bass, and catfish. In the southeast corner is a Corps maintenance and storage facility. An agricultural area located south of Legg Lake and west of the Southern California Edison Company easement currently contains a nursery area and strawberry fields. It is operated through an agricultural lease directly with the Corps. Entry is from Santa Anita Avenue, Durfee Avenue, and Rosemead Boulevard. Parking for approximately 1,150 cars is available in parking amenities in Area D.

### **Recreation Area E**

This area is located north of Durfee Avenue and east of Santa Anita Ave. The site consists of approximately 58 acres, and has amenities for picnicking and children's play areas. A County facility is located in the northern most portion of Area E. An expansion area for El Monte High School is adjacent to the picnic area. Parking for approximately 290 cars is available in the Area.

Picnic Area The picnic area has two group picnic areas which are fenced and available by

### **Whittier Narrows Golf Course**

The Whittier Narrows Golf Course is approximately 216 acres in size and is located in the northwestern portion of the Basin west of the Rio Hondo Channel. There are two golf courses, an 18-hole course and a 9-hole executive course, that were developed by the County and are operated by concession. There is also a driving range, concession stand, clubhouse, rest rooms, and parking for approximately 300 cars. The Rio Hondo Channel is separated from the golf course by a chain-link fence. A regional multi-use trail maintained by the County is located between the fence and channel.

### **Nature Area**

The Nature Area, previously administered by the Audubon Society, is now under the direction of the County. There are two areas; both are located south of Durfee Avenue, and north of the San Gabriel River Channel, with a total of 320 acres of land. The Nature Area contains five miles of trails through restored riparian vegetation. Additional planted riparian areas were added in 1975, along with 142 acres of land to the southwest of the original Nature Area.

A small Nature Center Museum and trail are located in the northeast corner of the area. Self-guided nature walks or walks led by docents start from the Nature Center building. The Nature Center has a small gift shop, library, and restrooms. A ramada, approximately 30 feet by 42 feet with a fixed metal barbecue, a concrete and metal prep table, and about 12 concrete picnic tables are available in the area. The Nature Center Museum has revolving and permanent exhibits of the natural history of the area. There is parking for approximately 40 cars and two buses. A Los Angeles County Police substation also occupies this site.

### **Bicentennial Park/Sports Arena**

The Bicentennial Park and Sports Arena are located in the eastern portion of the Basin between Rooks Road and the San Gabriel River, and occupy approximately 53 acres. Amenities include a Sports Arena, Campgrounds not in use, and Equestrian Center and Stables.

### **Pico Rivera Municipal Golf Course**

The Pico Rivera Municipal Golf Course is operated by the City of Pico Rivera through a recreation lease with the Corps, and is located south of the Whittier Narrows Dam, adjacent to the San Gabriel River channel. The 28-acre site consists of a 9-hole executive course, driving range, clubhouse, and parking for approximately 75 cars.

### **Streamland Park**

Streamland Park is downstream from Whittier Narrows Dam, between Rosemead Boulevard and the Dam, within the City of Pico Rivera. It is operated by the City of Pico Rivera through a recreation lease with the Corps. Access is from Durfee Road to the south. Two baseball diamonds, three basketball courts, four restrooms and parking, a tot lot with a slide and swing set are included in the park.

### **Trail System**

An extensive trail system extends throughout the Basin. The system includes foot trails, nature trails, bicycle paths, and equestrian trails. Access to trails is provided from Rosemead Boulevard, Santa Anita Avenue, Durfee Road, Siphon Road, Peck Road, San Gabriel Boulevard, Lincoln Avenue, Loma Street, Rush Street, Adelia Avenue, and Potrero Avenue. The equestrian trails, developed by the County and the LACFCD, connect with an extensive trail system outside the Basin, including the 40-mile San Gabriel River Trail, which travels within the right-of-way of the San Gabriel River and the 22-mile LARIO Trail, which are both used by equestrians, hikers, and bicyclers.

### **3.13 Public Health and Safety**

Public health and safety focuses on the potential risks to the public and personnel from hazards that may occur within the Basin itself, or which may impact public services adjacent to the Basin. Health and safety hazards to the public can arise from recreation uses, plants and wildlife, flooding, hazardous materials, and criminal activity. Nearby public services, such as law enforcement, fire protection, hospitals and schools, may be designated as respondents to health and safety issues within the Basin, may be impacted by activities in the Basin, or may depend on access through the Basin. Public health and safety measures are intended to protect the public, to maintain public services, to ensure compliance with applicable Federal and state laws, to prevent waste contamination, and to minimize hazards resulting from actions on Corps-managed lands and amenities. Safety issues specific to the Dam itself were previously discussed above in the Physical Land Resources section.

The Basin is usually dry, but heavy rainfall has, and may, result in flooding throughout the Basin. In the event of flood, hazards could occur both within and downstream of the Basin. Several roadways used daily by the public pass through the Basin and are closed when there is a danger of flooding. Alternative access is available for all public services except recreation amenities.

There is no formal evacuation plan for Whittier Narrows Dam Basin because the primary hazard is flood inflow which can be forecast with sufficient time to clear the Basin of recreation users. However, the Corps has a formal notification process in which the Reservoir Regulation Section contacts any known entity likely to be affected by flood inflow to the Basin, based on forecasted runoff and estimates of how high the Basin pool will rise; these notifications are updated on a continuous basis as hydrologic and Basin conditions change. Overall, the potential rate of rise of the Basin pool would be slow enough that anyone could readily walk to safety by moving to higher ground. Furthermore, the County would ensure that public use of the Basin during a potential flood condition would be curtailed through erecting roadway barriers and signage, and by having authorities in place to redirect traffic. The County maintains close coordination with law enforcement and the Corps as well as fire, medical, and emergency response agencies in the area.

The Whittier Narrows Dam Basin includes both natural and largely undeveloped areas and formal recreation amenities. Public health and safety issues associated with recreation include vehicle accidents, use conflicts, intoxication, and a variety of sports and activity-related accidents and injuries.

The Los Angeles County Sheriff’s Department maintains a substation located at the Nature Center within the Basin. Criminal activity has included trespass, property crime, violent crime, vandalism, gang activity, alcohol use, dumping, and unauthorized fire arm use. Fire Protection and Emergency Medical Technician (EMT) services are provided by the County of Los Angeles Consolidated Fire Department, Fire Station 90 which is located approximately 2 miles from the north entrance. The County maintains mutual aid agreements with other local cities and agencies for police, fire, and EMT services. Emergency Room and Hospital Services are found at Greater El Monte Community Hospital approximately 2 miles north of the Basin, and Beverly Hospital in Montebello approximately 4 miles south and west of the nature center (Gibson 2010).

<b>Table 3.7 Public Services in the Vicinity of the Whittier Narrows Dam Basin</b>			
<b>Service</b>	<b>Name and Address</b>	<b>Phone Number</b>	<b>Primary Server</b>
Law Enforcement	Los Angeles County Sheriff Parks Bureau, Whittier Narrows Station 1012 N. Durfee Avenue South El Monte 91733	(626) 575-4241	Y
Law Enforcement	Los Angeles County Sheriff 11234 Valley Boulevard 91731	-	N
Fire/EMT	County of Los Angeles Consolidated Fire District, Station No. 90 10115 Rush St, South El Monte, CA 91733	(323) 881-2411	Y
Fire/EMT	Montebello Fire Department 600 North Montebello Boulevard 90640	-	N

Hospital	Greater El Monte Community Hospital 1701 Santa Anita Avenue South El Monte, California 91733	(626) 579- 7777	Y
Hospital	Beverly Hospital 309 West Beverly Boulevard Montebello CA 90640	(323) 726- 1222	N
School	Loma Elementary School 2131 Loma Avenue 91733	-	N/A
School	South El Monte High School 1001 Durfee Avenue 91733	(626) 442- 0218	N/A
Source: Google Maps 2010; Gibson 2010.			

The California Department of Public Health (CDPH) has coordinated a statewide mosquito-borne encephalitis surveillance program since 1969. Though no cases of encephalitis or West Nile Virus (WNV) have been reported in humans in Los Angeles County, the total number of human cases of WNV has risen steadily throughout the state of California since 1969 (CDPH 2010).

The presence of mosquitoes and other animals that convey disease or viruses is monitored by CDPH, while control of these animals, or vectors, is generally conducted by land owners or certified professionals that may be hired by land owners. At Whittier Narrows Dam Basin, vector control would be provided by the lessees (County, City) if it were determined to be necessary. At this time, no known vector control actions are taken place within Whittier Narrows Dam Basin. If occurrences of WNV are found in the Basin or vicinity by the ongoing CDPH surveillance program, vector control measures may need to be put into place.

### Evacuation Plan

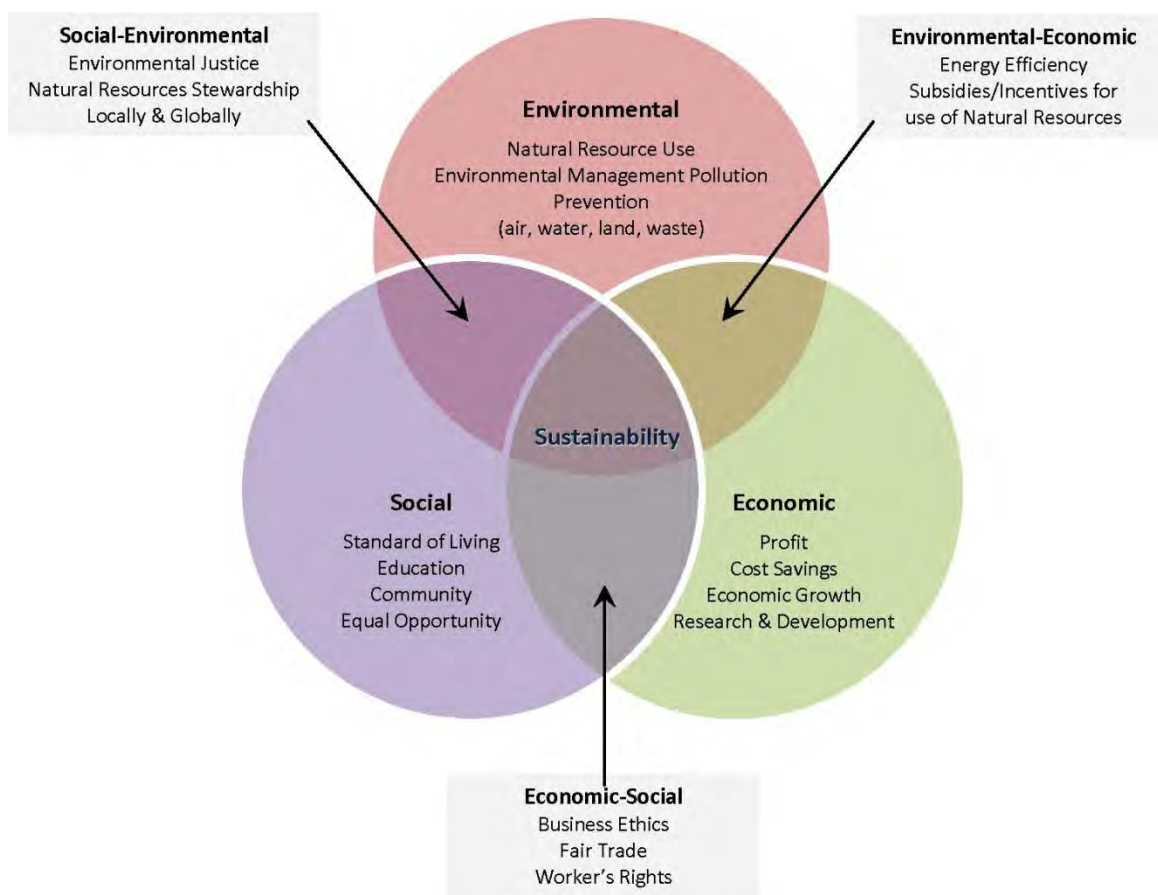
There is no formal evacuation plan prepared for Whittier Narrows Dam Basin. The County determines the response to hazards which occur within the boundaries of the Basin, as described in the previous section. However, the Reservoir Regulation Section of the Corps has a comprehensive notification protocol that is followed during storm and flood periods to notify entities that may be affected by flooding. In addition, the Corps has prepared an Emergency Action and Notification Subplan for Whittier Narrows Dam Basin to facilitate interagency coordination during earthquake, Dam safety, or security incidents (Corps 1986).

### 3.14 Sustainability

Sustainability can be broadly defined as “meeting the needs of the present generation without compromising the ability of future generations to meet their own needs.” This definition takes into account that there are three “spheres” comprising sustainability (environmental, economic, and social) that need to be considered when developing and evaluating projects and management systems. The three spheres of sustainability are described in Figure 3.3. For the Corps, applying the goals inherent in this definition to the development and implementation of Corps led and

Corps co-sponsored projects involves approaching the planning, design, construction, and operation phases of these projects with the intention of sustaining natural resources, protecting the environment, achieving economic viability, and promoting a high quality of life.

With the passing of the Water Resources Development Act (WRDA) in 2007, Congress directed the Corps (and other Federal agencies) to put environmental protection and restoration first when planning water resources projects. This emphasis complements the sustainability approach taken by the Corps in developing and implementing water resources and ecosystem restoration projects such as those being considered in this integrated document. Moreover, sustainability as a practice for the Corps has become increasingly important as rising population continues to place greater pressure on land development and competition for natural resources and land use, especially in and near urban areas such as the Los Angeles and San Gabriel River watersheds.



**Figure 3.1 The Three Spheres of Sustainability**

### 3.14.1 Environmental Sustainability

Under ideal environmental sustainability conditions an ecosystem would maintain functionality and biodiversity over time. Characteristics of this ideal ecosystem would include a steady

(equilibrium) state, the ability to recover from disturbance (resilience), and evolving plant communities (succession). Because the landscape within and around the study area has been altered, ideal ecosystem function does not exist, and achieving it may be no longer possible. However, the premise going forward is that with intervention, some of the critical ecosystem functions at many of the alternative restoration sites can be maintained, enhanced, or even to some extent restored. In all cases, it is assumed that an adaptive management program can be developed and implemented that will help support environmental sustainability. The baseline conditions with respect to functionality and biodiversity vary among the nine alternative sites in the study area.

Sustainability is best achieved through implementation of practices that are known to conserve and protect the resources within the Basin. Within the Basin, the implementation of measures to ensure sustainable use of resources may include developing a green waste and recycling plan. This plan should extend throughout the Basin and include specific measures for accommodating additional waste during special events.

### **3.14.2 Economic Sustainability**

Similar to environmental sustainability, which is based on the ability of an ecosystem to maintain functionality over time, economic sustainability involves creating economic value (in terms of capital and monetary exchanges) from implementing restoration projects in the study area that would also be sustainable over time. For the alternative sites being considered, striving for economic sustainability may involve developing programs and activities that generate revenue for the maintenance and upgrade of amenities. Also, more indirectly, it may involve the development of amenities such as restaurants and lodging in or near the watershed as a result of the interest generated in activities afforded at the project sites. However, developing these types of income amenities would need to be accomplished without exploiting and/or sacrificing environmental protection and restoration. Therefore, in the planning, design, construction, and operation phases, the usage and potential waste of resources in the generation of economic activity would be accounted for, and the use of green technology and materials and renewable resources maximized.

### **3.14.3 Social Sustainability**

Social sustainability is based on the concept that sustainable ecosystem restoration projects in the Whittier Narrows Dam Basin that maintain and enhance healthy natural environment and involve the development of sustainable (and revenue-generating) on-site and area activities would also result in ongoing high quality of life for area residents. It is also based on the above definition of sustainability whereby future generations should have the same or greater access to these quality of life benefits as the current generation. This concept encompasses human rights and environmental justice. Social sustainability applies not only to the provision of recreation and other social amenities but also to the protection of environmentally sensitive areas in the study area. Future generations deserve the opportunity to have a high quality experience with the natural areas of the watershed while perpetuating our collective responsibility of environmental stewardship. Finally, a healthy ecosystem that treats all people fairly with access to high quality amenities (both built and natural) is the best assurance of sustaining a vibrant economic system.

## 4

# ALTERNATIVES IMPACTS ASSESSMENT

Since approval of the Master Plan would not result in any physical implementation of a project, the impact analysis of the Proposed Action Alternative and the No Action Alternative are in most cases very similar and each resource category analysis identifies the need for compliance with NEPA and other Federal environmental laws that must be complied with when, in the future, lessees propose new development within the Basin.

To determine the potential for significant impacts, typical significance thresholds have been identified through application of Federal laws, Corps policy, published research, professional judgment, and in some cases through state and local regulations. In general, significance thresholds may be exceeded if project features will negatively affect:

- Public safety or health,
- Wetlands, floodplains, or ecologically sensitive areas,
- Important scientific, cultural, or historic resources, and/or
- Threatened or endangered species or their habitat.

Project impacts are assessed to determine if they are:

- Likely to be highly controversial or its impact analysis highly debated,
- Likely to involve highly uncertain impacts or unique or unknown risks,
- Likely to pave the way for future actions,
- Part of a larger proposal,
- Likely to violate any Federal law or requirement imposed to protect the environment, and/or

### 4.1 Alternatives Impact Analysis By Resource

#### 4.1.1 Physical Land Resources

##### Thresholds of Significance

A significant impact would occur to physical land resources if the proposed project:

- Results in substantial adverse effects to people or structures from geologic conditions including expansive soils, liquefaction, earthquakes, landslides, substantial erosion, depletion of groundwater supplies or interference with groundwater recharge.
- Results in the direct or indirect destruction of a unique geologic feature.
- Results in the loss of availability of a known mineral resource of local, regional, or state value.
- Significantly increases wind or water erosion of soils or loss of topsoil, either on or off site.



- Significantly alters the physical or chemical quality of sediments or soils.
- Substantially alters topography beyond that which would result from natural erosion and deposition.
- Triggers or accelerates geologic processes such as erosion or sedimentation brought about by disturbance of landforms.

### Potential Sources of Effect

Sedimentation occurs naturally during high rainfall events. Anthropogenic practices may also exacerbate sedimentation rates. Introduction of heavy machinery, increased foot, horse, bicycle, or vehicular traffic, or changes in water management may all result in erosion or increases in sedimentation.

### Proposed Action Alternative

Under the Proposed Action Alternative, existing topography and sedimentation rates would remain unchanged. Major landforms would remain and areas subject to erosion are expected to continue to erode at current rates. Current seismic activity, earthquake fault zones, and areas of liquefaction within the Basin would likely remain active.

No substantial additional foot, bicycle, or vehicular traffic is anticipated as a result of the approval of the Master Plan, though use of bicycles and pedestrian access to the Basin would continue to be encouraged for special events. No additional land clearing or development would be implemented as a result of the Master Plan.

Under the Action Alternative, special events would be expected to be held primarily in the MRM - Inactive and/or Future Recreation area just south of the Military Museum, which has ample parking and is designed for large groups, as regulated by policies in Appendix A5. Use of these areas for special events would have only minor effects on soil compaction and erosion, and restoration of the site to pre-event conditions would be required. Special events for groups over 5,000 attendees would receive event-specific analysis in a separate EA

Training activities within operations areas not exceeding two consecutive days, with no more than one hundred individuals, no major equipment, no stunts, pyrotechnics, firearms, fire, aircraft, animals, building of structures, water contact, ground disturbance such as digging or leveling, or physical alteration, such as cutting of vegetation or moving rocks, with required restoration of the area to its pre-training condition upon completion of the training, is anticipated to have no more than minor, temporary effects on physical land resources.

Filming and photography within operations areas, with no major equipment, no stunts, pyrotechnics, firearms, fire, aircraft, animals, building of structures, water contact, ground disturbance such as digging or leveling, or physical alteration, such as cutting of vegetation or moving rocks, with required restoration of the area to its pre-training condition upon completion of the filming or photography, is anticipated to have no more than minor, temporary effects on physical land resources.

Vegetation surveys (e.g., botany classes learning sampling methods, etc.) that involve only taking small samples of vegetation and animal surveys that do not involve creation of new trails are not anticipated to negatively affect physical land resources.

### No Action Alternative

If the updated Master Plan is not approved, water management practices would be retained as is and managed through the guidance of the Reservoir Regulation Manual (Corps 1957). Sediment removal would continue to occur as necessary. No additional foot or vehicular traffic is anticipated as a result. No additional land clearing or development would be approved that would not be in compliance with the existing Master Plan.

Under the No Action Alternative, special events would continue to be held in any area of the Basin after event-specific review occurs. Special events would likely continue to be held primarily in the area south of the Military Museum. Regardless of whether the Proposed Action Alternative is approved, approximately two large special events are generally held each month, including cultural festivals, car shows and expositions. Each of these events would continue to require event-specific review. Requests for use of operations areas for filming and photography, training, and biological surveys would require event specific review and would not be subject to a consistent set of requirements, as provided in Appendices A4 through A9.

### Determination of Impacts

Based on the significance criteria above, there would be no significant impacts to physical land resources as a result of the implementation of the updated Master Plan. However in the future, any proposal for future development in the Basin would need to be analyzed for potential impacts on the physical land resources in the Basin.

## **4.1.2 Water Resources**

### Thresholds of Significance

A significant impact would occur to water resources if the proposed project:

- Causes substantial interference with groundwater supplies, recharge or direction and rate of groundwater flow;
- Causes a violation of any water quality standard or waste discharge requirement, or otherwise substantially degrades water quality;
- Changes in streambed scour or long-term channel degradation that occurs as a result of operation and maintenance would result in buried utilities being exposed to air or flowing water;
- Substantially alters the existing drainage pattern of the site or area, including the alteration of the course of a stream or river, in a manner that would result in substantial increase in erosion or siltation on or off site;

- Substantially alters the existing drainage pattern of the site or area, including the alteration of the course of a stream or river, in a manner that would result in a substantial reduction in the quantity of surface water;
- Substantially alters the existing drainage pattern of the site or area, including the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner that would result in flooding on or off site or provide substantial additional sources of polluted runoff;
- Exposes people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a Dam;
- Increases erosion or sedimentation in relation to existing conditions; and/or
- Releases chemicals such as oil and grease into the waters of the United States, the impact would be considered significant.

### Potential Sources of Effect

Water quality impairments are typically caused by the introduction of pollutants into a water body, either by direct dumping of pollutants into the water, urban runoff during storm events, or urban runoff not associated with a storm event.

Pollutants may be introduced directly through construction activities adjacent to the water body, which could contribute oils and grease from machinery and releases sediments into the water body as a result of clearing vegetation or the use of heavy machinery. Direct pollution also occurs as a result of public dumping of household chemicals or trash into the water body. During storm events, as water makes its way toward a stream or lake, it may pass through heavily urbanized areas, where it collects oils, grease, and gas from roadways, and pesticides, fertilizers, and other chemicals in residential and commercial areas. Non-storm event runoff occurs when residential or commercial activities result in excess water being discharged, such as from watering lawns or washing cars. Runoff may enter the San Gabriel River and Rio Hondo, and may enter the lakes, ponds, and drainages that pass through the Basin.

Water quality impairments may also occur in the form of thermal pollution, resulting from minimal flow or lack of shading from overstory vegetation. Algae blooms or waterfowl kills have not been reported for water bodies within the area, but could potentially occur as a result of high water temperatures that promote pathogen growth. A CWA 303(d) listing could become necessary if the proposed land use classifications resulted in increased water temperatures or other types of pollution.

Groundwater recession occurs on a seasonal basis, as a result of drought, or through artificial pumping. Diminished groundwater levels could affect groundwater dependent riparian vegetation, and in turn diminish habitat quality.

### Proposed Action Alternative

Under the Proposed Action Alternative, existing water quality protection programs administered at the state and local levels will continue to address issues as they arise, including those at the Basin.

Special events with fewer than 5,000 attendees as identified in the policy in Appendix A5 would not be anticipated to impact water resources. Events that would impact water resources through pollutant discharge, alter drainage patterns, or create any other impacts as identified as significant above, would require event-specific review. Training, filming and photography, and biological survey activities within operations areas as described in the Appendices would not be anticipated to have impacts to water quality. No discharges of pollutants would be allowed within the Operations area.

No physical changes are proposed for implementation at the Basin as a result of the action alternative. No land clearing activities are proposed. Human use and maintenance activities within the Basin are not expected to change as a result of this plan. Groundwater usage and recharge would not change as a result of the proposed action.

Groundwater is currently pumped for Basin operations; the County lakes (e.g. Legg Lake) rely on local groundwater wells for water supply. This condition would not change as a result of the proposed action.

#### No Action Alternative

Under the No Action Alternative, existing water quality protection programs administered at the state and local levels would continue to address issues as they arise, including those at the Basin.

No physical changes are proposed at the Basin as a result of the No Action Alternative. Human use and maintenance activities within the Basin are not expected to change as a result of the No Action Alternative. Groundwater usage and recharge would not change as a result. Existing land use classifications currently allow recreation activities in areas of sensitive riparian habitats along drainages. This activity in close proximity to water resources contributes to increased sedimentation and decreased water quality within the creek. Under the no action alternative, water quality is expected to continue to diminish with increasing population growth and resulting visitation pressure on the Basin.

Under the No Action Alternative, activities within operations areas and special events would continue to occur on an activity-specific or event-specific evaluation basis. Special events would not be directed to any specific area of the Basin, though they would be anticipated to continue to occur mostly in area south of the Military Museum.

#### Determination of Impacts

The Proposed Action Alternative would not create any significant impacts on water resources, and may create beneficial impacts over the long-term. However, any proposal for future development in the Basin would need to be analyzed for potential impacts on the water resources in the Basin.

### 4.1.3 Air Quality

#### Thresholds of Significance

There could be significant impacts to air quality if the updated Master Plan resulted in:

- Non-compliance with the Federal General Conformity Rule (40 CFR Parts 6, 51, and 93) Requirements;
- Generation of air pollutants that would exceed any regional air quality thresholds;
- Emissions in exceedance of 7,000 tons of CO<sub>2</sub>;
- Net increase of any criteria pollutant for which the project region is non-attainment under an applicable Federal or state ambient air quality standard (including releasing emissions that exceed quantitative thresholds for ozone precursors);
- Exposure of the public (especially schools, day care centers, hospitals, retirement homes, convalescence facilities, and residences) to substantial pollutant concentrations;
- Objectionable odors affecting a substantial number of people;
- Emissions that exceeded 550 pounds per day for CO, 75 pounds per day for VOC, 100 pounds per day for NO<sub>x</sub>, 150 pounds per day for SO<sub>x</sub>, or 150 pounds per day for PM<sub>10</sub>; and/or
- Emissions that exceeded 100 tons per year of CO, 100 tons per year of VOC, 100 tons per year of NO<sub>x</sub>, 100 tons per year of SO<sub>x</sub>, or 70 tons per year of PM<sub>10</sub>.

#### Potential Sources of Effect

Most air pollution results from motor vehicle emissions, particularly in densely populated areas. Other sources include industrial amenities, agricultural areas, and construction zones that allow for fugitive dust.

#### Proposed Action Alternative

There are no measures under the Updated Master Plan for increasing vehicular access to the Basin. Effects could possibly occur if enhanced management of the Basin improves conditions and makes the area more desirable, thus attracting more users. Since automobiles are the primary source of air pollution in the SCAQMD, an increase in vehicles to the Basin could increase air pollution in the immediate vicinity. However, in comparison to continuous vehicular use of the surrounding urbanized area, there would be no significant increase in vehicle emissions. Basin parking capacity is not proposed to change, which will preclude any dramatic increase in the use of the Basin by visiting vehicles. Under the Proposed Action, special events would be focused in the area south of the Military Museum and would be considered on an event-specific basis. Events in the designated areas with no more than 5,000 attendees, a parking plan, a traffic plan, and encouragement of use of public transit and bicycling would not have more than a temporary, insignificant impact on the Basin. Special events with over 5,000 attendees would include an increased number of vehicles traveling to and from the Basin, and special events in other Basin locations may not have sufficient parking or road capacity without additional measures. Such

events would require event-specific impact analysis in order to comply with the Federal Clean Air Act and state and local requirements as deemed necessary by the lessee in complying with its permit process.

No change related to air impacts is anticipated from the training, filming, or biological survey policies.

#### No Action Alternative

Under the No Action Alternative, air quality would be similar to that under the Proposed Action in most respects. Over time, population growth would likely result in an increase in vehicle use and emissions in the area. Basin parking capacity is not proposed to change, and even incremental increases in Basin use are not anticipated to result in significant adverse effects on air quality, especially in comparison to ongoing vehicle use in adjacent urbanized areas.

#### Determination of Impacts

Based on the significance criteria above, the Proposed Action would not create any significant impacts on air quality, and may create beneficial impacts over the long-term as a result of the updated Master Plan, which includes integrated policies (Appendix A) restricting air quality impacts during special events. However, any proposal for future development in the Basin would need to be analyzed for potential impacts on air quality in compliance with the Federal Clean Air Act and state and local laws and regulations.

#### **4.1.4 Noise**

##### Thresholds of Significance

For this analysis, the proposed project may result in significant impacts on noise quality if:

- Noise levels projected for a Proposed Action did not comply with the relevant Federal, state, and/or local standards or regulations; and/or
- An increase in noise levels above the existing ambient condition as a result of the introduction of a new source of noise.

Although extremely loud noises can cause temporary or permanent damage, the primary environmental impact of noise is annoyance. The objectionable characteristic of noise often refers to its *loudness*. Loudness represents the intensity of the sound wave or the amplitude of the sound wave height (measured in decibels). The degree of impact is hard to assess because of the highly subjective character of individuals' reactions to changes in noise. Empirical studies have shown people begin to notice changes in environmental noise level around five dBA (EPA 1974). Thus, average increases in noise levels less than five dBA cannot be definitively considered as producing an adverse impact. For increases in level above five dBA, it is difficult to quantify the impact beyond the obvious: the greater the noise level change, the greater the impact.

Noise impacts on the surrounding community are enforced through City Codes, supported by nuisance complaints and subsequent investigation. The City Code lists maximum allowable noise levels to be used as the baseline for determination of public nuisance on various land uses/zones.

### Potential Sources of Effect

Common sources of noise include automobile traffic, construction, large crowds, events such as concerts, industrial practices, and recreation uses of the Basin.

### Proposed Action Alternative

Under the Proposed Action, noise issues would continue to be managed by local ordinances and state laws, as applicable. The updated Master Plan would not result in the development of additional recreation amenities, roadways, or events that might increase noise levels within the Basin. Reclassification of areas from Recreation to MRM – Recreation - Low Density may result less noise generated within the Basin as high intensity recreation activities are restricted and only passive recreation is allowed. There are no anticipated significant adverse impacts to the noise condition within the Basin as a result of the Proposed Action Alternative.

Under the Proposed Action, special events would be encouraged to occur in the area south of the Military Museum rather than other areas of the Basin. Events held in this area with fewer than 5,000 people, a parking plan, a traffic plan, encouragement of public transit and bicycling, and a noise limitation of 100 dB, held for no more than two days at a time, would not be anticipated to have more than insignificant, temporary impacts to noise. Events anticipated to have noise over 100 dB would continue to require event-specific review. Special events over 5,000 attendees or outside the designated special events area may have increased traffic or parking issues that could result in increased noise to surrounding areas. Such events would require an impact analysis in order to comply with the Federal Noise Control Act and state and local requirements as deemed necessary by the lessee in complying with its permit process. The event itself, depending on its location may create a noise level which would exceed Federal, state, and local standards and may be subject to analysis if any significant criteria would be exceeded.

Training activities within operations areas not exceeding two consecutive days, with no more than one hundred individuals, no major equipment, no stunts, pyrotechnics, firearms, fire, aircraft, animals, building of structures, water contact, ground disturbance such as digging or leveling, or physical alteration, such as cutting of vegetation or moving rocks, with required restoration of the area to its pre-training condition upon completion of the training, is anticipated to have no more than minor, temporary effects on noise.

Filming and photography within operations areas, with no major equipment, no stunts, pyrotechnics, firearms, fire, aircraft, animals, building of structures, water contact, ground disturbance such as digging or leveling, or physical alteration, such as cutting of vegetation or moving rocks, with required restoration of the area, are anticipated to have no more than minor, temporary effects on noise.

Vegetation surveys (e.g., botany classes learning sampling methods, etc.) that involve only taking small samples of vegetation and animal surveys that do not involve creation of new trails are not anticipated to have more than minimal impacts on noise levels on a temporary, infrequent basis.

### No Action Alternative

There are no anticipated significant adverse impacts to the noise condition within the Basin as a result of the No Action Alternative.

### Determination of Impacts

Based on the significance criteria, the Proposed Action Alternative would not create any significant impacts on noise quality. However, any proposal for future development in the Basin would need to be analyzed for potential impacts on noise quality in compliance with the Federal Noise Control Act and state and local laws and regulations.

## **4.1.5 Biological Resources**

### Thresholds of Significance

Impacts to biological resources are considered significant if one or more of the following conditions would result from implementation of the Proposed Action Alternative:

- Had a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the CDFG or USFWS (Endangered and threatened species referenced in this threshold are those listed by the USFWS and/or CDFG as threatened or endangered. Section 15380 of CEQA indicates that a lead agency can consider a non-listed species (e.g., CNPS List 1B plants) to be endangered, rare, or threatened for the purposes of CEQA if the species can be shown to meet the criteria in the definition of rare or endangered. For the purposes of this discussion, the current scientific knowledge on the population size and distribution for each special status species was considered in determining if a non-listed species met the definitions for rare and endangered according to Section 15380 of CEQA.).
- Had a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the CDFG or USFWS.
- Had a substantial adverse effect on Federally protected wetlands as defined by Section 404 of the CWA (including, but not limited to, marsh, vernal pool, and coastal wetlands) through direct removal, filling, hydrological interruption, or other means.
- Interfered substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impeded the use of native wildlife nursery sites.
- Conflicted with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.



- Conflicted with the provisions of an approved Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.
- Increased substantially the ambient noise levels for adjoining areas that interfere with breeding behavior of listed species (LACDPW significance criteria). For the purposes of this impact analysis, “substantial adverse effect” is defined as the loss or harm of a magnitude which, based on current scientific data and knowledge, would: 1) substantially diminish population numbers of a species or distribution of a habitat type within the region; or 2) eliminate the functions and values of a biological resource in the region.
- Substantial loss of species diversity in natural vegetation and wildlife habitat.
- Substantial loss of habitat that is regionally unique designated sensitive.
- Loss of breeding areas of listed threatened or endangered species.
- Significant disruption of wildlife corridors.

An evaluation of whether an impact on biological resources would be substantial must consider the resource and how that resource fits into a regional or ecological context. Impacts are sometimes locally important but not regionally significant; although they may result in an adverse alteration of existing conditions at the project site, they may not substantially diminish, or result in the permanent loss of, that resource on a population-wide or region-wide basis.

#### Potential Sources of Effect

Possible sources of effect may include 1) changes to the lighting regime, which may affect foraging or breeding of nocturnal creatures, 2) water diversions that may affect the groundwater table or diminish aquatic habitat value, and 3) creating conditions that would increase noise in areas containing sensitive (i.e., nesting, breeding, or fledging) wildlife.

#### Proposed Action Alternative

Designating and managing the Nature Area as Environmentally Sensitive land would provide increased protection of native vegetation communities and their associated wildlife assemblages than was provided in the previous 1996 Master Plan. In this area important habitat types would be managed and protected providing protection for the Federally endangered least Bell’s vireo and the threatened coastal California gnatcatcher observed in the area.

The classification of MRM – Recreation – Low Density in areas that were once high intensity recreation areas, or where they may act as a buffer between high intensity recreation and natural areas, would minimize impacts to biological resources overall.

Under the Proposed Action, special events would be encouraged to occur in the area south of the Military Museum. Events within these areas, with fewer than 5,000 attendees, a parking plan, a traffic plan, not impeding access to other areas of the Basin, with noise limitations of 100 dB, would not be anticipated to have more than minor impacts to biological resources. Events not complying with the conditions in Appendix A5 would require event-specific impact analysis in order to comply with the Federal Endangered Species Act, the Federal Migratory Bird Act, other Federal, state and local requirements as deemed necessary by the Corps and lessee in complying

with each permit process. No special events would be allowed to occur in Environmentally Sensitive or Mitigation land use classifications, protecting biological resources from disturbance.

Training activities within operations areas not exceeding two consecutive days, with no more than one hundred individuals, no major equipment, no stunts, pyrotechnics, firearms, fire, aircraft, animals, building of structures, water contact, ground disturbance such as digging or leveling, or physical alteration, such as cutting of vegetation or moving rocks, with required restoration of the area to its pre-training condition upon completion of the training, are anticipated to have no more than minor, temporary effects on biological resources.

Filming and photography within operations areas, with no major equipment, no stunts, pyrotechnics, firearms, fire, aircraft, animals, building of structures, water contact, ground disturbance such as digging or leveling, or physical alteration, such as cutting of vegetation or moving rocks, with required restoration of the area, are anticipated to have no more than minor, temporary effects on biological resources.

Vegetation surveys (e.g., botany classes learning sampling methods, etc.) that involve only taking small samples of vegetation and animal surveys that are non-invasive and do not involve creation of new trails, are anticipated to have no more than minor, temporary effects on biological resources. Vegetation sampling would be minor. No breaking of new trails during animal surveys would be permitted.

#### No Action Alternative

Because less protection to Environmentally Sensitive areas, and therefore little improvement to the environment, would be likely under the No Action Alternative, wildlife diversity and densities would be expected to remain the same or decrease over time. Any future degradation of habitat due to increases in weedy species or urbanization would give species best adapted to urban environments an advantage over those that require native vegetation communities. The result would be for some populations of native species to decline and potentially be eliminated from the Basin, further reducing species diversity.

#### Determination of Impacts

Based on the significance criteria above, no significant adverse impacts are anticipated to biological resources as a result of the approval of the updated Master Plan. Instead, slight improvements to vegetation and associated wildlife assemblages may result.

#### **4.1.6 Cultural Resources**

##### Thresholds of Significance

Criteria for the evaluation of effects to National Register properties are found in 36 CFR 800.9, *Criteria of Effect and Adverse Effect*. These include:

- An undertaking has an effect on a historic property when the undertaking may alter characteristics of the property that may qualify the property for inclusion in the National Register. For the purpose of determining effect, alteration to features of a property's location, setting, or use may be relevant depending on a property's significant characteristics and should be considered.
- An undertaking is considered to have an adverse effect when the effect on a historic property may diminish the integrity of the property's location, design, setting, materials, workmanship, feeling, or association. Adverse effects on historic properties include, but are not limited to:
  - Physical destruction, damage, or alteration of all or part of the property;
  - Isolation of the property from or alteration of the character of the property's setting when that character contributes to the property's qualification for the National Register;
  - Introduction of visual, audible, or atmospheric elements that are out of character with the property or alter its setting;
  - Neglect of a property resulting in its deterioration or destruction; and/or
  - Transfer, lease, or sale of the property.
- Effect of an undertaking that would otherwise be found to be adverse may be considered as being not adverse for the purpose of these regulations;
  - When the historic property is of value only for its potential contribution to archeological, historical, or architectural research, and when such value can be substantially preserved through the conduct of appropriate research, and such research is conducted in accordance with applicable professional standards and guidelines;
  - When the undertaking is limited to the rehabilitation of buildings and structures and is conducted in a manner that preserves the historical and architectural value of affected historic property through conformance with the "Standards for Rehabilitation and Guidelines for Rehabilitating Historic Buildings," and/or;
  - When the undertaking is limited to the transfer, lease, or sale of a historic property, and adequate restrictions or conditions are included to ensure preservation of the property's significant historic features.

### Potential Sources of Effect

Natural events and human activities both have the potential to impact cultural resources. Human activities that may affect cultural resources include land clearing, sediment removal, vegetation removal, construction, development, and any other activity that physically alters soils where cultural resources may be present, historic buildings, or structure or traditional cultural properties.

### Proposed Action Alternative

Several sites of cultural significance have been reported within Whittier Narrows Dam Basin. However, there are no measures that would be implemented as a result of the approval of the updated Master Plan that would impact cultural resources. No physical land modifications, clearings, developments, or alterations would occur if the Action Alternative is selected. The

potential for discovery or the need to reevaluate methods of any previous inventories would be addressed by the Corps for future actions on a case-by-case basis.

Special events in the area south of the Military Museum under the special events policy would have no effect on cultural resources; nor would filming and photography, training, and biological surveys within operations areas that comply with the restrictions in the policies set out in Appendix A, including a prohibition on ground disturbance and physical alteration. Special events outside of these areas beyond the scope of the Special event policy restrictions, as well as filming, photography, training and biological surveys within operations areas outside of the restrictions set out by those policies, would require event-specific impact analysis in order to comply with NEPA, NHPA, Corps policy and state and local requirements as deemed necessary by the lessee in complying with its permit process.

#### No Action Alternative

Federal protections for cultural resources would continue. It is not clear what level of work to identify cultural resources has been done subsequent to the previous Master Plan. For actions that could affect cultural resources on Federal land or actions that are funded, licensed, or permitted by the Federal government, compliance is required with the NHPA and other laws, statutes, and regulations. Consideration of the effects of actions on protected cultural resources would be required, and adverse effects would be resolved. There is potential for undiscovered or unevaluated resources to be present. The potential for discovery or the need to reevaluate methods of any previous inventories would be addressed by the Corps for future actions on a case-by-case basis.

#### Determination of Impacts

The Proposed Action Alternation would not create any significant impacts on cultural resources. However, any proposal for future development in the Basin would need to be analyzed for potential impacts cultural resources in compliance with NEPA, NHPA, Corps policy and state and local laws and regulations.

### **4.1.7 Hazardous and Toxic Waste Materials**

#### Thresholds of Significance

Impacts associated with the existence of hazardous and toxic materials in the Basin and surrounding region would be considered significant if the Proposed Action:

- Caused soil contamination, including flammable or toxic gases, at levels exceeding Federal, State and local hazardous waste limits established by 40 CFR Part 261 and Title 22 CCR 66261.21, 66261.22, 66261.23 and 66261.24;
- Resulted in the mobilization of contaminants, creating potential pathways of exposure to workers, the public or other sensitive receptors to contaminated or hazardous materials and such exposure exceeds permissible exposure levels set by the Federal Occupational Safety and Health Administration (OSHA) in Title 29 CFR Part 1910;

- Exposed the general public to hazardous situations through the transport, use, storage or disposal of hazardous materials; and/or
- Created a significant hazard to the public or environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment.

### Potential Sources of Effect

Hazardous or toxic materials such as oils, grease, fertilizers, or pesticides may be introduced into the Basin as a result of the use of these compounds for construction, development, agricultural or vegetation management. An increase of exposure to hazardous or toxic compounds already existing within the Basin may result from spillage or leakage of containment units if they are inadvertently damaged through Basin activities. Effects may also result if existing known hazardous sites remain unknown.

### Proposed Action Alternative

Two sites of interest have been reported for this site in the database search, and further discussion with appropriate personnel regarding the extent and nature of business operations is necessary to determine the types and quantities of hazardous materials and wastes that potentially may be, or have been, stored and/or generated on site, and the status of any cleanup actions.

The updated Master Plan does not recommend activities that would increase the levels of hazardous or toxic substances in the Basin. Corps policy guides the management of and response to spills of oils, grease, and other compounds that may be introduced into the Basin as a result of typical maintenance procedures

Special events and other activities complying with the policies in Appendices would not be anticipated to have any impact on hazardous or toxic materials. Events not covered by the policies would require an impact analysis of the event to determine if there would be significant impacts to hazardous and toxic materials through the above criteria

### No Action Alternative

If the updated Master Plan is not implemented, the baseline conditions regarding the use of hazardous and toxic materials and the generation, storage, and disposal of hazardous and toxic wastes in the Basin would continue as at present into the foreseeable future.

Corps policy guides the management of and response to spills of oils, grease, and other compounds that may be introduced into the Basin as a result of typical maintenance procedures. No significant immitigable impacts are anticipated as a result of the No Action Plan. Sites requiring additional investigation may continue to pose threats to the human environment if they are not investigated.

## Determination of Impacts

The Corps has determined that the Proposed Action Alternation would not create any significant impacts on hazardous and toxic materials through contamination or human exposure. However, any proposal for future development in the Basin would need to be analyzed for potential impacts to hazardous and toxic materials in compliance with Federal laws, Corps policy and state and local laws and regulations.

### **4.1.8 Socioeconomics and Environmental Justice**

#### Thresholds of Significance

An alternative may have a significant impact on socioeconomics and Environmental Justice if it caused:

- Changes to a sector of the economy, productivity, competition, prices, or jobs;
- Impacts the welfare of minority or low income populations;
- Project-induced population changes on the availability of public services;
- Reductions in the fiscal and physical ability of the local governmental agencies to meet the needs of the public following the project-related changes in the local population;
- Long-term decreases in local employment due to direct loss of jobs or an adverse effect on the local economy that results in an indirect long-term loss of jobs;
- A shortage of temporary housing during project construction caused by construction workers seeking local accommodations that prevents normal users from being able to obtain temporary housing in the area. Temporary housing would include motels, hotels, campgrounds, RV parks, dormitories, and similar lodging;
- Disproportionately high and adverse impacts on minorities, low income residents, or children;
- A substantial population growth in an area was induced by the project; and/or
- Substantial numbers of existing housing or people were displaced.

#### Potential Sources of Effect

An example of a disproportionate effect on a significant population might be the use of an economically repressed neighborhood for the development of a facility that contributes significant health hazards to the surrounding community. This would unfairly place the pressure of health hazards on a portion of the population that is less readily able to handle the additional pressures.

#### Proposed Action Alternative

There is a significant minority population identified within the market area of Whittier Narrows Dam Basin, where the local community is comprised of a greater than 60% Latino population. However, the updated Master Plan does not prescribe changes to the physical features of the Basin, would not impact public services, would not result in a substantial population increase, and would not increase jobs, fees, or the number of workers within the Basin.

Under the Proposed Action, the special events and other policies would not be anticipated to cause significant impacts to socioeconomics. Special events would be encouraged to occur in the area south of the Military Museum under the policy; events over 5,000 individuals or proposing to use other areas that may affect local general recreation users would require event specific analysis. Fees charged for admission to an event may cause a hardship to some, but to date, fees have been similar to fees charged to similar events within the region. Per Corps policy, fees must be approved by the District Commander and are to be in line with similar events in the area. Special events may provide limited temporary employment depending on the event. Events not addressed under the special events policy would require an impact analysis of the event to determine if there would be significant impacts to socioeconomic and environmental justice. Such events, depending on fee structure, cost, projected income and other factors, may create impacts to be determined through impact analysis.

#### No Action Alternative

Socioeconomics and environmental justice must be reviewed for any potential future development within the Basin. Increasing population and changing demographics will require re-evaluation to maintain compliance with environmental justice legislation.

#### Determination of Impacts

The Proposed Action Alternative would not create any significant impacts to local area socioeconomics and environmental justice issues, but continued reevaluation of population statistics would be required to ensure ongoing environmental justice for minority populations. However, any proposal for future development in the Basin would need to be analyzed for potential impacts in compliance with Federal laws, Corps policy, state and local laws, and regulations.

### **4.1.9 Traffic and Transportation**

#### Thresholds of Significance

An impact would be considered significant on transportation and traffic if:

- A major roadway (arterial or collector classification) would be closed to through traffic as a result of the Proposed Action's activities and there would be no suitable alternative route available.
- The Proposed Action's activities would restrict access to or from adjacent land uses and there would be no suitable alternative access.
- An increase in vehicle trips associated with additional commuter and truck trips would result in an unacceptable reduction in level of service of local jurisdictions on roadways in the vicinity of the Proposed Action or would result in safety problems for vehicular traffic, transit operations, or trains.

- An increase in roadway wear in the vicinity of the work zone would occur as a result of heavy truck or equipment movements, resulting in noticeable deterioration of roadway surfaces.
- The Proposed Action and its siting would conflict with planned transportation improvements in the area.
- Project activities or operation of the project would result in safety problems for vehicular traffic, transit operations, or trains.
- An increase in vehicle trips associated with additional commuter and truck trips would result in an unacceptable reduction in the level of service standards of local jurisdictions in the project vicinity.

### Potential Sources of Effect

Expanded sports amenities, new roads, or new public venues could contribute to increased traffic, decreased accessibility to the Basin or its neighboring communities, reduction in the availability of transportation modes, or a reduction in the connectivity of the multi-modal transportation network within the Basin.

### Proposed Action Alternative

Under the Proposed Action Alternative, the current multi-modal transportation system within the Basin would not be anticipated to change.

There are no proposed modifications to or development of the pedestrian, equestrian, bicycle, mass transit, and vehicular traffic network currently in place, although the Proposed Action would encourage use of public transit and bicycling to special events and would recommend improvements in wayfinding, which could result in minor increases in pedestrian, bicycle, and/or equestrian uses if implemented. No development is proposed that might create obstacles or cause diversions to the existing transportation system.

Special events would be recommended to generally occur in the area south of the Military Museum with adjacent parking with capacity for large groups, limiting idling time and traffic backups. Under the special events policy, a traffic management plan, a parking plan, and encouragement of public transit and bicycling would be required. Special events would also be required to ensure public access to adjacent areas is unimpeded. Special events beyond the limitations contained in the policy would be subject to event-specific analysis to comply with NEPA including analysis on the effects of increased traffic.

Training activities within operations areas not exceeding two consecutive days, with no more than one hundred individuals, no major equipment, no stunts, pyrotechnics, firearms, fire, aircraft, animals, building of structures, water contact, ground disturbance such as digging or leveling, or physical alteration, such as cutting of vegetation or moving rocks, with required restoration of the area to its pre-training condition upon completion of the training, is anticipated to have no more than minor, temporary effects on traffic or transportation. Groups of one hundred individuals or less would not greatly affect traffic circulation on or near the Basin.



Vegetation surveys (e.g., botany classes learning sampling methods, etc.) that involve only taking small samples of vegetation and animal surveys that do not involve creation of new trails are not anticipated to affect traffic or transportation.

### No Action Alternative

If implementation of the proposed updated Master Plan does not occur, the transportation access to the Whittier Narrows Dam Basin would likely remain as currently exists, subject to influences such as economic conditions in surrounding municipalities. Within the Basin and park area, the existing roads, trails, and access points currently available for pedestrians, cyclists, and equestrians, as well as parking areas and trail systems are unlikely to change in the future under without-project conditions.

Under the No Action alternative, special events would continue to be considered on an event-specific basis without a standard set of requirements to address traffic, parking, and alternative transportation, although similar requirements for traffic to those under the proposed action would be likely to be required on an event-specific basis.

### Determination of Impacts

Based on the significance thresholds, the Proposed Action would not create any significant impacts to Basin and local area traffic, transportation routes, access, or parking. Any proposal for development in the future would require a separate impact analysis to determine significance however.

#### **4.1.10 Utilities**

##### Thresholds of Significance

The proposed project would have a significant impact on utilities if it would:

- Require a substantial modification to existing utility facilities that would have an adverse environmental impact on sensitive resources or land uses; and/or
- Create a hazardous situation that could not be mitigated.

##### Potential Sources of Effect

Development, construction, modification, or alteration of any features within the Basin may result in the inadvertent severing or damage of utility infrastructure. These actions may also overload utility capacity, causing damage or outages. Increasing demand or overburdening of utilities as a result of increased human use of an area may also cause significant impacts.

##### Proposed Action Alternative

Reclassification of land use categories under the updated Master Plan would not lead to substantially increased use of utilities. Minor impacts may occur if increased management

increases the desirability of the area as a destination area, thereby increasing demand on local sewage and water amenities. Special events with fewer than 5,000 attendees, and filming and photography, biological surveys, and training activities within operations areas as described in Appendix A are not anticipated to have significant impacts on utilities. Training activities within operations areas under conditions in Appendix A are not anticipated to have any effect on utilities. Filming activities would follow similar procedures. Vegetation surveys (e.g., botany classes learning sampling methods, etc.) that involve only taking small samples of vegetation and animal surveys that do not involve creation of new trails are not anticipated to affect utilities.

### No Action Alternative

Utility condition and use, and energy consumption are not anticipated to change under the No Action Alternative. Maintenance and operation of the utilities would continue to be the responsibility of the utility owner or lessee.

### Determination of Impacts

The Corps has determined that the Proposed Action Alternation would not create any significant impacts to utilities as a result of the updated Master Plan. Any proposal for development in the future would require a separate impact analysis to determine significance.

#### **4.1.11 Aesthetics**

### Thresholds of Significance

The factors considered in determining impacts on esthetic resources typically include:

- Direct, permanent changes to important existing scenic characteristics of a landscape that are enjoyed by a large number of visitors.
- The impairment of or obstruction of views from public gathering places of scenic resources.
- Viewing distance and degree to which the Proposed Action would dominate the view of the observer.
- Resulting contrast of amenities related to the Proposed Action with existing visual resources.
- The level of public interest in the existing landscape characteristics and concern over potential changes.

### Potential Sources of Effect

Long-range views may be negatively impacted by introduction of obstructions, such as tree plantings or construction developments. Local or short-range views may be negatively impacted through natural occurrences such as wildfire, flood, storm or establishment of non-native invasive plant species, as well as human uses such as vegetation clearing, construction, large events, or overuse that results in worn amenities or trash dumping. Replacement of open or green

space with developed areas would reduce the availability of esthetic resources, while increases in lighting would diminish esthetic value with increased light pollution.

#### Proposed Action Alternative

Local views are not anticipated to be impacted by the action alternative, which does not propose any development or construction within the Basin.

Aesthetic value within the Basin is anticipated to improve with the implementation of the updated Master Plan and the resulting protections to Environmentally Sensitive lands. Special events as identified in the policy in Appendix A5 would not cause more than minor impacts to aesthetic quality. Special events that have under 5,000 attendees, occur at the area south of the Military Museum with adjacent parking, have parking and traffic plans, follow noise limitations, and do not impede access to other areas of the Basin, in addition to other criteria as outlined in the policy would not be anticipated to have more than minor, temporary impacts to esthetics. Special events and other activities not covered could need to provide an impact analysis if the event or activity would cause a significant impact as identified above. Examples could include festivals and other events which would block views of the natural areas of the Basin, require amenities that are out of proportion to the surrounding area, or require lighting at night that would disturb residents in the surrounding area.

Filming under Appendix would generally be protective of aesthetics, limiting impacts to temporary impacts below significance. Activities in operations areas under Appendix A6 and A7 would have no more than minimal impacts on aesthetics.

#### No Action Alternative

Aesthetic quality may degrade over time within the Basin without the approval of the updated Master Plan. Current operations and maintenance would continue to limit the aesthetic potential of the Basin. Special events and activities within operations areas would continue to be evaluated on an event-specific basis without use of a consistent set of requirements.

#### Determination of Impacts

The Proposed Action Alternation would not create any significant impacts to Basin esthetic quality. Any proposal for development in the future would require a separate impact analysis to determine significance. There are no significant adverse effects anticipated to aesthetic conditions within the Basin as a result of the Action Alternative.

### **4.1.12 Recreation**

#### Thresholds of Significance

Impacts to recreation may be significant if the Action Alternative reduces the availability or quality of a variety of existing recreation opportunities to a broad socioeconomic spectrum of the existing market area. Impacts may include those that have an effect on high intensity or low intensity recreation, and may impact support amenities associated with the recreation areas, such

as restrooms, shelters, drinking fountains, barbecues or picnic tables. Impacts on recreation and the use of recreation amenities could be considered significant if the following were to occur:

- The creation of significant disruption to access of recreation amenities or areas;
- Construction or operational activities substantially conflict with recreation use; and/or
- Impact support amenities associated with the recreation areas.

### Potential Sources of Effect

Measures that may reduce the availability of recreation amenities to a broad socioeconomic spectrum may include the restriction of universal accessibility at existing amenities, or the introduction of costs or fees associated with use of the facility that may restrict those without sufficient financial resources. Recreation opportunities may also be reduced through the inactivation of recreation amenities for the purpose of rejuvenation or as a result of budget constraints. The quality of amenities may be diminished if greater numbers of people begin to visit the Basin, or if a greater number of teams are permitted to utilize existing amenities.

### Proposed Action Alternative

There would be no immediate change to existing recreation amenities as a result of the Updated Master Plan. No new recreation amenities would be proposed or implemented as a result of the approval of the updated Master plan and no existing recreation amenities are proposed for alteration or modification. No new fees or expenses are proposed for implementation within the Basin. No additional amenities or parking areas are proposed for development, which might increase the use of the area beyond its current capacity.

Special events would be encouraged to occur at the area south of the Military Museum. Events occurring in that area, with fewer than 5,000 attendees, a parking plan, a traffic plan, encouragement of public transit and bicycling, noise limitations of 100 dB, and that avoid restricting access to adjacent areas would not be anticipated to negatively impact recreation users. The policy would be anticipated to have minor positive impacts for recreation users because adjacent areas would remain accessible for general users and traffic and parking impacts would be minimized. The Proposed Action, with inclusion of the special events evaluation policy, would be anticipated to have a minor beneficial impact to recreation users by encouraging special events proponents to comply with the restrictions rather than undergo lengthy event-specific review. Special events and other activities not covered under the policies would require event-specific analysis. Examples could include festivals and other events which would limit access to existing amenities, prohibit use of amenities by others, or cause excessive impacts to recreation support amenities.

Training activities within operations areas are not anticipated to have any effect on recreation.

Vegetation surveys (e.g., botany classes learning sampling methods, etc.) that involve only taking small samples of vegetation and animal surveys that do not involve creation of new trails are not anticipated to interfere with recreation.

### No Action Alternative

Under the existing Master Plan, land use classifications that are no longer applicable to the Basin lands would remain in place. The effectiveness of the current Master Plan as a management document would continue to be compromised by outdated information and guidelines. If the updated Master Plan is not approved, new development would need to comply with existing Corps policies and comply with the existing Master Plan, which could be in conflict with each other.

### Determination of Impacts

The Proposed Action Alternation would not create any significant impacts to Basin recreation resources. Any proposal for development in the future would require a separate impact analysis to determine significance.

#### **4.1.13 Public Health and Safety**

##### Thresholds of Significance

An alternative would have a significant adverse impact on public health and safety if it would:

- Increase exposure of people or structures to flooding hazards;
- Create conditions that would present potential dangers to the public or attract the public to a potentially hazardous area (e.g., attractive nuisances);
- Result in use of chemicals or machinery that would endanger staff or unauthorized visitors within the Basin;
- Create mosquito breeding conditions in an amount that would require increased levels of mosquito abatement programs to maintain mosquito populations at pre project levels;
- Impact public services or emergency services;
- Result in substantial adverse physical impacts associated with the provision of new or physically altered public services, need for new or physically altered public services, the construction of which could cause significant environmental impacts;
- Require additional fire protection or law enforcement staff and/or equipment to maintain an acceptable level of service;
- Substantially increase emergency service response times by fire and law enforcement;
- Require substantial changes to the daily schedule or calendar of a school, a major reorganization of students or classrooms, or other temporary or permanent disturbance to the school's activities; and/or
- Create unsafe conditions for school staff and/or students; and/or create overcrowded conditions at schools.

##### Potential Sources of Effect

Hazards may be introduced into the Basin in the form of hazardous or toxic waste, the creation of isolated or unlighted areas that would facilitate increased criminal activity, or a reduction in security patrols or security stations. Allowing human use in areas where natural or man-made

hazards occur may compromise public safety. These areas may include those with known poisonous plants or dangerous animals, where steep or unstable slopes occur, or adjacent to water hazards or Dam infrastructure. Public services may be compromised if fire, medical, or police vehicles or personnel are obstructed from entering the Basin as a result of closures or inaccessibility to the entire Basin area. Services may be compromised if planned events result in a larger number of service calls than the fire, medical, or police personnel are able to attend to.

#### Proposed Action Alternative

Land use reclassification does not result in any changes to accessibility of the Basin; no roadways, trails, or other access points will be altered. Therefore, public services such as fire, medical, and police will continue to have unobstructed access into and through the Basin. No new amenities are proposed that would create isolated or unlighted areas. Therefore, public services such as fire, medical, and police would continue to have the same access into and through the Basin. No new amenities are proposed that would create isolated or unlit areas.

Under the Proposed Action, special events that have under 5,000 attendees, occur in the area south of the Military Museum, include a traffic plan, evacuation plan, and parking plan, encourage use of public transit and bicycling, and require adequate restroom and first aid tent, as included in the Special events policy, would not be anticipated to have negative impacts on public health and safety. Special events and other activities not covered by the policy would require event-specific impact analysis. Examples of potential impacts include festivals and other events which would limit access to existing amenities, prohibit use of amenities by others, cause excessive impacts to support and safety, cause a hazardous situation which cause an excessive demand for emergency services or limit access to emergency vehicles.

Training activities within operations areas are anticipated to have no negative effects on public health and safety. Filming activities following similar procedures are anticipated not to have negative effects on public health and safety. Vegetation surveys (e.g., botany classes learning sampling methods, etc.) that involve only taking small samples of vegetation and animal surveys that do not involve creation of new trails are not anticipated to negatively affect public health and safety.

#### No Action Alternative

Continued use of the existing Master Plan would not result in any increase in public health or safety hazards within the Basin. Existing land use classification would not result in any changes to accessibility of the Basin. Therefore, public services such as fire, medical, and police would continue to have limited access into and through the Basin. No new amenities are proposed that would create isolated or unlit areas. Special events would continue to occur on a case-by-case basis without consistent application of requirements.

#### Determination of Impacts

The Proposed Action Alternative would not create any significant impacts to Basin users safety and public services, Any proposal for development in the future would require a separate impact

analysis to determine significance. Overall, there are no significant impacts associated with the approval of the updated Master Plan.

#### **4.1.14 Sustainability**

##### Thresholds of Significance

An alternative would have a significant adverse impact on sustainability if it resulted in:

- Economic, ecological, or social changes in the use, visitation, or management of the Basin;
- Inability of ecosystems to maintain functionality and retain current levels of abundance and biodiversity over time;
- Inability to ensure future generations have the same or greater access to social resources as the current generation; and/or
- Inability of an area to retain its value, both in terms of capital and monetary exchanges over time.

##### Potential Sources of Effect

Ecological diversity and abundance may be impacted through reduction in size of protected natural areas within the Basin or the reduction in quality of natural areas. Quality of natural areas may be affected by the degradation of air quality, water quality, noise levels, soil condition, and vegetation condition. Social sustainability was previously addressed in the Recreation section and the Socioeconomics and Environmental Justice section above. Economic sustainability may be negatively impacted if financial viability were compromised as a result of the proposed action plan.

##### Proposed Action Alternative

Designation of sizeable areas of Environmentally Sensitive lands allows for a substantial increase to the environmental sustainability of the land. Functional and dynamic ecosystems may be attained through additional protections afforded to these land use classifications; human use of the areas is more restricted than in other classifications. Functional and dynamic natural habitats may be fostered in areas that are both protected from development and extremely limited to human activities. Environmentally Sensitive lands are afforded the greatest protection from human use, since these areas are more restricted to human use than other classifications. There are no proposed changes to the financial management of the Basin as a result of the updated Master Plan. There are no negative impacts anticipated to Basin sustainability as a result of the action alternative; instead, the updated Master Plan is expected to improve compatibility of land uses, expand environmental protections, and provide an updated review of visitation data and community needs, which would improve the overall sustainability of the Basin.

Under the Proposed Action, special events are not anticipated to impact sustainability. Special events and other activities not covered by the policies in Appendix A5 may need to provide an impact analysis if the event or activity would cause a significant impact as identified above.

Examples could include festivals and other events which would impact energy, economic, or environmental resource sustainability through excessive use of an area, limit access or charge unreasonable fees, or be a drain on existing energy sources that would be irreplaceable.

### No Action Alternative

The updated Master Plan provides a recommended land use plan that is based on ecological, social, and economic sustainability. Without approval of the updated Master Plan, sustainability of environmental resources, community use, and economic viability may erode. In particular, without the updated Master Plan, there would be no update to the recreation needs assessment, no current review of socioeconomics and biological resources, and no updated land management plan based on best available data. As a result, there would be significant limitations to the ability to manage the Basin to the greatest benefit of both human interests and natural protections.

### Determination of Impacts

The Proposed Action Alternative would not create significant impacts to Basin energy, environmental, or economic sustainability. Any proposal for development in the future would require a separate impact analysis to comply with the Executive Order 12898 and determine significance.

## **4.2 Cumulative Impacts**

A cumulative impact is an “impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions” (40 CFR § 1508.7). Cumulative impacts can result from individually minor, but collectively significant, actions taking place over time (40 CFR § 1508.7). CEQ’s guidance for considering cumulative effects states that NEPA documents “should compare the cumulative effects of multiple actions with appropriate national, regional, state, or community goals to determine whether the total effect is significant” (CEQ 1997).

### **4.2.1 Past Actions**

Whittier Narrows Dam Basin was constructed in an area of continually increasing urbanization that has significantly altered the natural environment. The communities surrounding the Basin have become densely urbanized over the past century, marked by extensive automobile traffic, highly developed industrial and residential areas, numerous noise sources, and a dense population. The construction of the Dam and development within the Basin has contributed to cumulative environmental impacts to the area. Following construction, ongoing operation and maintenance of the Basin and its recreation amenities has continued to impact environmental conditions.

Cumulative impacts of development within and around the Basin have adversely affected water quality and quantity, air quality, and noise levels. Dense urbanization has adversely affected the presence of culturally valuable resources, as well as the native fish, wildlife and vegetative habitats that were historically present in the Basin. Development both within and around the



Basin has increased the possibility for introduction of pollutants, toxic materials, wastes, and non-native plant and animal species to the Basin. The overall quality of the natural environment at the Basin has diminished significantly since industrialization and urbanization of Los Angeles County.

The construction of Whittier Narrows Dam in 1957 necessitated clearing the land that is now the Basin. In contrast to the land surrounding the Basin which has undergone an intense urbanization process during the same time, the land within the Basin has been both restored to some extent and in some portions, allowed to become reestablished with native plant and wildlife communities. The Basin is now an increasingly rare piece of open space within a highly urbanized region. In comparison with the surrounding area, sources of noise and air pollution within the Basin have remained fewer and of lower intensity, vegetative communities and wildlife habitats have returned to some extent, and traffic is much less than the surrounding area. The Basin's esthetic value is higher due the natural character and environmental quality that has evolved over time while urbanization outside the Basin has destroyed much of the natural environment. The Basin offers a retreat from densely urbanized surroundings and provides the community a place to enjoy nature and to recreate safely.

#### **4.2.2 Present Conditions**

By tailoring management of the Whittier Narrows Dam Basin to its current conditions and needs, the approval of the updated Master Plan would continue to temper some of the effects of urbanization and will limit development to compatible and sustainable uses. The area previously designated as the Wildlife Management Area under the prior Master Plan is recommended for inclusion into the Environmentally Sensitive land use classification under the updated Master Plan. The establishment of the area under this land use classification affords the area greater protection under Corps policy. The new designation would mean greater restrictions of use and development within this environmentally valuable habitat. The designation of Environmentally Sensitive land will continue to ensure the Basin's natural habitats are protected and that the associated wildlife assemblages, including Federally protected species, are managed in a way that is sustainable and compatible to the visiting public.

Under the proposed land use classification plan, the area designated for any recreation use, including Recreation, MRM – Recreation - Low Density, and MRM – Future and or Inactive Recreation, has been reduced overall. Approximately 450 acres of land was transferred from high intensity recreation uses to low density recreation, raising the total MRM – Recreation - Low Density land from 212 acres to 637.8 acres. Reclassification of these lands would not result in immediate changes to land use or management in areas that are already designated for recreation activities of any kind. The updated Master Plan will not result in the construction or development of any land within the Basin. Under the updated Master Plan, the natural and human environments of the Basin would continue to be safeguarded and no significant cumulative adverse impacts are expected.

#### **4.2.3 Future Actions**

The updated Master Plan is intended to provide the baseline for future, sustainable management of the Basin. Approval of the updated Master Plan would result in the reclassification of several

acres of land throughout the Basin, but would not result in the construction of additional recreation amenities, roadways, structures, or utilities, nor does it advocate unnecessary development or development of natural areas.

As the updated Master Plan does not contain recommendations for specific projects to be constructed or implemented, there are no potential future impacts to assess in combination with impacts of other ongoing or future projects in the nearby vicinity.

Aside from the primary use of the Basin for flood risk management, the only other authorization for development within a Federal water resources development project is for recreation amenities. At Whittier Narrows Dam Basin, the total area available for recreation development for high intensity recreation will decrease from 1,000 acres to 438.5 acres. The updated Master Plan recommends the reduction in MRM – Inactive and/or Future Recreation from 275 acres to 188.4 acres. If undeveloped land designated for potential recreation development (MRM – Future and/or Inactive Recreation land) is developed or if designated Recreation amenities are modified at some point in the future, there may be minimal adverse effects to air quality, noise, and traffic if enhanced recreation areas lead to increased use of the Basin, which could contribute to the cumulative adverse impacts to the region.

An additional change to future development within the Basin concerns the existing golf course. The development of golf courses on Federally owned water resources development projects is no longer considered an acceptable use of the lands. Existing golf courses will remain in place as long as leases are renewed. However the land occupied has been reclassified into MRM – Recreation – Low Density. In the event that the golf course is decommissioned in the future, the land would not be developed for high intensity recreation uses and the overall impact to the environment would be decreased.

If it is determined by the local community that additional recreation amenities are desired in the future, the proposed action will be subject to project-specific NEPA documentation, which will further ensure that any significant cumulative adverse impacts are assessed.

By limit development in the Basin, it is anticipated that the approval of the updated Master Plan would contribute to reducing the overall cumulative adverse impacts of the continually developing areas surrounding Whittier Narrows Dam Basin into the future. Retaining the area as both a relatively naturalized open space area and recreation oasis will continue to mitigate the impacts of increasing traffic, noise, air and light pollution, loss of natural habitats and open space, to minority populations that may grow within the surrounding community, and that result from crowding associated with greater infill of surrounding urban areas over time.

The proposed land use classification plan would not impact the natural resources found within the Basin into the future and may provide some improvement to those resources, both through continued enforcement of existing laws and regulations, by defining an area of Environmentally Sensitive land, and reducing the acreage of land that may be developed for recreation activities.

## **5** COORDINATION AND CONSULTATION

### **5.1 Project Delivery Team**

The Corps' Project Delivery Team (PDT) is made up of a variety of specialists from various backgrounds and sections of the Corps. They include project manager and recreation planners plan formulators, environmental coordinators, and engineers. Other specialists have been consulted with as needed during the preparation of this Master Plan.

### **5.2 Agency Coordination**

U.S. Fish and Wildlife Service (USFWS) The Fish and Wildlife Coordination Act of 1958 (16 USC 661-667e) requires that any agency impounding, diverting, channel deepening, controlling or otherwise modifying a stream or body of water any purpose whatever, including navigation and drainage, consult with the USFWS. Since there are no recommendations for changes or modifications in Dam or Basin operations that would modify a stream or body of water, USFWS was not consulted in preparation of this Master Plan. This DEA will be sent to the USFWS.

Los Angeles Regional Water Quality Control Board (LARWQCB) In preparing the water quality section of this DEA, the LARWQCB was consulted on impairments to water bodies within the Basin. The findings are listed in Section 3.3.4 of the DEA. A 401 Certification would not be required since a 404 permit would not be required as no dredge or fill material would be discharged into waters of the United States unless warranted under further development of future proposed development and impact analysis.

### **5.3 Institutional Involvement**

Lessee Coordination During the preparation of the Master Plan and DEA, the PDT met with staff from the County and City of Pico Rivera several times during the preparation of this Master Plan. These meeting discussions focused on existing and proposed projects, maintenance issues, public safety issues and concerns, and use policies. A series of questions was distributed in advance to focus these discussions. Topics included park visitation records and statistics, carrying capacity of the various amenities and parks, connectivity and accessibility, maintenance issues, green waste management and sustainability measures, and future projects and projected future needs. These discussions provided valuable information from a day-to-day management and operation perspective for the development of the Master Plan.

### **5.4 Public Involvement**

In the development of this Master Plan, one workshop was held specifically for this Master Plan on Wednesday, 21 April 2010 from 5:00 pm to 7:00 pm at the City of Pico Rivera Sports Arena to foster collaboration and encourage dialogue among the interested parties of the Whittier Narrows Dam Basin Master Planning process. There were approximately 20 people in attendance at this workshop. Input was recorded via written comments by participants and on maps during the workshop process. All verbal comments were recorded on flip charts and later

transcribed. The comments have been consolidated into a list of actions and management directions. The outreach process, including that conducted by the WCA and its partners, is further summarized in Appendix C

## **5.5 Mailing List**

The mailing list identifies Federal, state and local agencies, as well as a list of libraries and other locations where the Master Plan and EA are available for review. A list of interested parties, mostly attendees at one or more of the workshops has also been included that requested a copy of the draft for review.

<b>Federal Elected Officials and Agencies</b>	
Honorable Barbara Boxer United States Senate 312 N. Spring St. Suite 1748 Los Angeles, CA 90012	Honorable Dianne Feinstein United States Senate 11111 Santa Monica Blvd. Los Angeles, CA 90025
Honorable Grace F. Napolitano House of Representatives 1610 Longworth Bldg Washington, DC 20515	Honorable Judy Chu House of Representatives 2421 Rayburn House Office Building Washington, DC 20515
U.S. Environmental Protection Agency Region 9, NEPA Compliance Department 75 Conference St. San Francisco, CA 94105	U.S. Council of Environmental Quality 722 Jackson Pl., Northwest Washington, DC 20503
U.S. Fish and Wildlife Service 2730 Loker Ave. West, Carlsbad, CA 92008	
<b>State Elected Officials and Agencies</b>	
California Department of Fish and Game Southern California Region 4949 View Ridge Ave. San Diego, CA 92123	State Office of Planning and Research State Clearinghouse 1400 10th St. Room 222 Sacramento, CA 95814
California Air Resources Board 9480 Telstar Ave. Suite 4 El Monte, CA 91731	L.A. Regional Water Quality Control Board 320 W. 4th St. Suite 200 Los Angeles, CA 90013
<b>County and City Elected Officials and Agencies</b>	
Honorable Gloria Molina Los Angeles County Supervisor, 1st District 821 Kenneth Hahn Hall of Administration 500 W. Temple St. Los Angeles, CA 90012	County of Los Angeles Department of Parks and Recreation 433 S. Vermont Ave. Los Angeles, CA 90020
County of Los Angeles Department of Public Works 900 S. Fremont Ave. Alhambra, CA 91803	City of Industry 15625 East Stafford St. #100 City of Industry, CA 91744
City of El Monte 11333 Valley Blvd. El Monte, CA 91731	City of Montebello 1600 West Beverly Blvd. Montebello, CA 90640
City of Pico Rivera 6615 Passons Blvd. Pico Rivera, CA 90660	City of Rosemead 8838 East Valley Blvd. Rosemead, CA 91770

City of South El Monte 1415 N. Santa Anita Avenue South El Monte, CA 91733	City of Whittier 13230 Penn Street Whittier, CA 90602
<b>Public Libraries</b>	
El Monte Public Library 3224 N. Tyler Ave. El Monte, CA 91731-3356	Monterey Park Bruggemeyer Library 318 S. Ramona Avenue, Monterey Park, CA 91754
Montebello Public Library 1550 W. Beverly Blvd. Montebello, CA 90604	Rosemead Public Library 8800 Valley Blvd. Rosemead, CA 91770-1788
West Covina Public Library 1601 W. Covina Pkwy. West Covina, CA 91790-2786	Whittier Central Library 7344 Washington Ave. Whittier, CA 90602
Whittwood Branch 10537 Santa Gertrudes Ave. Whittier, CA 90603	
<b>Interested Parties</b>	
Ralph Beltran 12251 Magnolia Ave. El Monte, CA 91732	Joel Chesler 1774 Manor Gate Road Hacienda Heights, CA 91745
John Giles 2593 Flanders St. Brea, CA 92821	Colleen J MacKay 1000 N. Durtee Ave. South El Monte, CA 91733
Arbia Massouris 3635 Myra Ave. Anaheim CA, 92804	Bill Naylor 8234 Gregory Circle Buena Park, CA 90621
Hammer Sui 2203 Calle Taxco West Covina, CA 91792	San Gabriel and Lower Los Angeles Rivers and Mountains Conservancy 100 N. Old San Gabriel Canyon Road Azusa, CA 91702

## 6

## ENVIRONMENTAL LAWS AND COMPLIANCE

The EA fulfills the requirements of NEPA and other pertinent laws and regulations discussed below.

### **6.1 National Environmental Policy Act (NEPA) (42 USC 4321 et seq.)**

NEPA is the nation's primary charter for protection of the environment. It establishes national environmental policy which provides a framework for Federal agencies to minimize environmental damage and requires Federal agencies to evaluate the potential environmental impacts of their proposed actions. Under NEPA, a Federal agency prepares an Environmental Assessment (EA) describing the environmental effects of any proposed action and alternatives to that action to determine if there are significant impacts requiring development of an Environmental Impact Statement (EIS) or if a Finding of No Significant Impact (FONSI) is appropriate. The EA must identify measures necessary to avoid or minimize adverse impacts, and all impacts must be reduced to a level below significance in order to rely upon a FONSI.

Any recreation and/or restoration projects that may be proposed in the future for development would need to comply with the Act during the planning and implementation process.

### **6.2 U.S. Fish and Wildlife Coordination Act (16 USC 661)**

This Act requires Federal agencies consult with the U.S. Fish and Wildlife Service (USFWS) and the fish and wildlife agencies of States where the "waters of any stream or other body of water are proposed or authorized, permitted or licensed to be impounded, diverted . . . or otherwise controlled or modified" by any agency under a Federal permit or license. Consultation is to be undertaken for the purpose of "preventing loss of and damage to wildlife resources." The intent is to give fish and wildlife conservation equal consideration with other purposes of water resources development projects.

As the proposed project does not involve impoundment, diversion, or other modification to bodies of water within the Basin with the proposed reclassification of land use, no Fish and Wildlife Coordination Act Report is required.

Any recreation and/or restoration projects that may be proposed in the future for development would need to comply with the Act during the planning and implementation process.

### **6.3 Endangered Species Act (ESA), as amended 16 USC 1531 et seq.)**

The ESA protects threatened and endangered species, and their designated critical habitat, from unauthorized take. Section 9 of the Act prohibits such take, and defines take as to harm, harass, pursue, hunt, shoot, wound, kill, trap, capture, or collect or to attempt to engage in any such conduct. Section 7 of the ESA requires Federal agencies to insure that any action authorized, funded or carried out by them is not likely to jeopardize the continued existence of listed species or modify their critical habitat. Consultation with the USFWS or National Marine Fisheries

Service is required if the Federal action may affect a Federally-listed species or designated critical habitat.

Since the proposed project is limited to the reclassification of land use within the Basin only, with no project to be physically implemented, consultation was not required, and the project complies with the ESA.

Any recreation and/or restoration projects that may be proposed in the future for development would need to comply with the ESA during the planning and implementation process.

#### **6.4 Migratory Bird Treaty Act (MBTA) (16 USC 715- 715s)**

The MBTA prohibits the taking or harming of any migratory bird, its eggs, nests, or young without an appropriate Federal permit. Almost all native birds are covered by this Act and any bird listed in wildlife treaties between the United States and several countries, including Great Britain, Mexican States, Japan, and countries once part of the former Soviet Socialist Republics. A “migratory bird” includes the living bird, any parts of the bird, its nest, or eggs. The take of all migratory birds is governed by the MBTA’s regulation of taking migratory birds for educational, scientific, and recreation purposes and requiring harvest to be limited to levels that prevent over-utilization. Section 704 of the MBTA states that the Secretary of the Interior is authorized and directed to determine if, and by what means, the take of migratory birds should be allowed and to adopt suitable regulations permitting and governing take. Disturbance of the nest of a migratory bird requires a permit issued by the USFWS pursuant to Title 50 of the Code of Federal Regulations (CFR).

Since the proposed project is limited to the reclassification of land use within the Basin only, with no project to be physically implemented, the project complies with the Act.

Any recreation and/or restoration projects that may be proposed in the future for development would need to comply with the Act during the planning and implementation process.

#### **6.5 Clean Water Act (CWA) (33 USC 1251 et seq.)**

Section 401 of the CWA requires every applicant for a Federal license or permit for any activity that may result in a discharge into navigable waters to obtain a State Water Quality Certification (Certification) or waiver that the proposed activity will comply with state water quality standards (*i.e.*, beneficial uses, water quality objectives, and anti-degradation policy). The Los Angeles RWQCB issues section 401 Water Quality Certifications for activities within Los Angeles County.

Since the proposed project is limited to the reclassification of land use within the Basin with no project to be physically implemented, the proposed project does not result in any discharge into navigable waters; therefore Certification is not required.

Section 402 prohibits the discharge of pollutants to "waters of the United States" from any point source unless the discharge is in compliance with a National Pollutant Discharge Elimination System (NPDES) Permit. Section 402 requires a NPDES Permit for the discharge of stormwater from municipal separate storm sewer systems (MS4) serving urban areas with a population



greater than 100,000; construction sites that disturb one acre or more; and industrial amenities. The RWQCB administers these permits with oversight provided by the SWRCB and EPA Region IX.

Since the proposed project is limited to the reclassification of land use within the Basin with no project to be physically implemented, the proposed project does not involve discharge of pollutants into waters of the US; therefore a Section 402 permit is not required. Any recreation and/or restoration projects that may be proposed in the future for development would need to comply with the Act during the planning and implementation process and may require a Storm Water Pollution Prevention Plan (SWPPP) under the NPDES under Section 402 of the Act.

Section 404 authorizes the Secretary of the Army acting through the U.S. Army Corps of Engineers to issue permits for the discharge of dredged or fill materials into the waters of the United States, including wetlands, at specified disposal sites. The selection and use of disposal sites must be in accordance with guidelines developed by the Administrator of EPA in conjunction with the Secretary of the Army and published in 40 CFR Part 230 (known as the 404(b)(1) guidelines). Under the Section 404(b)(1) guidelines, the Corps shall examine practicable alternatives to the proposed discharge and permit only the Least Environmentally Damaging Practicable Alternative (LEDPA).

For Corps actions, the Corps does not issue permits, but demonstrates compliance, or “equivalency,” with Section 404 through a Section 404(b)(1) analysis. In addition, the requirements and conditions of nationwide permits and regional permits may be applied for Corps actions and thus considered when addressing compliance with Section 404. All other entities must obtain a Section 404 permit from the Corps before undertaking any discharge of dredged or fill materials into waters of the United States, unless determined to be exempt from regulation.

Since the proposed project is limited to the reclassification of land use within the Basin with no project to be physically implemented, the proposed project does not involve discharge of dredged or fill material in waters of the United States; therefore a 404(b)(1) analysis is not required.

## **6.6 Clean Air Act of 1970 (42 USC 7401 et seq.)**

Section 118 of the Act states that any Federal action that may result in discharge of air pollutants must comply with Federal, State, interstate and local requirements respecting control and abatement of air pollution. Section 176(c) of the Act requires that Federal actions conform to an implementation plan after it has been approved or promulgated under Section 110 of the Act.

The potential air quality impacts of the proposed project have been examined and compared to the significant levels identified by the Southern California Air Quality Management District (SCAQMD), which is the agency with jurisdiction to enforce the Clean Air Act regulations and other relevant local air quality regulations. The SCAQB sets the threshold limits which, if exceeded, trigger New Source Review Rules, as defined in the Act.

Based on the air quality analysis described in Appendix D, Sections 3.4.1 through 3.4.3 and 4.2.1.3, a conformity determination for a specific pollutant is not required because for each

criteria pollutant or precursor the total of direct and indirect emissions of the criteria pollutant or precursor in the nonattainment area caused by the Federal action would not equal or exceed any of the rates in 40 CFR 93.153(b)(1) or (2). As a result, the proposed project conforms to the Federal Clean Air Act, as amended.

Any recreation and/or restoration projects that may be proposed in the future for development would need to comply with the Act during the planning and implementation process.

#### **6.7 Noise Control Act of 1972, as amended (42 USC 4901 et seq.)**

Noise generated by any activity, which may affect human health or welfare on Federal, state, county, local, or private lands, must comply with noise limits specified in the Noise Control Act.

Since the proposed project is limited to the reclassification of land use within the Basin with no project to be physically implemented, the proposed project will not have any direct impacts to noise levels in the area. Noise will continue to be regulated with Federal, state, and local laws and ordinances.

Any recreation and/or restoration projects that may be proposed in the future for development would need to comply with the Act during the planning and implementation process.

#### **6.8 National Historic Preservation Act (NHPA) (16 USC 460b, 470l-470n)**

Section 106 of the NHPA requires any Federal agency to take responsibility for the impact of the decisions on historic resources. Under Section 106, Federal agencies are prohibited from approving any Federal “undertaking” (including the issuance of any license, permit, or approval), without 1) taking into account the effects of the undertaking on the historic properties, and 2) affording the Advisory Council on Historic Preservation (ACHP) a reasonable opportunity to comment on the undertaking. The NHPA forces an agency to stop and consider the consequences of its undertakings on any historic property, and assures that the agency does so by requiring it to receive comment from the ACHP, or agencies acting in its stead, and from the public before proceeding with any such undertaking. In order to comply with the NHPA, a Federal agency considering an undertaking must go through the process outlined in the ACHP’s regulations at 36 C.F.R. Part 800.

Since the proposed project is limited to the reclassification of land use within the Basin with no project to be physically implemented, the proposed project will have no effect on historic properties. As such, the proposed project is in compliance with Section 106 of the Act and its implementing regulations (36 CFR part 800).

If any cultural resources are discovered in the future during study of proposed additional recreation amenities, they will need to be evaluated for their eligibility for inclusion in the NRHP pursuant to 36 CFR 800.13(b).

## **6.9 Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) (42 USC 9601 et seq.)**

CERCLA regulates the release or substantial threat of release into the environment of any pollutant or contaminant which may present an imminent and substantial danger to the public health or welfare.

As the Proposed Action includes only reclassification of Basin land and no physical alterations, there will be no impact to potentially existing contaminants and the project will not contribute contaminants to the Basin.

If during the planning process of future proposed recreation development in the Basin such sites were discovered, compliance with the Act would be required.

## **6.10 Executive Order (EO) 11514, Protection and Enhancement of Environmental Quality, amended by Executive Order 11991, Relating to Protection and Enhancement of Environmental Quality**

This EO mandates that the Federal government provide leadership in protecting and enhancing the quality of the nation's environment to sustain and enrich human life. Federal agencies must initiate measures needed to direct their policies, plans and programs so as to meet national environmental goals. These regulations include procedures for early EIS preparation and require impact statements to be concise, clear, and supported by evidence that agencies have made the necessary analyses.

Any recreation and/or restoration projects that may be proposed in the future for development would need to comply with the EO during the planning and implementation process. An Environmental Assessment has been prepared as part of this Master Plan. Therefore, the proposed project is in compliance with the mandates of this EO.

## **6.11 Executive Order 11988, Floodplain Management**

In accordance with this EO, the Corps shall take action to "...avoid to the extent possible the long and short term adverse impacts associated with the occupancy and modification of floodplains and to avoid direct or indirect support of floodplain development wherever there is a practicable alternative."

This EO requires that Federal Agencies take action to manage the risk and/or impacts of floods on human safety, health, and welfare; and restore and preserve natural and beneficial values served by the floodplains. Each agency also has the responsibility to evaluate potential effects of Federal actions that may be made within floodplains.

Compliance with this EO requires proper implementation of engineering regulations (ER) 1165-2-26, which states that the policy of the Corps with respect to floodplain management is to formulate projects which, to the extent possible, avoid or minimize adverse impacts associated with use of the base (100-year) floodplain and avoid inducing development in the base floodplain unless there is no practicable alternative.

Since the proposed project is limited to the reclassification of land use within the Basin with no project to be physically implemented, the proposed project will not result in further inducing development in the base floodplain.

There is no practicable alternative to undertaking the proposed Action Alternative within the floodplain, as the project area is already established within the floodplain. The Action Alternative recommends a land use classification plan for the Basin only, and does not include provisions for any physical development, alteration, or modification of the existing conditions. Therefore, the Action Alternative must occur within land that is already within the floodplain, and there are no practicable alternatives. The proposed project is in compliance with the ER 1165-2-26 for implementing EO 11988.

If actions are proposed in the future that would result in changes to the Basin, a separate review for compliance with this EO would be undertaken.

### **6.12 Executive Order 11990, Protection of Wetlands**

Federal agencies shall take action to minimize the destruction, loss, or degradation of wetlands, and to preserve and enhance the natural and beneficial values of wetlands in carrying out the agencies responsibilities. Each agency, to the extent permitted by law, shall avoid undertaking or providing assistance for new construction located in wetlands unless the head of the agency finds (1) that there is no practicable alternative to such construction and (2) that the proposed action includes all practicable measures to minimize harm to wetlands which may result from such use. In making this finding, the head of the agency may take into account economic, environmental, and other pertinent factors. Each agency shall also provide opportunity for early public review of any plans or proposals for new construction in wetlands.

The proposed project would not impact any wetlands within the Basin. The proposed project is in compliance with this EO.

Any recreation and/or restoration projects that may be proposed in the future for development would need to comply with the EO during the planning and implementation process if the proposal would impact existing wetlands.

### **6.13 Executive Order 12088, Federal Compliance with Pollution Control Standards**

Federal Agencies are responsible for ensuring that all necessary actions are taken for the prevention, control, and abatement of environmental pollution with respect to Federal amenities and activities under control of the agency.

The action does not negatively affect the natural and beneficial values of the Basin as the reclassification of land use would conserve and protect existing natural areas from further development. The proposed project is in compliance with the EO.

Any recreation and/or restoration projects that may be proposed in the future for development would need to comply with the EO during the planning and implementation process.

#### **6.14 Executive Order 12898, Environmental Justice Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations**

EO 12898 is intended to direct each Federal agency “to make achieving environmental justice part of its mission by identifying and addressing... disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low income populations in the [U.S.]...”

No minority or low income communities would be disproportionately affected by implementation of the Proposed Action. The Proposed Action is in compliance with the EO.

Any recreation and/or restoration projects that may be proposed in the future for development would need to comply with the EO during the planning and implementation process.

#### **6.15 Executive Order 13112, Invasive Species**

Federal agencies are to expand and coordinate efforts to prevent the introduction and spread of invasive plant species and to minimize the economic, ecological, and human health impacts that invasive species may cause.

Invasive species management within the Basin is the responsibility of the local sponsor under the terms of the lease. Through recommended eradication and/or maintenance of invasive species, and the future replacement of non-native ornamental trees and other plant material, within the Master Plan and per additional Corps guidance, the intent of the EO is met.

Any recreation and/or restoration projects that may be proposed in the future for development would need to comply with the EO during the planning and implementation process.

#### **6.16 Executive Order 13148, Greening the Government through Leadership in Environmental Management**

Environmental management considerations must be a fundamental and integral component of Federal Government policies, operations, planning, and management. The primary goal of this EO in the natural resources arena is for each agency to strive to promote the sustainable management of Federal facility lands through the implementation of cost-effective, environmentally sound landscaping practices, and programs to reduce adverse impacts to the natural environment.

The Master Plan in Section 5, Resource Objectives, discusses ways to improve environmental stewardship and management of the Basin. The proposed project is in compliance with the EO. Any recreation and/or restoration projects that may be proposed in the future for development would need to comply with the EO during the planning and implementation process.

### **6.17 Executive Order 13195, Trails for America in the 21<sup>st</sup> Century**

This EO states that Federal agencies will, to the extent permitted by law and where practicable and in cooperation with Tribes, States, local governments, and interested citizen groups, protect, connect, promote, and assist trails of all types throughout the United States.

The approval of the updated Master Plan will not result in the development of trails or the reduction in quality or quantity of existing trails. An analysis of existing trails has been provided, which will serve to inform the promotion of trail building and connection in the future. This Master Plan and DEA is in compliance with this order.

**7**

**LIST OF PREPARERS**

**U.S. Army Corps of Engineers**

The following list provides the names and roles of Corps staff responsible for preparation and review of this Whittier Narrows Dam Basin Master Plan.

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Lillian Dampios, Real Estate Attorney  
Phillip Serpa, Project Manager  
Priyanka Wadhawan, Plan Formulator  
Lillian Dampios, Real Estate Attorney  
Jonathon Thorpe, Processing  
Sean Alexander, Processing  
Greg Peacock, Reservoir Regulation  
Ned Araujo, Reservoir Regulation  
Lillian Dampios, Real Estate Attorney  
Jonathon Thorpe, Processing  
Sean Alexander, Processing  
Greg Peacock, Reservoir Regulation  
Ned Araujo, Reservoir Regulation

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**APPENDIX D1:  
 VEGETATION**

A list of plant species identified during the vegetation survey site visit is provided below. This list is not exhaustive, although, it captures all dominant plant species and associated habitat types. Also included is the canopy level and percent of canopy cover each plant species comprises within each habitat type.

Common Name	Scientific Name	Canopy Level	% of Canopy
Southern Willow Scrub			
Red willow	<i>Salix laevigata</i>	Upper	25
Castor bean	<i>Ricinus communis</i>	Middle	20
Narrowleaf cattail	<i>Typha angustifolia</i>	Middle	20
Arroyo willow	<i>Salix lasiolepis</i>	Middle	15
Mulefat	<i>Baccharis salicifolia</i>	Middle	15
Tobacco tree	<i>Nicotiana glauca</i>	Middle	15
Sandbar willow	<i>Salix exigua</i>	Middle	15
Fremont cottonwood	<i>Populus fremontii</i>	Upper	15
Giant cane	<i>Arundo donax</i>	Middle	15
Telegraph weed	<i>Heterotheca grandiflora</i>	Lower	10
Hoary nettle	<i>Urtica dioica</i>	Middle	5
Cocklebur	<i>Xanthium strumarium</i>	Lower	5
Southern California black walnut	<i>Juglans californica</i>	Middle	5
Fennel	<i>Foeniculum vulgare</i>	Middle	2
Umbrella sedge	<i>Fuirena</i> sp.	Lower	2
Poison hemlock	<i>Conium maculatum</i>	Lower	2
Stinging nettle	<i>Urtica dioica</i>	Lower	2
White nightshade	<i>Solanum douglasii</i>	Lower	2
Giant wildrye	<i>Elymus condensatus</i>	Middle	2
Ornamental Tree/Maintained Lawn			
Peruvian pepper tree	<i>Schinus molle</i>	Upper	15
Eucalyptus	<i>Eucalyptus</i> sp.	Upper	15
Palms	<i>Washingtonia</i> sp.	Upper	15
Common olive	<i>Olea europaea</i>	Upper	15
Toyon	<i>Heteromeles arbutifolia</i>	Middle	15
Common ice plant	<i>Mesembryanthemum crystallinum</i>	Lower	15
Western sycamore	<i>Platanus racemosa</i>	Upper	15
Sweetgum	<i>Liquidambar styraciflua</i>	Upper	15
Chinese elm	<i>Ulmus parvifolia</i>	Upper	15
Yellow poplar	<i>Liriodendron tulipifera</i>	Upper	10



Common Name	Scientific Name	Canopy Level	% of Canopy
Castor bean	<i>Ricinus communis</i>	Middle	10
Liquid amber	<i>Liquidambar styraciflua</i>	Upper	10
Arborvitae	<i>Thuja occidentalis</i>	Upper	10
Oleander	<i>Nerium oleander</i>	Middle	10
Canary Island pine	<i>Pinus canariensis</i>	Upper	10
Kapok	<i>Ceiba pentandra</i>	Upper	10
English ivy	<i>Hedera helix</i>	Lower	10
White alder	<i>Alnus rhombifolia</i>	Upper	10
Brazilian pepper tree	<i>Schinus terebinthifolius</i>	Upper	10
Magnolia	<i>Magnolia sp.</i>	Upper	10
Siberian elm	<i>Ulmus pumila</i>	Upper	10
Indian fig	<i>Opuntia ficus-indica</i>	Middle	10
English holly	<i>Ilex aquifolium</i>	Middle	5
Deodar cedar	<i>Cedrus deodara</i>	Upper	5
Red oak	<i>Quercus rubra</i>	Upper	5
Weeping willow	<i>Salix babylonica</i>	Upper	5
Black locus	<i>Robinia pseudoacacia</i>	Upper	5
Pampas grass	<i>Ulmus pumila</i>	Middle	5
Laurel sumac	<i>Malosma laurina</i>	Middle	5
Juniper	<i>Juniperus sp.</i>	Middle	2
Coast live oak	<i>Quercus agrifolia</i>	Upper	2
Canyon live oak	<i>Quercus chrysolepis</i>	Upper	2
Chinese tree of heaven	<i>Ailanthus altissima</i>	Upper	2
Paper bark birch	<i>Betula Papyrifera</i>	Upper	2
Papaya	<i>Carica papaya</i>	Middle	2
Mexican palo verde	<i>Parkinsonia aculeata</i>	Upper	2
<b>Disturbed Upland</b>			
Black mustard	<i>Brassica nigra</i>	Middle	20
Telegraph weed	<i>Heterotheca grandiflora</i>	Middle	20
Tobacco tree	<i>Nicotiana glauca</i>	Upper	15
Castor bean	<i>Ricinus communis</i>	Upper	15
Prickly Russian thistle	<i>Salsola tragus</i>	Middle	15
White nightshade	<i>Solanum douglasii</i>	Lower	10
Giant wildrye	<i>Elymus condensatus</i>	Upper	10
Toyon	<i>Heteromeles arbutifolia</i>	Upper	5
Indian fig	<i>Opuntia ficus-indica</i>	Middle	5
Poison hemlock	<i>Conium maculatum</i>	Middle	5
Cocklebur	<i>Xanthium strumarium</i>	Middle	5
Poison oak	<i>Toxicodendron diversilobum</i>	Middle	5

<b>Common Name</b>	<b>Scientific Name</b>	<b>Canopy Level</b>	<b>% of Canopy</b>
Southern California black walnut	<i>Juglans californica</i>	Upper	5
Fennel	<i>Foeniculum vulgare</i>	Middle	2
Perennial pepperwood	<i>Lepidium latifolium</i>	Middle	2
Sacred thorn-apple	<i>Datura wrightii</i>	Lower	2
Red oak (planted)	<i>Quercus rubra</i>	Upper	2
White sage	<i>Artemisia ludoviciana</i>	Middle	2
California sagebrush	<i>Artemisia californica</i>	Middle	2
California buckwheat	<i>Eriogonum fasciculatum</i>	Middle	2
Agriculture			
Unidentified nursery plants	Unknown	Mid/Upper	90
Ruderal			
Prickly Russian thistle	<i>Salsola tragus</i>	Lower	15
Sacred thorn-apple	<i>Datura wrightii</i>	Lower	2

**APPENDIX D2:  
 WILDLIFE**

A list of wildlife species documented during the field survey site visit is provided below. This list is not exhaustive; although it captures most common species in the Basin. Also included is the habitat type in which each species was documented.

Common Name	Scientific Name	Habitat
<i>Birds</i>		
Pied-billed grebe	<i>Podilymbus podiceps</i>	Open water
American coot	<i>Fulica americana</i>	Open water
White pelican	<i>Pelecanus erythrorhynchos</i>	Open water
Double-crested cormorant	<i>Phalacrocorax auritus</i>	Open water
Ringed-billed gull	<i>Larus delawarensis</i>	Open water
Great egret	<i>Ardea alba</i>	Riparian/wetland
Cattle egret	<i>Bubulcus ibis</i>	Riparian/wetland
Canada goose	<i>Branta canadensis</i>	Open water
Mallard	<i>Anas platyrhynchos</i>	Open water
American wigeon	<i>Anas americana</i>	Open water
Ruddy duck	<i>Oxyura jamaicensis</i>	Open water
Red-tailed hawk	<i>Buteo jamaicensis</i>	Riparian
American kestrel	<i>Falco sparverius</i>	Upland
Sharp-shinned hawk	<i>Accipiter striatus</i>	Upland
Northern flicker	<i>Colaptes auratus</i>	Upland
Hairy woodpecker	<i>Picoides villosus</i>	Upland
Acorn woodpecker	<i>Melanerpes formicivorus</i>	Upland
Mourning dove	<i>Zenaida macroura</i>	Upland
Anna's hummingbird	<i>Calypte anna</i>	Upland
Rufous hummingbird	<i>Selasphorus rufus</i>	Upland
Vaux swift	<i>Chaetura vauxi</i>	Upland
Willow flycatcher	<i>Empidonax traillii</i>	Riparian/wetland
Say's phoebe	<i>Sayornis saya</i>	Riparian/wetland
Black phoebe	<i>Sayornis nigricans</i>	Riparian/wetland
Western kingbird	<i>Tyrannus verticalis</i>	Upland
European starling	<i>Sturnus vulgaris</i>	Upland
Common raven	<i>Corvus corax</i>	Upland
Western meadowlark	<i>Sturnella neglecta</i>	Upland
Bushtit	<i>Psaltriparus minimus</i>	Upland
Chestnut-backed chickadee	<i>Poecile rufescens</i>	Upland
Yellow-rumped warbler	<i>Dendroica coronata</i>	Upland
Yellow warbler	<i>Dendroica petechia</i>	Upland
Golden-crowned kinglet	<i>Regulus satrapa</i>	Upland
Hermit thrush	<i>Catharus guttatus</i>	Upland
American robin	<i>Turdus migratorius</i>	Upland

<b>Common Name</b>	<b>Scientific Name</b>	<b>Habitat</b>
Dark-eyed junco	<i>Junco hyemalis</i>	Upland
House sparrow	<i>Passer domesticus</i>	Upland
Song sparrow	<i>Melospiza melodia</i>	Upland
Tree sparrow	<i>Spizella arborea</i>	Upland
White-crowned sparrow	<i>Zonotrichia leucophrys</i>	Upland
California towhee	<i>Pipilo crissalis</i>	Upland
Spotted towhee	<i>Pipilo maculatus</i>	Upland
House finch	<i>Carpodacus mexicanus</i>	Upland
<i>Mammals</i>		
Coyote	<i>Canis latrans</i>	Upland
Striped skunk	<i>Mephitis mephitis</i>	Riparian
Raccoon	<i>Procyon lotor</i>	Riparian
Virginia opossum	<i>Didelphis virginiana</i>	Upland
Western gray squirrel	<i>Sciurus griseus</i>	Upland

### **APPENDIX D3: ADAPTIVE HABITAT MANAGEMENT PLAN**

The following Adaptive Habitat Management Plan (AHMP) is designed for use within the associated Whittier Narrows Dam Basin Master Plan and Draft Environmental Assessment (DEA) and is based on the U.S. Department of the Interior's Technical Guide for Adaptive Management (Williams *et al.* 2009).

This model should be applied to actions taken to preserve, protect, enhance, or restore biological resources. Its purpose is to ensure that, over time, management strategies continue to best meet resource objectives. Adaptive management requires a distinctly defined process of identifying resource objectives while remaining flexible in management strategies in order to best achieve those objectives. This AHMP should provide a means to more effective decisions and enhanced benefits.

The key to adaptive management is the awareness of uncertainty about management decisions and impacts due largely from the variability of ecological processes. Continued monitoring, and the adaptive application of information gained through such monitoring, is essential in fostering improvements to management policies.

An AHMP should be used only in certain cases. It is appropriate to use a management plan only when 1) projects have a goal, or set of goals, that can be specifically identified, 2) achievement of goals can be empirically measured, 3) there is the opportunity and intention to collect empirical data and learn from that data, and 4) stakeholders can modify their management strategies based on the empirical data. Each of these components must be attainable to utilize an AHMP effectively.

Resource objectives are described in general for management of the Basin in Section 5 of the Master Plan. These objectives will guide future biological and resource use management decisions. As specific management actions are proposed for improving biological resources, it will be necessary to apply the AHMP model to those plans.

#### **Adaptive Habitat Management Plan**

The AHMP model presented below is comprised of 9 steps (Williams *et al.* 2009) and addresses the known elements specific to the Whittier Narrows Dam Basin Master Plan and DEA. Each component is conceptually introduced and followed by how it factors into the overall AHMP process.

#### **Step 1: Stakeholder Involvement**

*Who decides how to manage the project area?*

Stakeholders for any proposed action are people who must act as decision makers. The first step in this process is to identify the stakeholders and encourage their active participation in the project. Stakeholders must be clearly apprised of the adaptive management process, must strive for agreement in all phases of the process, must commit to the timeframes agreed upon, and must

commit resources for achieving AHMP goals. Stakeholders may include Federal or local governmental agencies or organizations tasked with managing the Basin, property owners, non-profit or local interest groups, community members, or any group with a vested or expressed interest in the project or Basin. While not an exhaustive list, the following entities have been identified as key stakeholders in the AHMP; their precise roles and involvement, however, would ultimately be defined by a given action.

U.S. Army Corps of Engineers (Corps) and Other Lease Holders Completed in 1957, Whittier Narrows Dam is operated to provide flood risk management along the Rio Hondo and San Gabriel River downstream of the Dam. The acquisition of real property for the Basin's amenities totals 2,826.6 acres. The control and regulation of waters out of Whittier Narrows Dam Basin is governed by the Reservoir Regulation Manual (Corps 1957).

The Corps granted a lease of 1,161.0 acres in the Whittier Narrows Dam Basin for recreation purposes to the County of Los Angeles Department of Recreation and Parks (County) for a term of 50 years commencing on 11 June 1957 and terminating on 10 June 2007. A new lease for a term of 50 years commencing on June 1, 1986 increased the County's acreage for recreation development to 1,258.0 acres and extended the termination date to 31 May 2036.

The Corps also granted a lease of 120.4 acres in the Basin for recreation purposes to the City of Pico Rivera for a term of 50 years commencing on 1 December 1984 and terminates on 30 November 2034.

The Corps approved the use of Basin land for several other non-recreation uses determined to be in the public interest which includes 26 acres for the development of a Water Reclamation Plant through a lease to the Los Angeles County Sanitation District and 82 acres agricultural uses through three separate leases.

In addition to the flood risk management operations detailed in the water control plan, the manual provides extensive background information on the history and authorization of the project, additional land-use options granted by the Corps, watershed characteristics, hydrologic data collection systems, hydrologic forecasting, hydraulic characteristics, agency responsibilities, and coordination for water control management. In addition, the Corps has responsibilities and authorities granted under the Federal Water Pollution Control Act, Section 404 (33 USC §1251 as amended) commonly referred to as the CWA. Thus, as the land owner and responsible agency for the primary flood control functions of the Basin, the Corps is the principal stakeholder in any present or future actions within the Basin and its appurtenant works.

U.S. Fish and Wildlife Service (USFWS) The USFWS is the Federal agency whose mission is to conserve, protect, and enhance fish and wildlife and their habitats for the continuing benefit of the nation and its citizens. Their major responsibilities and missions include: migratory birds, endangered species, freshwater and anadromous fish, the National Wildlife Refuge System, protection of wetlands, protection of natural habitats, conservation of coastal areas, and environmental contaminants that threaten fish and wildlife and/or their habitats. The Endangered Species Act (16 USC §1531-1544 as amended; ESA) emphasizes early coordination/consultation

to avoid potential impacts to rare, endangered, and threatened species and to develop appropriate mitigation planning to offset project related losses of listed species and their habitats. The consultation process thus renders the USFWS as a principal and compulsory stakeholder in any action or AHMP decision where the natural resources of the Basin are either positively or negatively affected.

U.S. Environmental Protection Agency (EPA) In addition to the Corps CWA responsibilities, the EPA also retains and establishes the basic structure for regulating discharges of pollutants into the waters of the United States and regulating quality standards for surface waters. In general, the objective of the CWA is to restore and maintain the chemical, physical, and biological integrity of the nation's waters by preventing point and nonpoint pollution sources, providing assistance to publicly owned treatment works for the improvement of wastewater treatment, and maintaining the integrity of wetlands. Since the Whittier Narrows Basin is a flood risk management facility designed to store flood waters, it has the potential to impact water quality and aquatic habitats. Thus, the EPA should be considered a significant stakeholder for certain actions.

California Department of Fish and Game (CDFG) The CDFG maintains and conserves native fish, wildlife, plant, and natural communities for their intrinsic and ecological value and their benefits to the citizens of California and the nation. This includes habitat protection and maintenance in a sufficient amount and quality to ensure the survival of all species and natural communities. The department is also responsible for the diversified use of fish and wildlife including recreation, commercial, scientific, and educational uses. CDFG is therefore an important stakeholder in any action or AHMP decision process affecting the natural resources of the Basin.

Los Angeles Regional Water Quality Control Board (LARWQCB) The LARWQCB regulates wastewater discharges to both surface water (rivers, ocean, etc.) and to groundwater. The LARWQCB also regulates storm water discharges from construction, industrial and municipal activities, discharges from irrigated agriculture, dredge and fill activities, the alteration of any Federal water body under the CWA Section 401 certification program, and several other activities with practices that could degrade water quality. Tantamount with the Corps' CWA, Section 404 responsibility, the LARWQCB is a significant stakeholder in actions within the Basin (or in waters downstream of the Basin) that has the potential to affect water quality and ecosystem functions.

## **Step 2: Objectives**

*What are the goals of the project?*

It is essential to agree upon clear and measurable management objectives, which play a crucial role in evaluating performance, reducing uncertainty, and improving management decisions over time. Objectives should be specific and unambiguous, measurable through on-site data collection, achievable under the current environmental and socioeconomic conditions, and should specify desired results and the timeframe for these results. Examples of measurable objectives include improving nesting habitat for a targeted species, improving physical or chemical water quality, increasing native flora and fauna, or reducing non-native invasive species.

The goal of the project, strictly in terms of wildlife, habitat conservation, and the AHMP, is defined as follows in the Master Plan, “*Manage land in the Basin to optimize wildlife habitat and native vegetation.*” This management objective can be further defined to:

- Protect, preserve, and restore wildlife habitat and native plant communities appropriate to the Basin.
- Manage resources within the Basin in a manner that would preserve or improve the quality of wildlife habitat and create coherent plant communities.
- Always use appropriate native plant palettes in new landscaping or when rehabilitating or replacing older established landscaped areas.
- Replace non-native vegetation with native species when existing non-native vegetation dies.
- Respect the public’s attachment to landscapes of an exotic nature if they are long established or have cultural meaning. Also, recognize that these exotic landscapes may provide certain benefits to wildlife.

The following is a brief discussion of certain elements that may influence how the goal(s) are achieved.

Environmental Quality and Character Congress has indicated that the protection and enrichment of environmental quality is clearly in the public interest and, in concert with other environmental legislation, is a compulsory part of the Federal decision making process. Environmental quality and character is an inclusive term that refers to the integrity and value of a number of resources which comprise an environment including ecological, esthetic and cultural resources. In other words, the environmental quality and character of the Basin is an applied tenant that factors in many aspects and relates to existing conditions as well as future actions; it attempts to satisfy, to the greatest extent possible, both human reverences and wildlife uses of the environment.

Environmental quality and character include management objectives that:

- Prioritize those uses, activities and developments which conserve natural and cultural resources.
- Preserve areas containing unique, sensitive and/or significant resources so that they will not be disturbed and their inherent integrity and values will not be adversely impacted by other uses, management practices, or developments within the Basin.
- Require management practices for on-going uses, activities and developments that avoid significant adverse impacts to the Basin’ natural and cultural resources and the overall environmental quality and character of the Basin.
- Design siting, and operation of amenities and activities to avoid or minimize adverse environmental effects.
- Locate those activities which would have significant adverse impacts on the Basin’s unique or important natural and cultural resources in areas where such impacts would be avoided or minimized to a level of insignificance.
- Conserve and protect those resources which cumulatively contribute to the Basin’s overall environmental quality and character.
- Mitigate adverse environmental effects to the fullest extent practicable.



Connectivity Connectivity, in the context of wildlife conservation and habitat, defines the ability for effective movement of wildlife within and between spatially or functionally discrete areas. Man-made features often disrupt this movement and can adversely impact foraging, breeding, gene-flow, and overall persistence of a given species within the landscape. Vegetation can also suffer adverse impacts from a lack of connectivity when they depend on animal seed dispersal. It is therefore important to consider both local and regional vegetation and wildlife habitat patterns in order to minimize impacts of human encroachment while maximizing habitat use for the greatest number of species possible. Wildlife corridors, both aquatic and terrestrial, are an important characteristic of landscape-level ecology and environmental sustainability.

Within the context of recreation, connectivity describes a certain efficiency in trails and developed structures such as parking lots, picnic and camping areas, restrooms, and other public gathering areas. Efficient use, operation, and maintenance often depend on the connectivity of these types of amenities. Public safety and handicapped access is also an important aspect of connectivity.

It is important to consider both definitions of connectivity in environmental stewardship, but this is often a difficult goal to fully achieve and often oppose each other. Nonetheless, an awareness and diligence of all types of connectivity should be maintained during the design of all recreation amenities and the designation of natural habitat areas in order to maximize connectivity for both recreation and habitat purposes. The following are some management objectives to consider in future actions:

- Identify and connect with regional trail systems and eliminate impediments to trail connections within the Basin.
- Create trails that loop back upon themselves rather than be one-directional.
- Ensure that Basin-contained trail systems interconnect with trail systems outside the Basin.
- Create adequate signage to minimize unnecessary trips within the Basin.
- Provide safe and efficient circulation and access to the Basin's recreation amenities in order to both control traffic and provide a linkage between the various activities within the Basin.
- Protect and restore waterways such as creeks and streams to allow for safe corridors for wildlife movement.
- Identify natural opportunities/pathways for terrestrial wildlife movements; these may be evident through animal tracks or signs of foraging.

Community Involvement The public is an important contributor in land stewardship. If the community has a strong sense of ownership and pride in the Basin, issues such as littering and vandalism may be significantly reduced or even eliminated. In order to foster the public's sense of ownership, their inclusion in the decision making processes is essential. The public is often the best emissary in conveying the Corps mission of environmental stewardship, identifying and protecting resources of the site, and educating the public about those resources. The following are some management objectives and benefits that community involvement can bring about:

- Promote a spirit of personal responsibility and stewardship of public lands.
- Develop public appreciation for appropriate and safe use of resources.
- Promote volunteer programs for purposes of education and interpretation, clean-up, and restoration activities.
- Maintain communication channels among Basin users and the Corps for the reporting of issues or suggestions for improvements to the Basin.

Global Climate Change Climate change is an increasing problem that threatens the integrity and quality of all natural resources and ecosystems. Predictions vary and uncertainty around these predictions are considerable, but there is little doubt that climate change will impact virtually all aspects of society and a certain degree of climate change is now inevitable. It is therefore important that management decisions be mindful of the trajectory and consequences of climate change and implement as many mitigating measures as possible.

One of the more immediate impacts of climate change is the effects on water resources. The western United States is expected to witness moderate to severe drought conditions within the next 30-50 years, but this overall pattern may be punctuated by episodes of acute precipitation events as the ocean-atmosphere energy flux seeks a new equilibrium state. This places a new emphasis on flood control and the effectiveness of flood control amenities. The myriad effects of climate change also include an increase in water demand, changes in water quality, the expansion and increase of fire season intensity, and energy demand. In terms of natural resources and ecosystem responses, the effects of climate change are overwhelmingly chaotic and poorly understood; however, actions taken in the present can influence the sustainability through the difficult times ahead.

Some management objectives to be considered here are:

- Prioritize land uses and activities that do not contribute to global climate change.
- Support Corps regulators on dealing with climate change in permitting decisions.
- Use adaptive management to respond to changing conditions on site that may result from global climate change.
- Use the on-going development of methods and policies to deal with hydrologic frequency analysis under changing conditions.
- Evaluate the impacts of climate change on the Basin's ecosystems and the potential effects on Corps infrastructure and ecosystem restoration projects.
- Change native landscaping as needed to adapt to changed on-site conditions resulting from global climate change.
- Where in harmony with the native landscape, maintain or expand the existing tree canopy.
- Build on the baseline carbon budget for Corps projects to guide subsequent policy and project operation and maintenance.
- Prioritize and promote the use of zero-emission transportation such as walking or bicycling within the Basin.
- Locate activities and developments that have an adverse impact on the environment in similar areas near vehicular access points to minimize overall impact.

- Create circulation and traffic plans that encourage the use of public transportation to and within the Basin.
- Promote the use or generation of renewable energy within the Basin.
- Require all new buildings achieve a LEED® Silver (U.S. Green Building Council) or higher rating.

Energy Energy conservation is a key component of sustainability and in reducing the carbon footprint of activities within the Basin. Energy saving measures should be encouraged and new development constructed in accordance with green building principles. Management objectives to consider here can often be applied in concert with objectives for Global Climate Change and include:

- Maximize energy conservation and apply/promote renewable energy alternatives.
- Minimize the use of non-renewable energy through energy efficient land use planning and construction techniques.
- Provide for the development of energy resources that promote national economic development.
- Require that all new development be consistent with green building principles.

Economic The primary function of the Dam is to minimize flood damage and the loss of life. The economic value of each Dam and Basin is the cost of property damage that has been avoided through the dam's operation. The Basin plays an even larger economic role. The recreation amenities at the Basin often generate user fees that help defray recreation operating costs. Recreation activities also contribute to the larger local economy through purchases of food, gas, lodging, and specialized recreation equipment by outside visitors. The Basin is not only an integrated feature in the landscape, but an important aspect to the local economy; however, economic benefits from the Basin must be weighed against many of the previous objectives to ensure that the ecological and esthetic merits remain uncompromised. Some management objectives here include:

- Minimize economic impacts to life and property by responding quickly to flood conditions.
- Ensure the long-term integrity of the Basin through inspections and maintenance.
- Encourage activities on site including various forms of recreation that contribute to the local economy while not impacting the ecosystem or flood control functions.
- Allow activities on Corps lands that help defray recreation amenities operation and maintenance costs.

Low Density Recreation Activities such as walking, hiking, bicycling, horse-back riding, picnicking, primitive camping, wildlife observation, and fishing provide enjoyable activities that are of less impact to the natural resources of the Basin and may create a higher level of interaction with nature than other more intrusive types of recreation. These activities lend themselves to small groups interacting together such as families with children or school groups. Activities such as these are generally dispersed throughout the Basin through the use of trails and can foster an intimate awareness and personal ownership of the Basin and its intrinsic value to the community. Again, recreation of any kind, including low density recreation, must be

considered collectively with other resource objectives (e.g. connectivity and the separation of high-value ecosystems) as well as cumulative effects of all recreation activities within the Basin. Some low density recreation management objectives to consider are:

- Through the planning process, design low density recreation to minimize impacts to the natural environment and minimize conflicts between activities in the Basin.
- Promote a system of trails and networks that encourage use in and around the Basin while keeping such areas separate from ecologically sensitive areas.
- Provide low-density recreation opportunities that are available to a broad socio-economic cross-section of the region's population without discrimination based on age, race, religion, gender preference, or physical capabilities.
- Promote low-density recreation that brings people together seamlessly without regard to physical abilities.
- Design amenities such as picnic areas, campsites, and interpretive displays that take advantage of unique views or landmarks and lead to a greater appreciation of the Basin's natural resources.

### **Step 3: Management Actions**

*What is the initial management plan?*

In this step, stakeholders identify a set of management actions that are intended to achieve project objectives. It allows for stakeholders to design and structure the kinds of management actions that will be taken, determine the timeframe or life of the project, the checks needed throughout the project life, and the decision-making process for changing management strategies to meet management objectives. Multiple management actions may be implemented to further increase learning about which strategies are or are not successful. Examples of management actions might be a plan to physically remove non-native invasive plant species or to plant native riparian plants to improve nesting and foraging habitat for a targeted species.

The Whittier Narrows Dam Basin Master Plan and DEA are documents designed to update the existing conditions of the Basin and suggest clear guidelines for the planning and implementation of future actions. In addition, the AHMP sets out a process to adaptively manage the dynamic resources and functions of the Basin. The basic tenant of adaptive management is to identify and consider all aspects of the target system, how they interact or indeed conflict, and to define a model mechanism through which current and future knowledge can be used to improve management decisions by the stakeholders. While the Master Plan and DEA provide essential Basin information, they cannot be viewed or intended as a surrogate for specific project evaluations or environmental compliance. Pursuant to NEPA (P.L. 91-190) additional compliance documents will be required when future actions are proposed.

Again, an initial management plan is an action, or set of actions, that promote the goals for natural resource management in the Basin. Factors that can influence the ability to achieve a specific goal(s), through formal analysis or professional inference, include:

Human Population Trends Southern California is a highly urbanized region that has undergone massive population growth for many decades. Like other population centers in the western

United States, there is a mix of residential, commercial, industrial, and agricultural land uses. Many communities are at or near buildout capacity. Protection of natural areas is thus more important than ever before and the stresses on their integrity clearly more pronounced. There are continual pressures to develop these areas for short term economic gain or unwise use that threaten the natural qualities and species they harbor. It is therefore important to protect and wisely manage Whittier Narrows Dam Basin to effectively preserve both the flood control and the scarce natural environment it represents. In addition, a growing population will undoubtedly increase the recreation usage of the Basin and stress the system as a whole. An initial and forward-looking management plan must recognize the value of the Basin's natural resources and strive to preserve it in the face of a growing population and development pressures. Such a management plan will not only provide habitat for dwindling wildlife and vegetation, but ultimately provide a greater quality of life for the local citizens.

Global Climate Change Global climate change represents perhaps the greatest long-term threat in the fundamental reorganization of the natural world we see and enjoy today. While the outcome is uncertain, an initial management plan must factor in a plausible and defensible error rate of all proposed actions and some way to adaptively manage the incremental actions in achieving its objectives. Water availability and temperature increases may drastically alter the ecology and species composition of the Basin and an initial management plan, as well as management plans in the future, must be prepared to address such changes without bias to the observed magnitude.

Public Opinion and Land Use Change It should be anticipated that public opinion on the current land uses may change in the future and this may or may not be commensurate with a given management plan. It is therefore important to consider the degree to which current and future lease agreements permit such changes, and how flexible stakeholders are willing to be in response to public opinion. If public opinion is in opposition to land use designations, it will become increasingly difficult garner public support for the Basin's use thereby making management far more difficult. Any land-use designations must, of course, work in conjunction with the original purpose of the Basin.

An effective and comprehensive management plan should seek to balance the goals and objectives indentified by the stakeholders. It is generally not practical to believe that all resources can be maximized within a relatively small parcel of land, but this does not mean that an adequate equilibrium cannot be achieved. Thoughtful and efficient planning, based on empirical or well developed modeling practices, are essential to effective management and individual management actions should be thought of as pieces of the larger whole in an effort to fulfill the shared vision of the Basin's objectives.

#### **Step 4: Models**

*How do we measure the success of our management plan?*

Stakeholders must now identify a model (or set of coupled models) that can be used to measure variables that indicate if the project is a success. This is the stage at which the "clear and measurable objectives" come into play. The model selected may be qualitative or quantitative; it can be as informal as a verbal description of system dynamics or it can be as formal as a mathematical equation(s). A Habitat Evaluation Procedure (HEP) is an example of a

mathematical model. It combines Habitat Suitability Indices (HSI), which are models that describe the health of a habitat for a specific species or guild of species, to mathematically calculate habitat health for a suite of native species. Qualitative models must have benchmarks for measurement. Once a model(s) is selected, and prior to implementing management actions, an initial onsite survey must be conducted to establish baseline conditions within the Basin. The Master Plan and DEA should serve as the primer and foundation for Basin's baseline conditions.

Because the goals of Whittier Narrows Basin represent a set of resource management objectives, the need for multiple models is necessary and output from one given model may then be used as input for another (coupled models). For example, output (*e.g.* temperature and precipitation trends) from a General Circulation Model (GCM) can be used as input for hydraulic and hydrologic models and thus water supply predictions and flood risk management needs are identified. Water supply (and quality), precipitation, and temperature values can then be input as indices for an HEP and thus used to gain a better understanding for what climate change could represent for the future of the ecology and plausible biodiversity limitations of the Basin.

A GCM is a long-term predictor (years to decades) and should not be confused with a Numerical Weather Prediction (NWP) model. A GCM informs the user, in a statistical sense, about long-term climate trends in response to large-scale conditions (*e.g.* atmospheric carbon dioxide concentrations) whereas an NWP provides a short-term (1-10 days) weather prediction. A GCM need not be constructed and maintained by stakeholders as there are numerous and respected resources (Federal, academic, etc.) that could be engaged for assistance.

There are a wide variety of models, both qualitative and quantitative, that can be applied to adaptive management objectives. In each case, there is an opportunity for the results to be propagated for other aspects of resource management. For example, data from a GCM and/or an HEP can be used in economic and socioeconomic modeling efforts. Here also, the results can be used to guide management decisions in terms of the divergence from baseline conditions and the dynamic resources of the Basin.

This kind of information, if conducted reliably and consistently, can help guide management decisions by providing useful parameters and boundary conditions for contemporary management decisions. Moreover, these efforts can be applied regionally thereby representing a significant cost savings and reducing misallocation of valuable government resources.

### **Step 5: Monitoring Plans**

*What is the plan for monitoring success of our management plan over time?*

Once the models are identified, the next step is to design an appropriate way to collect data to plug into the models. If the model asks us to collect canopy cover data, then our monitoring plan will determine when and how that data is collected, and how it is used in the model.

Monitoring plans should be designed to assess the existing system conditions, which describes the current state of the system, and allows us to compare it to past and future conditions. Monitoring plans should remain consistent in their methodologies through time and thus the results comparable. Monitoring consistency also has cost implications as well. If the initial

monitoring regime is intensive and future monitoring falls short in some way(s), then the results may not be commensurate in their use for modeling or comparative analysis. This can often result in a lapse of monitoring efforts and result in the need for comprehensive baseline assessments. This can represent a significant cost allocation and result in an unwitting decline in environmental and ecological integrity. Lastly, however, in an effort to conserve project funds, monitoring plans should be designed to be as efficient as possible, providing the necessary data for minimum cost. Geographic Information Systems (GIS) should be used to the greatest extent possible.

Monitoring may include the following (not including periodic inspections of flood risk management amenities and structures conducted by the Corps):

- Surveys for rare, threatened, and endangered species (plants and animals).
- Seasonal species richness and diversity indices including exotic species (location, extent, dominance, overstory/understory, etc.).
- Seasonal habitat use (avifauna, mammals, reptiles, amphibians, and insects).
- Basic water quality parameters on a seasonal basis (pH, temperature, conductivity, dissolved oxygen, etc.).
- Soil and water nutrient dynamics and flux (i.e. timing and degree of eutrophication of water bodies) possibly including forest litter production rates.
- Periodic contaminant testing (including fish tissue analysis, upstream sources, and downstream sinks).
- Seasonal recreation visitation rates including the types of activities. Perhaps conduct periodic public interactions (i.e. simple verbal questionnaires given to visitors).
- Infrastructure (i.e. parking lots, restrooms, trails) assessments for safety concerns, handicap accessibility, vandalism or other criminal activities.

### **Step 6: Decision Making**

*What will our response be to unsuccessful management plans?*

In cases where the models do not indicate successful management actions or data clearly show a problem with the current management approach, a process should be identified for changing management plans. This is the crucial piece of the process that makes a management style *adaptive*. During Step 3, a number of alternative management actions should have been identified. In the event that the selected actions are not successful, as determined by the modeling or ascertained by monitoring, then the alternative actions may be implemented. In this step, the process of choosing a new management plan is defined.

All the tenants of previous steps should be observed: stakeholder and public involvement, a reassessment of goals and monitoring approaches, short- and long-term implications of management decisions, cumulative effects, etc. Only then can one be confident that the new management approach is well founded, has a reasonable chance for success, and is well defined.

### **Step 7: Monitoring**

*What is happening in our project area?*

This is the actual gathering of empirical data. Data are collected following the guidelines set in the monitoring plan. Regular data collection, recording, synthesis, and reporting should be scheduled and carried out through standardized, repeatable methods.

A clear stakeholder hierarchy in the definition, potential contracting, data validation, schedule, and review procedures of monitoring data should be established prior to the initiation of any monitoring activities. This adds a crucial measure of consistency to the methods and data synthesis over time. If changes occur in the hierarchy, as is often the case, a transition procedure (meetings, documentation, identification of contractors and review personnel, etc.) should take place. Again, it must be emphasized that consistency in monitoring approaches and methods is essential for the long-term integrity of the dataset(s) and their use in modeling and/or management decisions. Inconsistency in monitoring will inevitably result in a waste of time, funding, and agency resources.

There must also be a firm belief in the long-term benefits of monitoring by the stakeholders. In the short-term, monitoring often shows little change or statistically insignificant trends that can be interpreted as background noise. This can result in complacency and the waning of interest in continued monitoring efforts. It is important to keep in mind that many of the parameters being monitored display gradual changes, but once altered are difficult to restore to a previous state or functional condition.

### **Step 8: Assessment**

*Are we achieving our project objectives?*

In this step, data are calculated through the established model and results are reviewed to capture a description of the existing conditions of the Basin. The monitoring event outcome is then compared to the baseline data to determine if project objectives are being achieved.

Data interpretation and synthesis is an important aspect of this step. Scale, statistical significance, geospatial patterns, and autocorrelation effects can influence how the data are interpreted and subsequently put to use in the larger objective assessments. Moreover, a general consensus, or at least partial agreement, among the stakeholders in the assessment process should be sought before the lasting codification of objectives, methods of attaining those objectives, and monitoring approaches used to measure success are continued. This is often far more difficult than it appears and the effort by the stakeholders in attaining agreement should not be underestimated.

### **Step 9: Iteration**

*What's next?*

If conditions have improved according to the model(s) output, monitoring inferences, and data synthesis, then management actions appear to be successful and continued monitoring and assessment should be carried out for the life of the project to validate the project's continued success. If data are input into the models, and outcomes indicate that management actions are not successful, it will be necessary to return to Step 6 and begin the process of adapting the management plan according to available or newly formulated management actions. The cycle



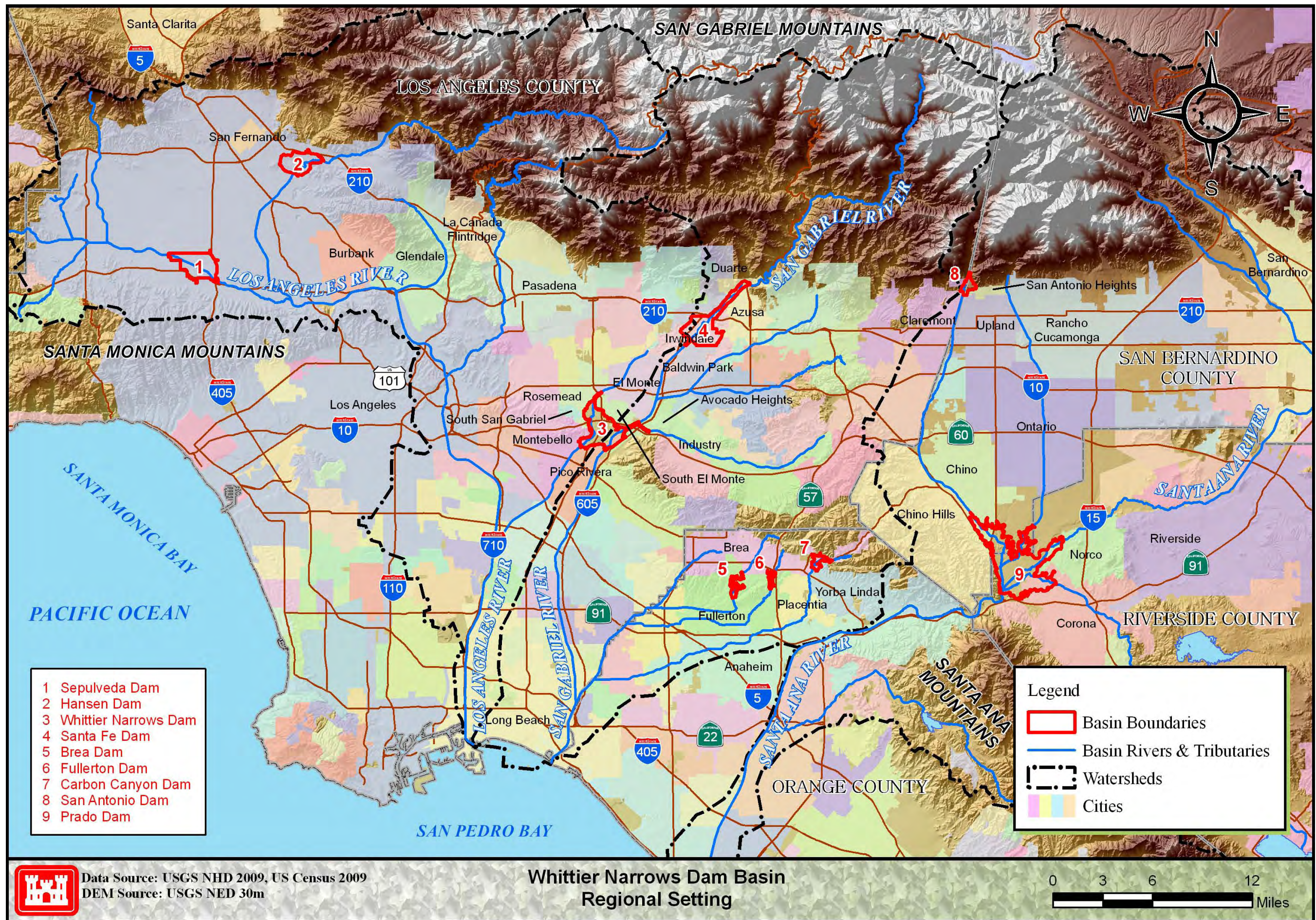
from step 6 to 9 is iterated until the end of the previously determined project life. If data are unavailable or inconclusive, it may be necessary to return to step 4 to revisit model selection and/or the monitoring plan (Step 5) to validate monitoring data integrity. Finally, it may be necessary to critically revisit the goals and objectives and assess their plausibility. In the absence of any clear direction that can be agreed upon by the stakeholders, it is often advisable to seek an outside review and opinion of any given step or the AHMP as a whole.

**APPENDIX E:**

**MAPS**

**APPENDIX E:**  
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- 1 Sepulveda Dam
- 2 Hansen Dam
- 3 Whittier Narrows Dam
- 4 Santa Fe Dam
- 5 Brea Dam
- 6 Fullerton Dam
- 7 Carbon Canyon Dam
- 8 San Antonio Dam
- 9 Prado Dam

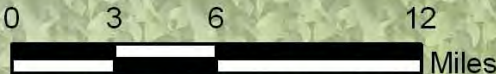
**Legend**

- Basin Boundaries
- Basin Rivers & Tributaries
- Watersheds
- Cities

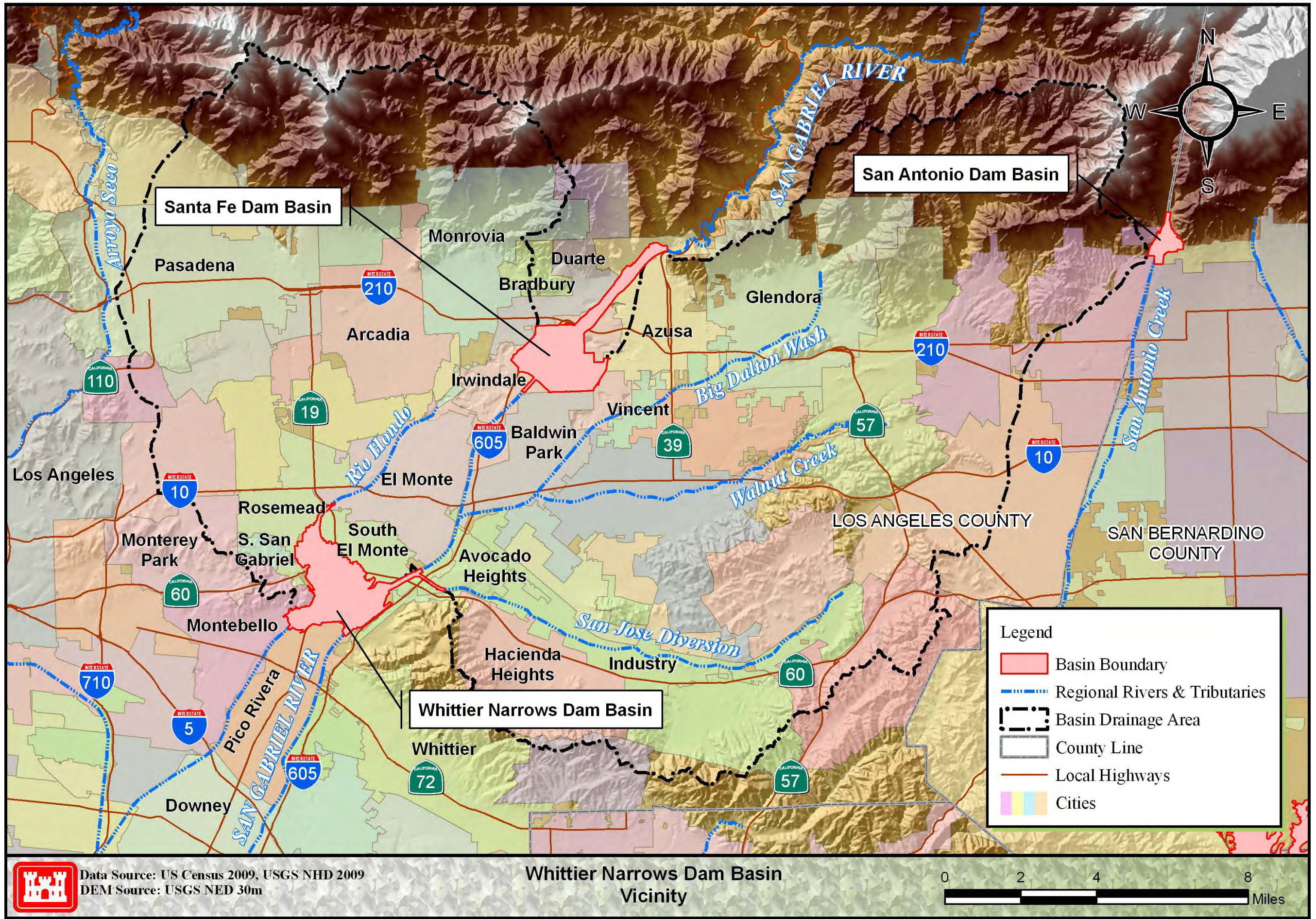


Data Source: USGS NHD 2009, US Census 2009  
 DEM Source: USGS NED 30m

**Whittier Narrows Dam Basin  
 Regional Setting**



Map 1 Regional Setting

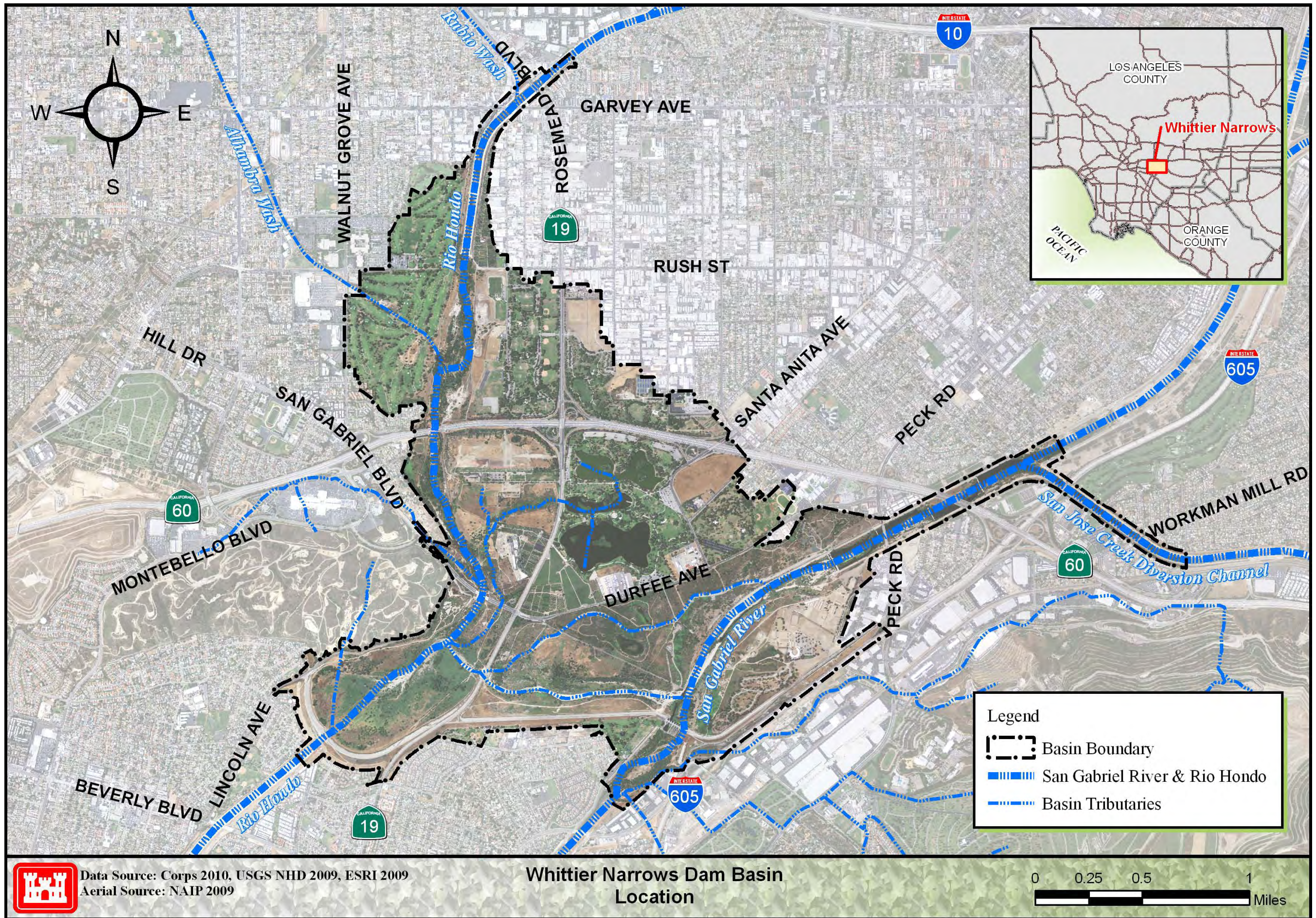


Data Source: US Census 2009, USGS NHD 2009  
 DEM Source: USGS NED 30m

**Whittier Narrows Dam Basin  
 Vicinity**



Map 2 Vicinity

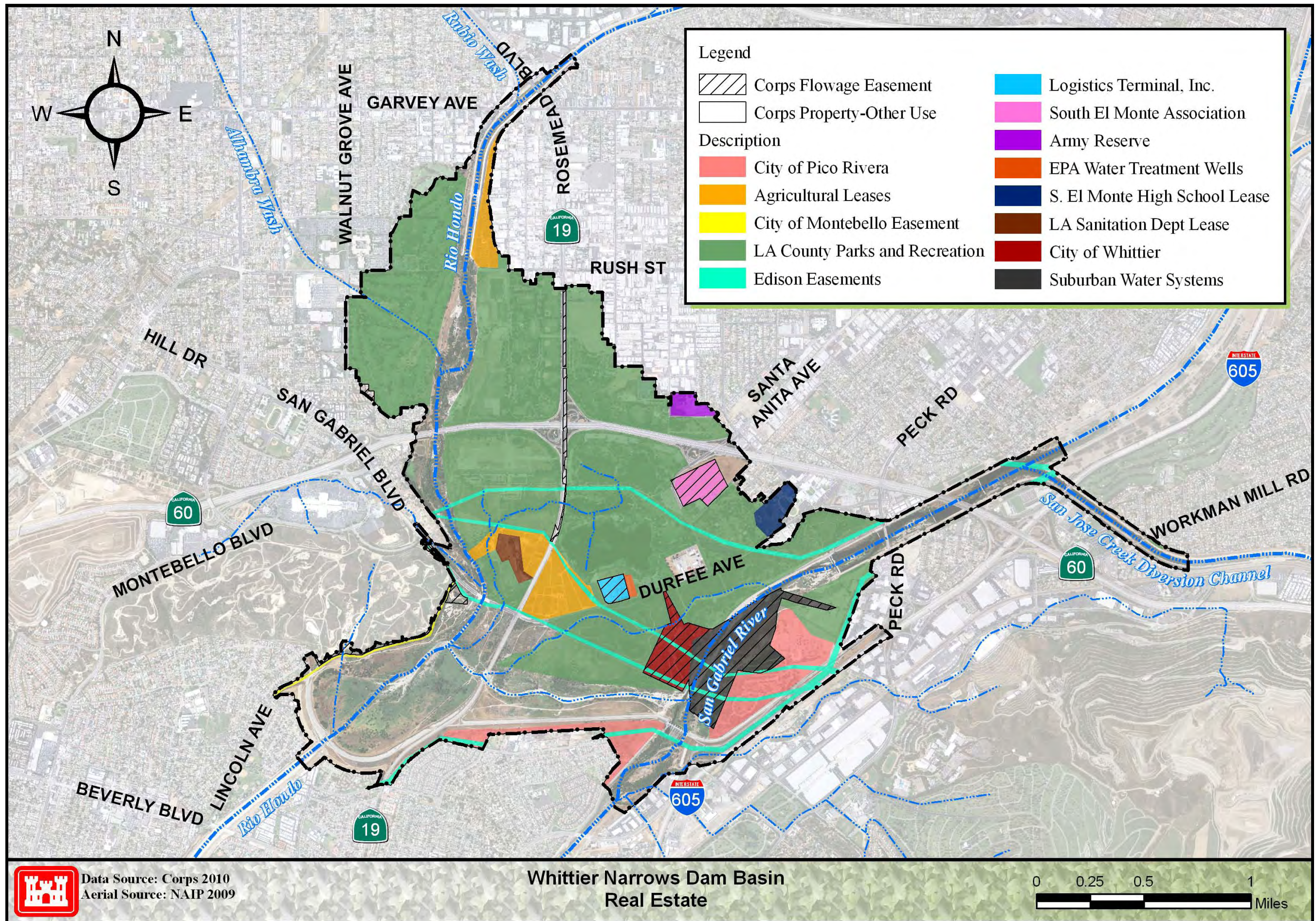


Data Source: Corps 2010, USGS NHD 2009, ESRI 2009  
 Aerial Source: NAIP 2009

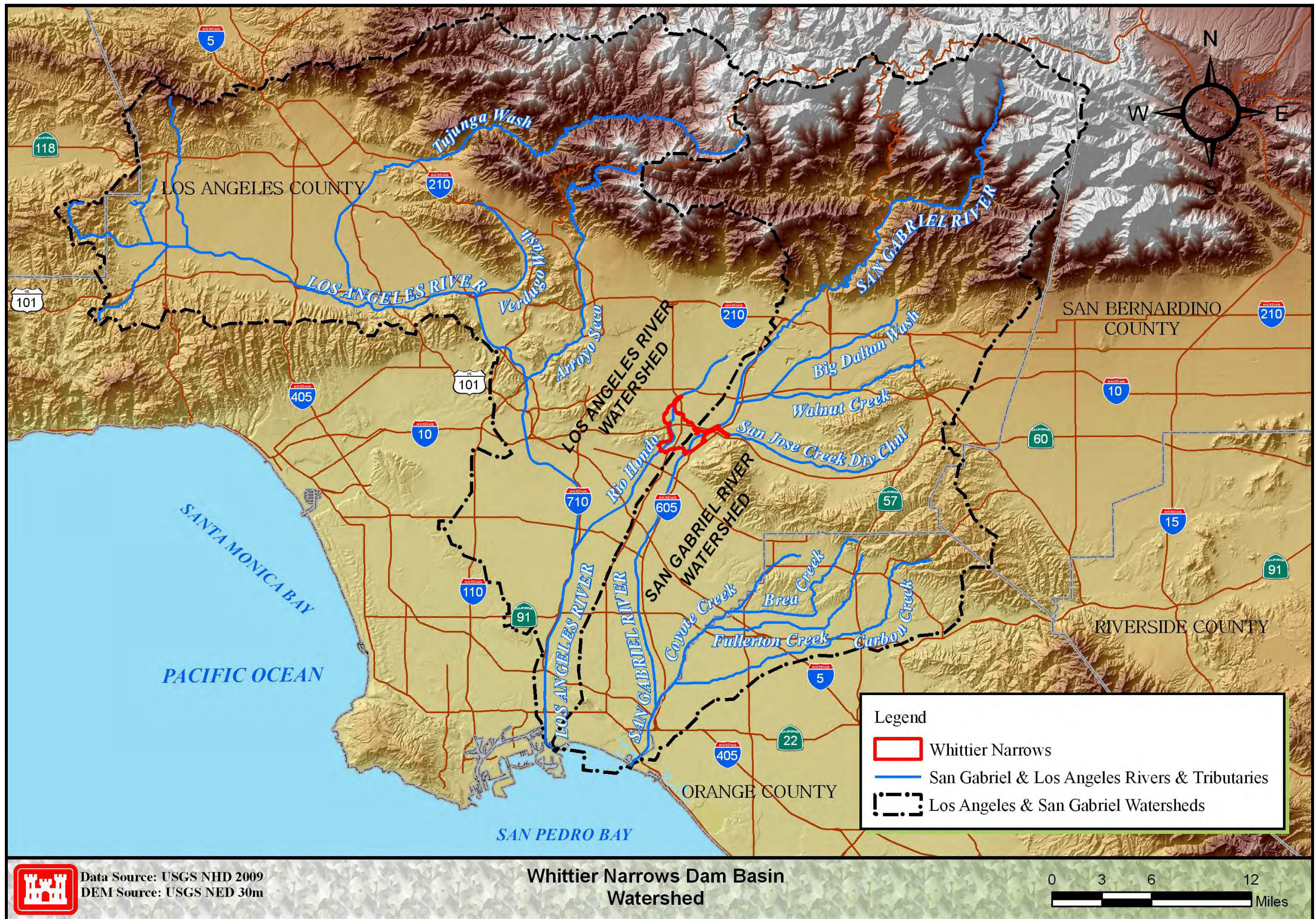
**Whittier Narrows Dam Basin  
 Location**

0 0.25 0.5 1  
 Miles

Map 3 Project Location



Map 4 Real Estate

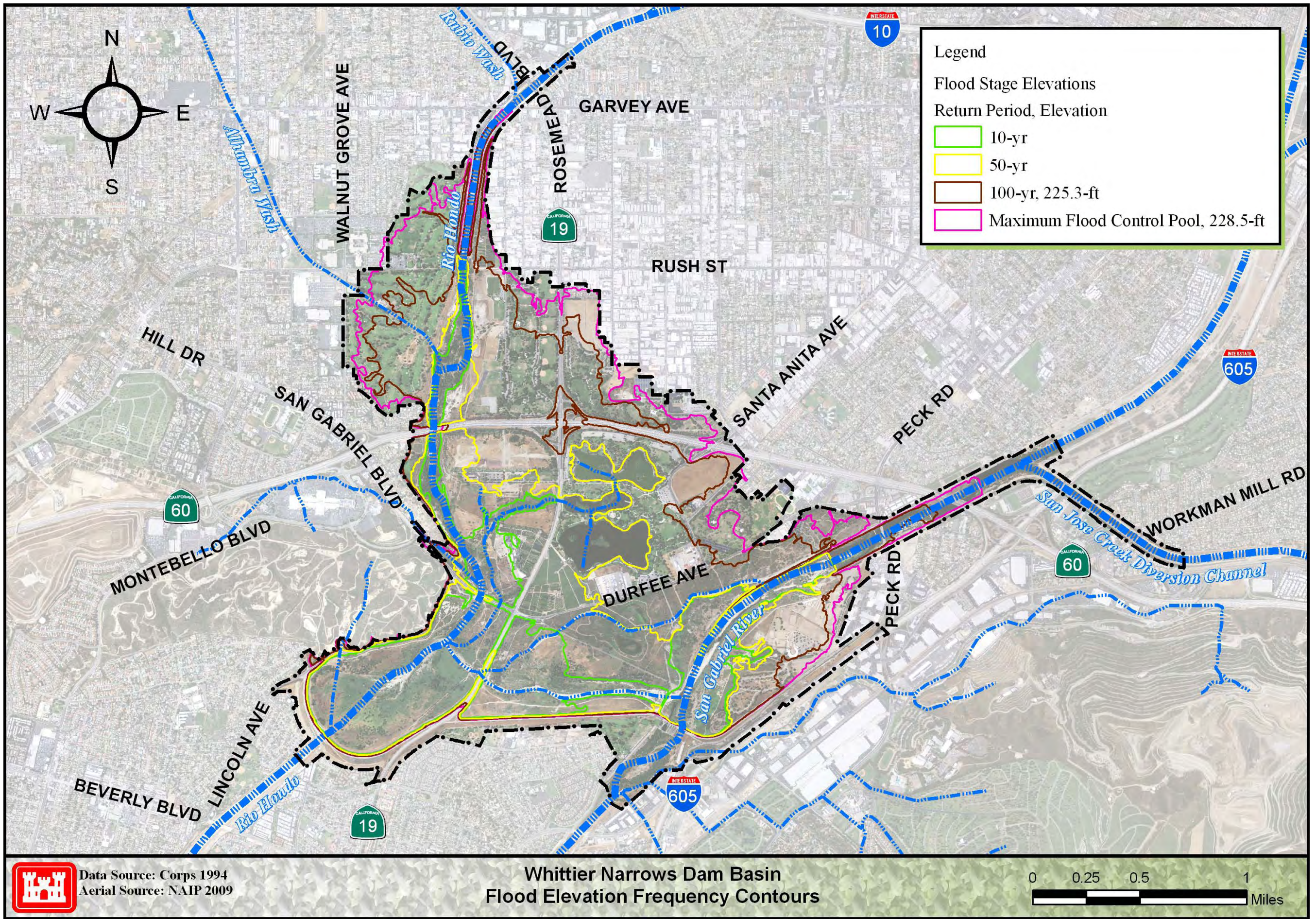


Map 5 Watershed

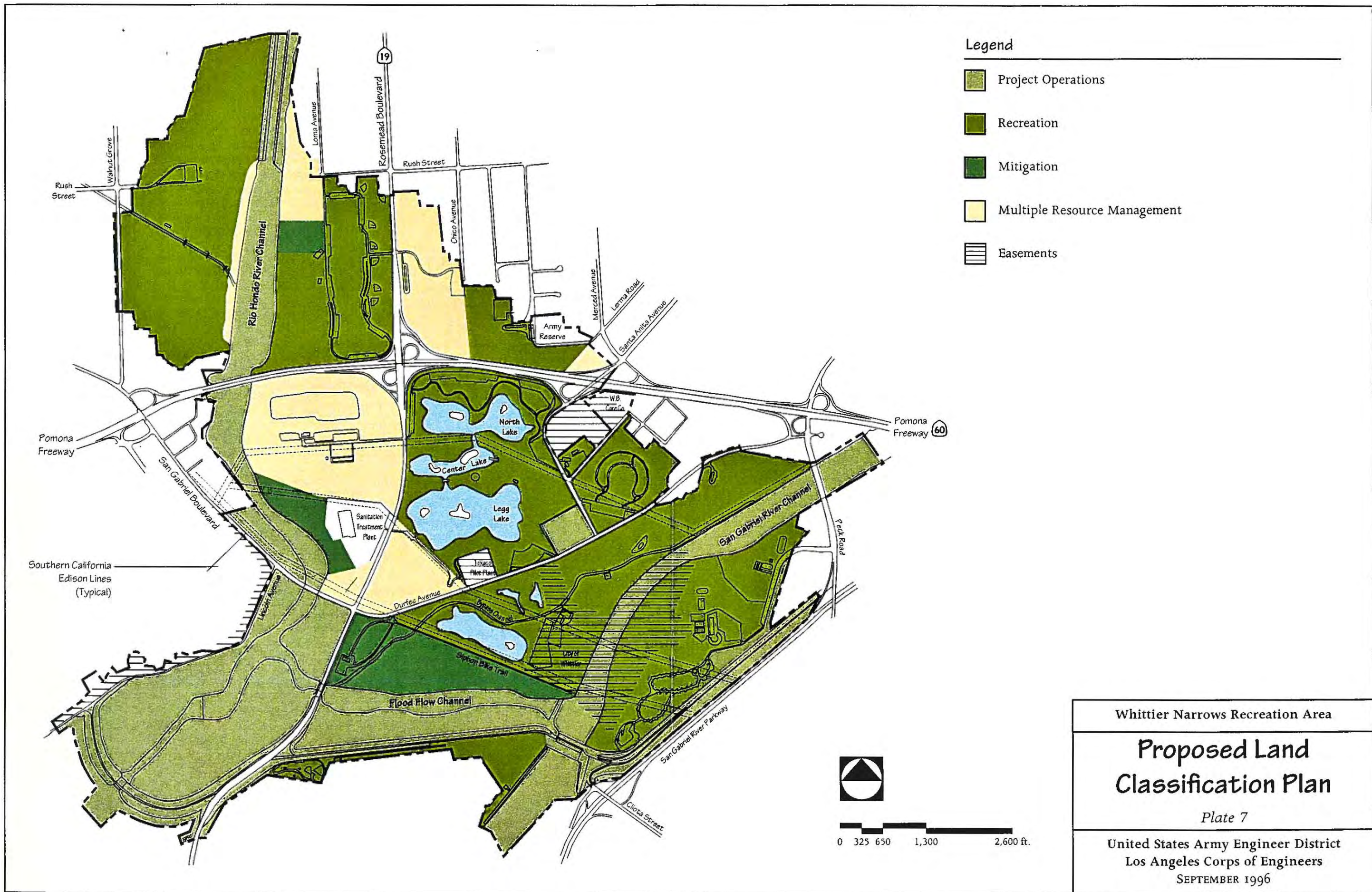




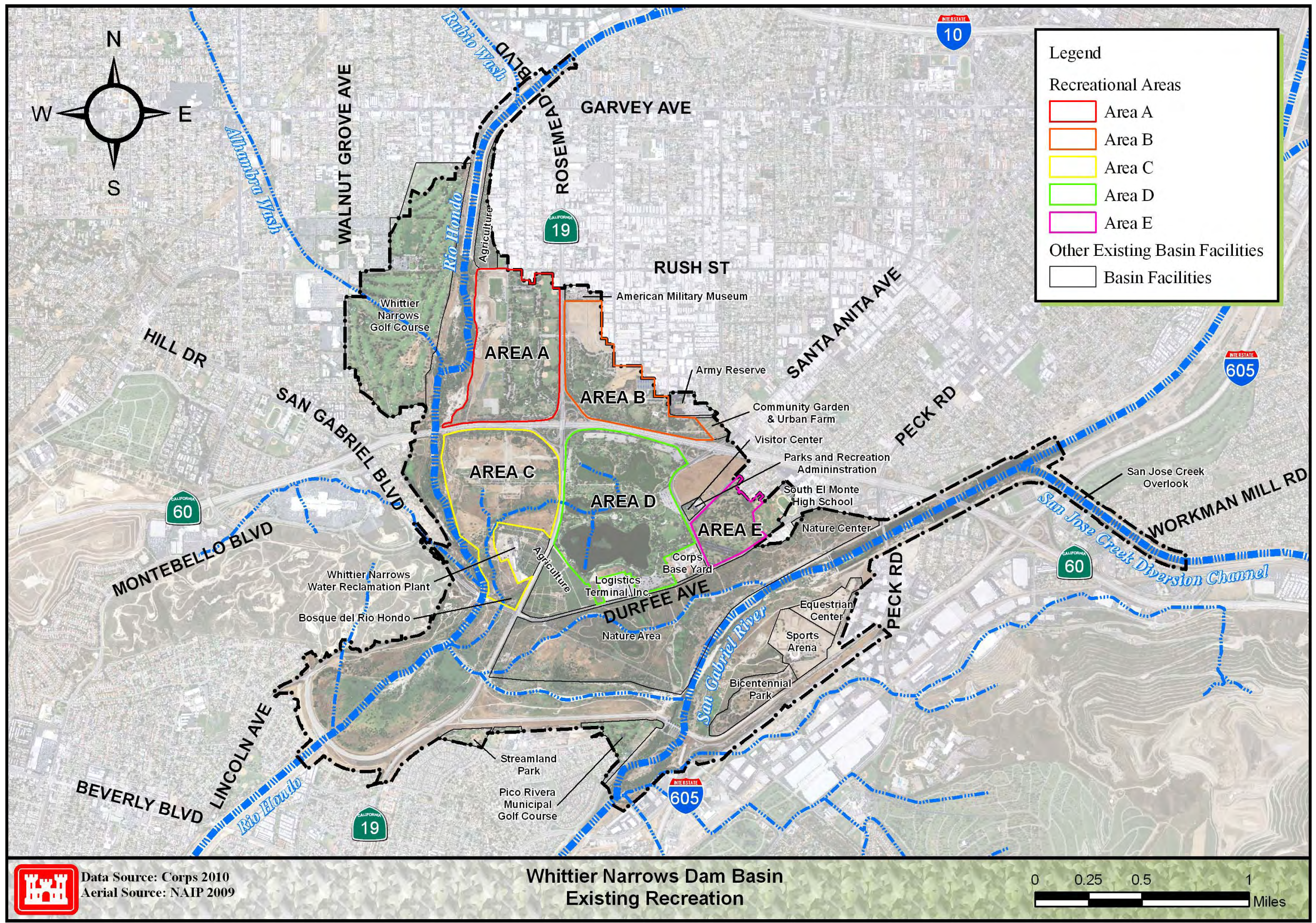
Map 6 Open Space



Map 7 Flood Elevation Frequency Contours



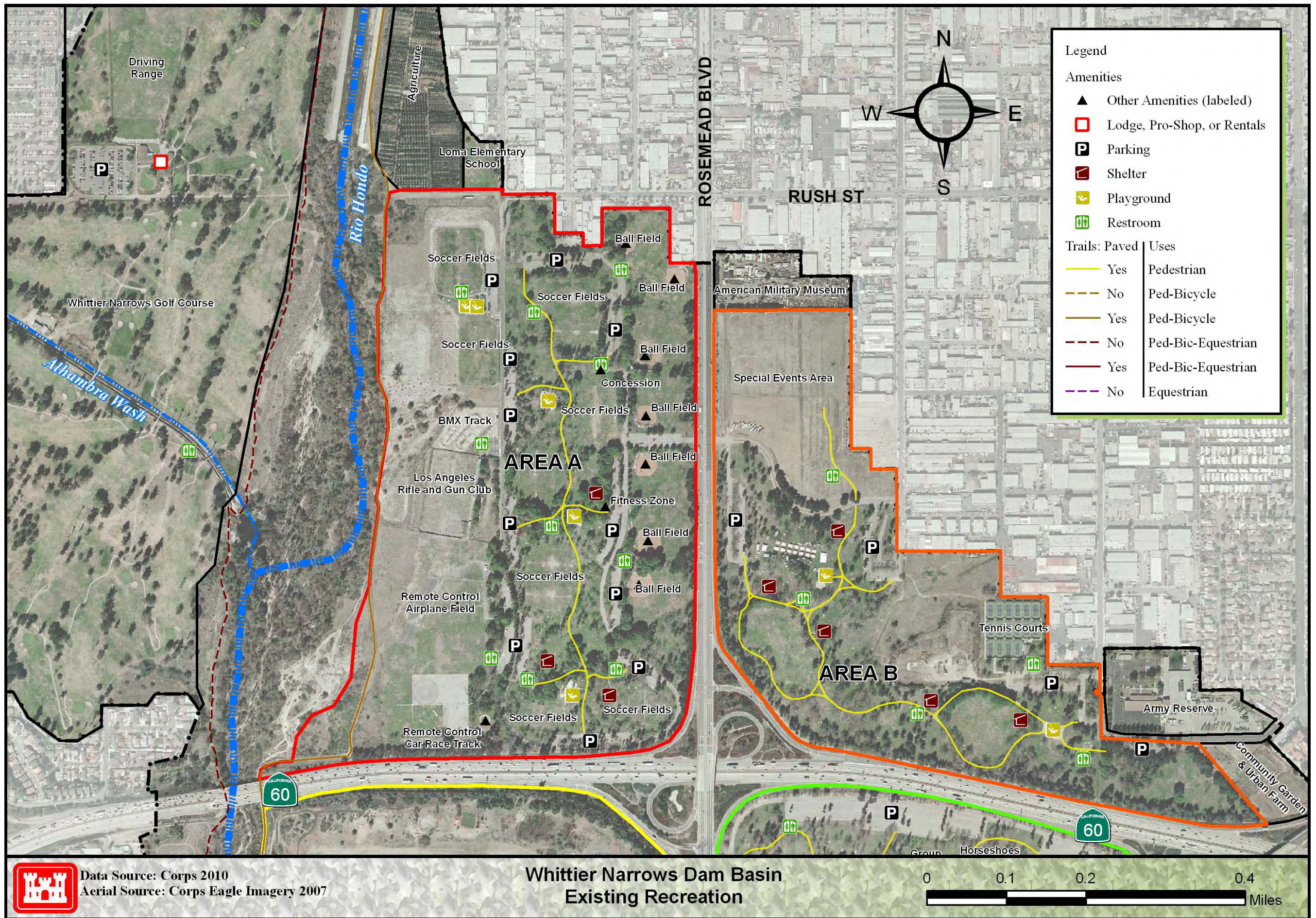
Map 8 1996 Master Plan Land Use Classification Map



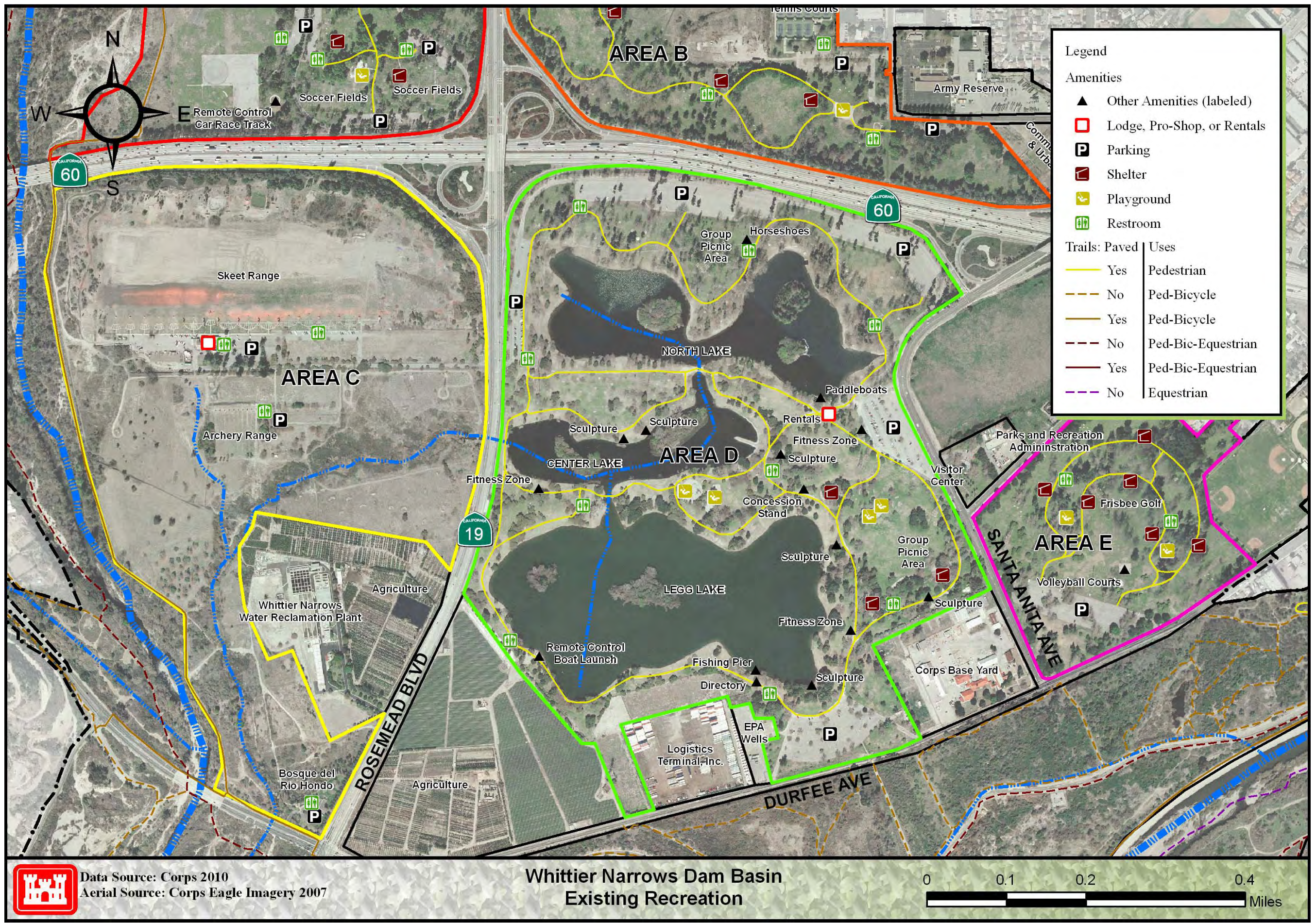
 Data Source: Corps 2010  
Aerial Source: NAIP 2009

**Whittier Narrows Dam Basin  
Existing Recreation**

Map 9 Existing Recreation



Map 10 Area A and Area B

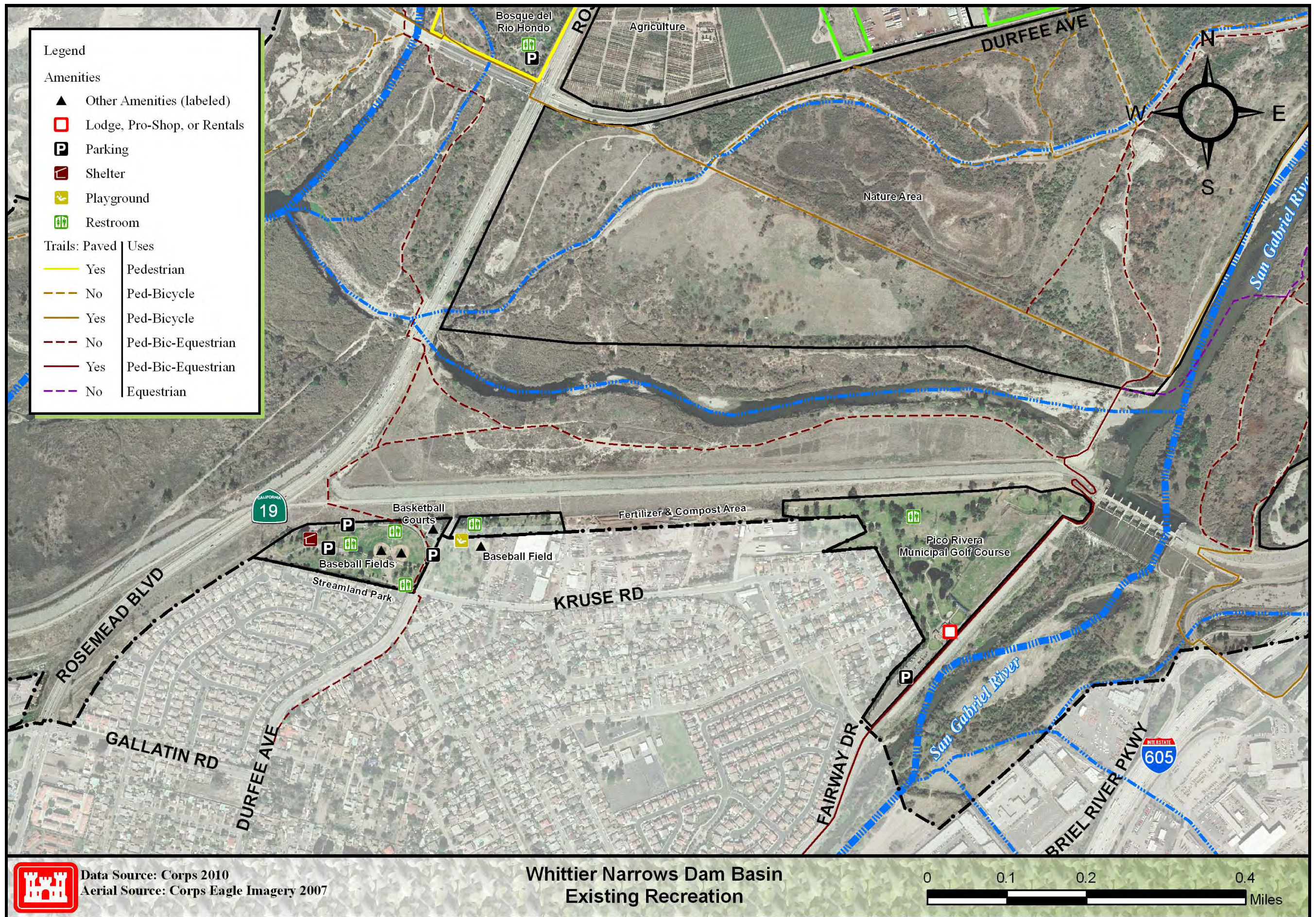



 Data Source: Corps 2010  
 Aerial Source: Corps Eagle Imagery 2007

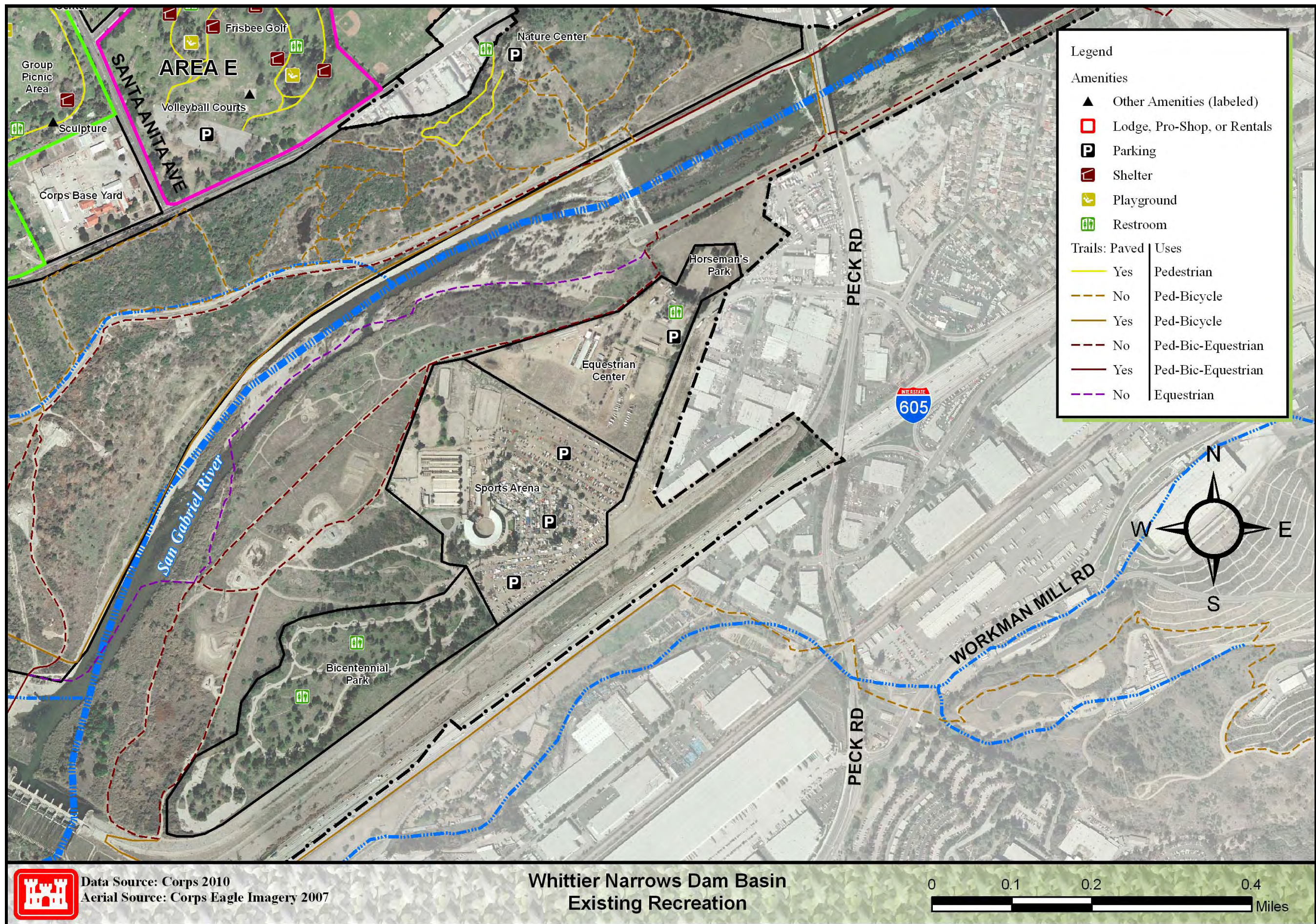
**Whittier Narrows Dam Basin  
Existing Recreation**



Map 11 Area C, Area D, and Area E

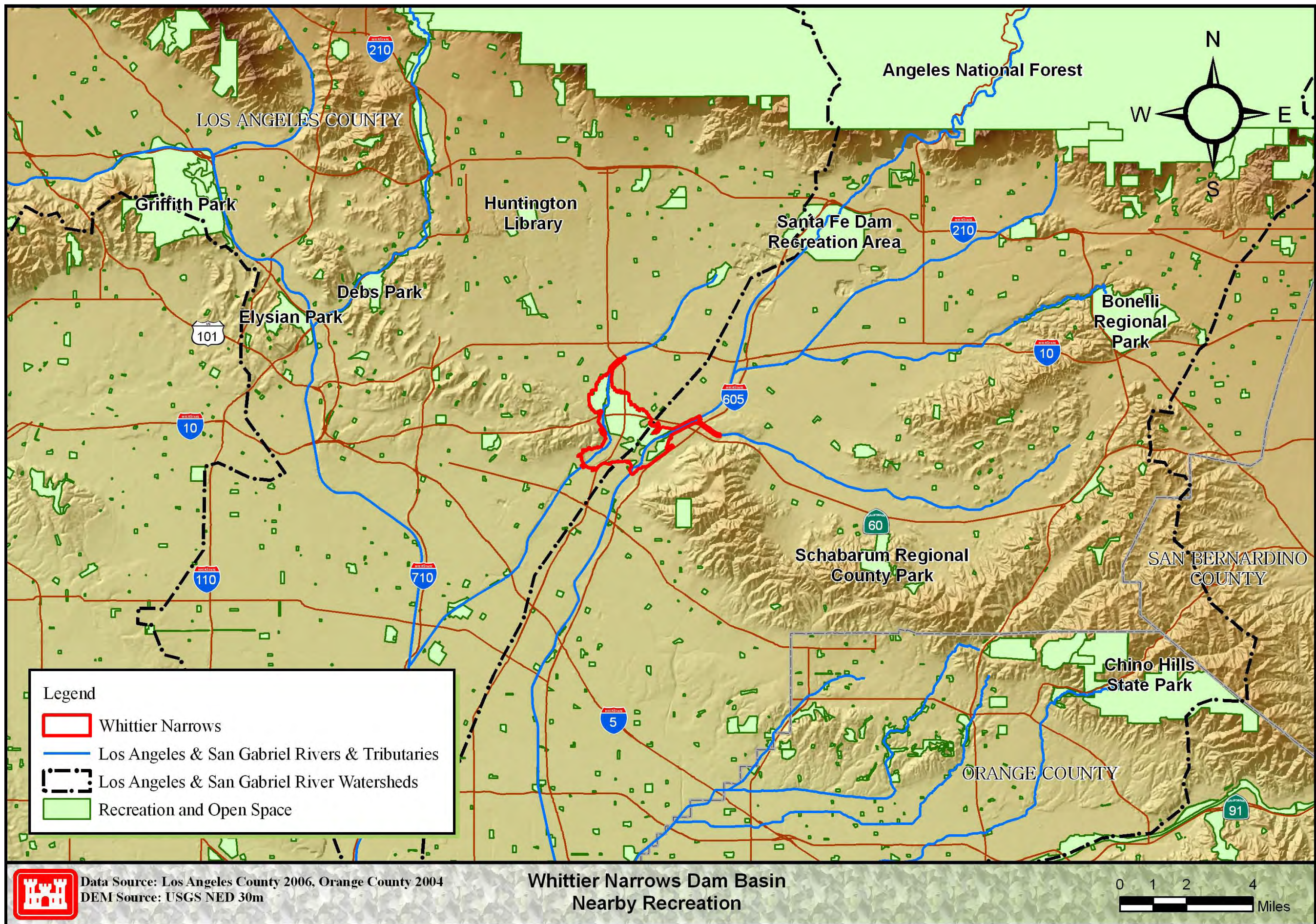


Map 12 Streamland Park and Pico Rivera Municipal Golf Course



Map 13 Equestrian Center, Sports Arena and Bicentennial Park





**Legend**

- Whittier Narrows
- Los Angeles & San Gabriel Rivers & Tributaries
- Los Angeles & San Gabriel River Watersheds
- Recreation and Open Space

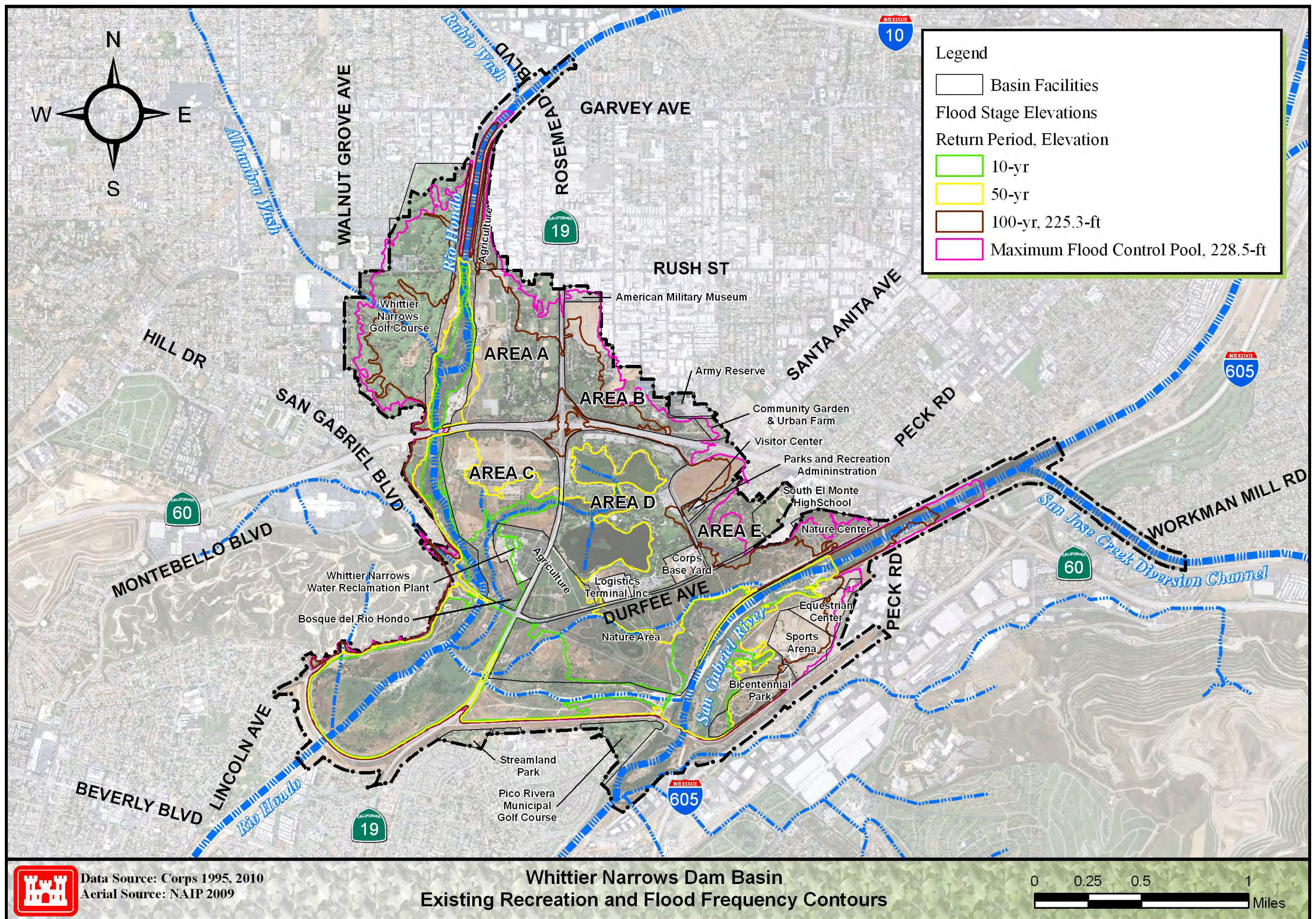


Data Source: Los Angeles County 2006, Orange County 2004  
 DEM Source: USGS NED 30m

**Whittier Narrows Dam Basin  
 Nearby Recreation**

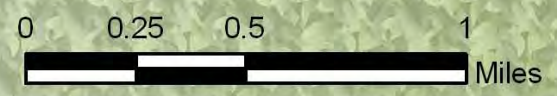
0 1 2 4  
 Miles

Map 14 Nearby Recreation

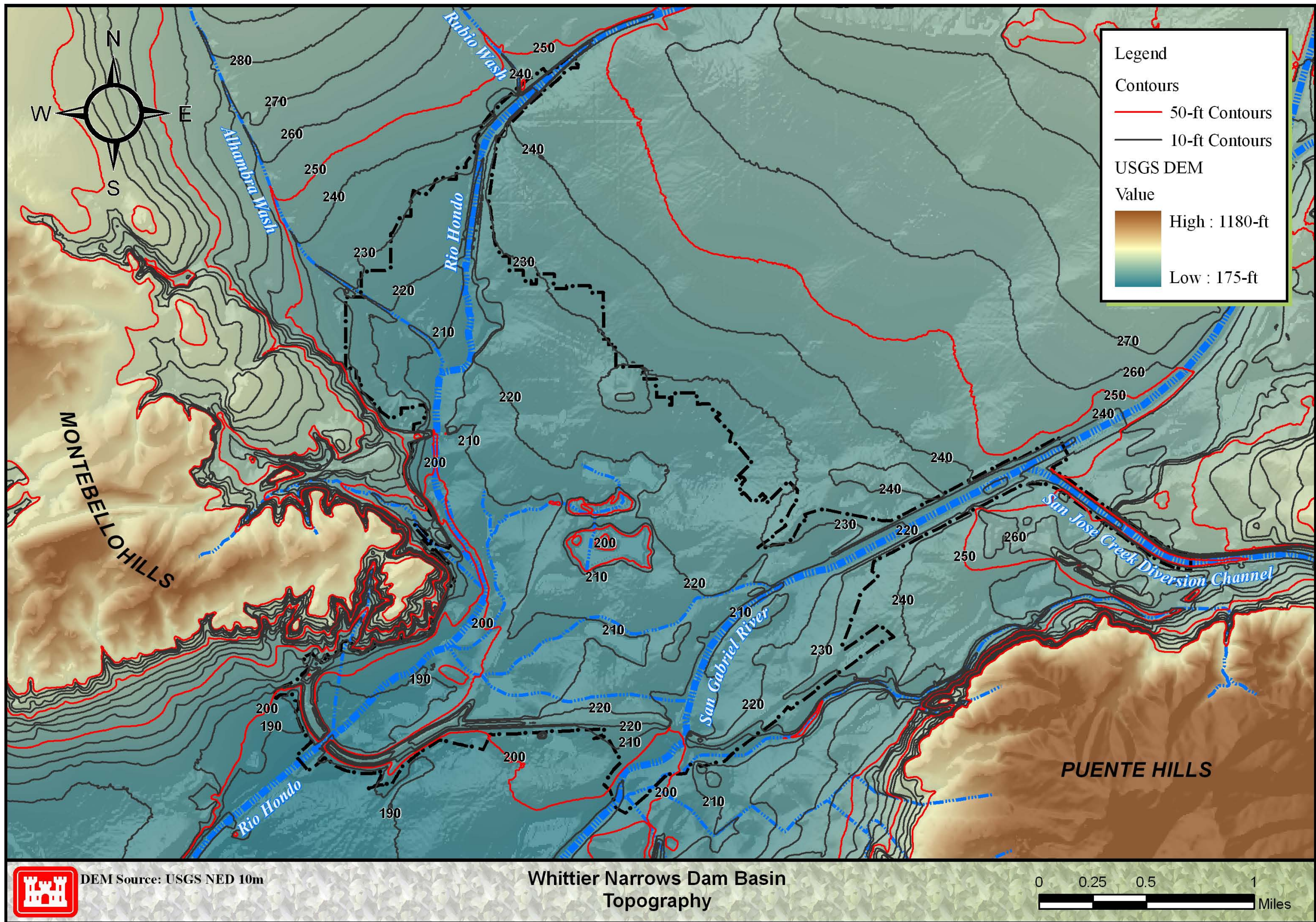


Data Source: Corps 1995, 2010  
 Aerial Source: NAIP 2009

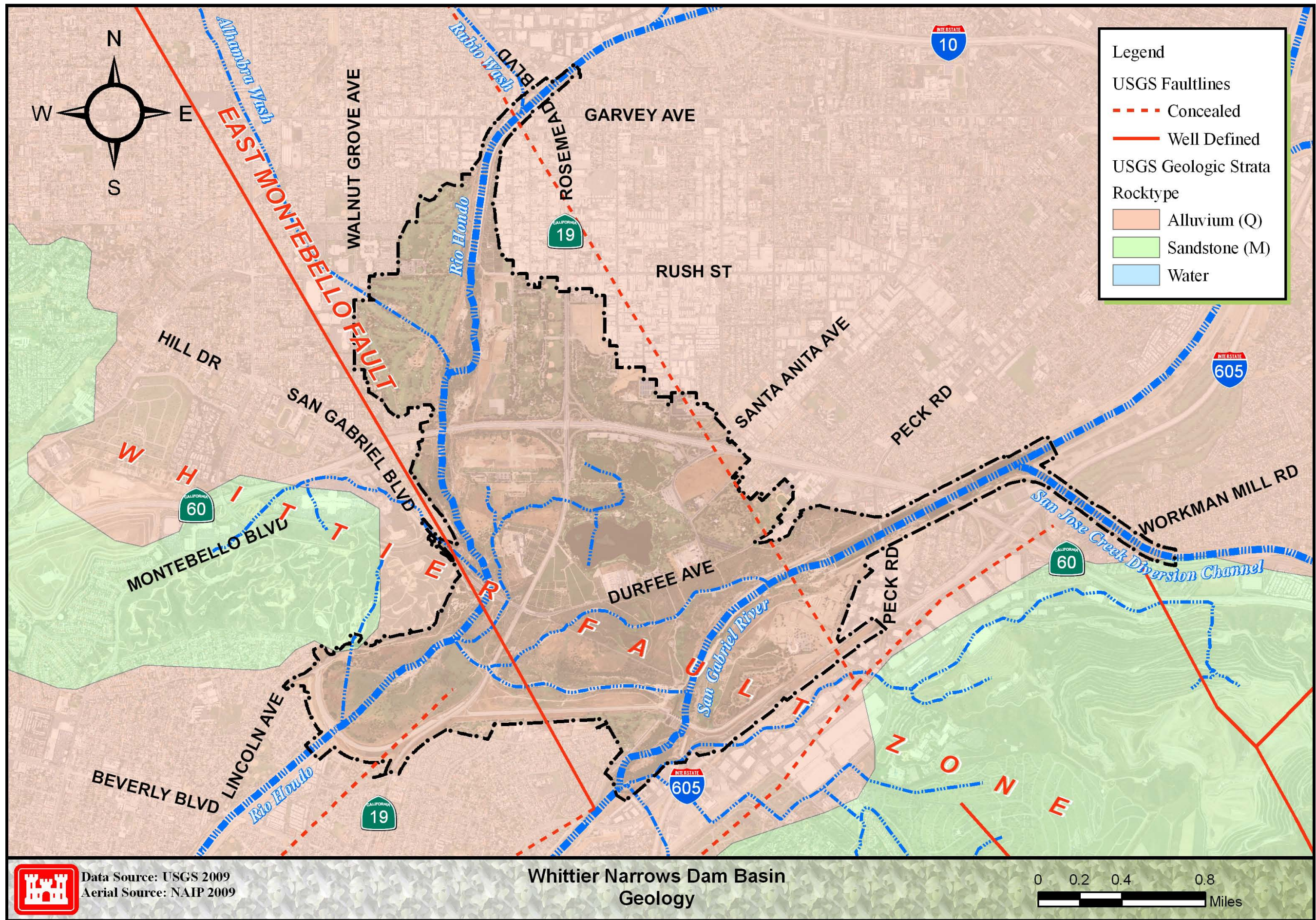
**Whittier Narrows Dam Basin**  
**Existing Recreation and Flood Frequency Contours**



Map 15 Existing Recreation and Flood Frequency Contours

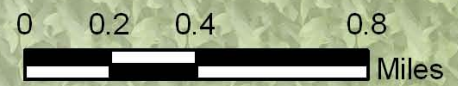


Map 16 Topography

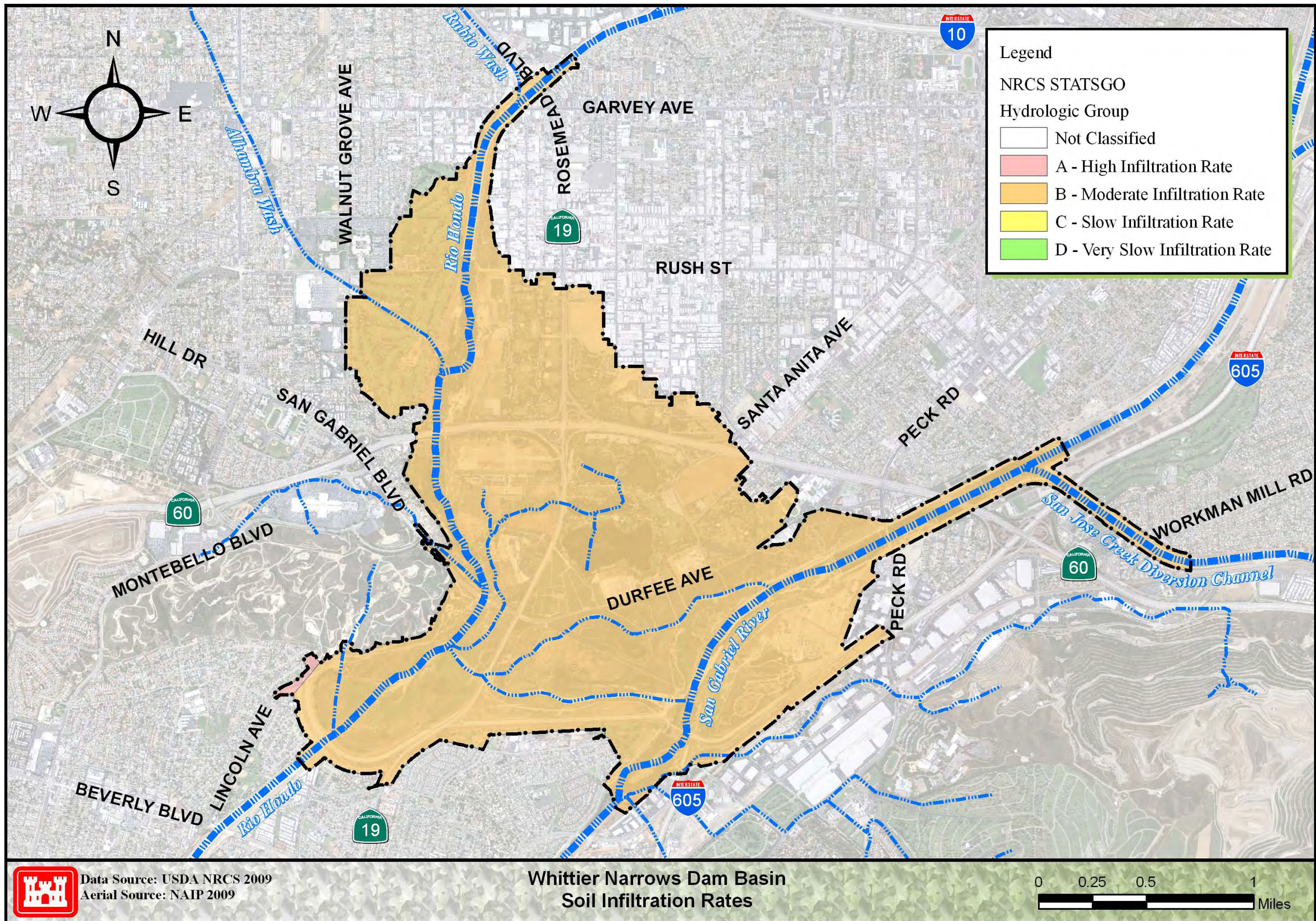


 Data Source: USGS 2009  
Aerial Source: NAIP 2009

Whittier Narrows Dam Basin  
Geology

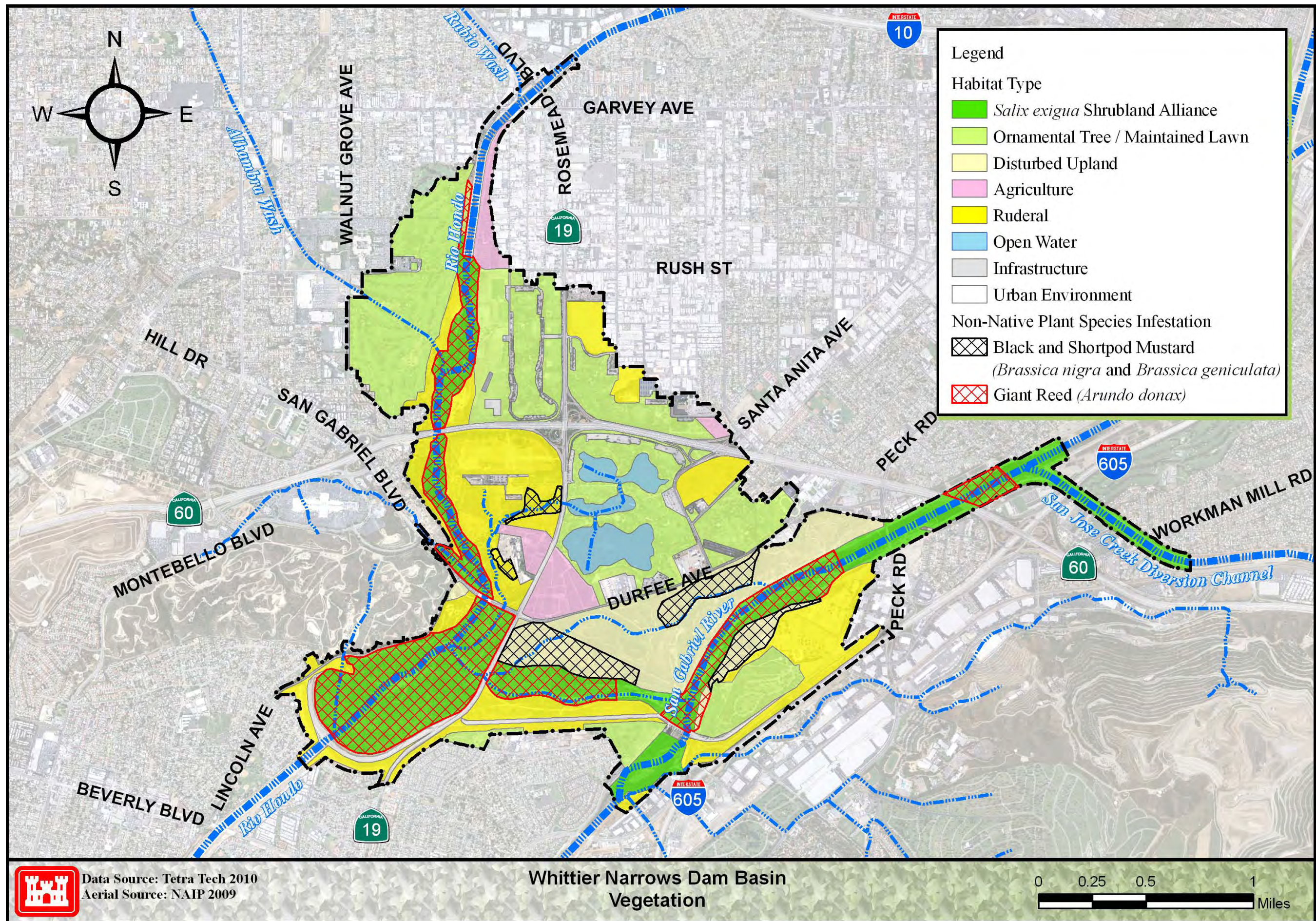


Map 17 Geology

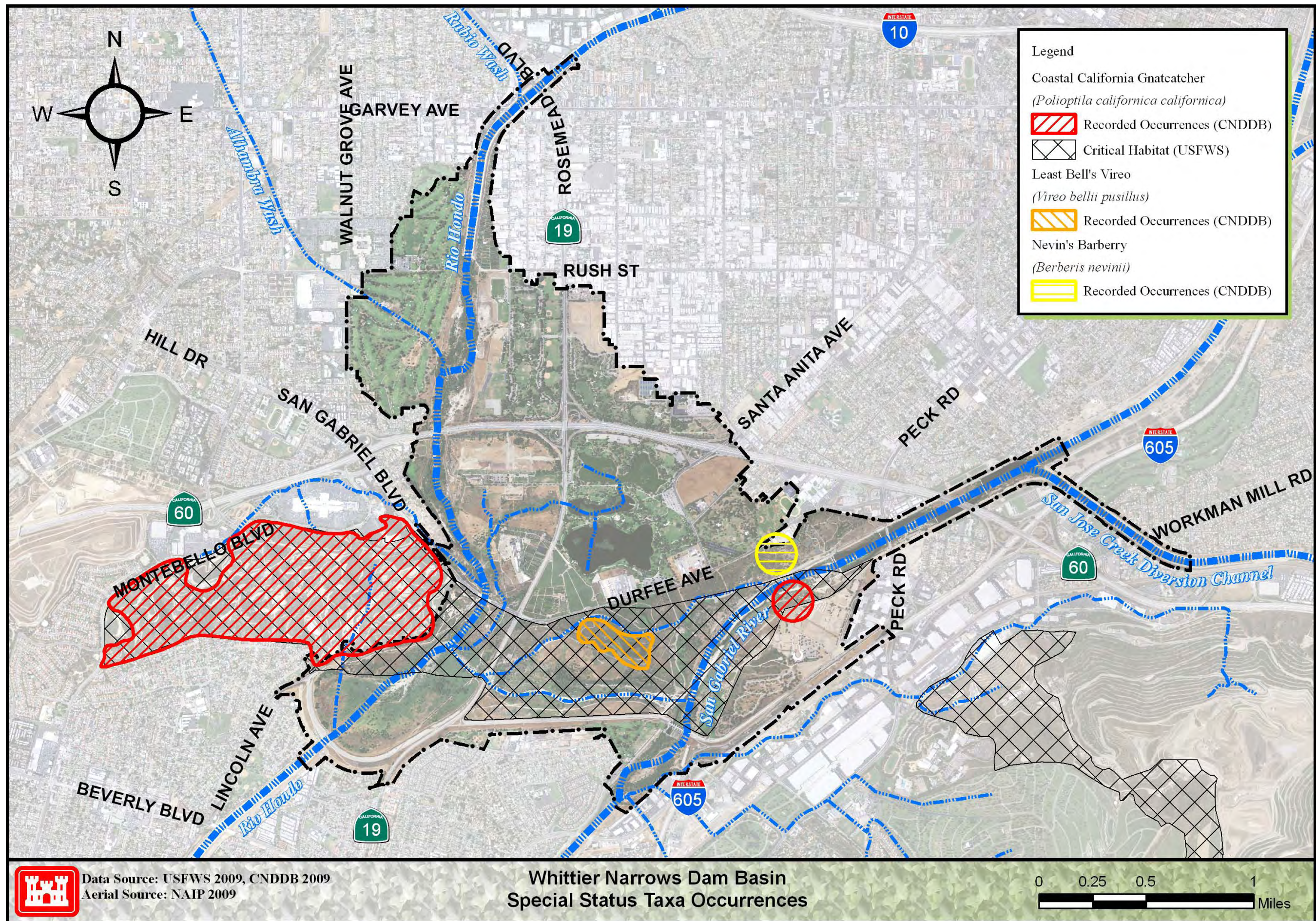


Data Source: USDA NRCS 2009  
 Aerial Source: NAIP 2009

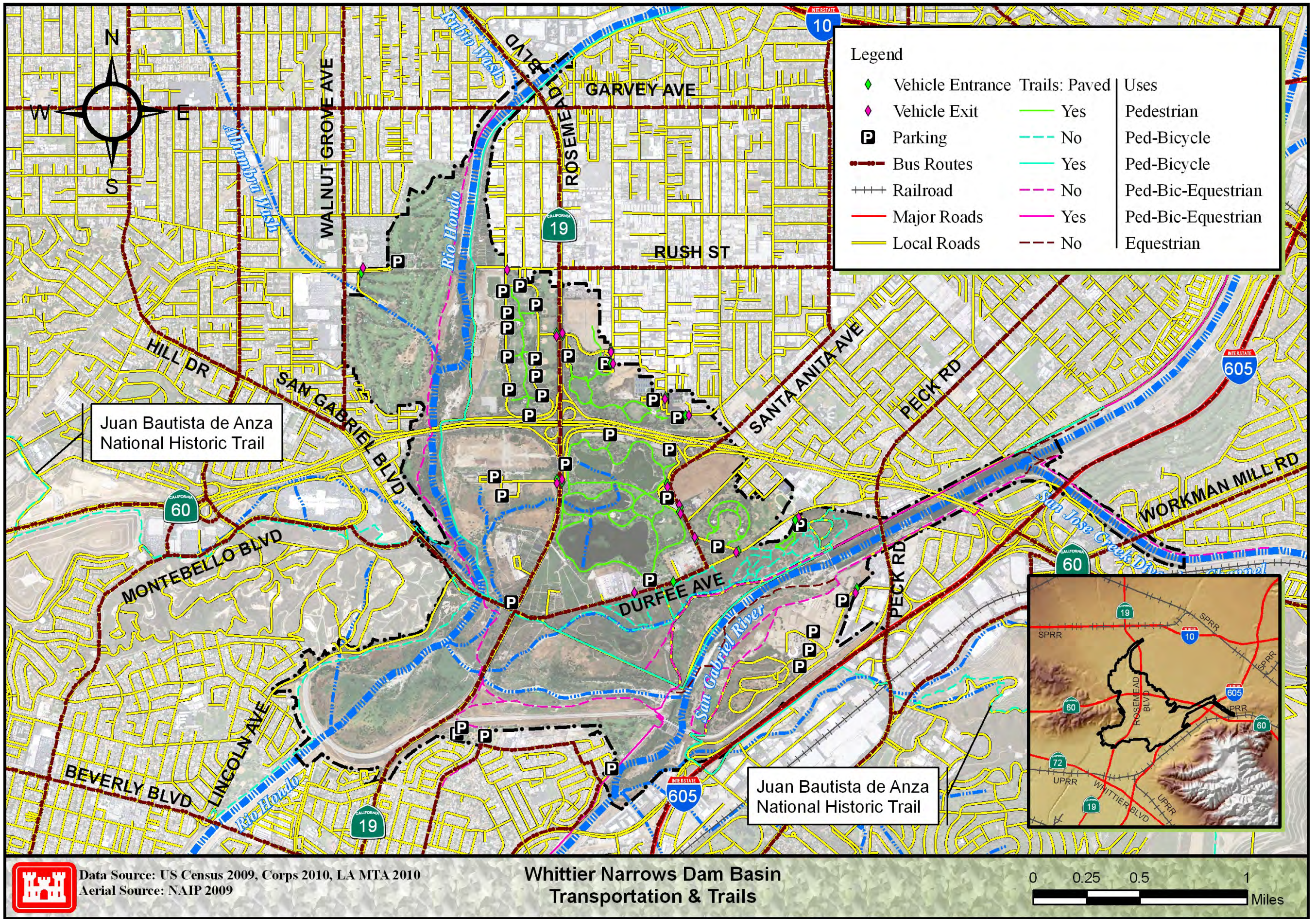
Map 18 Soil Infiltration Rates



Map 19 Vegetation



Map 20 Special Status Taxa Occurrences



Legend

◆	Vehicle Entrance	Trails: Paved	Uses
◇	Vehicle Exit	— Yes	Pedestrian
P	Parking	- - - No	Ped-Bicycle
—	Bus Routes	— Yes	Ped-Bicycle
+++	Railroad	- - - No	Ped-Bic-Equestrian
—	Major Roads	— Yes	Ped-Bic-Equestrian
—	Local Roads	- - - No	Equestrian

Juan Bautista de Anza National Historic Trail

Juan Bautista de Anza National Historic Trail



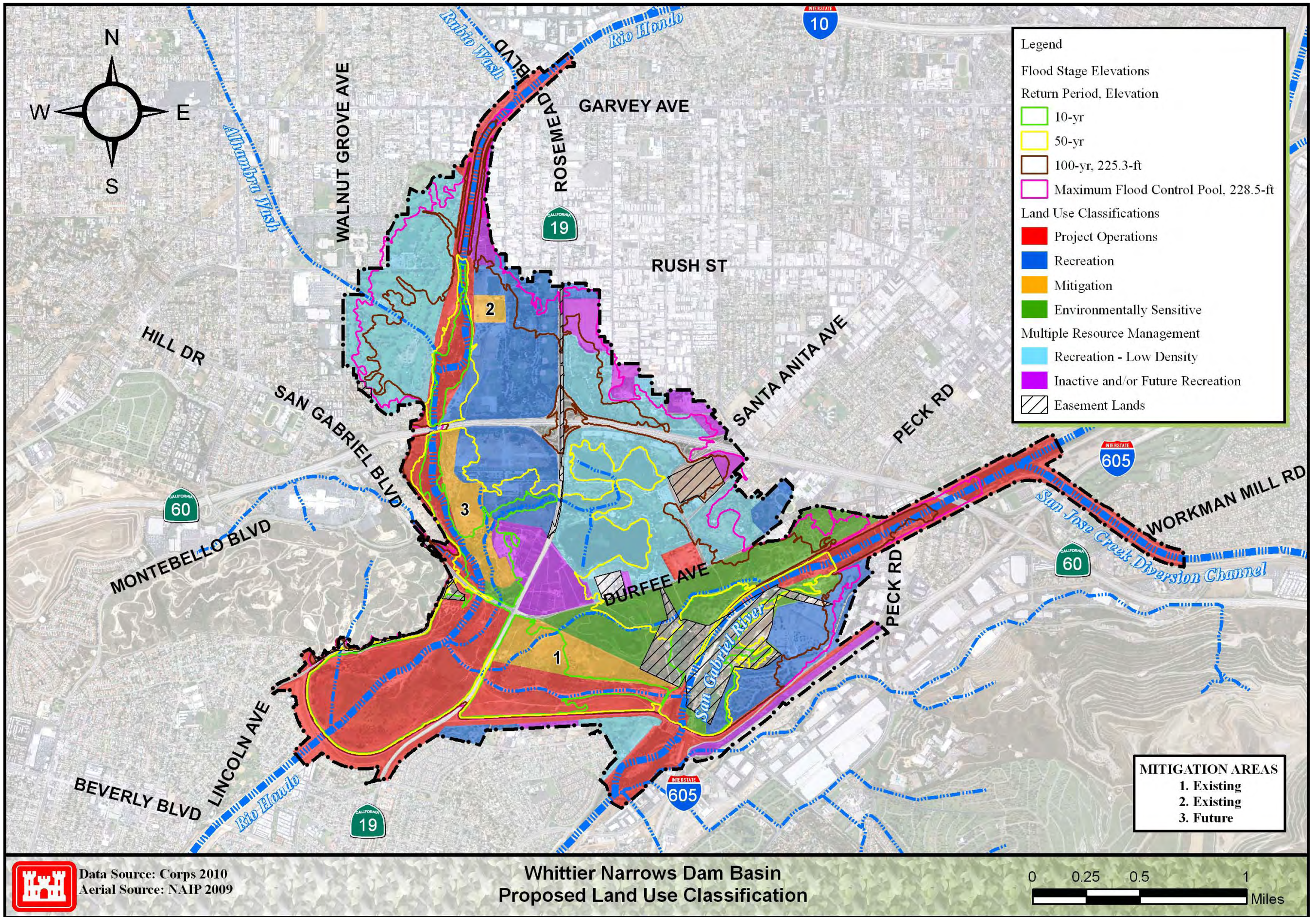
Data Source: US Census 2009, Corps 2010, LA MTA 2010  
 Aerial Source: NAIP 2009

**Whittier Narrows Dam Basin  
 Transportation & Trails**

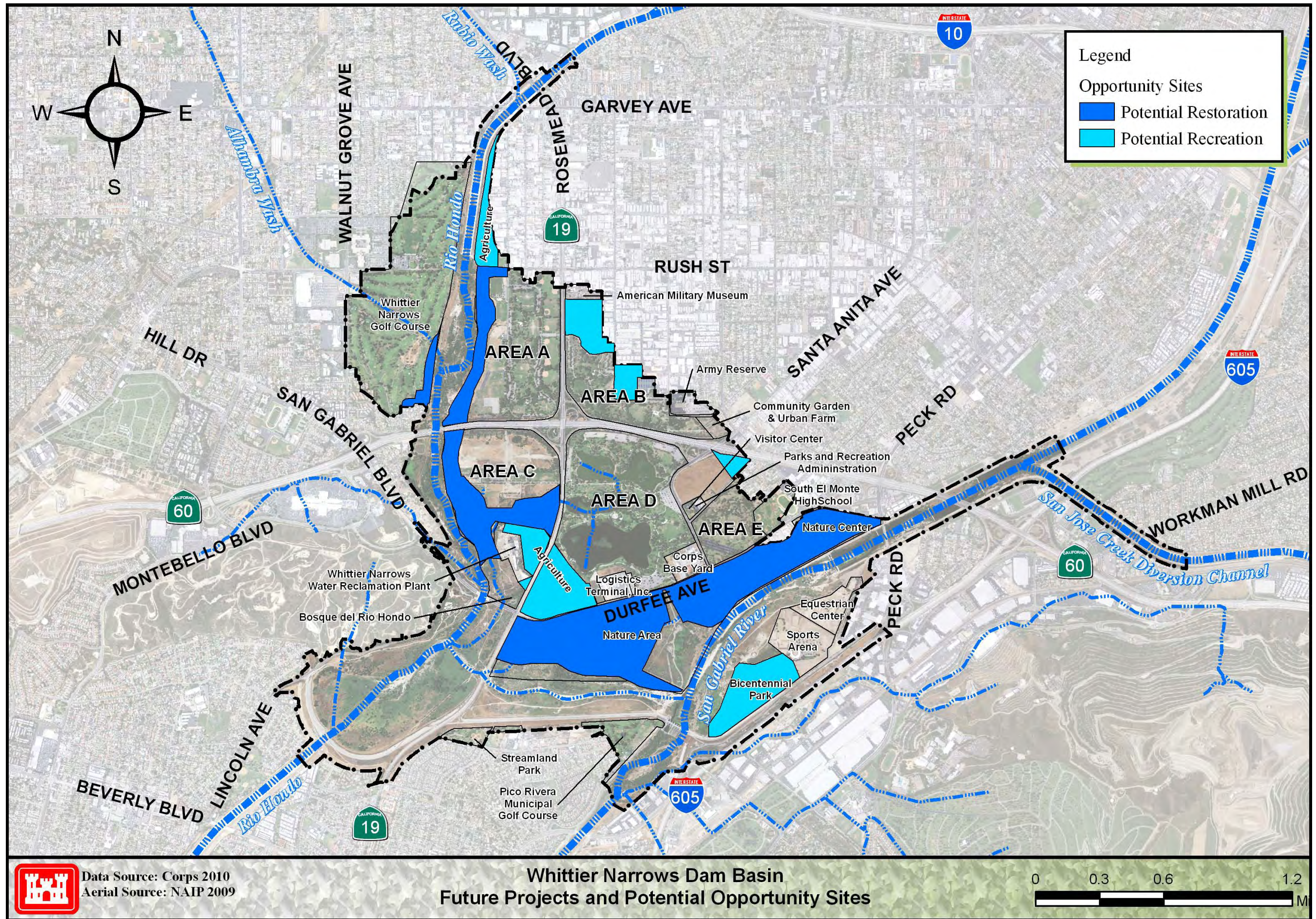


Map 21 Transportation and Trails





Map 22 Proposed Land Use Classifications



 Data Source: Corps 2010  
Aerial Source: NAIP 2009

**Whittier Narrows Dam Basin  
Future Projects and Potential Opportunity Sites**

Map 23 Future Projects and Potential Opportunity Sites

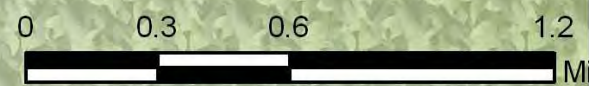


Data Source: Corps 2010  
 Aerial Source: NAIP 2009

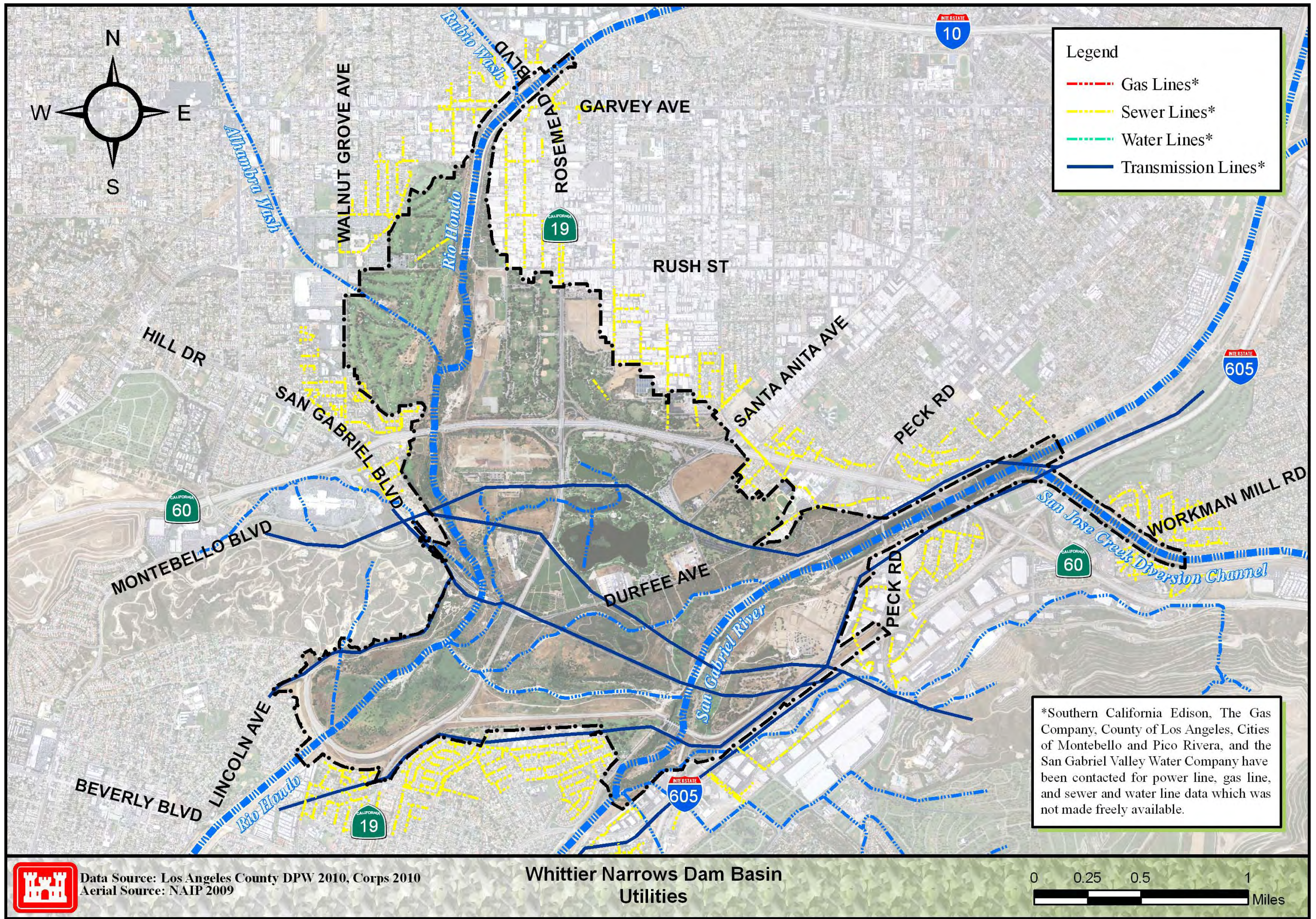
### Whittier Narrows Dam Basin Restoration Opportunities

Legend

- Native Habitat: Riparian
- Native Habitat: Upland



Map 24 Restoration Opportunities



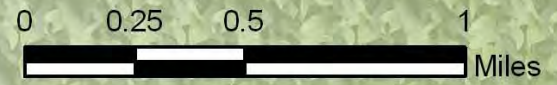
**Legend**

- - - Gas Lines\*
- - - Sewer Lines\*
- - - Water Lines\*
- Transmission Lines\*

\*Southern California Edison, The Gas Company, County of Los Angeles, Cities of Montebello and Pico Rivera, and the San Gabriel Valley Water Company have been contacted for power line, gas line, and sewer and water line data which was not made freely available.

 Data Source: Los Angeles County DPW 2010, Corps 2010  
Aerial Source: NAIP 2009

**Whittier Narrows Dam Basin  
Utilities**



Map 25 Utilities