M E M O

To: George Abrahams, Citizens for Open Space

From: Hans Giroux, Senior Analyst, Giroux & Associates

Subject: ENV-2015-3200-ND (2791 Partridge)

Date: May 10, 2016

Via e-mail:

As per your request, we have reviewed the air quality and noise impact analyses for the proposed zone change. The CEQA documentation goes to great length to state that the proposed action does not entail any construction of replacement uses. However, at multiple responses to the CEQA checklist questions, the document acknowledges that impacts to several elements of the physical environment would likely occur. At the stated limit of one live-work unit per 1,200 square feet of lot space, the site could produce up to 47 dwelling units. Between set-back requirements and height limits created by Q Conditions, 47 units may be a tight squeeze, but residential repurposing in clearly the 800 pound gorilla in the room.

If this parcel is rezoned to CM, all uses in the CM, C2 and R3 zones will be allowed. Issuance of a building permit for any project within the scope of allowed uses would only require ministerial approval and no environmental review. For example, some of the uses that could be approved without CEQA review which conform to the allowable CM and Q-Condition uses include:

Hotel or Lodge	Building Materials or Hardware Store
Construction Equipment Rental	Doggy Day Care
Café w/ Entertainment/Karaoke	Nightclub without Dancing
Rescue Mission	Taxicab Dispatch and Service
Car Wash	Sheet Metal Shop
Parcel Delivery Service & Dispatch	Probation Ofc./Drug Rehab out-patient

It is interesting to note that the CM zone and the Elysian Valley Q-conditions seem to be designed to encourage increased housing opportunities, but unfortunately the CM zone forbids daycare facilities in the zone, unless they are for dogs.

Our concern is that a proper environmental analysis may be side-stepped by declaring that the anticipated future [likely live-work] project meets all the requirements of the Planning Commission Letter of Determination. Presumably the Courts would see through the transparent effort to bifurcate the CEQA process if there was an attempt to evade CEQA processing. Clearly, the proposed zone change could create potential for environmental impacts even if no specific change in site uses is being advanced at this time. The current owner of the property is a developer and not an operator of light industrial facilities. The statement that the proposed

action (zone change) entails no physical development is a smoke-screen for an almost guaranteed intent to increase site intensity.

The City should further be cautioned that reliance on the Ordinance that created the various Q Conditions as a basis for approval of future development CEQA clearance has been invalidated by the Courts in the recent *Keep our Mountains Quiet v. Santa Clara County* (the "Wozniak" case) decision. The Court ruled that compliance with development standards alone to approve a project under CEQA fails to focus on unique local opportunities and constraints and sent the CEQA process back for an EIR for a very small project in itself. That finding was echoed in the Newhall decision which concluded that one size fits all compliance with state programs ignores the very local aspects of many environmental impacts.

The parcel in question was studied as Open Space in the 2004 MND for the community plan. In response to citizen concerns regarding the up-zoning of numerous parcels in the Elysian Valley to promote infill, additional future parklands were identified, including this parcel. It was offered as a mitigation measure in the 2004 Plan Update. To undo the Open Space zoning of 2791 Partridge constitutes a taking of future greenways offered to ensure continued development and access to recreational resources. (see Community Plan Goals 4 and 5)

Rather than trying a possible end-around, it would have made much more sense to be honest about that the proposed zone change was intending to accomplish and analyze impacts from a residential conversion of the site. Given the degree of local controversy, it would likely have been even better to incorporate the analysis into an EIR rather than relying on subterfuge at all.

HANS D. GIROUX

SUMMARY OF QUALIFICATIONS AND EXPERIENCE

EDUCATION:

Bachelor of Arts in Physics, University of California (Berkeley), 1965.

Bachelor of Science in Meteorology, University of Utah, 1966.

Graduate studies in Meteorology, University of Wisconsin, 1967-68.

Masters of Science in Meteorology, UCLA, 1972.

Candidacy for Doctorate in Meteorology, UCLA, 1974.

PROFESSIONAL EXPERIENCE:

Weather Forecaster, U.S. Air Force, Truax AFB, Madison, WI, 1966-67.

Staff Weather Officer/Chief Forecaster, McChord AFB, WA, 1968-69.

Teaching Assistant, Basic Meteorology/Advanced Dynamics, UCLA, 1969-71.

Research Assistant, California Marine Layer Structure, UCLA, 1971.

Research Assistant, Remote Air Pollution Sensing by Satellites, UCLA, 1972.

Research Assistant, Climate Change - Aircraft Pollution, UCLA, 1973.

Instructor, Basic Meteorology, Cal State Northridge, 1972-74.

Air Pollution Meteorologist, S-Cubed, LaJolla, CA 1973-75.

Senior Meteorologist, Meteorology Research, Inc., Altadena, CA 1975-77.

Instructor, Weather for Flight Aircrews, Orange Coast College, 1976.

Instructor, Basic Meteorology, Golden West Community College, 1976-81.

Instructor, Basic Meteorology, Orange Coast College, 1977-81.

Consultant, Atmospheric Impact Processes, Irvine, CA, 1977-present.

PRINCIPAL PROFESSIONAL RESPONSIBILITIES:

Military: Performed operational weather forecasting for jet aircrews; trained new personnel; responsible for ground safety, security, records administration, quality control, forecasting methodology research, and liaison with other base units; air defense battle staff weather officer; and deputy detachment commander.

University: Conducted laboratory sessions; instructed students in the use of meteorological instrumentation; demonstrated weather analysis techniques; supervised student weather observation programs; gave lectures and tests.

Private:

Air Quality: Prepared air quality impact assessments for coal- and oil-fired, nuclear, solar geothermal and wind energy power generation systems; prepared impact assessments for transportation systems, industrial emissions sources, wastewater treatment plants, landfills, toxic disposal sites, oil processing facilities, mining operations, commercial, residential, institutional and recreational land uses, airports and harbors; conducted atmospheric gas tracer experiments; developed numerical airflow analyses; and conducted numerous meteorological and air quality data acquisition programs with a very strong emphasis in arid environments, geothermal development, odors and nuisance and in regional pollution impacts from Southern California urbanization.

Noise: Developed impact assessments for roadways sources, construction equipment, sand and gravel plants, wineries, industrial equipment, gas recovery plants, railroads, recreational activities and oil refineries; monitored ambient noise levels from above sources, calibrated highway traffic noise model (FHWA-RD-77-108), and calculated sensitive receptor noise exposures; wrote community noise ordinances, purchased monitoring equipment and trained city staff; performed noise mitigation studies including barrier design, location, equipment noise control, and residential building retrofits.

PROFESSIONAL REFERENCES

Dr. Don B. Blumenthal, President, Sonoma Technology, Inc., 707-527-9372
Mr. Jerry Backoff, Planning Director, City of San Marcos, 760-744-1050
Mr. Thom Ryan, Principal Planner, EDAW, Inc., 949-660-8044
Ms. Josephine Alido, Senior Planner, David Evans Associates, 909-481-5750
Dr. Joyce Hsiao, President, Orion Environmental Associates, 415-951-9503
Ms. Valerie Geier, President, Geier & Geier Consulting, 510-644-2535
Mr. Tom Dodson, President, Tom Dodson & Associates, 909-882-3612
Mr. David Tanner, President, EARSI, 949-646-8958
Ms. Betty Dehoney, Principal Planner, HDR, Inc., 858-712-8400

June 13, 2016

Los Angeles City Council
Planning and Land Use Committee
200 North Spring Street
Los Angeles, CA 90012

RE: Objections to 2917 Partridge Zone Change and GPA

sharon.dickinson@lacity.org
(213) 978-1040

Hon. Jose Huizar, Chair
Hon. Marqueece Harris-Dawson, Vice Chair
Hon. Mitchell Englander
Hon. Gil Cedillo
Hon. Felipe Fuentes
c/o Sharon Dickinson, Legislative Assistant

Planning & Land Use Management Committee
City of Los Angeles
200 N. Spring Street, Rm. 395
Los Angeles, CA 90012

Hon. Chair Huizar and Members of the PLUM Committee:

> All objections, including those regarding proper notice and due process, are expressly reserved. Please ensure that notice of all hearings, actions, events and decisions related to the Project are timely provided to me at my email listed below or, if electronic copies are unavailable, to the address below. This request for advance notice is made pursuant to, but not limited to, Public Resources Code Sections 21092, 21092.2 and 21167(F), and Government Code Sections 65091 and 65904.

Please find the attached document generated by the US Army Corp of Engineers for the Feasibility Study of the Restoration of the Los Angeles River.

The Habitat Study in particular finds that preservation of natural habitat is essential to the goals of ecosystem restoration and that urbanization and the stressors associated with it significantly contribute to the degradation of the River habitat.

Since no study of Biological impacts were made for this project, we offer the USACE study which was vetted over a 4 year period and peer reviewed for accuracy and depth of

analysis. This document was certified in September of 2015 and contains many facts that support the preservation of open space in the vicinity of the Los Angeles river and its linkages. The subject parcel would be included since it abuts the River and Marsh Park, both areas of know wildlife habitat.

Passages of particular relevance have been highlighted in Yellow for ease of reference.

Also attached is a map of the 50 year and 100 year flood plain event. We would like to point out that the parcel located at 2917 Partridge is indicated as a flood area on both maps. The likelihood for flooding on this parcel would support a preferred long-term use as Open Space rather than a high-density urban development.

In conclusion, we object to the zone change of this from Open Space to CM. The most consistent use of the land is Open Space, as it was intended to be, and how Mr. La Kretz purchased it. Nothing prevents this developer from adaptively re-using the existing warehouses which would be consistent with the artisanal manufacturing and creative space that is prevalent in the area. High-density residential and shopping developments for which Mr. La Kretz is known, have no place and no precedent in this low-density residential neighborhood.

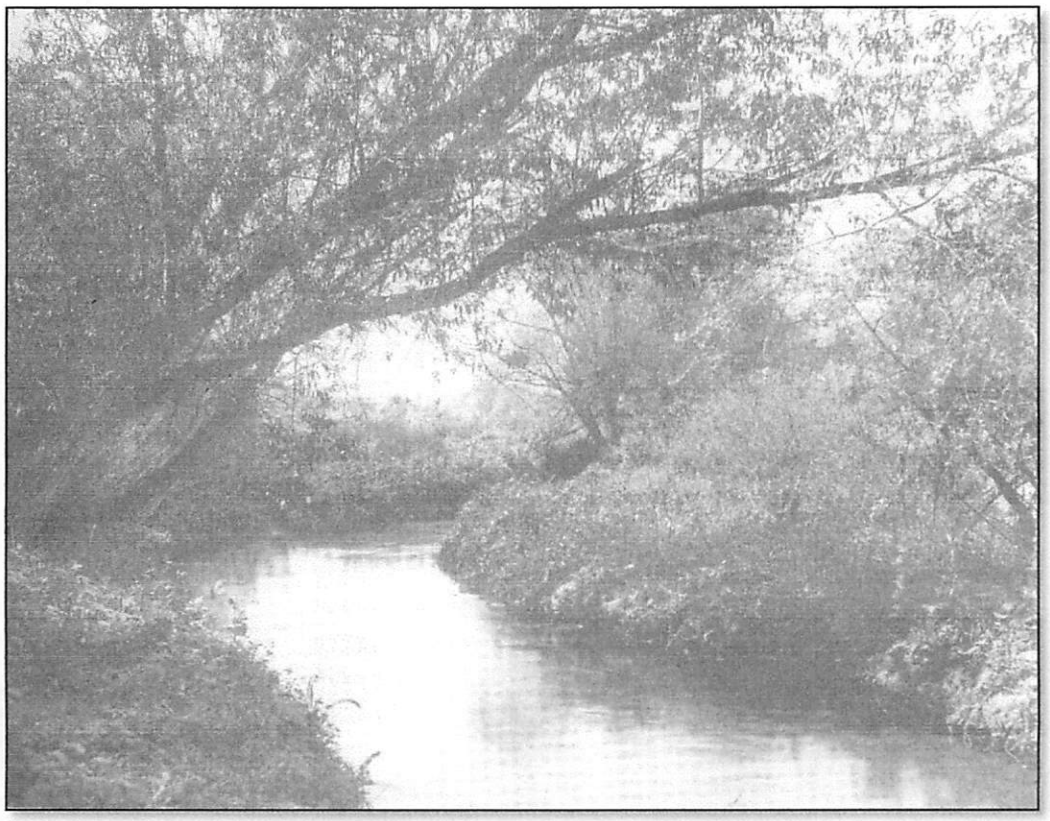
THIS PARCEL IS NOT SUBJECT TO THE NEW Q-CONDITIONS for the Elysian Valley adopted on December 26, 2015 (figure 1). However, the map for the public hearings did show the Partridge parcel as subject to the Q-conditions. (figure 2). This is fatal error in the public process and misrepresentation at a hearing by planning staff.

We further note that the map for the Q-conditions recently adopted by ordinance designed to limit development by height and FAR in order to preserve the character of the neighborhood and promote lower-intensity development, do not apply to this parcel. Please see the attached map. This developer would be able to build a 76 foot tall tower if he utilized an array of development incentives including Density Bonus (SB1818). Without discretionary approvals, he could at the very least build a 56-foot tall by-right density bonus project, with half the required parking, without any environmental review whatsoever.

Thank you very much for the opportunity to comment on this item.

Best regards,

Jennifer Deines, on behalf of
Citizens for Open Space
Art_dogs@icloud.com



Los Angeles River near Downtown, circa 1900
from Blake Gumprecht's "The Los Angeles River"

CHAP Habitat Evaluation Appendix
Los Angeles River Ecosystem Restoration Study

U.S. Army Corp of Engineers
Los Angeles District

and

Northwest Habitat Institute

September 2015

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1.0 INTRODUCTION

This Appendix provides a habitat assessment analysis of alternatives proposed for the Los Angeles (LA) River Ecosystem Restoration (ER) Feasibility Study (the "Study"), Los Angeles, California. The Study examines restoration opportunities within an 11-mile segment of the LA River, referred to as the ARBOR (Alternative with Restoration Benefits and Opportunities for Revitalization) reach (hereafter referred to as Study area) (Figure 1-1). The Study alternatives evaluate restoration of the area to a condition characteristic of the historic, natural riparian river channel, as limited by the surrounding highly urbanized City of LA and the channel's purpose for flood risk management. Development of restoration alternatives was based on the following study objectives:

- Restore Valley Foothill Riparian Strand and Freshwater Marsh Habitat.
- Increase Habitat Connectivity.

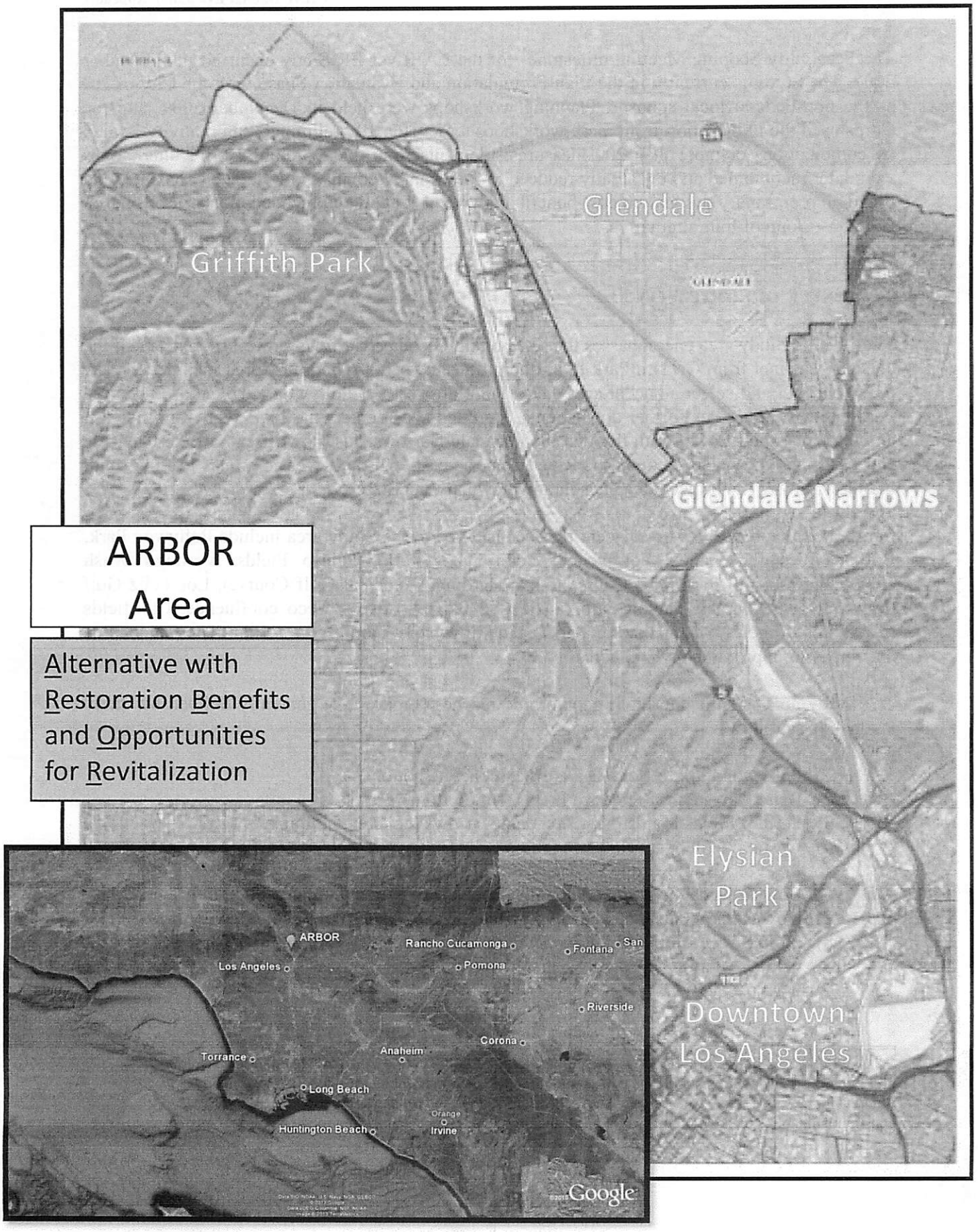
2.0 STUDY BACKGROUND

The U.S. Army Corps of Engineers' (Corps') involvement with the LA River began in the 1930s after devastating floods destroyed homes, businesses, and infrastructure in the early 20th Century. The City of Los Angeles and Los Angeles County initiated the flood control program that channelized the river after these floods. Congress authorized the Corps to undertake, with the County as partner, a modified version of the County's comprehensive plan. The Corps then joined the efforts, which led to the further channelization of the River in the 1930s and 1940s and the current concrete configuration. This configuration drastically altered the remaining riparian and freshwater marsh habitats as well as ecosystem functions in the once natural River system. The flood risk management project also allowed for increased urbanization and development in the floodplain, further reducing the marsh and riparian habitats that had naturally occurred on the river and its tributaries. The Corps' involvement on the LA River continues today in sharing operation and maintenance responsibilities with the LA County Flood Control District. The Corps has operation and maintenance responsibility for the portion of the river within the Study Area.

The U.S. Congress directed the Corps to undertake the LA River Ecosystem Restoration Study in 2006. The Study initially focused on the first 32 miles of river, and was subsequently narrowed to focus on the 11.5-mile Study area (aka ARBOR reach), which exhibits the greatest potential for ecosystem restoration. This reach includes the "soft-bottomed" Glendale Narrows that connects Griffith Park to Downtown LA and that currently supports degraded riparian habitat. The soft-bottomed reaches currently support a natural bed with concrete banks due to a high groundwater table that did not allow the bed to be constructed with concrete.

In 2007, the City of LA adopted the long-range LA River Revitalization Master Plan that calls for the creation of a 64-mile network of trails, parks, and recreation along both sides of the first 32 miles of the LA River, from the San Fernando Valley to the City of LA's border with the City of Vernon, an area home to more than one million people. The entire Study area is within the Master Plan's focus area.

Figure 1-1. ARBOR Study Area



The Feasibility Scoping Meeting milestone[1] for the LA River ER Study occurred in November 2007. The Study is currently in the Plan Formulation and Evaluation Phase with the City of LA as the non-Federal local sponsor. Planning workshops were held in December 2009, and the Corps used the information from these workshops to develop 19 preliminary alternatives defined by combinations of more than 200 measures. Elements from these preliminary 19 alternatives were later recombined and eventually reduced to four final alternatives for detailed consideration based on preliminary design and cost-benefit analyses. A final recommended plan will be chosen from this group of four alternatives.

3.0 SITE DESCRIPTION

The 11-mile Study area encompasses the soft bottom Glendale Narrows as well as portions of the concrete channel from Griffith Park to northern downtown LA. The Study area includes the LA River channel and select adjacent areas, beginning upstream at Pollywog Park, across from the Forest Lawn Cemetery. Further downstream, Verdugo Wash enters the LA River from the east, and the River then flows south through the Glendale Narrows. Just downstream of the Glendale Narrows, the Arroyo Seco enters the River from the east, and the River continues to flow south into downtown. The project area ends in downtown at First Street.

Large (i.e. in acreage) River-adjacent areas considered in the Study area include Pollywog Park, Burbank-Western Channel confluence, Bette Davis Park, Ferarro Fields, Verdugo Wash confluence, Griffith Park Golf Course (a.k.a. Harding Municipal Golf Course), Los Feliz Golf Course, Bowtie Parcel, Taylor Yard (a.k.a. G-2 Parcel), Arroyo Seco confluence, Cornfields (a.k.a. Los Angeles State Historic Park), and Piggyback Yard (Figure 3-1). The Study area encompasses approximately 842 acres.

The Study area is split into eight geomorphic reaches (Figure 3-2) generally defined by Study landmarks as follows:

1) Pollywog Park to Bette Davis Park (concrete bottom)
2) Bette Davis Park to Ferraro Fields (soft bottom)
3) Ferraro Fields to upstream Glendale Narrows (concrete bottom)
4) Upstream Glendale Narrows to Los Feliz Boulevard (soft bottom)
5) Los Feliz Boulevard to Bowtie Parcel (soft bottom)
6) Bowtie Parcel to downstream Glendale Narrows/Arroyo Seco (soft bottom)
7) Downstream Glendale Narrows/Arroyo Seco to Main Street (concrete bottom)
8) Main Street to First Street (concrete bottom)
   *Note that all reaches have concrete banks

1 Feasibility Scoping Meeting (FSM) = The purpose of the FSM is to bring the Corps vertical management team, the non-Federal sponsor, and resource agencies together to agree on the problems and solutions to be investigated by a Study, and the scope of analyses required. An FSM will address the problems, opportunities, and needs; refine study constraints; identify the key alternatives; and further define the scope, depth, and methods of analyses required.

Figure 3-1. Key River Adjacent Areas

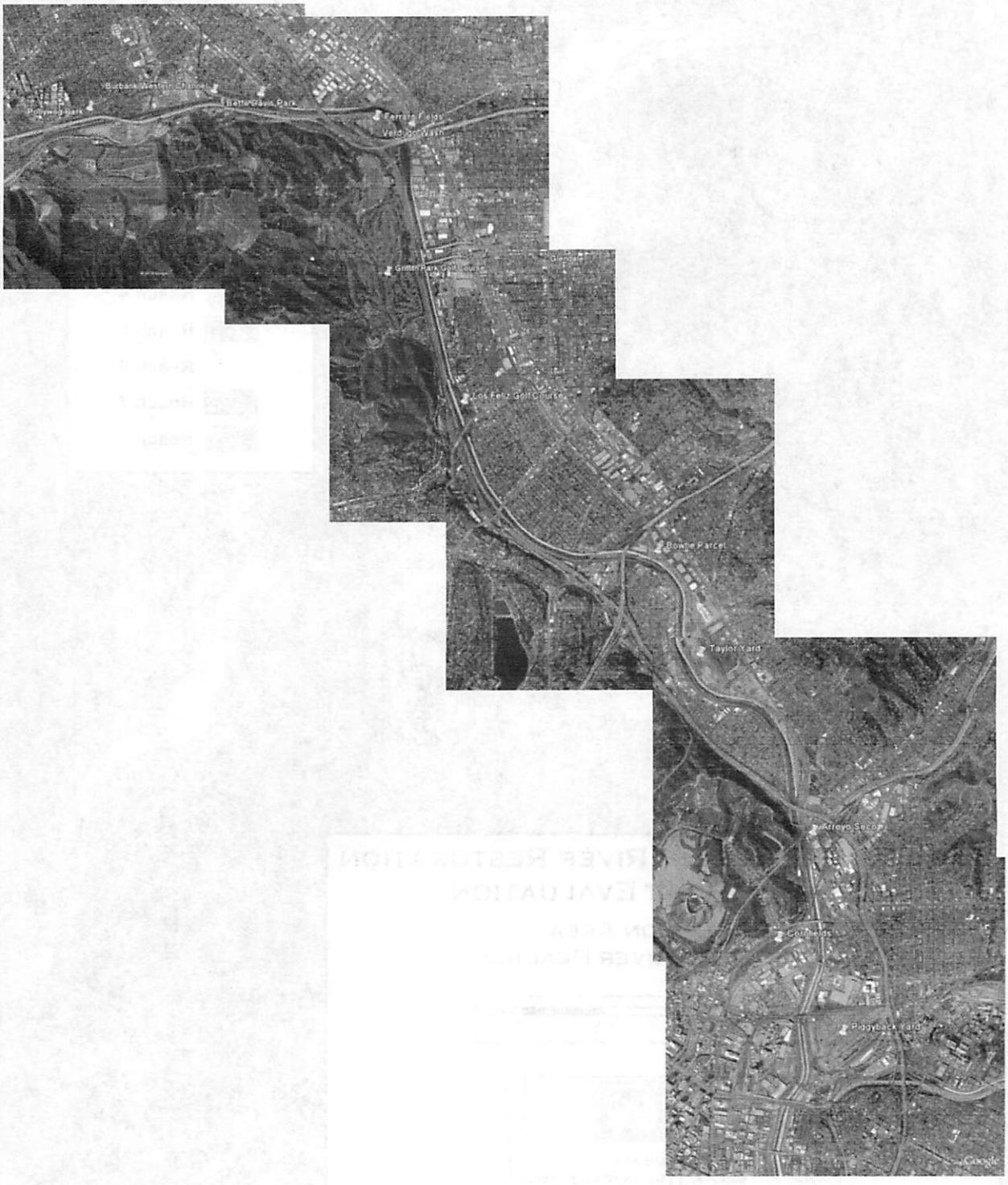
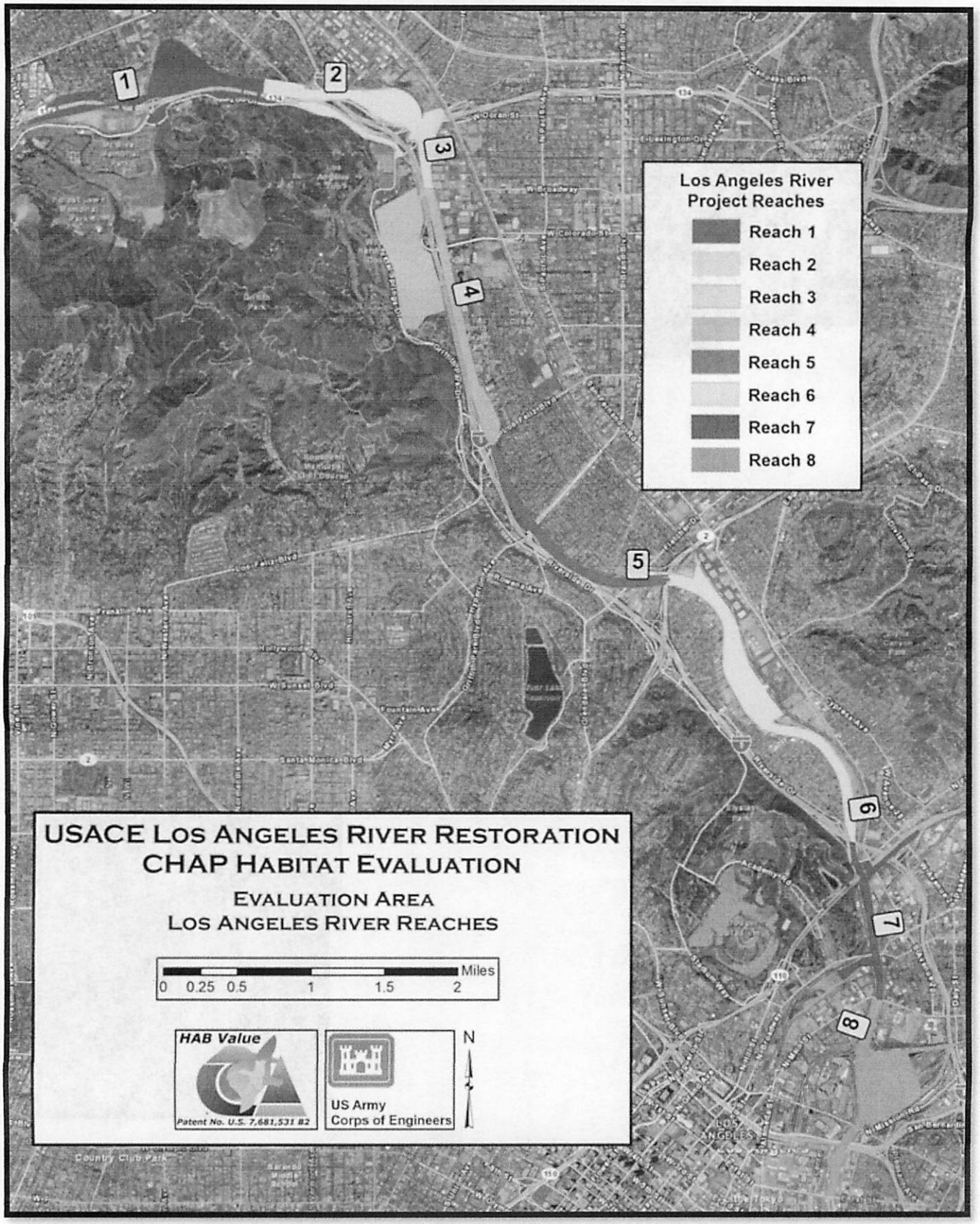


Figure 3-2. Geomorphic Reaches



The reaches of the River with a concrete bottom have three configurations in the Study area, including box and trapezoidal, or a combination of the two. The "soft" bottom areas have predominantly rock and cobble substrate that support riparian and wetland vegetation within trapezoidal concrete slopes.

4.0 STUDY AND METHODOLOGY ASSUMPTIONS AND CONSTRAINTS

Due to its highly urbanized setting and the hydrologic alterations that the River has undergone prior to and since its channelization, there are several constraints that were considered in defining alternatives and assessing how these alternatives can achieve the Study objectives.

Historic hydrologic conditions that are extremely important to riverine, riparian, and marsh ecosystems have been irreversibly altered along most of the LA River. Complete restoration of historic conditions is not feasible; therefore, to the greatest extent possible, the Study aims to restore riparian and wetland vegetation communities and habitats that were known to occur historically.

Residential, commercial, and industrial land uses border the River, thereby limiting the area adjacent to the River available for restoration. This is an important determinant in the potential acreage of each community type in the habitat analysis. More importantly, it influences the spatial and structural diversity that can be attained, as well as the quality of riparian habitat in terms of characteristics such as availability of water to River adjacent restoration areas and the relationship between interior versus edge space. Presently, the Study area (i.e., width of the restoration corridor) has been predominantly defined by existing easements and rights of way, existing structures, availability of adjacent lands for acquisition, local topography, and the historic floodplain. Furthermore, several of the River-adjacent areas that would provide substantial lands for restoration, if acquired, require cleanup of hazardous and toxic wastes from previous uses, such as rail yards.

Overall, water availability in the project area during the non-flood season, is predominated by upstream releases from the Tillman Water Reclamation Plant, as well as local surface runoff. Ongoing water conservation efforts include holding more water at upstream reservoirs with the intent of percolating in spreading basins. The City also has plans to remove dry weather flows from the River as part of its Integrated Regional Plan, specifically the Department of Water and Power's Recycled Water Master Plan. Lack of a more significant, reliable water source for the Study area poses constraints on the ability to sustain important functions of stream, riparian, and wetland habitats that currently exist, as well as proposed habitats in the alternative plans. However, the City is committed to maintaining flows necessary for the restoration plan to be implemented as a result of this study.

Several other ecosystem restoration studies and projects are on-going on LA River tributaries, including the Headworks, Sun Valley, and Arroyo Seco Ecosystem Restoration Continuing Authority Program Studies, and the Tujunga Wash project was recently completed. These Studies and projects will positively affect the LA River riverine system by restoring upstream habitat and functions, and by increasing ecosystem value. However, the implementation of these projects will also require a portion of the scarce water resources to support the restoration efforts.

The California High Speed Train (HST) project is also a factor in the extent to which the riparian ecosystem can be restored and the success of the restoration project in achieving its goals. Certain proposed alignment alternatives near the Study area may impact the restoration project. While HST project implementation is considered long-term and not precisely defined at this point, the alignments that abut and cross the Study area would have a negative impact on the value of wildlife habitat. Other development, transportation, and infrastructure projects occurring within or adjacent to the Study area would generally have a negative effect on restoration.

Ultimately the LA River in its current state is a flood risk management structure. The purpose of flood risk management must be maintained and there can be no increase in flood risk, thereby limiting the amount vegetation that can be sustained in the channel. Acquisition of river adjacent areas that would allow for widening of the River would allow for more vegetation in the channel; however these opportunities are limited.

Despite these constraints and limitations, the ARBOR reach retains the potential for substantial improvements to habitat quality in highly degraded areas, providing or enhancing wildlife movement corridors, and increasing nesting opportunities for native resident and migratory species.

5.0 HABITAT EVALUATION: COMBINED HABITAT ASSESSMENT PROTOCOL (CHAP)

5.1 CORPS RESTORATION POLICY

Under Corps authority, restoration opportunities that are associated with wetlands, riparian and other floodplain and aquatic systems are most appropriate for Corps involvement. The objective of Corps ecosystem restoration projects is to restore degraded ecosystem structure, function, and dynamic processes to a less degraded, more natural condition. Even partial restoration may provide significant and valuable improvements to degraded ecological resources (USACE 2000).

Restored ecosystems should mimic, as closely as possible, conditions that would occur in the area in the absence of human changes to the landscape and hydrology. Indicators of successful restoration would include the presence of a large variety of native plants and wildlife, the ability of the area to sustain larger numbers of key indicator species[2] or more biologically desirable species, and the ability of the restored area to continue to function and produce the desired habitat benefits with a minimum of continuing human intervention (USACE 2000).

Additional guidance for ecosystem restoration in the Civil Works Program assures that civil work investments in ecosystem restoration have the intended beneficial effects and would be conducted in the most cost effective manner (USACE 2000).

Corps guidance requires that the ecosystem related benefits of proposed alternatives be subjected

2 An indicator species is an organism whose presence, absence or abundance reflects a specific environmental condition. Indicator species can signal a change in the biological condition of a particular ecosystem, and thus may be used as a proxy to diagnose the health of an ecosystem.

to detailed economic analysis, allowing an explicit comparison of the costs and benefits associated with the alternatives. Consequently, it is necessary that the environmental benefits of the alternatives be based on some quantifiable unit of value. Since restoration value is difficult to monetize, instead of calculating benefits in monetary terms, the Corps ecosystem restoration projects calculate the value and benefits of restored habitat using established habitat assessment methodologies. Comparing the alternatives in this manner facilitates the determination of the most cost-effective restoration alternative that meets restoration goals (USACE 2000).

5.2 HABITAT ASSESSMENTS

Evaluating habitat quality is the approach most often taken to compare ecosystem restoration alternatives because habitat is thought of as a surrogate for ecosystems; it is the setting where plants and animals live, interact, and reproduce. Habitat is frequently viewed in conjunction with species information to gain insight to various uses, structures, and functions existing within a landscape or site.

Few methods for habitat assessment exist; however, most are focused only on aquatic habitats, wetland habitats, or habitat for a single species. One such habitat assessment methodology used by the Corps is the U.S. Fish and Wildlife Service's (USFWS) single species model known as the Habitat Evaluation Procedure/Habitat Suitability Index Models (HEP/HSI) (1980). HEP evaluates single species, a species guild, or a species assemblage using models comprised of measureable habitat variables and associated mathematical aggregations to estimate habitat suitability/quality (NHI 2007). The preliminary output of the HEP model is a habitat suitability index (HSI), which ranges from 0 (poor habitat quality) to 1.0 (optimum habitat quality). Habitat value is finally calculated in terms of Habitat Units (HUs) by multiplying the HSI by site acreage.

HUs are then used to rate and compare the value of one ecosystem restoration alternative to another. While HUs are a simple and useful form for presenting habitat quality as a numerical value, HEP assumes a linear relationship between habitat suitability and species response. In other words, HEP assumes that as HSI increases the wildlife population should also increase. This implies that the model has the ability to predict population response without errors (NHI 2007).

Furthermore, the single species method assumes that an entire community is represented by that species, which may result in a narrow representation of habitat quality (NHI 2007). The single species method does not account for substantial benefits that are afforded by the ecosystem as a whole, which includes multiple species and multiple habitats. Furthermore, it does not account for all functions or habitat components potentially present at a site.

Throughout the U.S. there is a shift towards assessing restoration and other conservation activities at the ecosystem level (Perkins 2002). Determining habitat structure and functional integrity of an area for all species potentially using it is more supportive of an ecosystem management approach. A habitat assessment methodology that measures functionality, which is critical to the success of many restoration projects, should incorporate multiple components such as vegetation, structure, surrounding landscape, and habitat size and shape (Breaux et al. 2005, Store and Jokimaki 2003).

5.3 CHAP BACKGROUND

Recently, an ecosystem-based habitat evaluation framework known as HAB (or the Habitat Accounting and Appraisal methodology) was developed by the Northwest Habitat Institute (NHI). This approach involves a triad assessment of species, habitat, and functions (O'Neil et al. 2005), and includes an inventory of habitat components and their relationship to ecological functions performed by species. The Combined Habitat Assessment Protocols (CHAP) method, which incorporates the HAB methodology, generates HUs based on an assessment of multiple species, habitat features, and functions by habitat type.

In the HAB approach, fish and wildlife with the potential to occur at a given site are identified. Potential species are determined using range maps in conjunction with information on vegetation types and habitat types, structural conditions, and habitat elements, also known as Key Environmental Correlates (KECs). KECs represent habitat elements (physical and biological) that are known to most influence a species distribution, abundance, fitness, and viability. KECs include habitat elements such as down wood, snags, litter layer, shrub layer, flowers, burrows, boulders, or riffles and pools. For the Master list of CHAP KECs, see Appendix A.

Habitat is defined as "the place, including physical and biotic conditions, where a plant or animal usually occurs" (Johnson and O'Neil 2001). Habitat types are often characterized by a dominant plant form or physical characteristic. Structural conditions of the habitat are also considered.

Function refers to the principal way organisms influence the environment, also known as Key Ecological Functions (KEF) (NHI 2007). KEFs refer to the principal set of ecological roles performed by each species in its ecosystem (NHI 2007). More specifically, KEFs refer to the main ways organisms use, influence, and alter their biotic and abiotic environments. KEFs include functions that organisms perform in the environment, such as a grazer, sap feeder, carrion feeder, seed disperser, nest parasite, primary cavity excavator, or impounds water by creating dams. For the Master list of CHAP KEFs see Appendix B.

While other methods consider habitat components, the HAB approach considers over 350 different KECs and over 100 KEFs as seen in Appendices A and B. KECs and KEFs are key components in determining the wildlife habitat unit values.

The HAB approach can be combined with elements of HEP to address habitat value at evaluation sites, with HUs as the output. Such a combined approach is referred to as CHAP (Combined Habitat Assessment Protocol) (NHI 2007).

The CHAP evaluation described herein utilizes the ecosystem-based approach to quantitatively characterize the ecological value of wildlife habitat associated with the restoration alternatives proposed for the LA River ER Study. Habitats for the following groups of animals were evaluated as part of the CHAP analysis and would be benefited by implementation of the alternatives:

- Resident and Migratory Birds, including raptors
- Reptiles
- Amphibians

- Mammals
- Fish

5.4 CORPS PLANNING PROCESS

In order to solve water resources and ecosystem restoration issues, the Corps Planning process identifies problems and opportunities, inventories and forecasts conditions, and formulates, evaluates, and compares alternative plans in order to select the best, most cost effective project alternative for implementation and construction.

In identifying problems and opportunities, project objectives and constraints are also developed that guide the formulation of alternatives. When inventorying and forecasting, the historic, existing, and future conditions are examined to establish a baseline for alternative comparison. Alternative formulation develops a suite of management measures[3] that are combined together in various ways to create a set of project alternative plans. The alternative plans are evaluated by forecasting conditions "with project" implementation and comparing them to the forecasted "without project" condition. The plans are then compared to one another based on how they meet project objectives, and on cost effectiveness and cost-benefit analyses, policy compliance, and acceptability by the public and stakeholders. The best plan, based on these factors, becomes the recommended plan for implementation.

The habitat assessment serves to quantify restoration benefits that inform the cost effectiveness and cost-benefit analyses and that contribute to the comparison of alternative plans.

6.0 CHAP ANALYSIS

The HAB approach, which is largely spatially based, uses Geographic Information Systems (GIS) to delineate habitat polygons[4] and map habitat types (cross-walked with associated vegetation types) within the Study area. These habitat type classifications are based on the California Wildlife Habitat Relationships (CWHR) habitat classification scheme, derived from the CDFG publication titled "A Guide to Wildlife Habitats of California" (Mayer and Laudenslayer 1988). For each habitat polygon, wildlife species associated with these CWHR habitat types are linked to key environmental correlates (KECs) (i.e. habitat elements) and key ecological functions (KEFs)(i.e. functions performed by species), which are derived from NHI's Interactive Habitat and Biodiversity Information System (IBIS) database[5] (Johnson and O'Neil, 2001).

The detailed steps of compiling KECs and KEFs are outlined in Section 6.1.1.

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3 A management measure is a feature or activity that can be implemented at a specific geographic site to address one or more planning objectives. It may be a "structural" feature that requires construction or assembly on-site, or it may be a "non-structural" action that requires no construction (USACE 1996).

4 In GIS, a polygon is a map feature that bounds an area at a given scale, such as a county on a world map or a district on a city map. In habitat mapping, the polygon bounds a specific habitat type.

5 The datasets for KECs and KEFs have been developed through a multiple expert panel process. IBIS is an extensively peer reviewed system that contains current ecological information on more than 1,000 fish and wildlife species, organized in searchable databases.

The subsequent analysis of these habitats, species, and functions results in a quantitative value for existing and forecasted with and without project habitats in the Study area.

6.1 BASELINE: EXISTING CONDITIONS

6.1.1 Baseline: Existing Conditions Methods

A fine level scale approach was used to calculate habitat value for the LA River ER study. The baseline CHAP approach, incorporating the HAB methodology, involves: 1) preliminary mapping, 2) field inventory, 3) species list, 4) data compilation and analysis, 5) conversion to HUs, and 6) Annualizing HUs.

1. Preliminary Mapping
   Using GIS and geo-referenced aerial imagery, the LA River ER study site was mapped by delineating potential habitat types or structural conditions within the site. Habitat types were identified using visual differences in land formations, vegetation, and structural condition, as detected and interpreted in the imagery. Preliminarily, the National Agriculture Imagery Program (NAIP) imagery was used, and later high-resolution imagery supplied by the Corps was used.

2. Field Inventory
   The field inventory included an ocular survey that verified the polygon delineations. Habitat type, structural conditions, and key environmental correlates within each polygon were identified and recorded. Invasive plant species and the presence of stressors within each polygon were also recorded.

   Stratified random verification transects were then employed to measure in detail the site's vegetation characteristics. These transects substantiate site variables including percent cover and species of trees, shrubs, herbaceous and invasive vegetation and serve as a double sampling technique to confirm the ocular field inventory.

3. Species List
   The CWHR was used to produce a site-specific species list by considering ecological and geographical connections between species and the habitat types within the Study area. Factors used to generate the species list are potential species linked to each of the habitat types and potential species linked to the Study area based on species range maps and known existing conditions.

   References from local experts including the Griffith Park Draft Wildlife Management Plan (Cooper and Mathewson 2008), The Biota of the Los Angeles River (Garrett 1993), and The State of the River – the Fish Study (FoLAR 2008), were also employed to develop an initial species list.

   The species list was reviewed and refined by a habitat evaluation team (See Section 8.0) comprised of Corps and City of LA staff and local resource agency experts including the U.S. Fish and Wildlife Service (USFWS), California Department of Fish and Game (CDFG), Regional Water Quality Control Board (RWQCB), and a

local fish expert from the University of California Cooperative Extension, Los Angeles County. The team decided that seasonal migrants and infrequent visitors would be included on the species list, as creating an arbitrary limit for including a species as "occurring" would not account for all species that are known to use the project area. Additional review and input was requested from local experts including Dan Cooper (Cooper Ecological Monitoring, Inc.) and Drew Stokes (San Diego Natural Museum of History) to verify the presence or absence of certain species of interest. The resulting species list is included in Appendix C.

4. Data Compilation and Analysis

Data from the mapping and field inventory was used to generate two relationship matrices including 1) a potential species by function (KEFs) matrix and 2) a habitat (KECs) by function (KEFs) matrix (for definitions of KEC and KEF See Section 5.3; for further details on the matrices see Appendix D).

To create these matrices, the species list was sorted by its association with the CWHR habitat types and the list of taxa was linked to the associated habitat elements (KECs) and functions (KEFs).

The first matrix determines the mean functional redundancy index (MFRI), which is based on the number of species performing functions in a habitat type (KEFs). More specifically, it is the number of species that are associated with the habitat type and performing each function divided by the number of potential functions associated with the habitat type. The result of the first matrix is the number of potential functions characterized by species specific to that polygon.

The second matrix is based on the results of the field inventory of the Study area and the list of habitat elements (KECs) observed. The result of the second matrix is the number of functions characterized by habitat elements (KECs) specific to that polygon.

Per-acre values were then computed for each polygon by adding the species-function matrix (MFRI) value and the habitat-function matrix value (for further details on calculations see Appendix D). In sum, for each polygon MFRI + KEC matrix = Per Acre Value.

The per-acre value represents the intrinsic worth of an area to fish and wildlife, determined by accounting for species, habitats, and functions. Additional factors that may negatively impact this habitat value are accounted for as described in Section 6.1.2.

5. Conversion to HUs

To determine HUs for site conditions, in order to compare Study alternatives and inform alternative cost-benefit analyses, each polygon's per-acre value was multiplied by its acreage. These values were then summed across all polygons to calculate the

total HUs for a particular condition or alternative scenario. In sum, for each polygon Per Acre Value x Acres = HUs.

Unlike HEP, where the preliminary output (HSI) ranges from 0 to 1 (as described in Section 5.2), CHAP's per-acre values are not limited to this range. In this way, where the HUs in HEP are dependent on acreage (HSI x acreage = HU; IE more acreage = more HUs), the HUs generated by CHAP are not dependent on acreage and reflect the intrinsic value of a particular habitat type based on species, functions, and habitat.

Results of the baseline CHAP analysis are provided in the form of GIS maps and Microsoft excel spreadsheets. GIS maps generated depict the habitat values (HUs) of each of the 172 polygons. Supporting maps illustrate: a) study area boundaries; b) polygon numbering; c) percentage of non-native plant species by polygon (See Section 6.1.2); d) wildlife habitat types by polygon (See Section 6.1.3); e) structural conditions by polygon (See Section 6.1.3); f) per-acre habitat value (See Section 6.1.3); and g) HUs (See Section 6.1.3).

Spreadsheets were developed that contain the calculations of the species-function and habitat-function matrices, along with calculations of Study area habitat values. Due to the large volume of data, maps, and spreadsheets, the complete set of files is available upon request from the Corps, Los Angeles District. Sample figures are provided in Figures 6.1.1-1, 6.1.2-1, and 6.1.3-1 to 6.1.3-8. Summary tables are included in Tables 6.1.3-1 and 6.1.3-3, and discussed in the following Sections 6.1.2 and 6.1.3.

6.1.2 Per-Acre Adjustment Value for Habitat Stressors

Since the LA River ER project area is located within a highly urbanized setting, there are several ecosystem drivers and stressors that affect the Study area and how it is currently managed. There are four noteworthy influences including: 1) invasive plant species, 2) potential use of the area for encampments by people who are homeless, 3) horseback riding in the river, and 4) excessive refuse/trash in the river.

Prior to conversion to HUs, the per-acre baseline value of each polygon was adjusted based on the presence of these stressors, in order to capture the value lost due to these factors within the Study area. The HAB method allows for these modifications when the habitat evaluation team deems them to be appropriate.

Invasive Plant Species

Each polygon was assigned an invasive plant value for each of three structural layers (grass/herbaceous, shrub, and tree) based on the presence and abundance of invasive species in that layer, as documented in the field inventory. Because invasive species generally negatively influence ecosystem function, the per-acre values were then discounted for the presence of invasives, to begin to arrive at a corrected per-acre value for each polygon. The value of discount applied based on presence of invasive species is described in Table 6.1.2-1. The deduction factor was multiplied by the per-acre value to reach the adjusted value. In sum, per-acre value x deduction factor = adjusted per-acre value.

The percent abundance of invasive species by polygon can also be spatially displayed in a map to show their influence on the habitat value. Sample maps are included in Figure 6.1.2-1.

Table 6.1.2-1. Invasive plant species deduction factors[6]

Invasive species cover	*X*
0-10%	1.0
11-35%	0.9
36-65%	0.7
66-90%	0.5
>90%	0.3

Homeless, Horseback Riding, Excessive Refuse

During the habitat evaluation team meetings, the subject of homeless encampments, horseback riding, and excessive refuse/trash and their influence on wildlife habitat was raised. The team members were reluctant to assign an arbitrary value of influence to weight the polygons based on these stressors, so to address these concerns a literature review was conducted. Activities noted as potential effects to wildlife habitat from these stressors include trampling, camping, sewage, erosion, and covering. KECs that are influenced by these activities are found in Table 6.1.2-2. Since the CHAP identifies KECs as absent or present within each polygon, the stressor influenced KECs are adjusted by changing their status from present to absent. For example, the presence of homeless encampments would result in camping/trampling, which would damage vegetation. KECs such as flowers, forbs, shrubs, and saplings would, therefore, be identified as absent for those polygons. In applying this to the Study Area, these local stressors influenced the site's overall habitat value approximately 7%.

6.1.3 Baseline: Existing Conditions Results

Habitat Types and Vegetation Communities

The 172 polygons in the LA River ER Study area were determined by delineating the California Wildlife Habitat types that occur within the Study area. The mapping performed by NHI within the Study area in 2011 documented several habitat types, each of which are an aggregation of several vegetation communities. Habitat types as described by the CWHR System included Coastal Scrub, Eucalyptus, Open Water/Riverine, Pasture, Perennial Grassland, Valley Foothill Riparian, Tree Farm, and Urban (High Density, Golf Course, and Low Density). Structural conditions included: grass-forb, shrub, and tree layers along with constrained river channel and urban with various levels of impervious surfaces.

6 Deduction factors for invasive plant species were developed by NHI in a team environment during the Oregon Bridge Replacement Program, where agencies wanted to receive credit for controlling invasive species at a site. The team was comprised of representatives from: U.S. Army Corps of Engineers, Bureau of Land Management, NOAA Fisheries Service, Environmental Protection Agency, U.S. Forest Service, U.S. Fish and Wildlife Service, Federal Highway Administration, Oregon Department of Transportation, Oregon Department of Environmental Quality, Oregon Department of Fish and Wildlife, Oregon Department of State Lands, and the State Historic Preservation Office.

Figure 6.1.1-1. Sample Maps – Baseline Existing Conditions – Polygon Identification Numbers

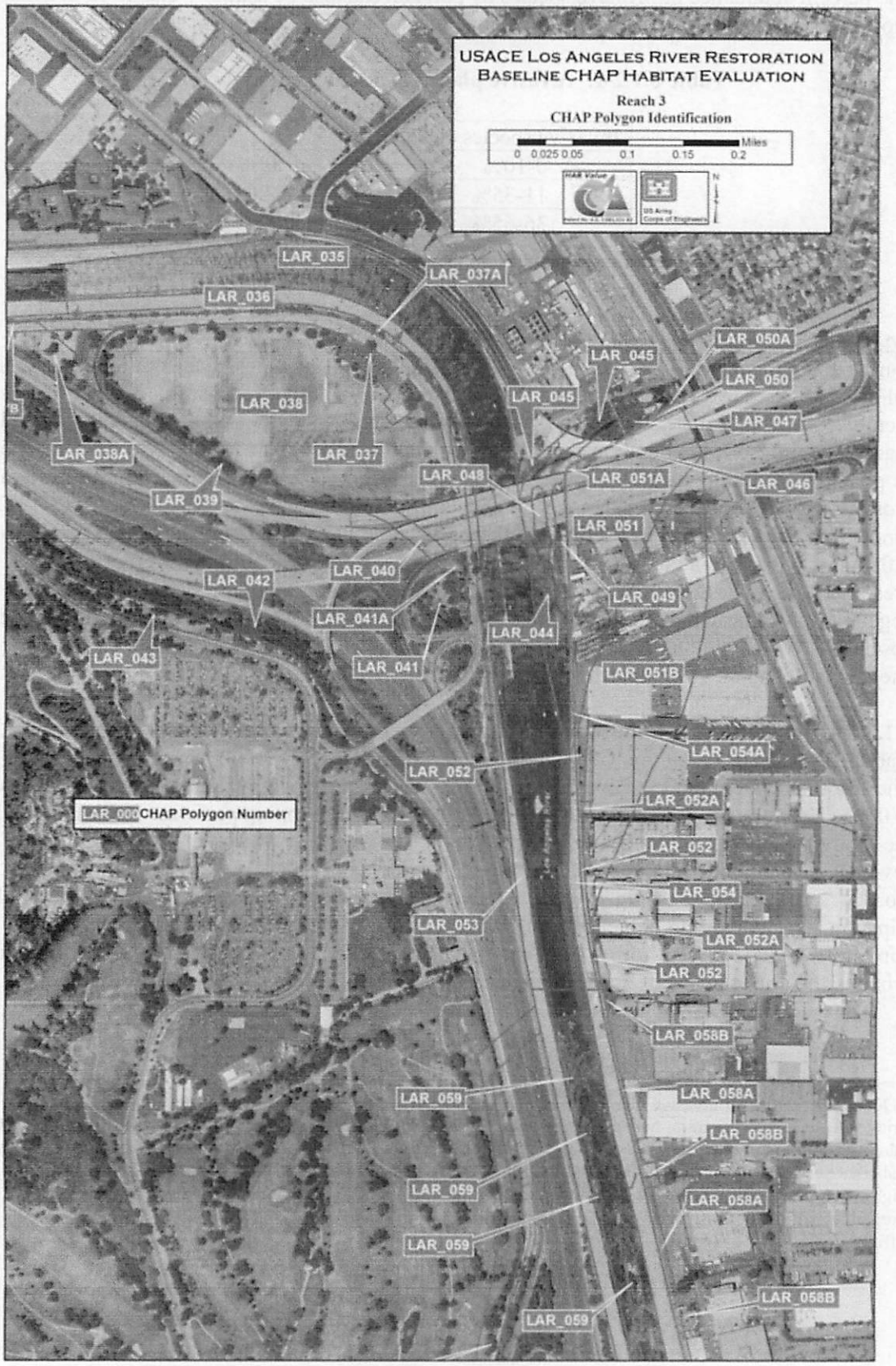


Figure 6.1.1-1. Sample Maps – Baseline Existing Conditions – Polygon Identification Numbers

Figure 6.1.1-1. Sample Maps – Baseline Existing Conditions – Polygon Identification Numbers

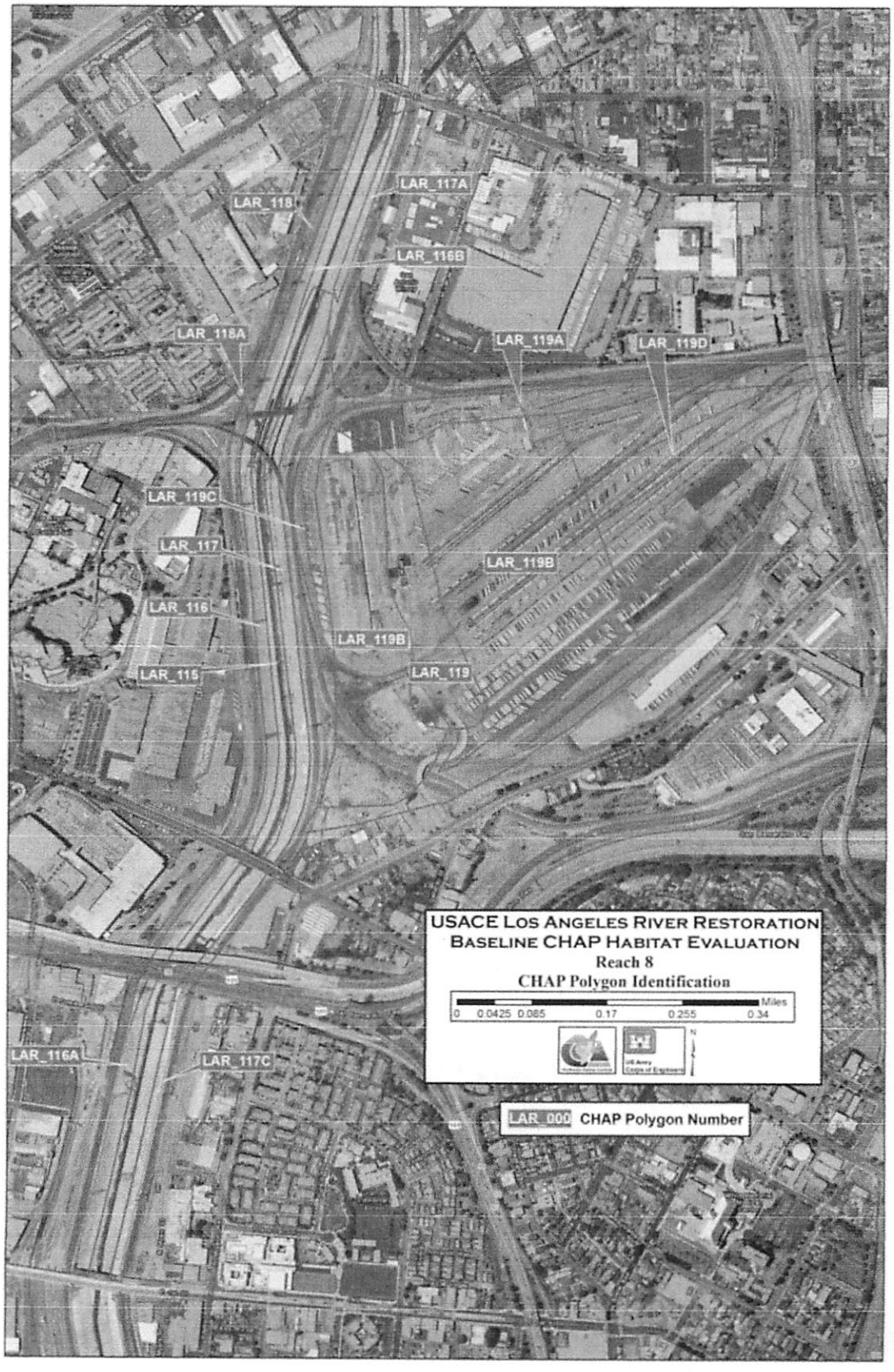


Figure 6.1.2-1. Sample Maps – Baseline Existing Conditions – Percentage of Non-native Plant Species – Herbaceous Species

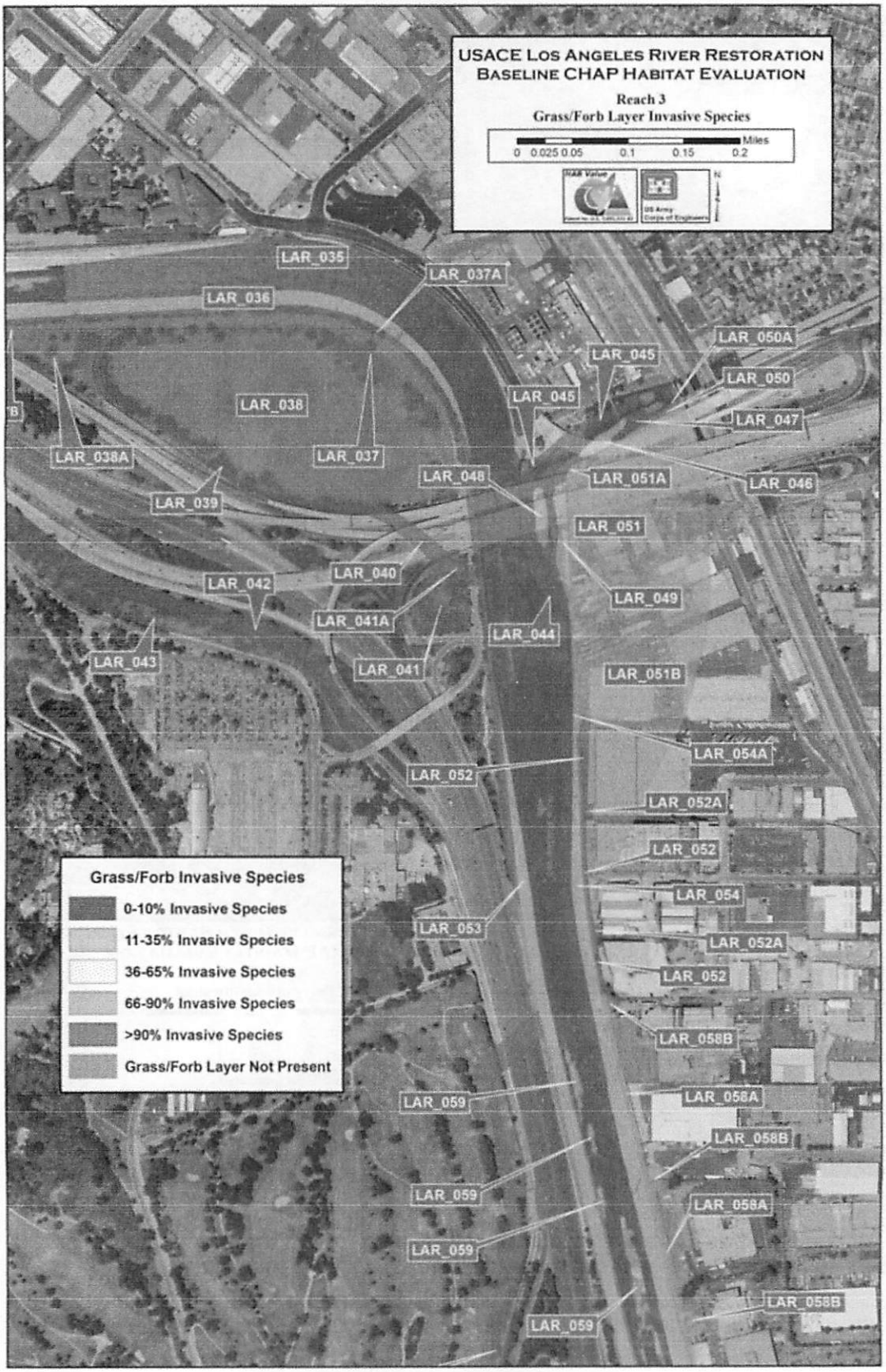


Figure 6.1.2-1. Sample Maps – Baseline Existing Conditions – Percentage of Non-native Plant Species – Herbaceous Species

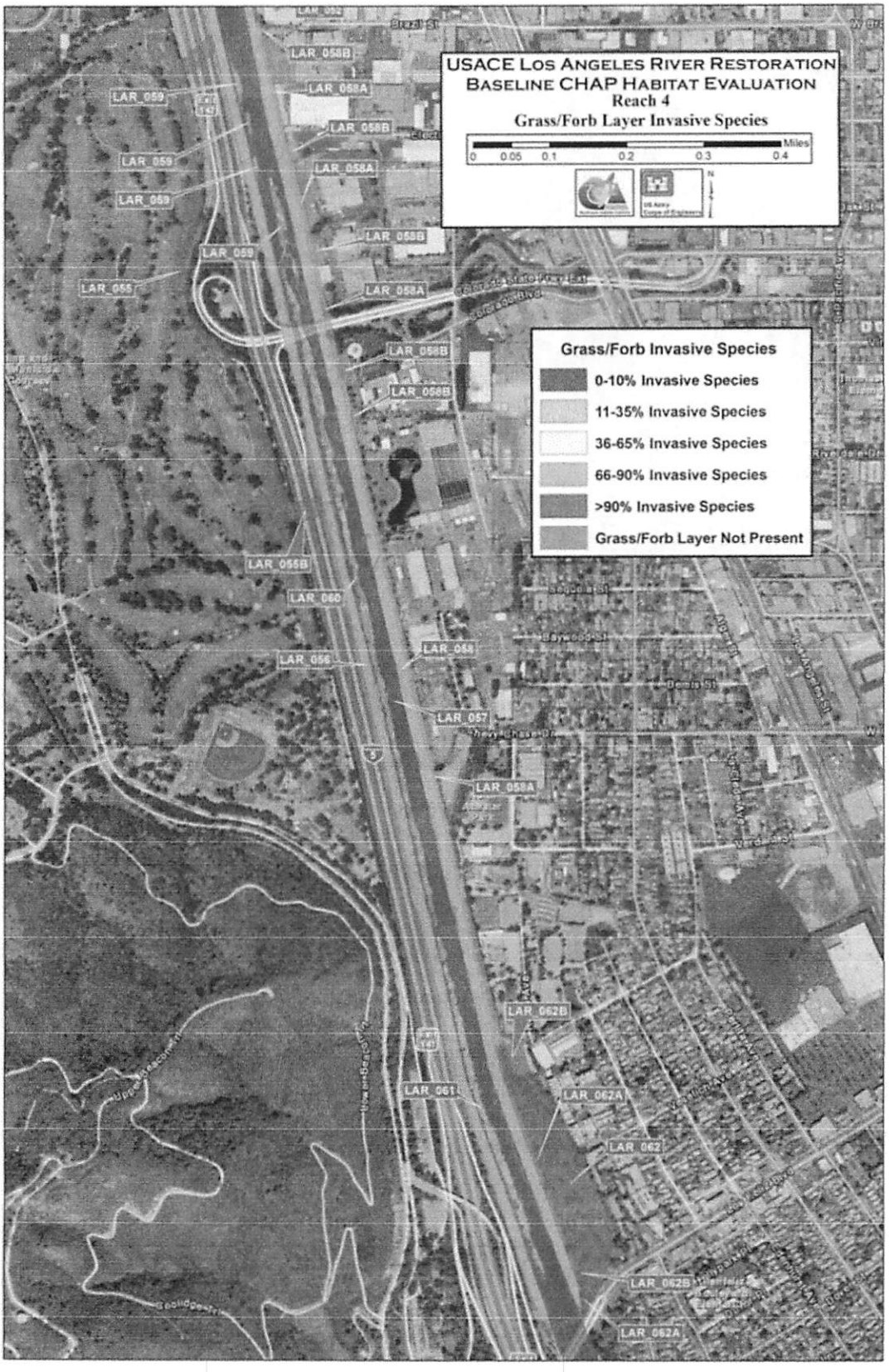


Figure 6.1.2-1. Sample Maps – Baseline Existing Conditions – Percentage of Non-native Plant Species – Herbaceous Species

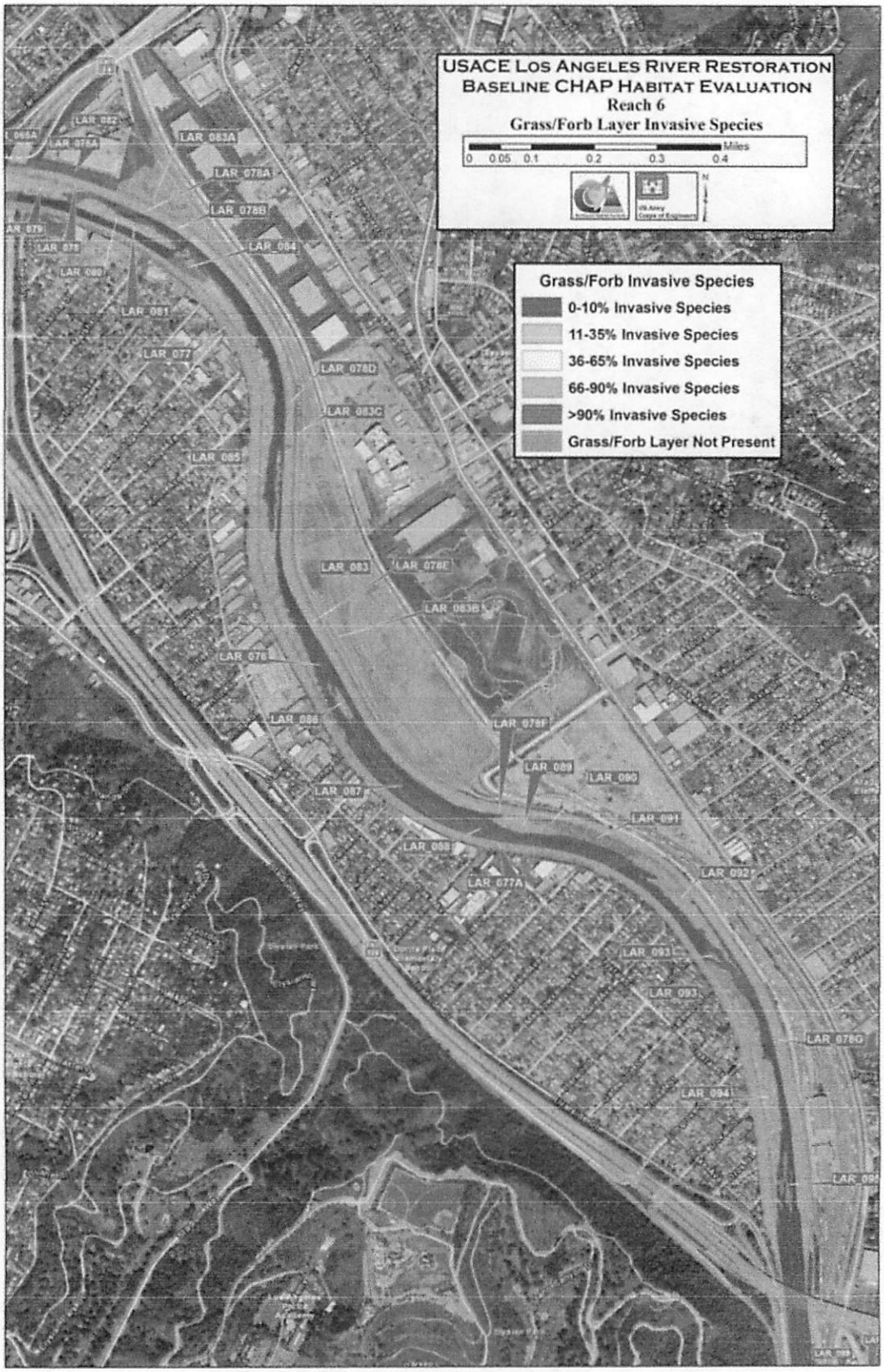


Figure 6.1.2-1. Sample Maps – Baseline Existing Conditions – Percentage of Non-native Plant Species – Herbaceous Species

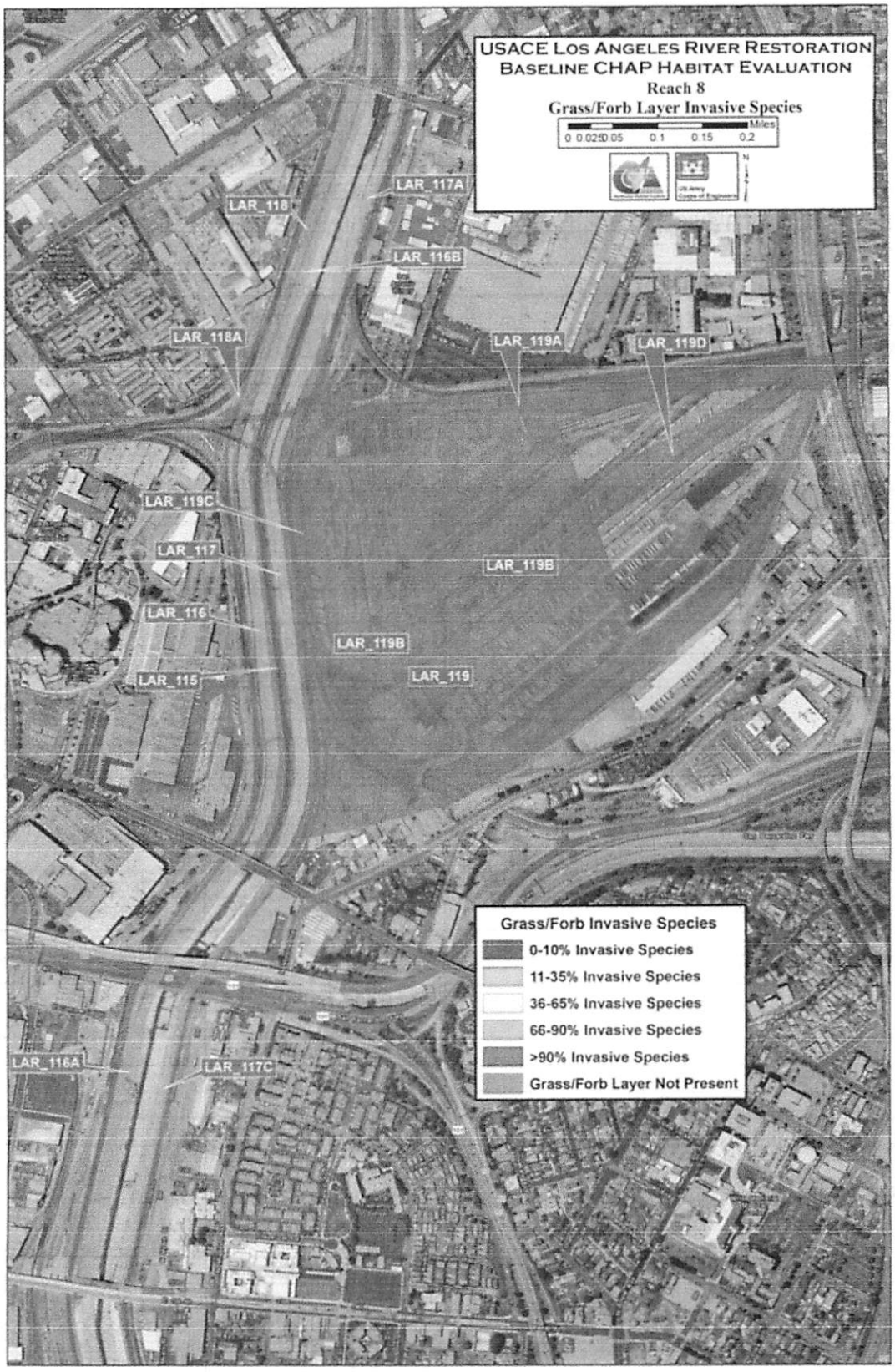


Table 6.1.2-2. KECs influenced by Stressors (homeless encampments, horseback riding, excessive refuse/trash)

Human Impact	KEC Code	KEC	Action
Homeless Encampments	1.2.1	herbaceous layer	camping/tramping
Homeless Encampments	1.2.5	flowers	camping/tramping
Homeless Encampments	1.2.8	forbs	camping/tramping
Homeless Encampments	1.2.6.1.1	shrubs small	camping/tramping
Homeless Encampments	1.2.6.1.2	shrubs medium	camping/tramping
Homeless Encampments	1.2.6.1.3	shrubs large	camping/tramping
Homeless Encampments	1.1.14.3.1	live tree seedling	camping/tramping
Homeless Encampments	1.1.14.3.2	live tree sapling	camping/tramping
Homeless Encampments	1.1.14.3.3	live tree small	camping/tramping
Homeless Encampments	1.1.14.3.4	live tree medium	camping/tramping
Homeless Encampments	1.1.14.3.5	live tree large	camping/tramping
Homeless Encampments	1.1.14.2.3	snag, small	camping/tramping
Homeless Encampments	4.1.12	aquatic nutrient enrichment	sewage
Human Impact	**KEC Code**	**KEC**	**Action**
Horse riding	1.1.3	duff	trampling
Horse riding	1.2.1	herbaceous layer	trampling
Horse riding	1.1.1.4.1	shrubs, small	trampling
Horse riding	1.1.1.4.2	shrubs, medium	trampling
Horse riding	1.1.5	moss	trampling
Horse riding	4.7.4	marshes	trampling/erosion
Horse riding	1.1.14.3.1	live tree, small	trampling/erosion
Horse riding	1.2.8	forbs	trampling/erosion
Horse riding	1.2.10	grasses	trampling/erosion
Horse riding	4.1.3	dissolved solids, aquatic	defecation/erosion
Horse riding	4.1.7	water tubidity	trampling/erosion
Horse riding	4.2.3.3	shorelines	trampling/erosion
Horse riding	4.1.12	aquatic nutrient enrichment	defecation/erosion
Horse riding	4.2.4.5	aquatic bentic structure	trampling/erosion
Horse riding	5.9	water clarity	trampling/erosion
Human Impact	**KEC Code**	**KEC**	**Action**
Refuse/Trash	1.2.1	herbaceous layer	covering
Refuse/Trash	1.2.8	forbs	covering
Refuse/Trash	1.1.1.2	down wood in riparian	covering
Refuse/Trash	1.1.4.1.1	small tree	covering
Refuse/Trash	1.1.4.1.2	medium tree	covering
Refuse/Trash	1.1.4.1.3	large tree	covering
Refuse/Trash	1.1.14.3.1	tree seedling	covering
Refuse/Trash	1.1.14.3.2	tree sapling	covering
Refuse/Trash	1.1.14.2.3	small snag	covering
Refuse/Trash	1.1.14.2.4	medium snag	covering
Refuse/Trash	1.1.14.2.5	large snag	covering
Refuse/Trash	4.2.4.5	aquatic bentic structure	covering
Human Impact	**KEC Code**	**KEC**	**Action**
Refuse/Trash	4.7.4	marshes	covering
Refuse/Trash	4.7.5	wet meadows	covering
Refuse/Trash	1.2.1	herbaceous layer	covering
Refuse/Trash	1.2.8	forbs	covering
Refuse/Trash	4.1.11	metals in water	depending on type
Refuse/Trash	8.19.3	pollution in water	depending on type
Refuse/Trash	5.9	water clarity	covering/depending on type

Vegetation communities associated with each habitat type are described below, as applicable, as documented in both "A Manual of California Vegetation" (2nd Edition) (Sawyer and Keeler-Wolf 2009) and "Preliminary Descriptions of the Terrestrial Communities of California" (Holland 1986).

1. **Coastal Scrub**

   Vegetation Communities

   Holland 1986
   - Riversidean Sage Scrub 32700

   Sawyer and Keeler-Wolf 2009
   - *Artemisia californica* Shrubland Alliance (California sagebrush scrub)

   Dominant species include California sagebrush (*Artemisia californica*) and California buckwheat (*Eriogonum fasciculatum*). This community is typically found on xeric sites such as steep slopes or well drained soils. Co-dominant species include brittlebush (*Encelia farinosa*), deerweed (*Lotus scoparius*), chaparral mallow (*Malacothamnus fasciculatus*), and white and black sage (*Salvia apiana* and *S. mellifera*).

2. **Eucalyptus**

   Vegetation Communities

   Sawyer and Keeler-Wolf 2009
   - *Eucalyptus* (*globules*, *camaldulensis*) Alliance (Eucalyptus groves) (semi-natural woodland stands)

   Several species of eucalyptus including blue gum, red gum, and silver gum are established in dense, pure stands and are typically adjacent to urban areas and non-native grasses.

3. **Open Water - Riverine**

   Vegetation Communities

   Holland 1986
   - Freshwater Marsh 52400

   Sawyer and Keeler-Wolf 2009
   - *Arundo donax* Semi-Natural Herbaceous Stands (Giant reed breaks)
   - *Typha* (*angustifolia*, *domingensis*, *latifolia*) Herbaceous Alliance (Cattail marshes)
   - *Schoenoplectus californicus* Herbaceous Alliance

Dominant species include cattails (*Typha* sp.), sedges, and rushes, as well as non-native invasive arundo (*Arundo donax*), in areas permanently saturated or flooded by freshwater.

Intermittent or continually running water distinguishes river and stream communities. Streams originate at an elevated source, such as a spring or lake, and flow velocity generally declines at progressively lower altitudes (Mayer and Laudenslayer 1988). These areas are considered to have a minimum of vegetation components, except along the edges, which may be mapped (in this case) as types such as freshwater marsh.

In the higher velocity stretches of natural streams, riffle/pool complexes are dominant and vegetation includes water moss and filamentous algae that are attached to rocks. In slower moving waters, with increasing temperatures, decreasing velocities and accumulating bottom sediment, emergent freshwater marsh vegetation, such as rushes, sedges, and cattails, establishes along river banks (Mayer and Laudenslayer 1988).

4. Pasture

Vegetation Communities

Holland 1986

- Non-native grassland 42200

Sawyer and Keeler-Wolf 2009

- *Conium maculatum – Foeniculum vulgare* Semi-Natural Herbaceous Stands (Poison hemlock or fennel patches)

Dominant species include non-natives such as fennel (*Foeniculum vulgare*), bromes (*Bromus sp.*), wild oat (*Avena sp.*), red-stem filaree (*Erodium cicutarium*), fescues (*Vulpia sp.*), and mustard (*Brassica sp.*). Scattered trees may also be present.

5. Perennial Grassland (Invasive)

Vegetation Communities

Holland 1986

- Non-native grassland 42200

Sawyer and Keeler-Wolf 2009

- *Conium maculatum – Foeniculum vulgare* Semi-Natural Herbaceous Stands (Poison hemlock or fennel patches)

Invasive Perennial Grassland is similar in composition to Pasture, where relic perennial grassland occurs in habitats now dominated by annual grasses and forbs (Mayer and Laudenslayer 1988).

6. Valley Foothill Riparian

Vegetation Communities

Holland 1986

- Southern Cottonwood-Willow Riparian Forest 61330
- Southern Willow Scrub 63320

Sawyer and Keeler-Wolf 2009

- *Salix gooddingii* Woodland Alliance (black willow thickets)
- *Salix laevigata* Woodland Alliance (red willow thickets)
- *Populous fremontii* Forest Alliance (Fremont cottonwood forest)

Dominant species include cottonwood (*Populus fremontii*), western sycamore (*Platanus racemosa*), and willows (*Salix* sp.). Forest understory may consist of shrubby willows and mule fat (*Baccharis salicifolia*) with herbaceous species including sedges, rushes, and mugwort (*Artemisia douglasiana*). Scrub habitat has less vertical structure, with shorter willows dominant.

7. Tree Farm

Ornamental or non-native hardwood species dominate this community, although other non-native conifers, shrubs, and grasses may be present. These communties are usually in developed areas, including urban and residential landscapes, parks, recreational areas, highways, and cemeteries, etc. and may include potted landscaping trees (USFS 2009).

8. Urban

This category includes landscapes dominated by urban structures, residential units, industrial areas, highways, parks, and other such structures (USFS 2009). Park areas may include alternately categorized vegetation such as non-native or ornamental. Urban areas are categorized as:

- High density
- Low density
- Golf course

The acreage of each habitat type by reach is shown in Table 6.1.3-1. To demonstrate the habitat mapping results, sample maps depicting habitat type and structural conditions are included in Figures 6.1.3-1 and 6.1.3-2.

Table 6.1.3-1. Acreage of Habitat Type by Reach

	Habitat Type (acres)										
Reach	Coastal Scrub	Eucalyptus	Open Water (Channel)	Pasture	Perennial Grassland	Riparian	Tree Farm	Urban	Urban (Golf Course)	Urban (Low Density)	TOTAL
1			22.80	11.75	2.19	2.97		108.12		7.98	155.81
2		12.37	9.02			4.01		12.78		9.82	48.00
3			30.84			7.07		38.62		24.61	101.14
4			29.00			7.94		35.90	20.33		93.16
5			28.02			8.97		30.72			67.71
6			32.42			28.90		103.01			164.33
7	0.29		23.14			2.55	6.30	21.48		5.15	58.90
8			6.97					146.35			153.32
TOTAL	0.29	12.37	182.21	11.75	2.19	62.42	6.30	496.97	20.33	47.55	842.37

Figure 6.1.3-1. Sample Maps – Baseline Existing Conditions – Wildlife Habitat Types

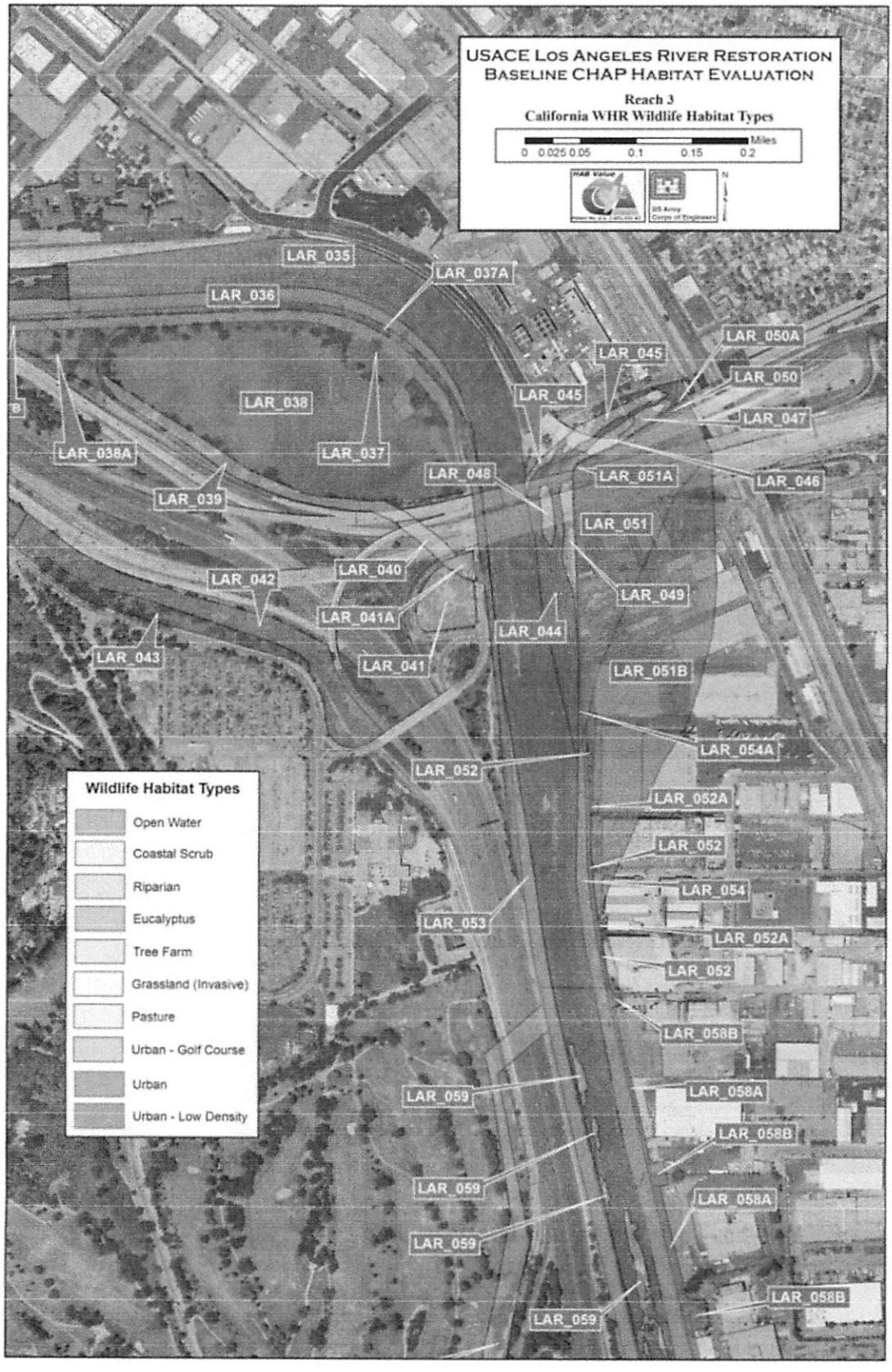


Figure 6.1.3-1. Sample Maps – Baseline Existing Conditions – Wildlife Habitat Types

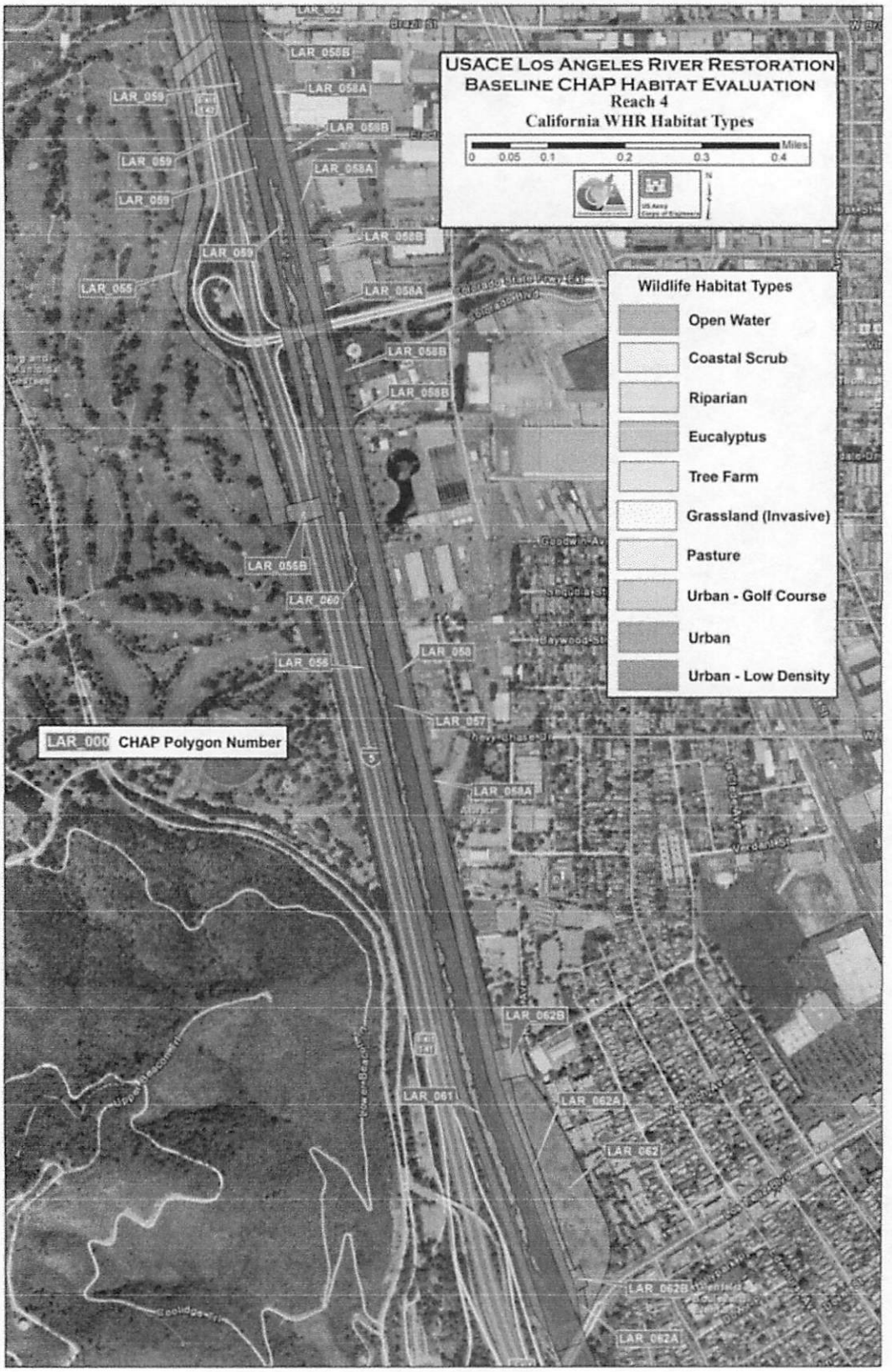


Figure 6.1.3-1. Sample Maps – Baseline Existing Conditions – Wildlife Habitat Types

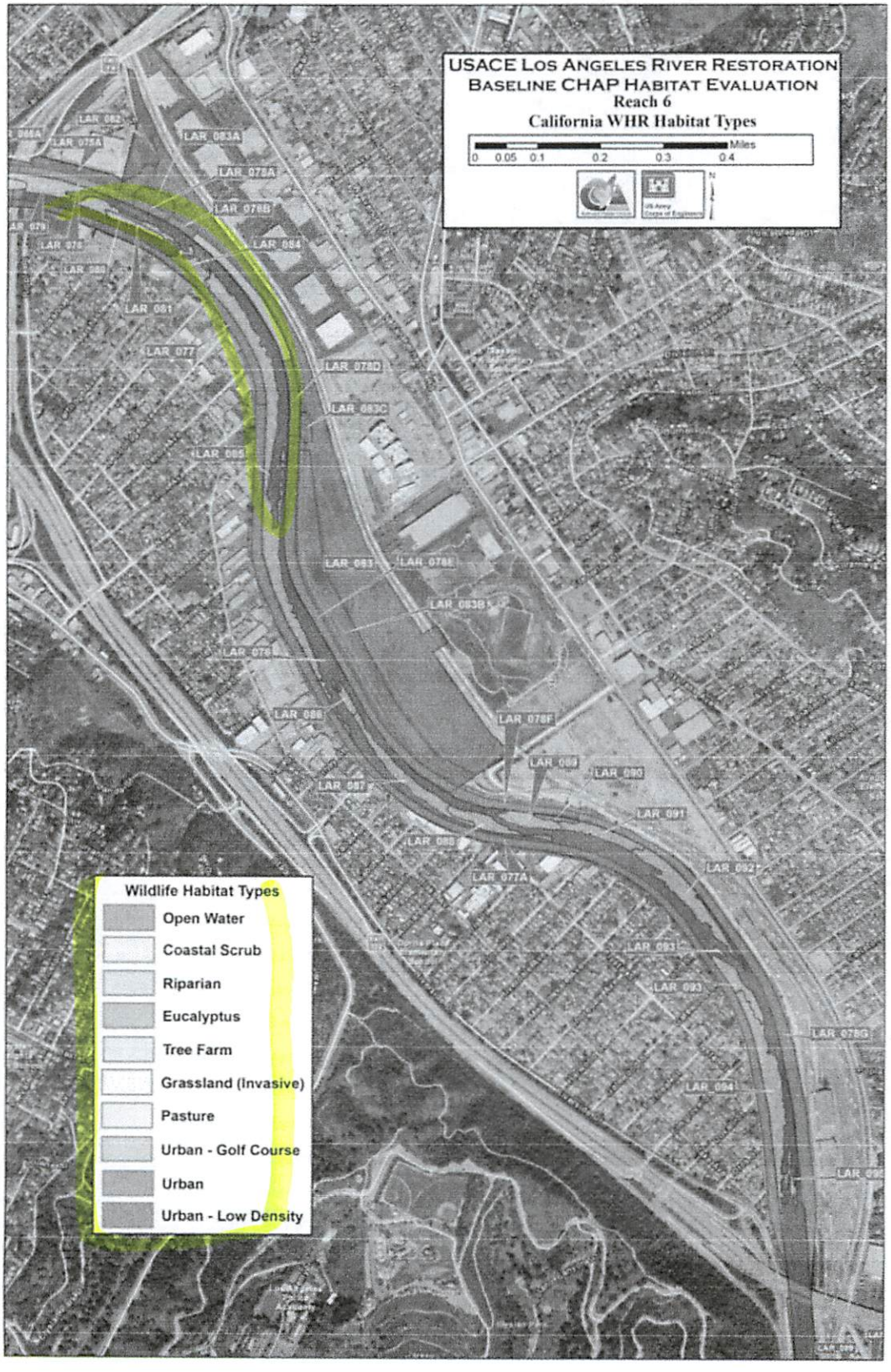


Figure 6.1.3-1. Sample Maps – Baseline Existing Conditions – Wildlife Habitat Types

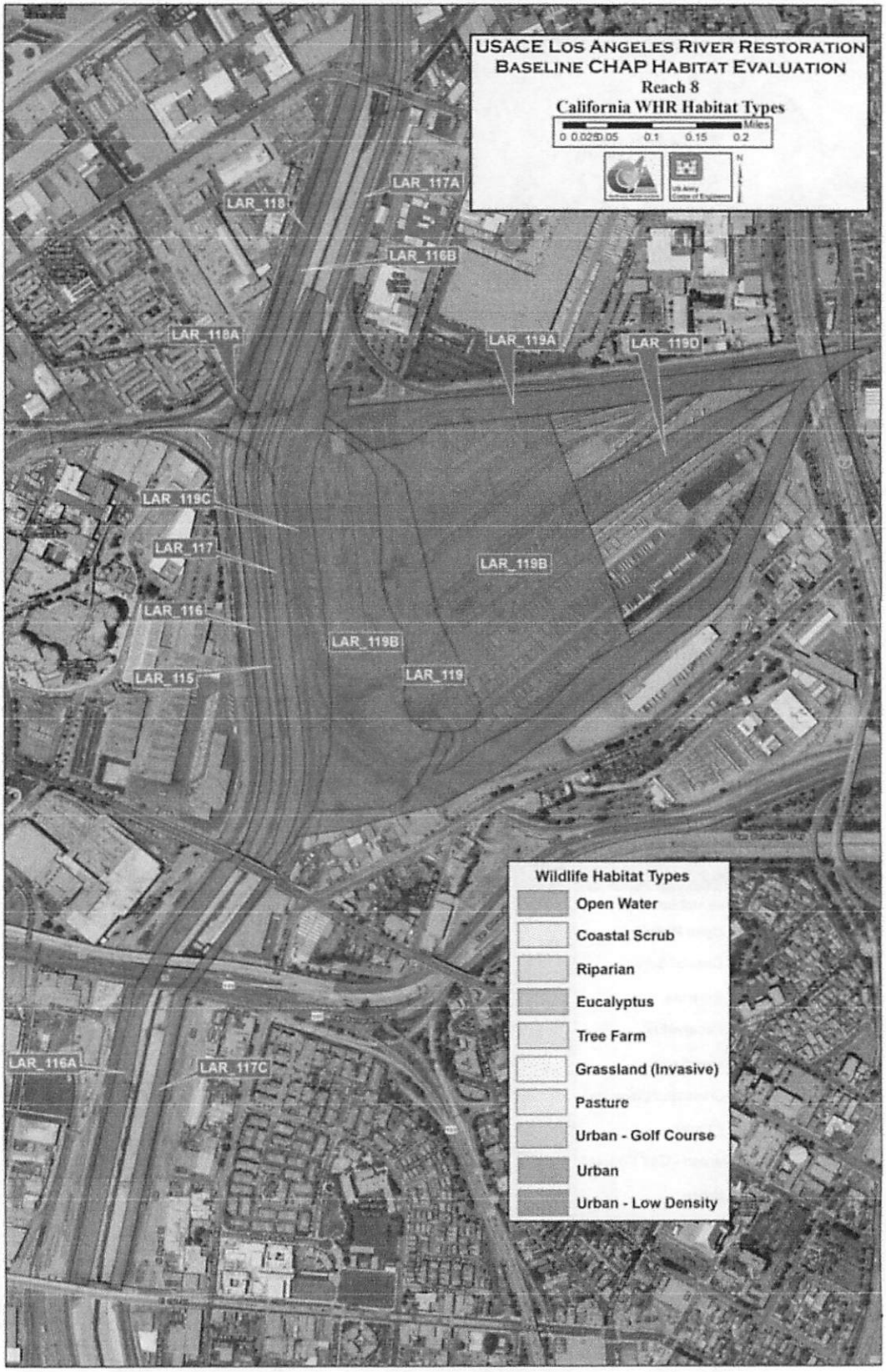


Figure 6.1.3-2. Sample Maps – Baseline Existing Conditions – Structural Conditions

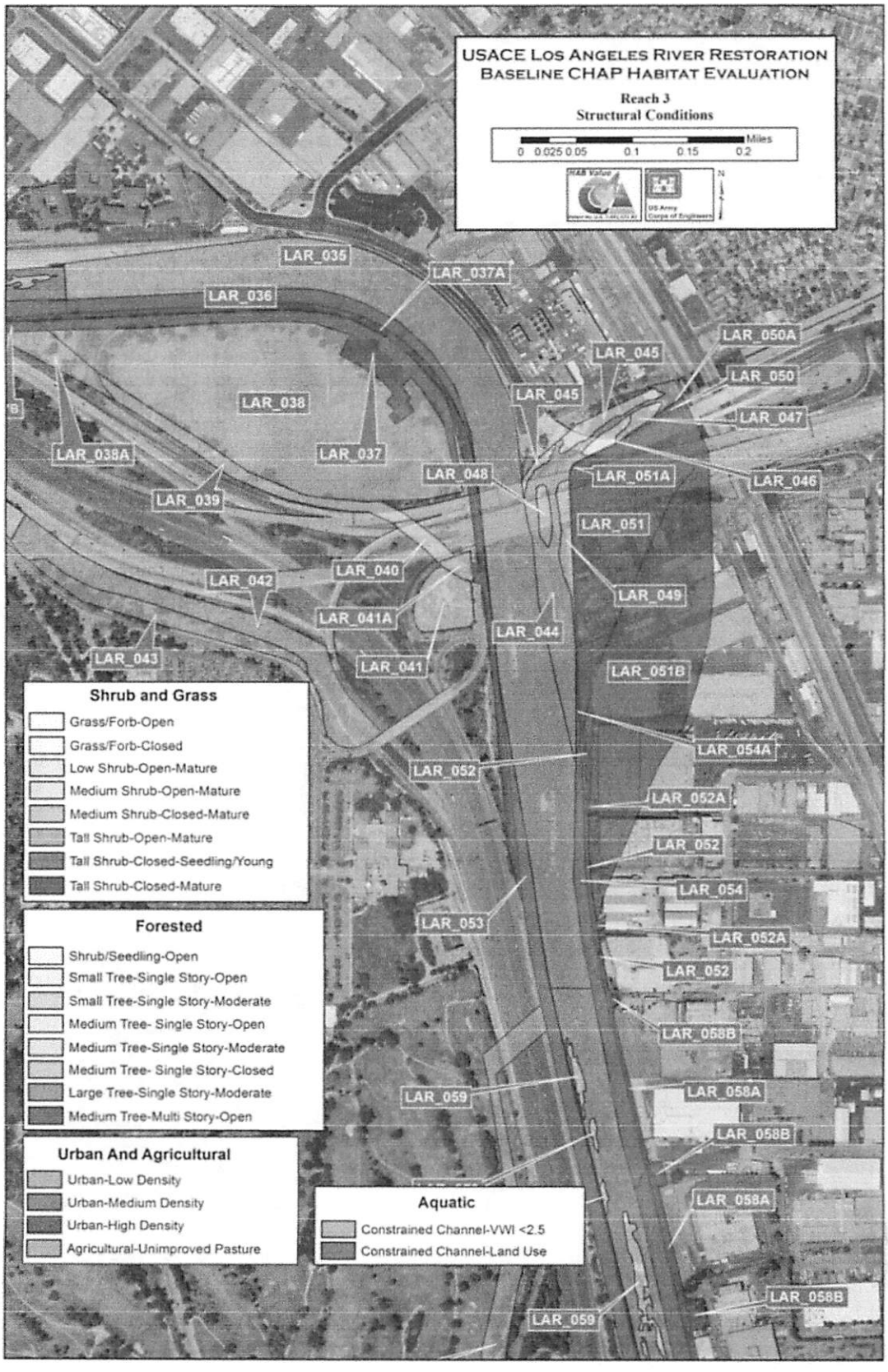


Figure 6.1.3-2. Sample Maps – Baseline Existing Conditions – Structural Conditions

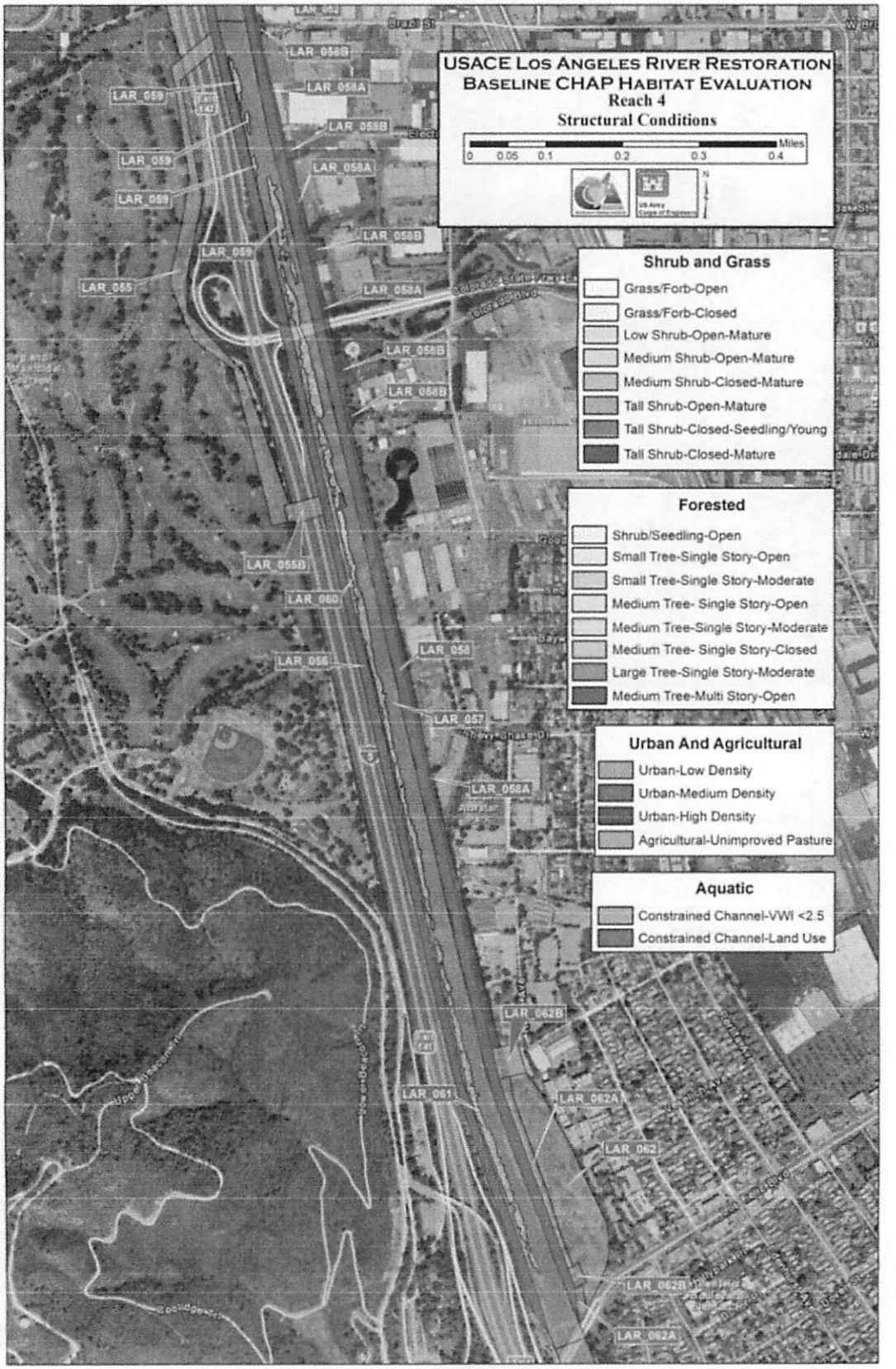


Figure 6.1.3-2. Sample Maps – Baseline Existing Conditions – Structural Conditions

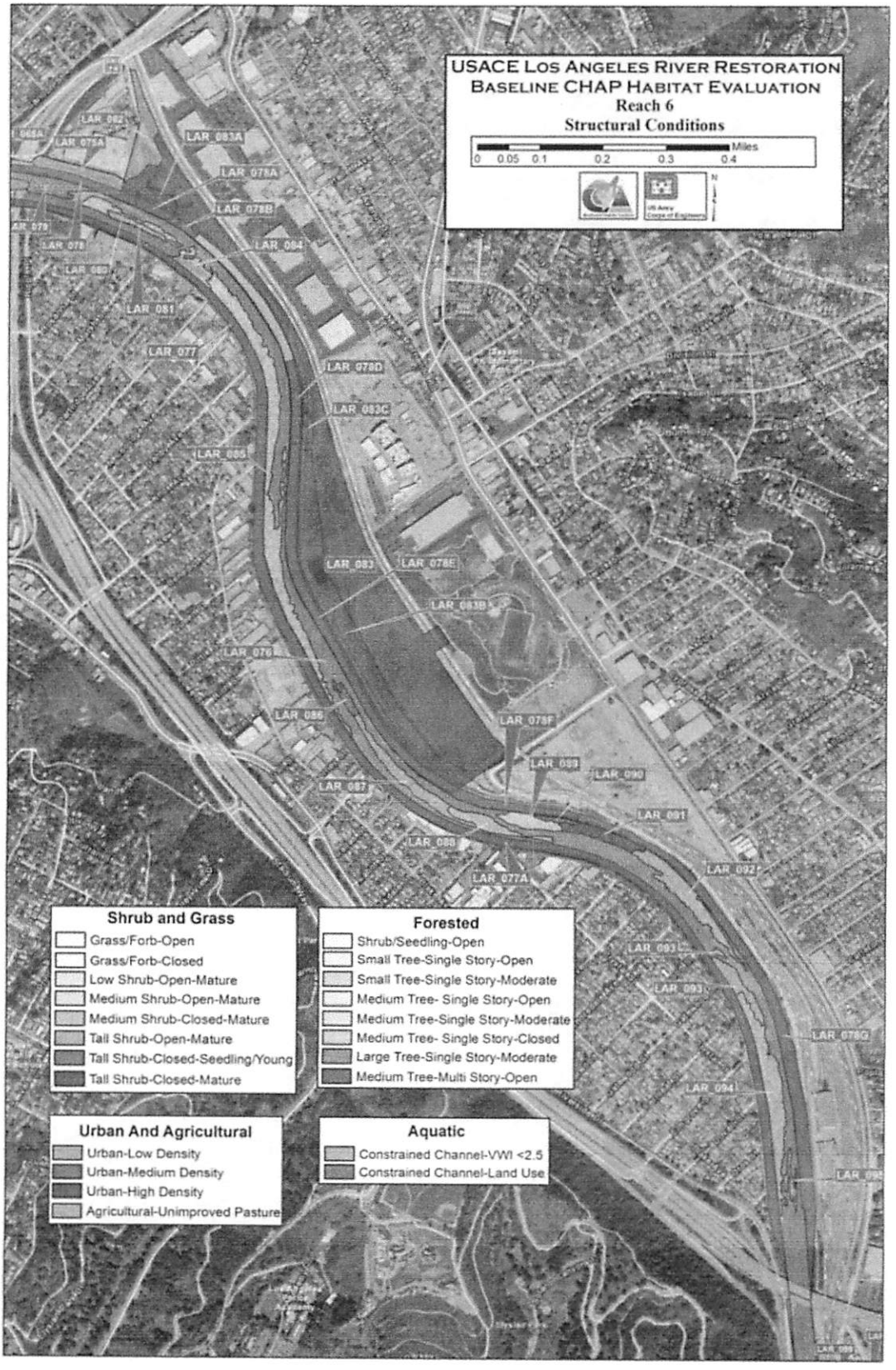
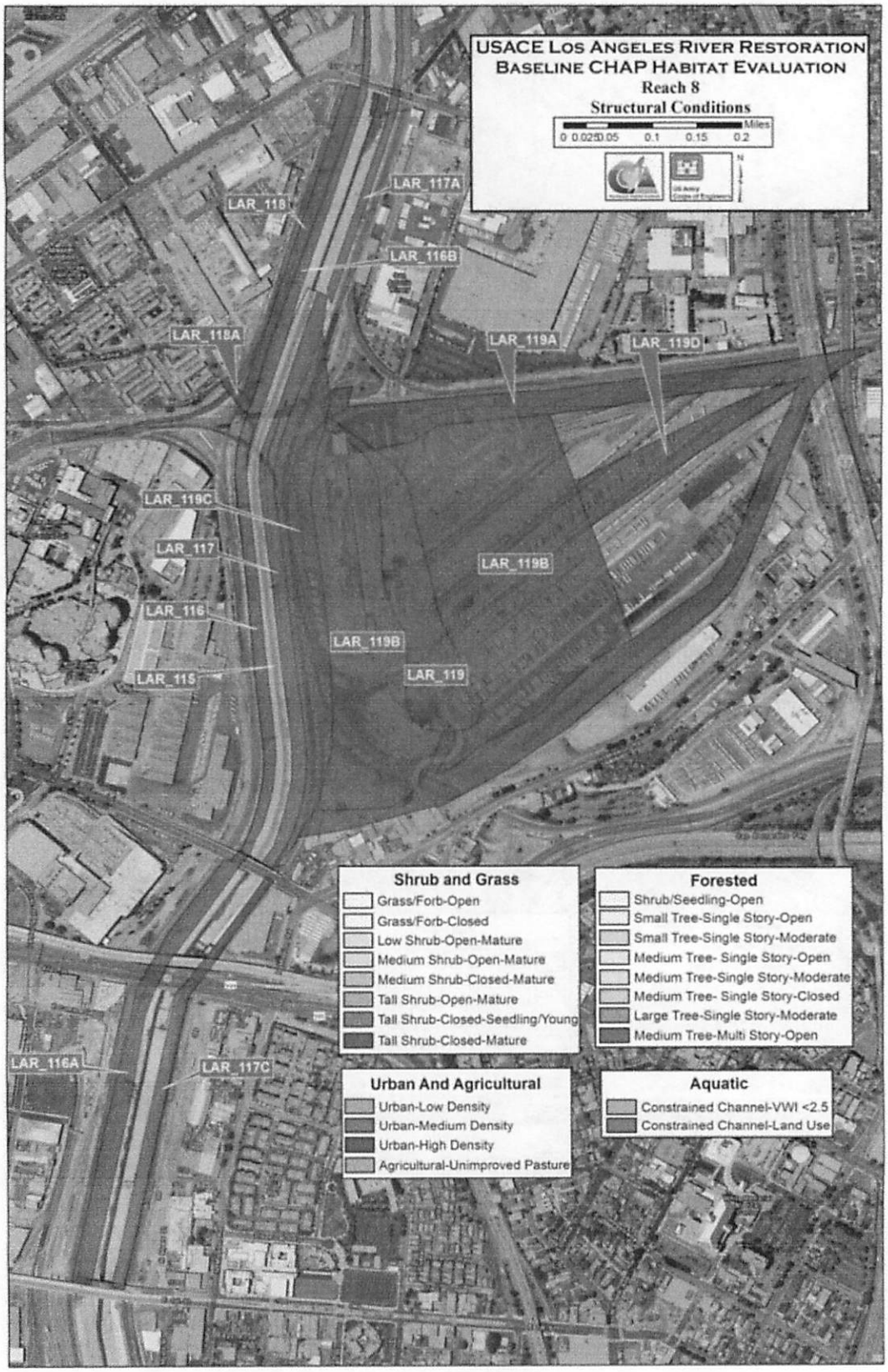


Figure 6.1.3-2. Sample Maps – Baseline Existing Conditions – Structural Conditions



Habitat Findings

Vegetation transects were employed to verify the results of the habitat inventory that occurred at the LA River ER Study site. Results of these verification transects are included in the LA River CHAP Verification Transect Report (Ashley 2010) (Appendix E). Figure 6.1.3-3 shows the location of the verification transects. Table 6.1.3-2 outlines a list of plant species encountered either along or near the verification line transects.

Habitat Units

The habitat assessment shows ten habitat types currently existing within the Study area, totaling approximately 842 acres. The acreage of each of the habitat types and their proportion of the total study area are depicted in Table 6.1.3-3. The baseline existing condition assessment calculated that these acres have a total value of 6,119 HUs. Graphs depicting acreage by habitat type and per-acre habitat value by habitat type follow in Figures 6.1.3-4 and 6.1.3-5. Sample figures depicting per-acre value and HUs are included in Figures 6.1.3-6 and 6.1.3-7.

Mapping of habitat types for baseline existing conditions shows that approximately 67% of the Study area (564.85 acres) is urban (including low density and golf course), providing an average 4.64 HUs per acre. Existing riparian habitat accounts for only 7% of the Study area (62.42 acres), however it provides 16.84 HUs per acre. These riparian areas occupy 9 times fewer acres than the urban areas, yet provide almost four times more HUs per acre than the urban areas. The open water areas also provide substantial HUs per acre, totaling 22% of the Study area (182.21 acres) and providing 11.89 HUs per acre. Other habitat types account for less than 4% of the Study area.

These conditions show that riparian and riverine restoration has the potential to provide substantial restored habitat function and value in the highly urban setting of Los Angeles, and that maximizing acreage of these habitats would benefit ecosystem functioning and species diversity in the area.

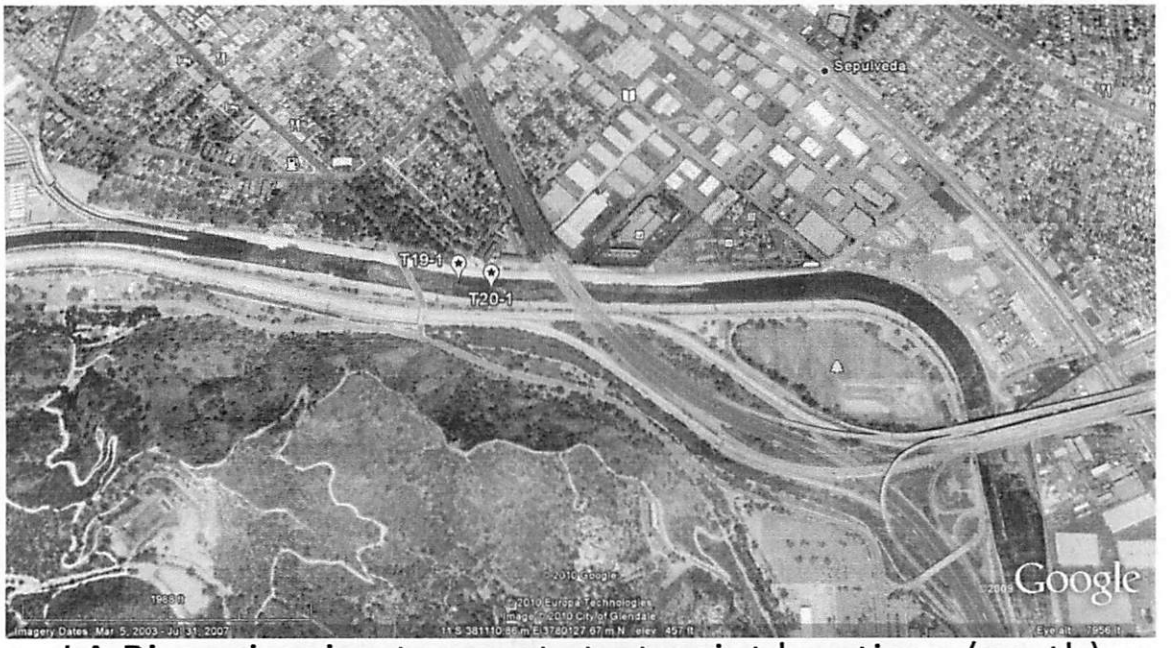
6.2 BASELINE: FIFTY YEAR FUTURE WITHOUT PROJECT

The future without project analysis forecasts the conditions in the Study area 50 years into the future assuming that no project is implemented (i.e. No Action alternative). The 50-year future without project analysis assesses two future time periods, 25 years and 50 years.

To undertake this assessment, several projections were made to assess habitats over the 50-year time period. These projections are based on past and current trends in habitat condition in the area. Specifically, reasonable predictions include: 1) an increase in presence of invasive plant species throughout the LA River ER Study area, 2) a large flood event (i.e. 500-year event) is likely to occur, and 3) fires threatening the project area will be suppressed.

The habitat evaluation team discussed a reduction in the number of fish and wildlife taxa present within the project area over time. However, in this case, it was the consensus of the habitat evaluation team that the current highly urban landscape conditions would prevail over time. Despite intense development pressure along certain areas of the river corridor, large swaths of existing open space (especially at Griffith Park) were expected to be conserved, consistent with long-established land use policies. Furthermore, it was assumed that native species are already

Figure 6.1.3-3. Verification Transect Locations (Ashley 2010)



LA River riparian transect start point locations (north)

LA River riparian transect start point locations (south)

Table 6.1.3-2. List of Plant Species Encountered on or Near Verification Transects

Common Name	*Scientific Name*	Native	Transect #			
			Los Angeles River			
Arroyo	*Salix lasiolepis*	Yes	19 -1	20 -1	24-1	31-1
Sage	*Salvia columbariae*	Yes	19 -1			
Castor Bean	*Ricinus communis*	No			24-1	
Eucalyptis	*Eucalyptis sp.*	No				31-1
Mexican Fan Palm	*Washingtonia robusta*	No			24-1	31-1
Mulefat	*Baccharis salicifolia*	Yes		20 -1	24-1	31-1
Red	*Salix laevigata*	Yes	19 -1		24-1	31-1
Shamel Ash	*Fraxinus uhdei*	No	19 -1	20-1	24-1	
Sycamore	*Platanus racemosa*	No		20 -1		
White Mulberry	*Morus alba*	No	19 -1	20 -1		

Common Name	*Scientific Name*	Native
Alkali bulrush	*Schoenoplectus maritimus*	Yes
Ash	*Fraxinus velutina*	Yes
Arundo	*Arundo donax*	No
Black mustard	*Brassica nigra*	No
bulrush	*Schoenoplectus californicus*	Yes
Sedge	*Carex spp.*	Yes
Cheatgrass	*Bromus tectorum*	No
Chickweed	*Cerastium sp.*	No
Dock	*Rumex salicifolius*	Yes
Datura	*Datura wrightii*	Yes
Fennel	*Foeniculum vulgare*	No
Foxtail chess brome	*Bromus madritensis*	No
Lemonade berry	*Rhus integrifolia*	Yes
Mustard	*Brassica sp.*	No
Narrow Leaved Cat tail	*Typha angustifolia*	Yes
Pepper tree	*Schinus molle*	No
Plantain	*Plantago major*	No
Poa spp.	*Poa spp.*	**
Prickly lettuce	*Lactuca serriola*	No
Rattail Fescue	*Vulpia myuros*	No
Redstem fillaree	*Erodium cicutarium*	No
Ripgut brome	*Bromus diandrus*	No
Slender oats	*Avena barbata*	No
Tabacco Tree	*Nicotiana glauca*	No
Bull Thistle	*Cirsium vulgare*	No
Fescue	*Vulpia sp.*	**
White sage	*Salvia apiana*	Yes
Wild cucumber	*Marah macrocarpus*	Yes
Wild radish	*Raphanus raphanistrum*	No
Yellow sweet clover	*Melilotus officinalis*	No

Table 6.1.3-3. Proportion of Acreage and Habitat Value by Wildlife Habitat Type

	Coastal Scrub	Eucalyptus	Open Water (Channel)	Pasture	Perennial Grassland	Riparian	Tree Farm	Urban	Urban (Golf Course)	Urban (Low Density)	TOTAL
Acres	0.29	12.37	182.21	11.75	2.19	62.42	6.30	496.97	20.33	47.55	842.37
Proportion of Acreage	0.00	0.01	0.22	0.01	0.00	0.07	0.01	0.59	0.02	0.06	1
Habitat Units (HUs)	2.38	129.51	2166.22	54.95	14.77	1051.38	42.18	2361.82	104.74	191.49	6119.44
Proportion of Habitat Value	0.00	0.02	0.35	0.01	0.00	0.17	0.01	0.39	0.02	0.03	1
Habitat Units (HUs) per Acre	8.29	10.47	11.89	4.68	6.74	16.84	6.69	4.75	5.15	4.03	

Figure 6.1.3-4. Baseline Existing Conditions – Acres by Habitat Type

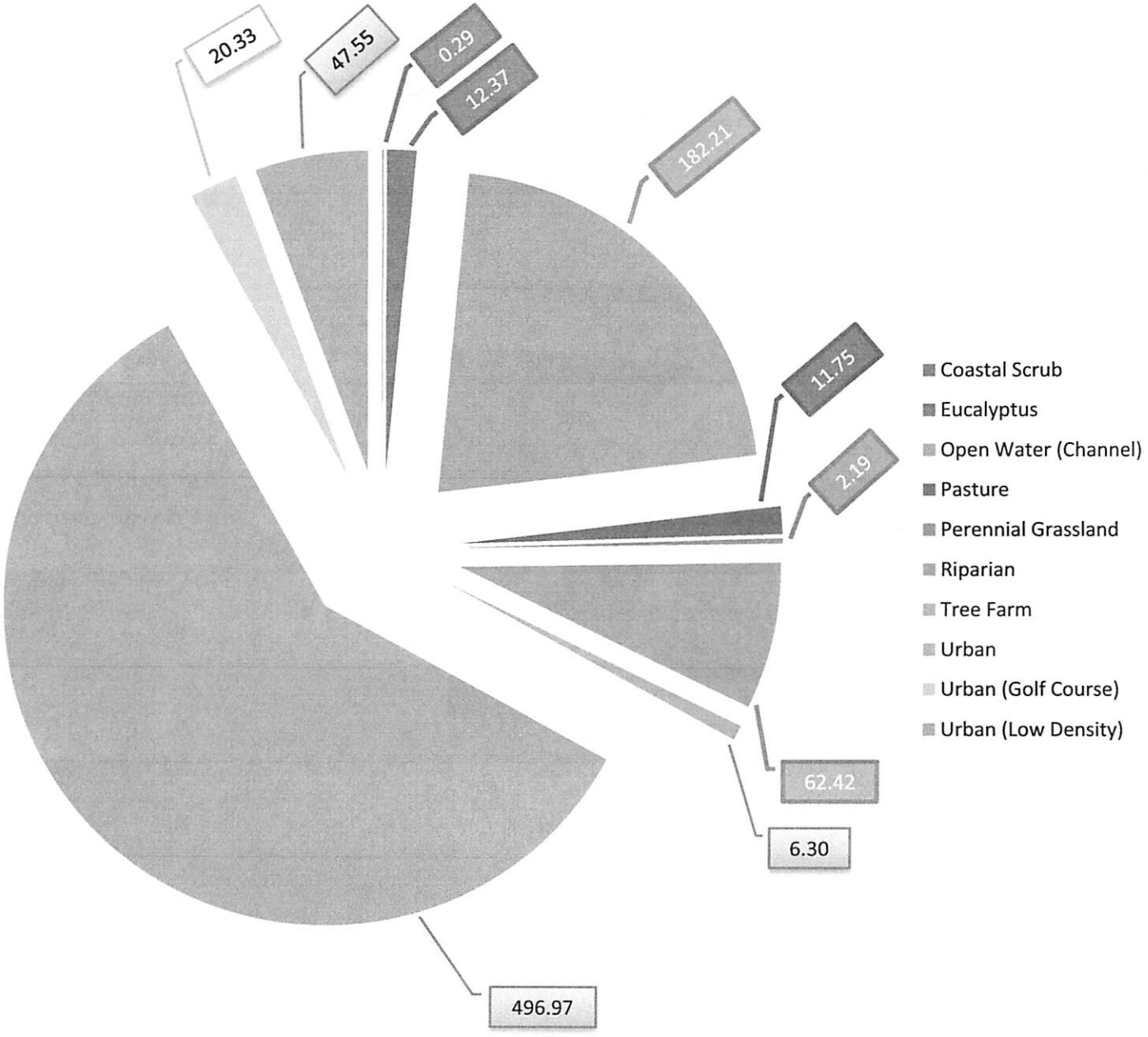


Figure 6.1.3-5. Baseline Existing Conditions – Per Acre Habitat Value by Habitat Type

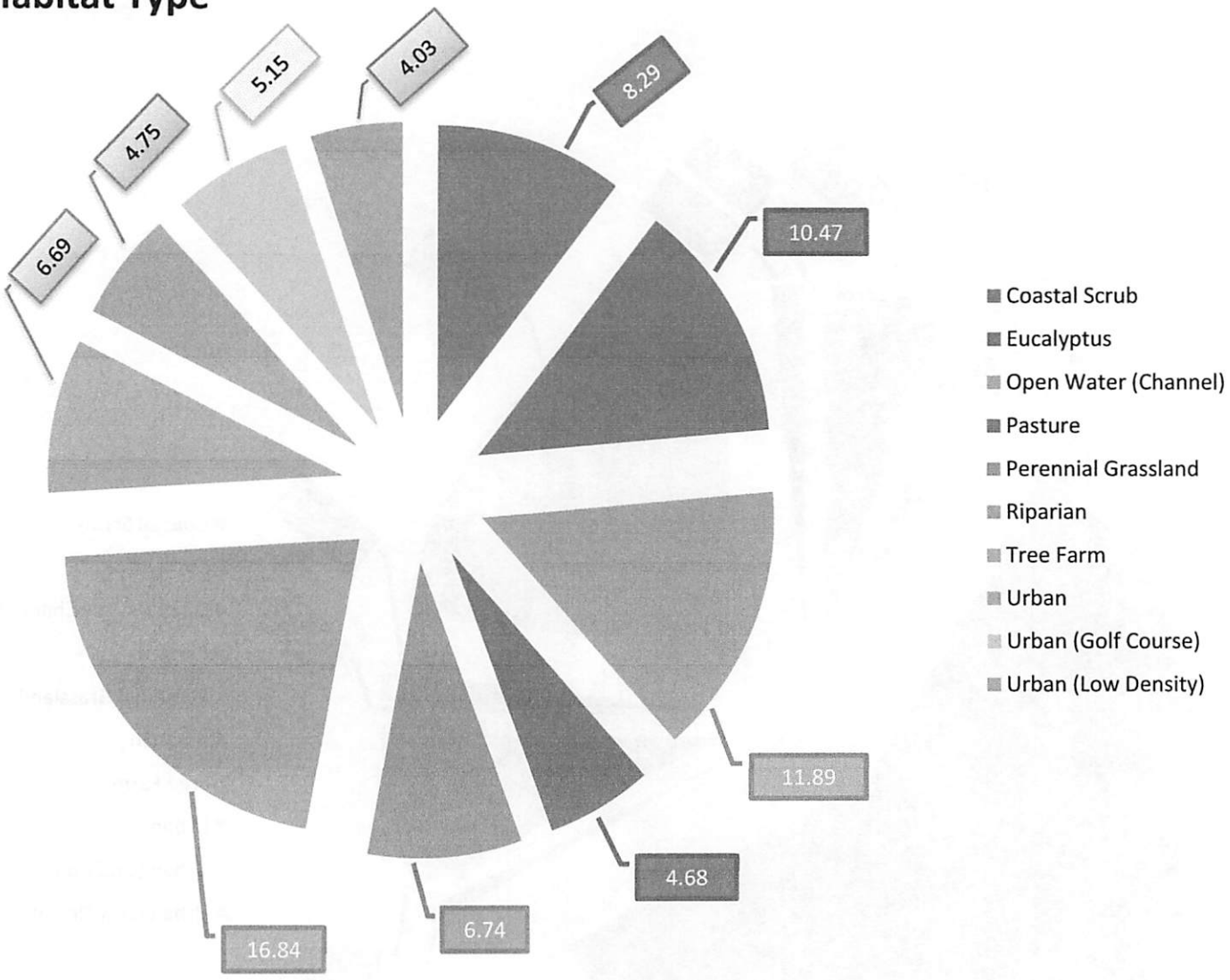


Figure 6.1.3-6. Sample Maps – Baseline Existing Conditions – Per-Acre Value

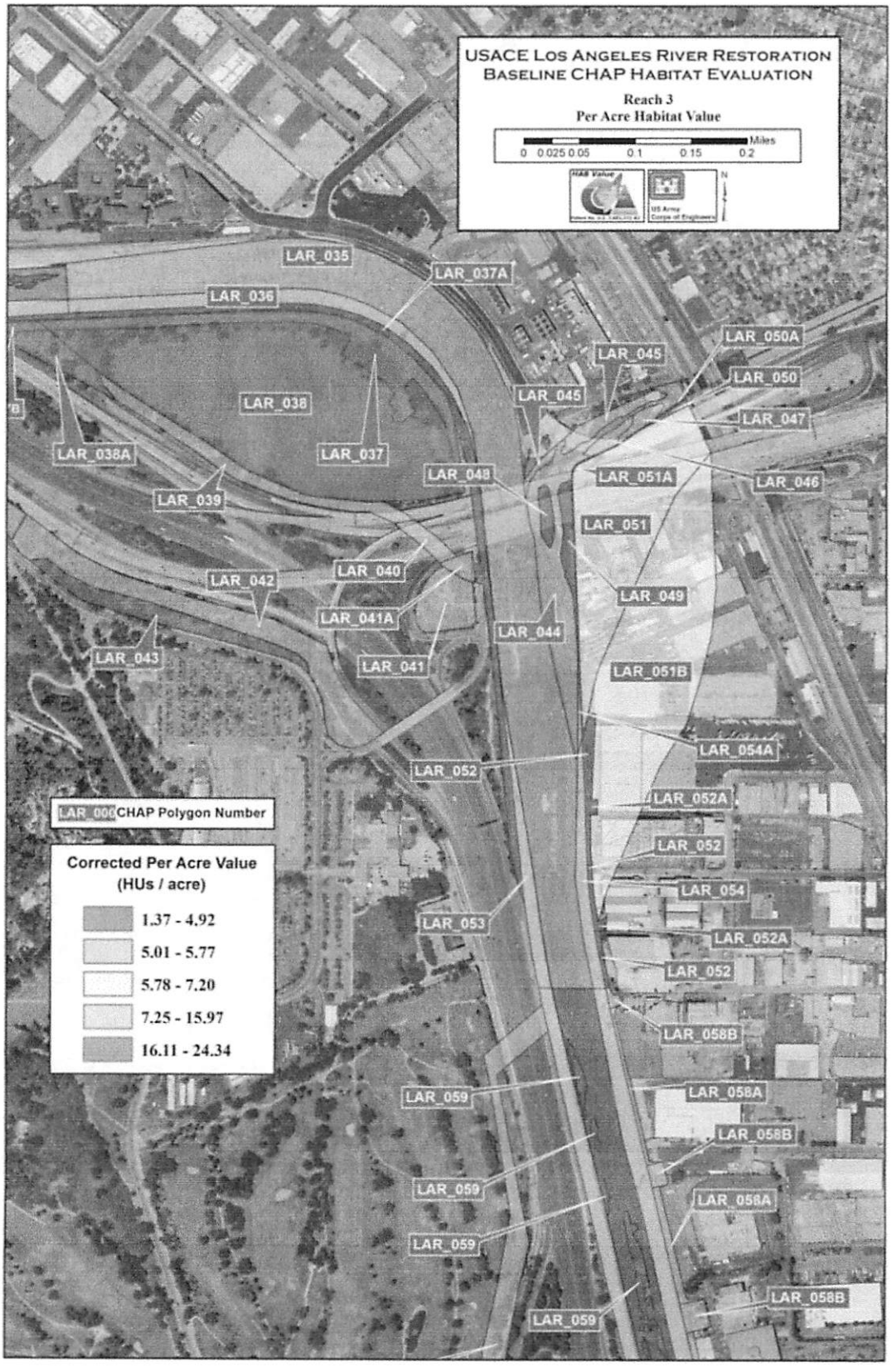


Figure 6.1.3-6. Sample Maps – Baseline Existing Conditions – Per-Acre Value

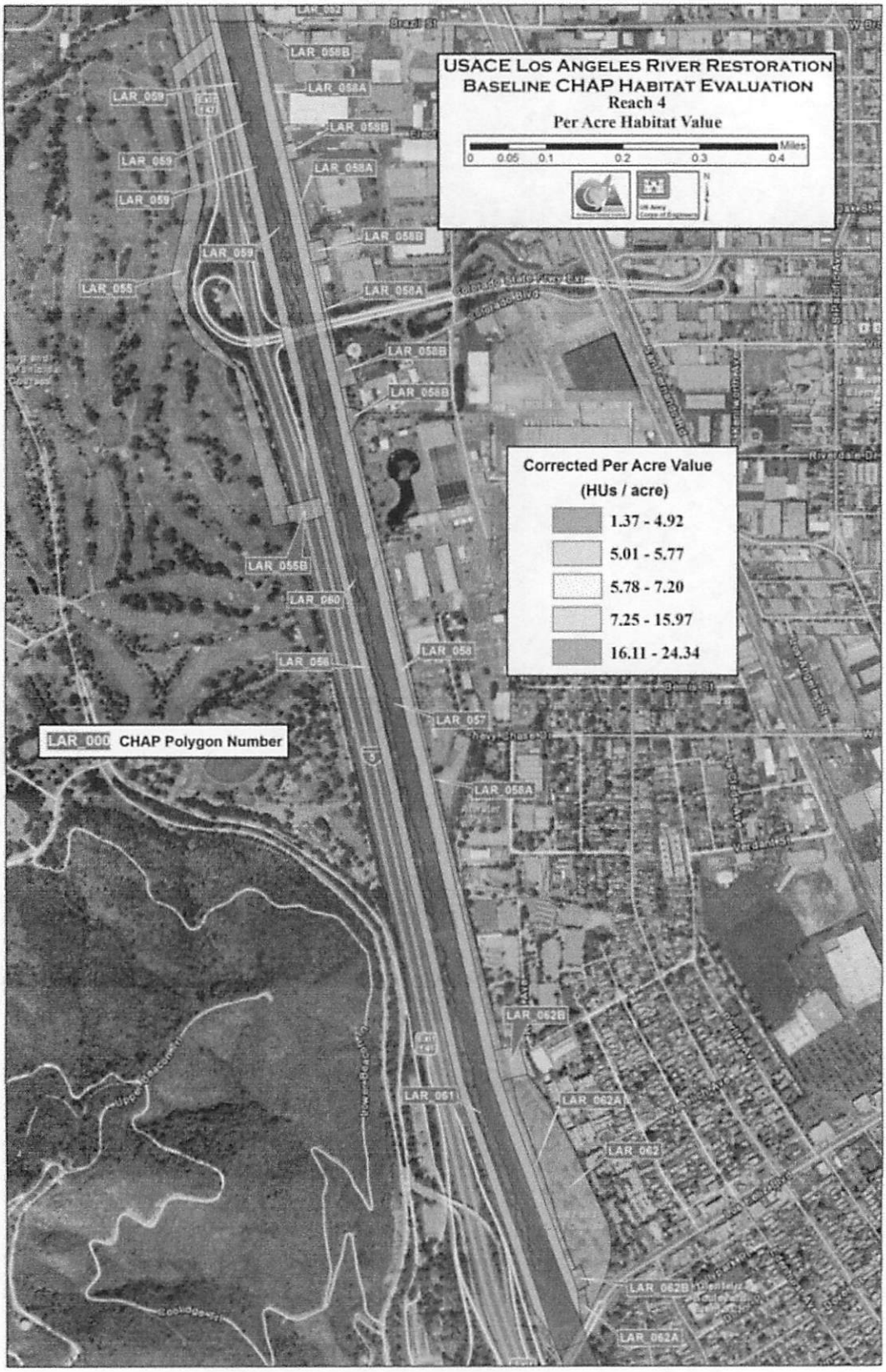


Figure 6.1.3-6. Sample Maps – Baseline Existing Conditions – Per-Acre Value

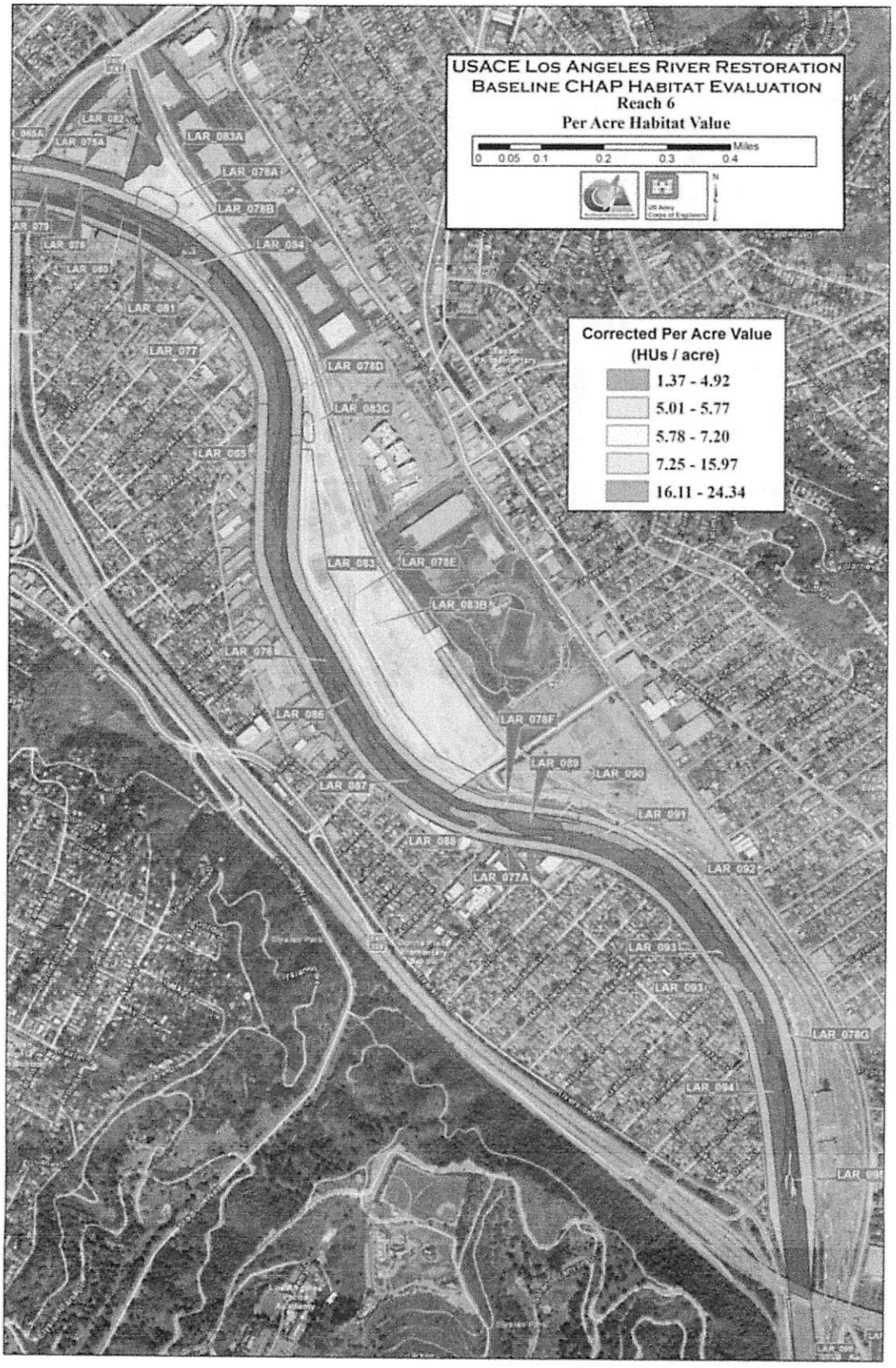


Figure 6.1.3-6. Sample Maps – Baseline Existing Conditions – Per-Acre Value

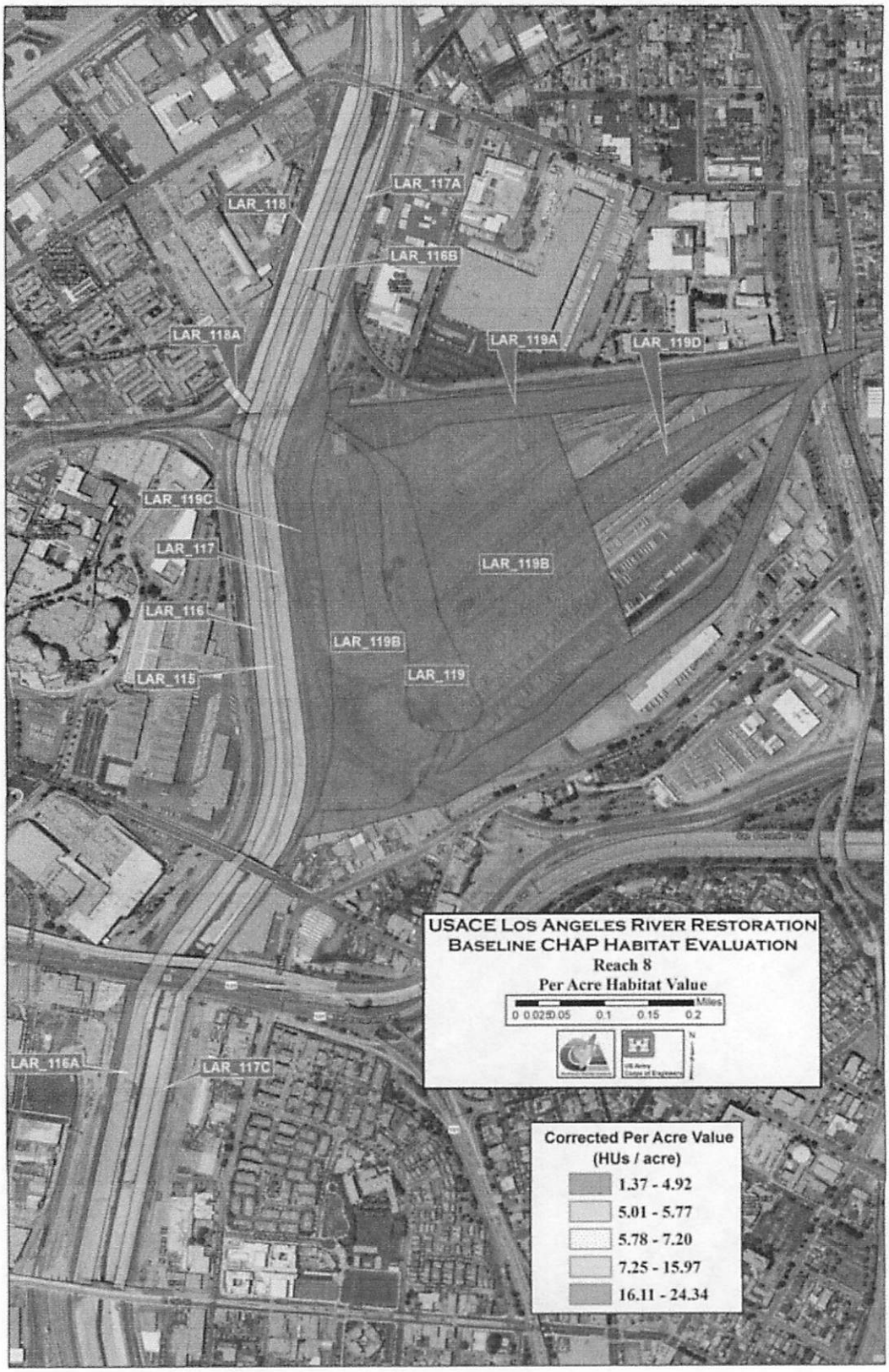


Figure 6.1.3-7. Sample Maps – Baseline Existing Conditions – Baseline HUs by Polygon Number

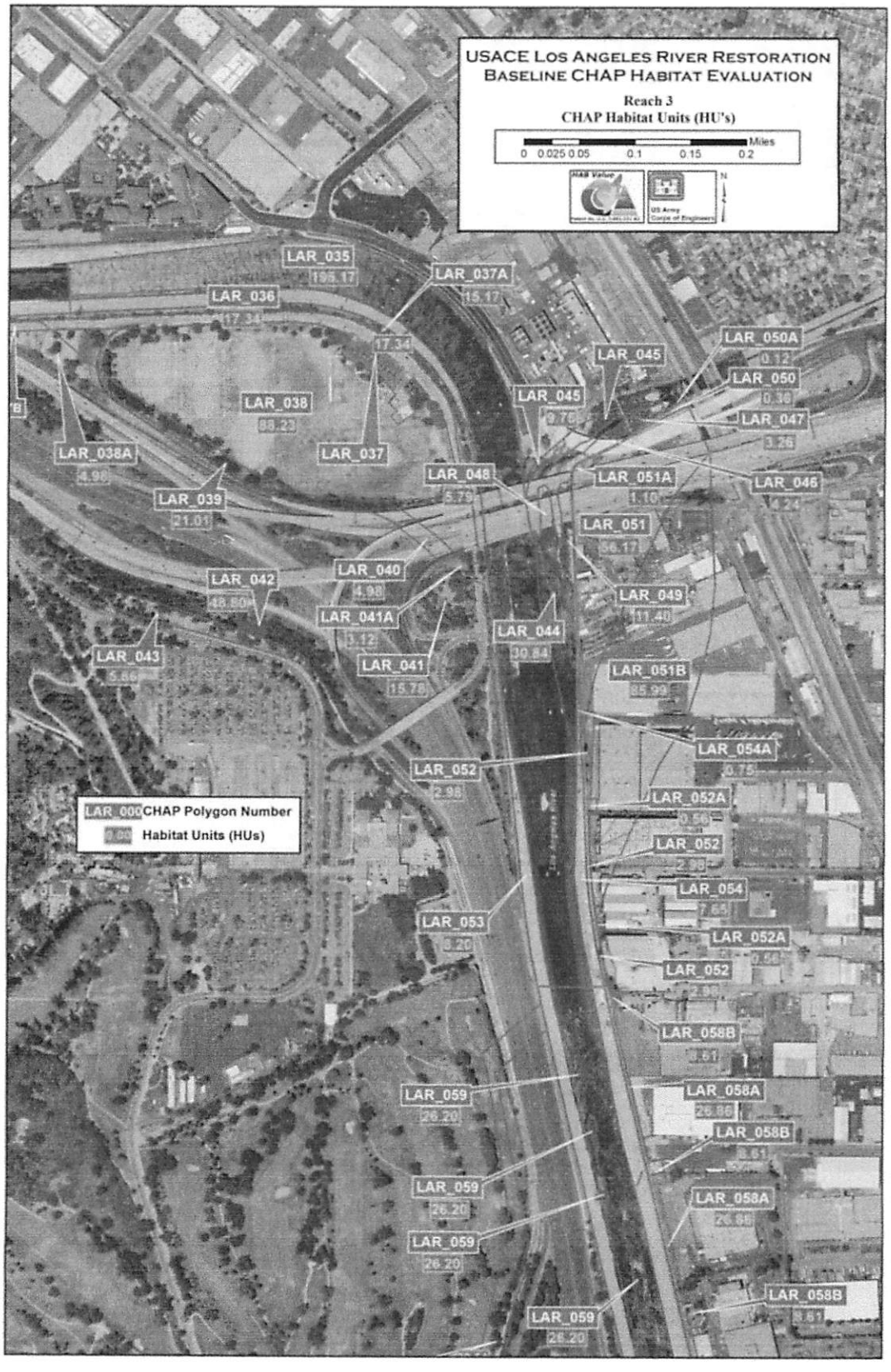
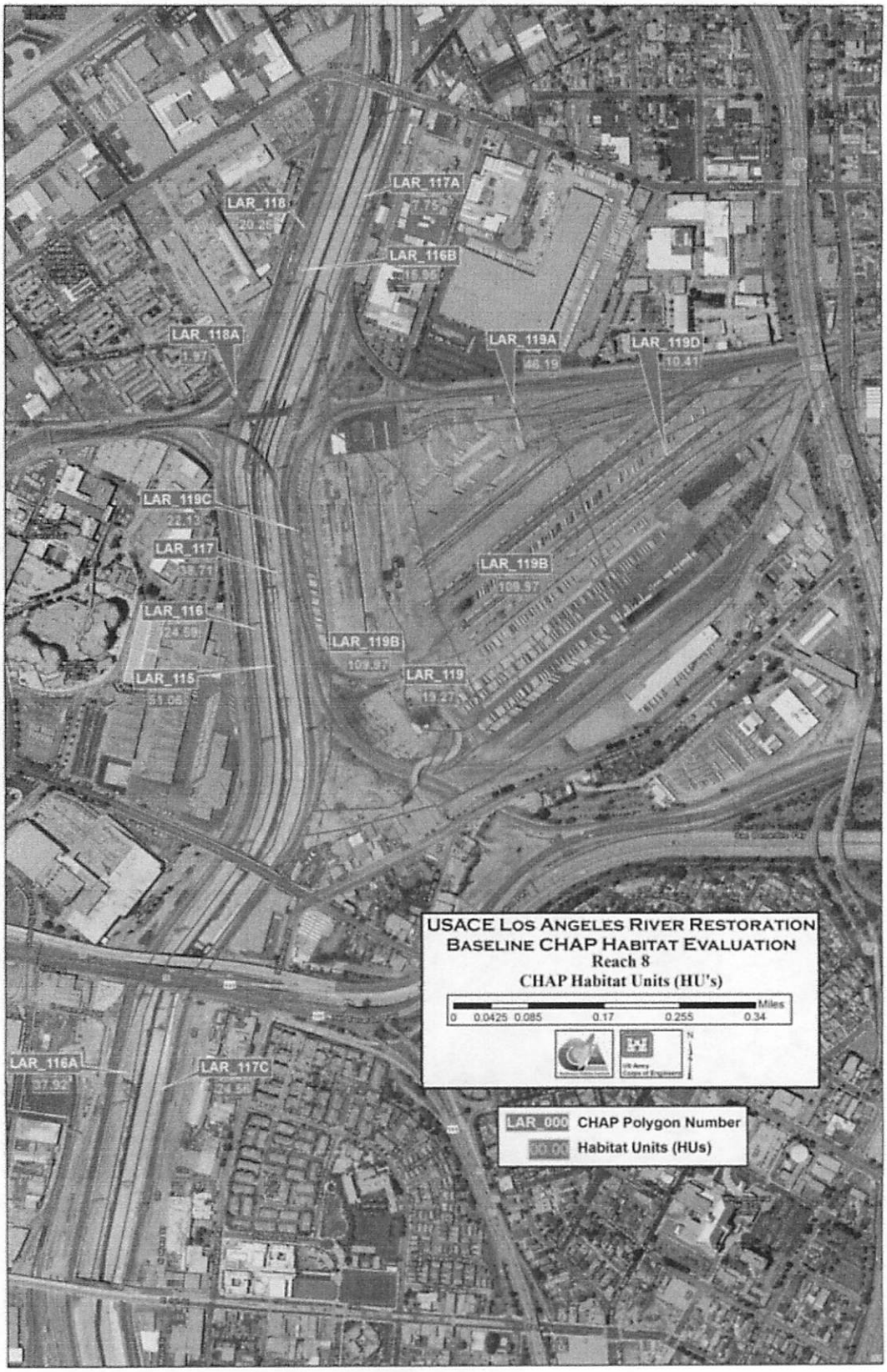


Figure 6.1.3-7. Sample Maps – Baseline Existing Conditions – Baseline HUs by Polygon Number

Figure 6.1.3-7. Sample Maps – Baseline Existing Conditions – Baseline HUs by Polygon Number

Figure 6.1.3-7. Sample Maps – Baseline Existing Conditions – Baseline HUs by Polygon Number



severely depressed, to nearly the maximum extent, given the impacts from urbanization. Therefore, it is assumed that the fish and wildlife species currently identified in the Study area, even under continued pressure from such stressors as invasive species, homeless encampments, horseback riding, and other urban uses, would likely prevail in the future. Thus, there were no adjustments made to the species list over the 50-year period.

Similarly, only minor adjustments to structural conditions were expected to occur from a simulated flood event. Due to the heavily urbanized environment surrounding the river and the engineered structure of the channel, conversion of wildlife habitat type and use by additional wildlife species would be unlikely. The riparian vegetation in the channel through the Glendale Narrows area has the potential to wash out during high flows, but would quickly recover, and has persisted through recent storm events.

6.2.1 Baseline: Future Without Project Methods

To determine a change in habitat values over time from the existing conditions, projections are needed to estimate changes to the species, habitat, and/or function parameters in the future. Applying these changes over several time periods requires some forecasting and theorizing to estimate the amount of alteration that might be expected during each time period. To display the future without project conditions and visualize these changes in value over time, changes to the habitat are applied to the fine scale habitat mapping, while changes to the species and functions, if any, are applied to their respective data sets.

The 25- and 50-year future without project analyses were built upon the baseline existing conditions analysis that illustrates the California wildlife habitat types within the Study area by GIS polygon (Figure 6.1.3-1). By modifying the species-habitat-function input information, which is based on the future projections for the area, a comparative time series evaluation over the 50-year period was generated.

Adjusting Species, Habitat or Functions

The habitat evaluation team met to generate projections for the 50-year future without project conditions. The rationale used by the habitat evaluation team, including logic and decision points, is included as follows.

1. Potential non-viable wildlife populations – The habitat evaluation team discussed the possibility of reducing or modifying the species list, however the team concluded that the current taxa, which are adapted to the highly urban environment surrounding the River, would most likely persist. It was assumed at the time of discussion that despite development pressure on the River, large open space areas, such as Griffith Park, were expected to be conserved due to high demand by the residents and established land use policies.

2. Invasive species would expand in area and abundance – Invasive plant species occurrence for baseline existing conditions was originally collected for three structural levels (the grass/forb layer, the shrub layer, and the tree layer) in each polygon. A discount factor

was applied based on the percentage of invasive species cover present, as shown in Table 6.1.2-1.

To determine the influence of invasive species for the future without project conditions, the habitat evaluation team forecasted that the presence and abundance of the invasive species would increase over time without implementation of a restoration project. Although occasional non-native and trash removal efforts are conducted by the Corps (and others) in certain reaches of the river, these efforts are not frequent or consistent, and are dependent on limited and unpredictable funding. They are also not conducted watershed-wide, so areas cleared of non-natives one year may be subject to re-infestation in later years. Therefore, it was estimated that the percentage of invasive species for each polygon at the baseline condition would advance to the next highest percentage level for the first 25 years, and to the subsequent level beyond that for the last 25 years. For example, if the baseline existing condition of a polygon exhibits 36-65% invasive cover in the grass/forb layer, then the condition at Year 25 would be assessed at 66-90% invasive cover, and the condition at Year 50 would be assessed at >90% invasive cover.

3. Flooding – A simulated 500-year flood event would likely have little influence on how the current wildlife population interacts with the landscape. It is possible that the riparian vegetation in the River within the soft-bottomed portions of the channel could be partially or even completely washed out by a 500-year event; however, historic photos indicate that current structural conditions are likely to persist in the soft-bottomed sections of the project area if no action is taken for the next 50 years. Riparian vegetation rapidly re-establishes after flood events, and this would be expected in the LA River channel. The project area outside the channel is extremely urbanized and any semi-natural areas would likely return to invasive shrub and grass conditions post-flood.

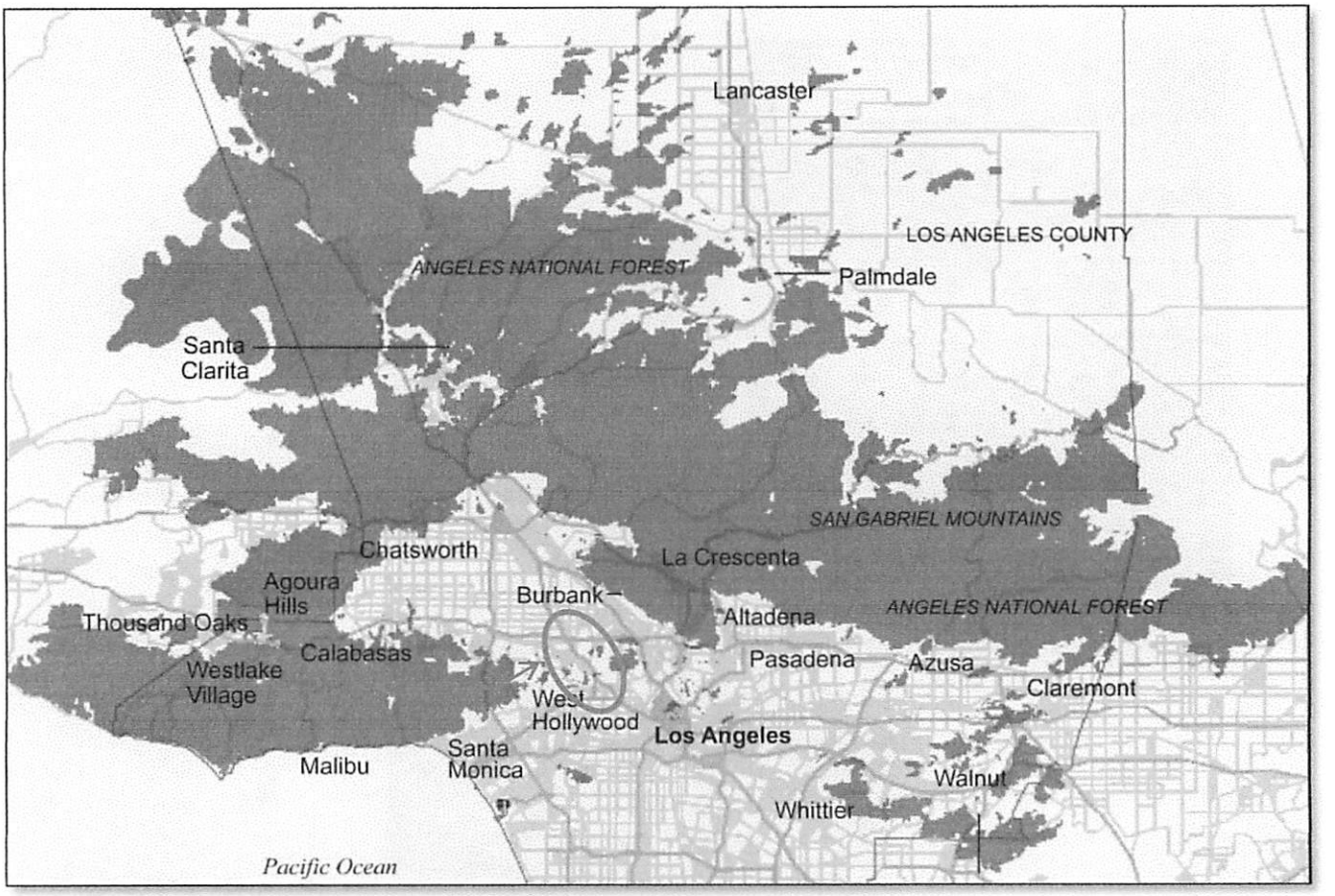
   While a 500-year storm event may wash larger amounts of urban trash and detritus into the river, in its current state the River already contains substantial levels of trash in the Study area. The impacts of trash in the River were, therefore, expected to persist in the event of major flooding without project implementation. Overall, it was not expected that the number of species present or how those species interact with the landscape (habitat function) would be altered by flooding in the absence of a restoration project. Figure 6.2.1-1 depicts the overflow area for a 500-year flood event.

4. Fire – Griffith Park may be threatened by wildfire, however extreme effort is placed on suppressing the spread of wildfire near the Study area due to the threat to human life and property (infrastructure). The 2007 Griffith Park fire burned 817 acres, and a similar fire in 1961 burned 814 acres. Neither fire impacted the habitat within the Study area. There may be a greater concern over time for a potential increase in wildfire due to increased drought conditions associated with climate change. Maturing vegetation types and senescence would increase fuel loading and the potential for wildfire to spread to the Study area.

   Therefore, the likelihood for at least one occurrence of a wildfire within the 50-year period has been projected based on the County's past fire history (Figure 6.2.1-2).

Figure 6.2.1-1. 500-year Flood Event – Overflow Area

Figure 6.2.1-2. LA County Fire History



Fire History from the Los Angeles County Fire Department illustrating the fires that have occurred from 1870s to 2005 [as reported in LA Times 08-05-2007].

Depending on the severity of a fire in the Study area, burned trees that do not suffer mortality may re-sprout from remnant vegetation and weedy species would likely return as ground cover. Over time some riparian vegetation in the Study area may re-establish from upstream seed sources, however weedy species would be expected to colonize quickly in the absence of established native vegetation. Without maintenance of non-native weeds, these species would be expected to further degrade existing riparian areas over time.

Some wildlife may benefit immediately after a fire, such as insectivorous birds that feed from post-fire insect outbreaks and cavity nesting birds and perching birds that find shelter and snags in the standing dead and damaged trees. Species that prefer structural diversity are generally expected to be negatively affected by a large stand-replacing fire in the Study area. A severe fire may change the water chemistry, leading to mortality of fish and other aquatic organisms. Loss of vegetation and the associated increase in sedimentation would also affect water quality for these species.

The Santa Ana winds, which can fan a wildfire into a major fire storm, were not considered a contributor to fire as the winds do not blow uniformly across Southern California and some areas, including the Study area, are relatively sheltered from the winds (Figure 6.2.1-3).

5. Planned Development – Currently, several development projects are anticipated to occur near the Study area. At the Headworks site, LA County Department of Water and Power is actively installing water tanks at the west end of the site. The Headworks site currently consists of a pile of fill dirt and hole for the future water tanks; therefore, KECs were altered for the area under the future without project condition to account for grass and shrub components that would be planted if no other action is taken at the site.

   The California High Speed Train project is currently developing alternative alignments near the Study area. While the final alignment has not been determined, the alignment alternatives that abut and cross the Study area (if chosen) would have an impact on the value of wildlife habitat in the Study area under the future-without project scenario.

   In the absence of an ecosystem restoration project on the River, urbanization will continue near the Study area, particularly in Downtown LA. Other development, transportation and infrastructure projects occurring within or adjacent to the Study area would generally have a negative effect on habitat value.

6. Earthquakes – Earthquakes and tremors occur frequently in the Southern California area. Figure 6.2.1-4 depicts the seismic activity that occurred in and around the Los Angeles area from 1800 thru 2000. In the event of an earthquake, the primary impact would be to infrastructure along the corridor. It is expected that the design and engineering of the channel, including pipelines and tanks, would withstand predictive earthquakes for the area. If this infrastructure failed, flooding may occur, although surface water would eventually flow back in the Los Angeles River.

Figure 6.2.1-3. Santa Ana Winds

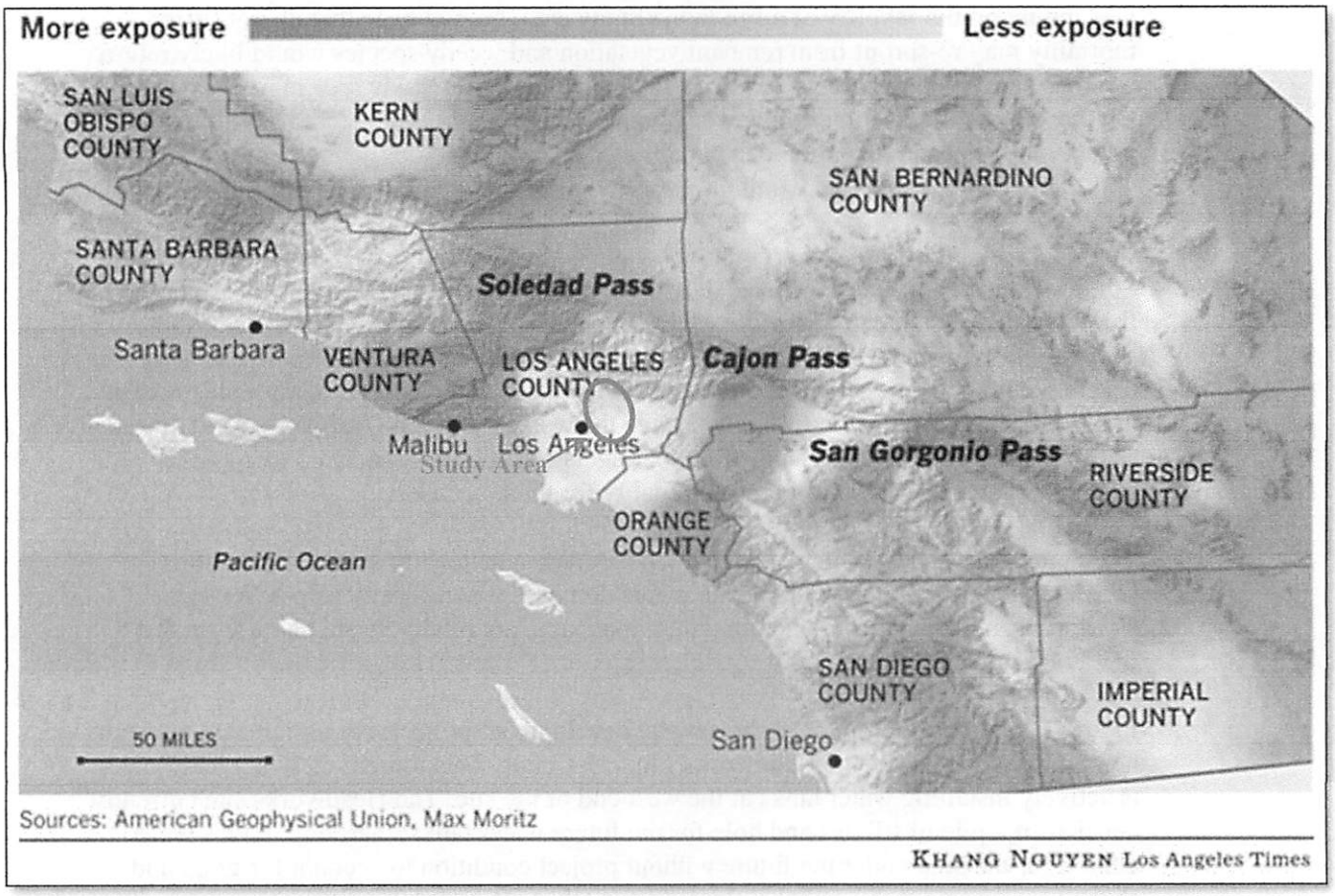
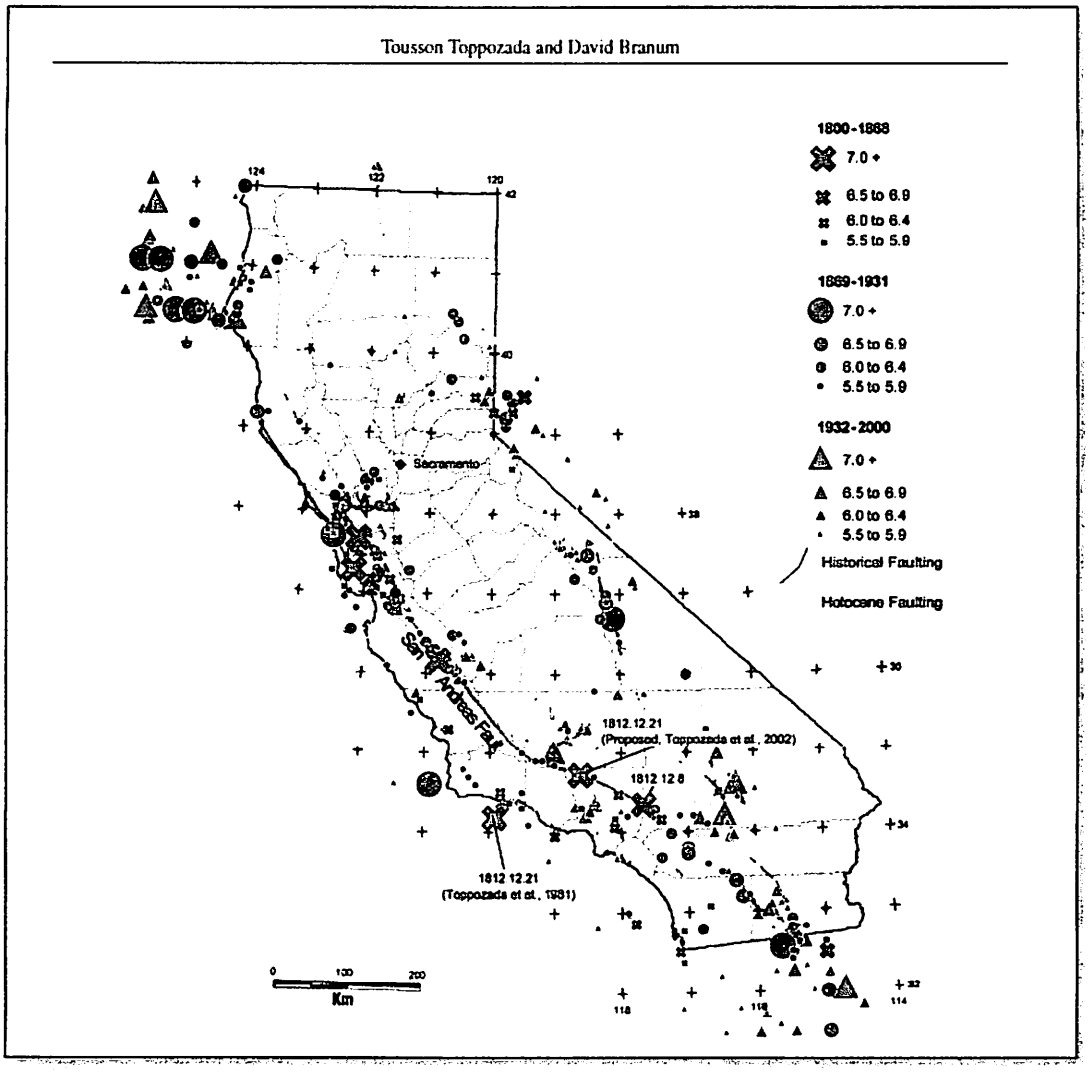


Figure 6.2.1-4: Earthquakes in Southern California



Magnitude greater or equal to 5.5 California earthquakes, 1800-2000 (modified from Toppozada and Branum, 2002).

7. Proximity to Other Natural Areas – The Study area is in close proximity to other natural areas, most notably Griffith Park, which is the eastern terminus of the Santa Monica Mountains (Figure 6.2.1-5). It was expected that these substantial nearby open space areas and habitat connections would persist in the future.

6.2.2 Baseline: Future Without Project Results

After adjusting the percent of cover of invasive species and adjusting the KECs of each polygon based on planned development, flood and fire events, and climate change, habitat values were generated for the 25 and 50-year time periods.

As expected, habitat value is projected to substantially decline within the Study area assuming no restoration activity is implemented over the next 50 years. Open water areas and urban areas mostly comprised of impervious surfaces (including the concrete channel banks) showed no change from the current habitat value. The remainder of the Study area is projected to decline steadily in habitat value, with an overall decline of 7% after 25 years and 14% after 50 years (Figure 6.2.2-1). In the absence of restoration in the Study area, the existing riparian areas that currently provide the most habitat value per acre will continue to degrade. Ecosystem functions in the Study area will also continue to diminish.

The future without project CHAP calculations are included in Microsoft excel spreadsheets and displayed in a GIS geodatabase. Due to the large volume of these spreadsheets and data, the complete set of files is available upon request from the Corps, Los Angeles District.

6.2.3 Annualizing HUs

Since the amount and value of habitat found within the Study area is likely to vary over time, to account for time dependent variation habitat units were forecasted over the 50 year period of analysis. These 50 annualized values were then averaged to produce an average annual habitat unit value.

Annualized habitat unit values were generated by forecasting the amount and value of habitat expected to exist within the study area at discrete points of time during the period of analysis (i.e. the number of habitat units expected to exist in the 1st, 25th and 50th year of the period of analysis). The habitat values expected to exist in years between the forecast points were created by interpolating (linearly) between these forecast values. The resulting 50 habitat unit values (one for each year in the period of analysis) were then averaged to produce a single average annual habitat unit value. This annualized habitat value was compared to annualized costs in the economic cost effectiveness and incremental cost analyses (CE/ICA)(See Appendix B of the Main Feasibility Report).

6.3 ALTERNATIVES ANALYSIS

Through the Corps' Plan Formulation process, 19 preliminary ecosystem restoration alternatives were developed based on input from local stakeholders and resource agency groups provided at workshops throughout the planning process.

during formulation. The determination of cost effectiveness is only made with detailed economic analysis. With the recombinations, therefore, the most cost effective ideas from each of the original 19 alternatives are combined into various new cost effective alternative plans. The final array of 4 of these new plans was chosen to be carried forward for further analysis in the Feasibility Study. The final array of 4 alternatives is described in detail in Section 4.14 of the Main Feasibility Report.

For additional detail on the CE/ICA analysis and the recombined cost effective alternative plans, see the Economic Appendix B in the Main Feasibility Report. For additional detail on the choice of alternative plans for the Final Array, see Section 4 of the Main Feasibility Report.

7.0 OTHER BENEFITS NOT CAPTURED IN CHAP

7.1 CONNECTIVITY

The CHAP analysis accounts for benefits provided by restored ecosystem functions, habitats, and species. There are, however, other types of benefits afforded by the restoration alternatives, including restoration of a more natural hydrologic regime, that influence and support restoration of biological systems. Restoration of movement corridors for wildlife is another benefit of restoration. Both hydrologic and wildlife connectivity has been lost since urbanization of the Study area and the channelization of the LA River in the early 20th century.

These benefits were considered in addition to the CHAP benefits to evaluate and compare the final array of alternatives, as described in Section 6.6 of the Main Feasibility Report.

7.1.1 Hydrologic and Hydraulic Connectivity - Reconnection of River to Floodplain

Hydrologic connections may be made naturally, by widening the river channel, removing artificial barriers, and allowing the river to naturally meander and reshape the adjacent floodplain area. Natural connections also support natural ecological processes such as exchange of sediment, nutrients, and energy between the river and floodplain. Connections may also be made artificially to support habitat, using river water to feed overbank sites via pipes, culverts, or pumps. Artificial connections are valuable to establish habitat, but are less capable of supporting other ecosystem processes and exchanges.

Maintaining ecological and evolutionary processes includes natural disturbance regimes, hydrologic processes, nutrient recycling and biotic interactions (EPA 1999). This benefit can only be achieved with reconnection of the river to its floodplain. This will protect the integrity of the ecosystem and increase sustainability. Biogeochemical interactions between the river and terrestrial sources are not as vital to riparian systems as overbank flow from floodplain connections (Hein 2003).

Floodplain connectivity also benefits restoration of fish habitat. Floodplain habitats provide critical spawning and rearing habitats for many large-river fishes. The standard that floodplains are essential habitats is often a key reason for restoring altered rivers to natural flow regimes (Burgess 2012).

Removal of concrete and widening restores ecosystem processes such as natural disturbance, a

more natural hydrologic regime, nutrient cycling, biotic interactions, population dynamics, and evolution, which determine the species composition, habitat structure, and ecological health of an ecosystem (EPA 1999). Channel widening would allow the river to connect to the overbank, which restores a dynamic floodplain and supports diverse riparian and in stream habitat for plants and wildlife.

7.1.2 Wildlife Connectivity

River channels in arid and semi-arid regions provide important wildlife movement corridors because they support continuous chains of vegetation that wildlife can use for cover and food (which may not be supported in drier upland habitats). These river corridors naturally guide wildlife movement, both daily and generationally, which is essential to species survival (Levick et al. 2008).

The remaining fragments of habitat in the urban landscape (or habitat "nodes") benefit the integrity of the larger ecosystem by supporting metapopulations (assemblages of local populations connected by migration) (Hanski & Gilpin 1991). By increasing patches and reducing the distances between them, colonization among populations improves (Hanski & Thomas 1994). Metapopulations depend on seed dispersal and wildlife movements to persist, and such dispersal is in turn dependent on the connectivity of the landscape (Schippers et al 1996).

Nodes may be larger or smaller. Large habitat nodes support colonization of wildlife in the smaller nodes, while smaller nodes act as peripheral refuge habitat (Rudd et al. 2002). Large nodes tend to have high biodiversity and provide important breeding and seeding habitat for interior species, as well as edge species and transients. Smaller nodes are partly or entirely dependent on individuals immigrating from the larger nodes as they have a higher rate of extinction and therefore need to be repopulated constantly (Hansson 1991; van Apeldoorn et al. 1992). Smaller nodes (those under 250 acres) may not be able to support large numbers of species on their own but are able to provide important peripheral habitat to species in the larger nodes (Hansson 1991).

Generally, nodes have a greater overall interaction when they are larger and closer together (Linehan et al 1995). Well connected systems prevent inbreeding depression and disease, and have a lower extinction rate as populations can more easily colonize if they are highly connected (Noss 1983; Schippers et al 1996). Without connections between habitat areas, isolation and loss of genetic diversity is imminent (Hobbs & Saunders 1990).

In order to benefit the biological integrity of a landscape, corridors should be restored to allow for dispersal between habitat areas. More corridors equal more routes to suitable habitat, creating more opportunities for dispersal. A complex network of nodes and corridors is therefore critical to restoration in an urban environment, as suitable habitat often remains unused if isolated (Hanski & Thomas 1994).

Restoring connectivity for wildlife and movement between patches of habitat provides several benefits including reconnecting genetically isolated populations of species and preventing inbreeding depression, providing necessary interactions between predators and prey to control

population size and providing a healthy ecosystem balance, and connecting individual wildlife to required resources that may not be present within one isolated area.

7.2 ECONOMIC

Other benefits include installation of recreational features and regional economic development (RED) benefits. RED benefits may include increases in employment and regional income/gross regional product (GRP) resulting from the project. Benefits may also include other social effects that have value that were not explicitly valued in monetary terms, such as increases in "community cohesion" or carbon offsets from the installation of carbon sequestering vegetation.

These benefits are accounted for in the narrative of the Main Feasibility Report in Section 6.6.

8.0 CHAP HABITAT EVALUATION TEAM

8.1 PARTICIPANTS

The CHAP Habitat Evaluation Team consisted of the following representatives from the USACE environmental and plan formulation branches, City of Los Angeles Bureau of Engineering (BOE), Northwest Habitat Institute (NHI), U.S. Fish and Wildlife Service (USFWS), Regional Water Quality Control Board (RWQCB), California Department of Fish and Game (CDFG), and U.C. Cooperative Extension. The CHAP analysis team members based their evaluation on expertise in local ecology, plants and wildlife, study objectives, and field visits to the project site. The team members are listed below:

- Erin Jones, Biologist, U.S. Army Corps of Engineers, Planning Division
- Kathleen Bergmann, Study Manager, U.S. Army Corps of Engineers, Planning Division
- Larry Hsu, City of Los Angeles, formerly Bureau of Engineering
- Tom O'Neil, Northwest Habitat Institute
- Andy Hackethorn, Northwest Habitat Institute
- Scott Estergard, Tetra Tech
- Peter Beck, U.S. Fish and Wildlife Service
- Shirley Birosik, Regional Water Quality Control Board, Los Angeles Region
- Scott Harris, California Department of Fish and Game
- Sabrina Drill, U.C. Cooperative Extension, Los Angeles County

8.2 MEETINGS

Habitat evaluation team meetings were held at the Corps' Los Angeles District Office to discuss baseline existing conditions, baseline future without project conditions, and future with project conditions. Meetings were held on January 7, 2010; April 21, 2010; and November 3, 2011.

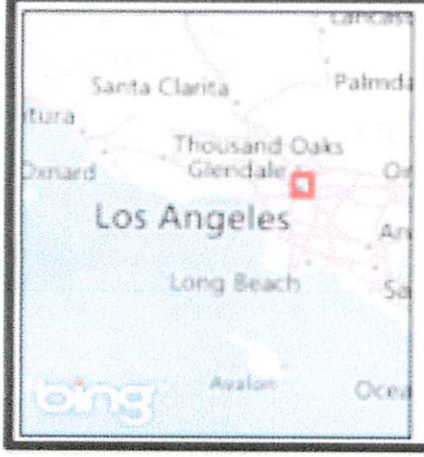
9.0 CONCLUSION

The CHAP analysis is a habitat assessment tool that evaluates habitats, functions, and species to quantify habitat value. For the LA River ER Feasibility Study, CHAP was used to quantify the value, or benefits, of various restoration alternatives in terms of Habitat Units (HUs) in order to

compare alternative plans. Habitat value was calculated for baseline conditions including the future without project conditions at 25 and 50 years into the future. Habitat value was also calculated for the 19 restoration alternatives developed during the plan formulation process.

The benefits of each restoration alternative were used with project costs to inform the economic cost effectiveness and incremental cost analysis. This analysis recombined the 8 reaches among the 19 alternatives, resulting in an array of new cost effective alternative plans. The final array of 4 of these new plans was chosen to be carried forward for further analysis in the Feasibility Study.

Additional benefits not captured in CHAP were used to evaluate and compare the final array of alternatives. These benefits include hydrologic connectivity to support biotic and abiotic functions, and nodal connectivity to support wildlife movement and dispersal. An assessment of these benefits is applied outside of the CHAP analysis as part of the environmental impact analysis.



N

Legend

Watercourse

50-yr w/o vegetation

50-yr w/ vegetation

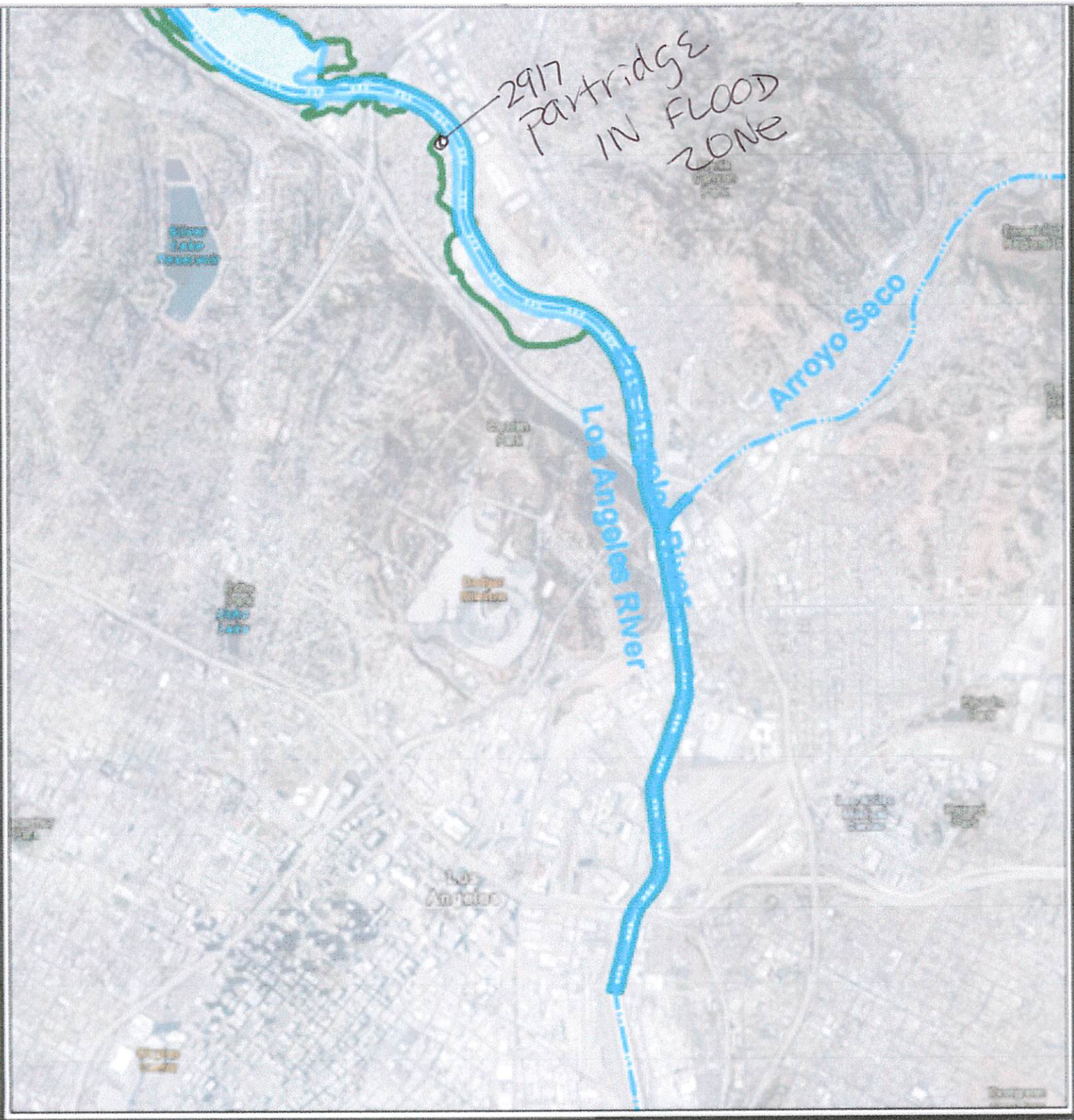
0 0.5 1

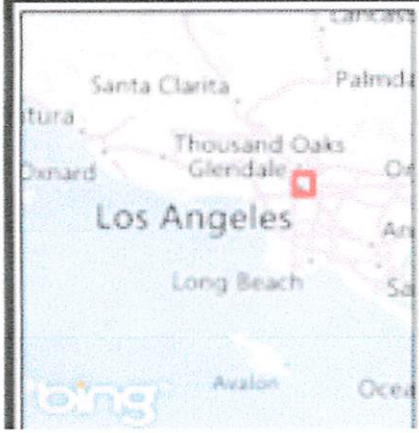
Miles

LOS ANGELES RIVER
ECOSYSTEM RESTORATION STUDY

LOS ANGELES RIVER 2% ACE EVENT FLOODPLAINS

CORPS OF ENGINEERS
LOS ANGELES DISTRICT





N

Legend

- Watercourse
- 100-yr w/o vegetation
- 100-yr w/ vegetation

0 0.5 1

Miles

LOS ANGELES RIVER
ECOSYSTEM RESTORATION STUDY

LOS ANGELES RIVER 1% ACE EVENT FLOODPLAINS

CORPS OF ENGINEERS
LOS ANGELES DISTRICT

FIGURE 1

ORDINANCE NO. 183954

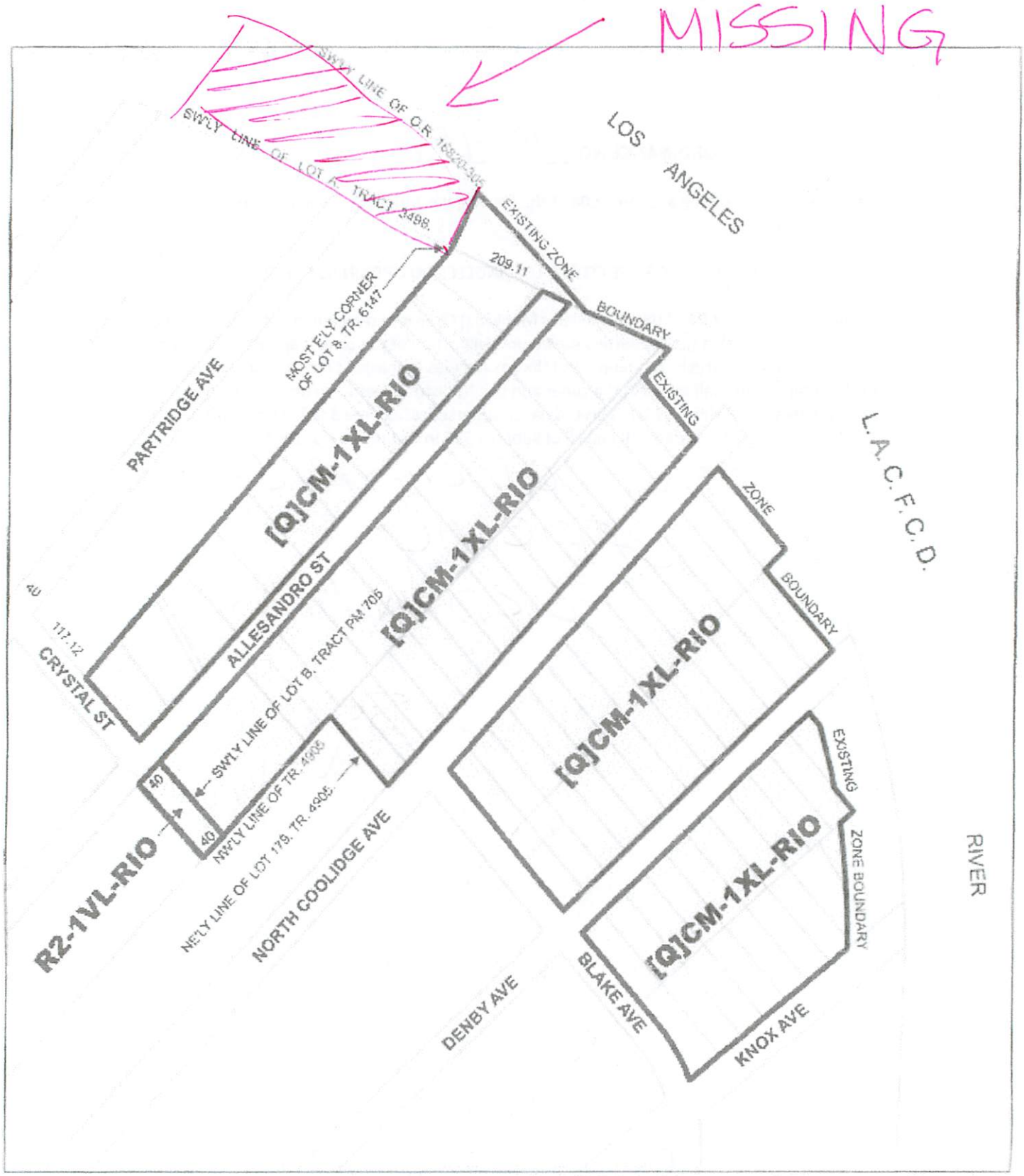
An ordinance amending Section 12.04 of the Los Angeles Municipal Code by amending the Zoning map.

THE PEOPLE OF THE CITY OF LOS ANGELES DO ORDAIN AS FOLLOWS:

Section 1. Section 12.04 of the Los Angeles Municipal Code is hereby amended by changing the zone classifications on the properties shown upon a portion of the zone maps attached thereto and made a part of Article 2, Chapter 1 of the Los Angeles Municipal Code, so that such portion of the zoning map shall set forth the zones and height districts as shown on the attached Elysian Valley Q Conditions Map. This ordinance supersedes Subarea 33A in Ordinance No. 176825, portions of Subarea 33B and all of Subarea 33C in Ordinance No. 180154.

FROM COUNCIL FILE:
OFFICIAL
ORDINANCE

See Map →

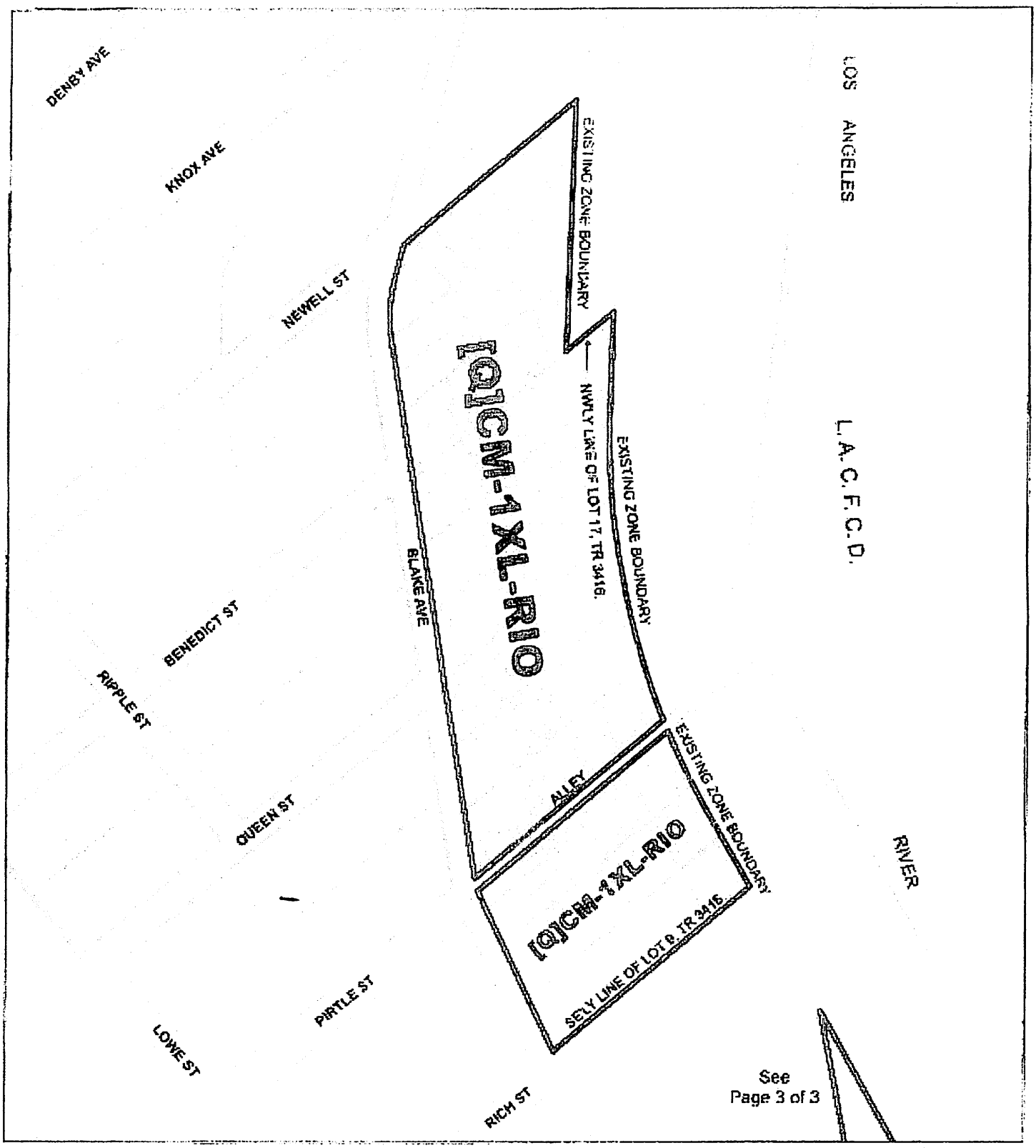


NORTH

230 115 0 230 Feet

C.M.150 B 213, 148.5 A 213	CPC-2015-1295-HD-ZC
CF	Silver Lake CPU D70715

Area Mapped



300 150 0 300
Feet

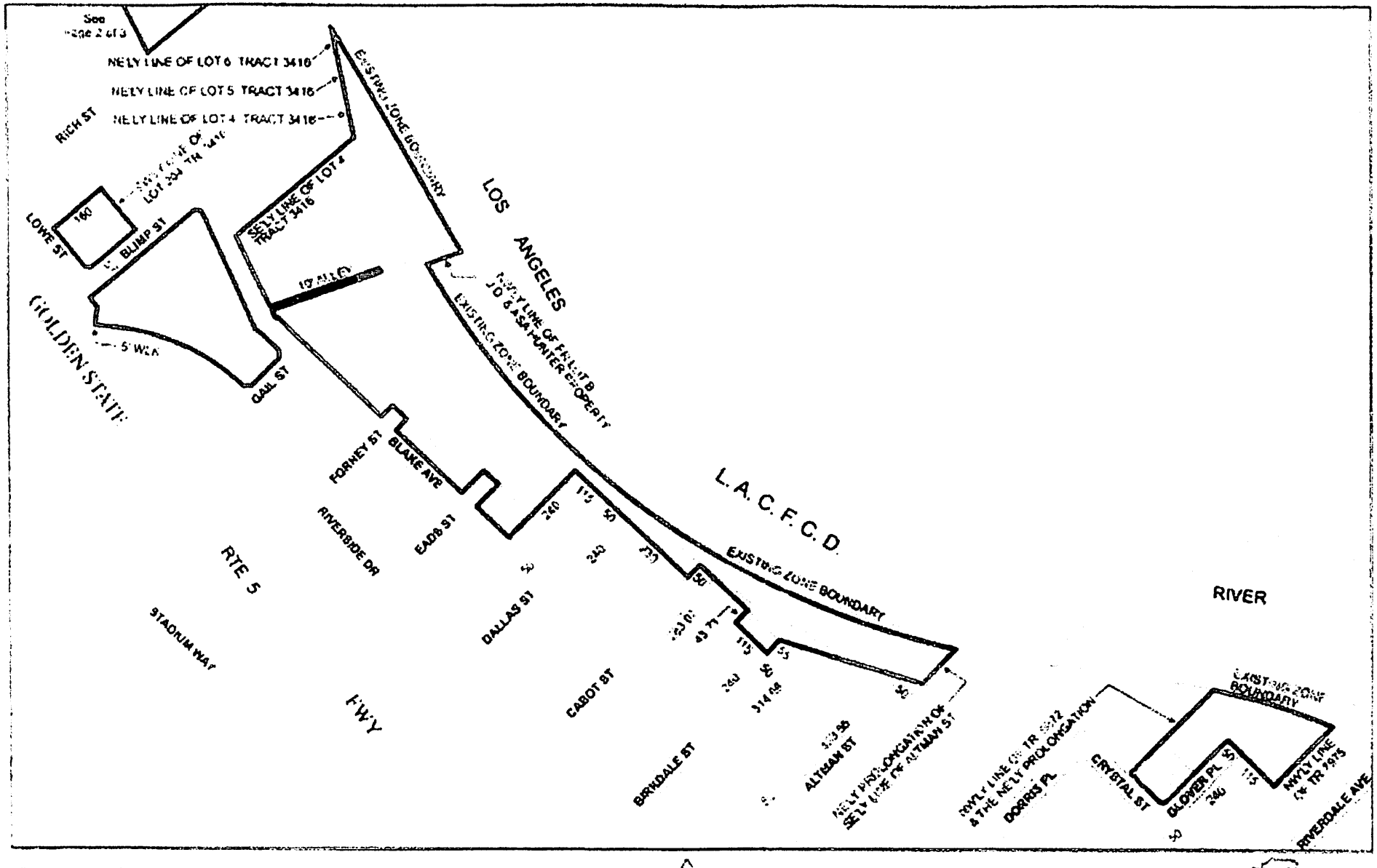
C.M 146 5 A 213, 147 A 213	CPC-2015-1295-HD-ZC

CF

Silver Lake CPU

07/07/15

Area Mapped



[Q]CM-1XL-RIO

450 225 0 450 Feet

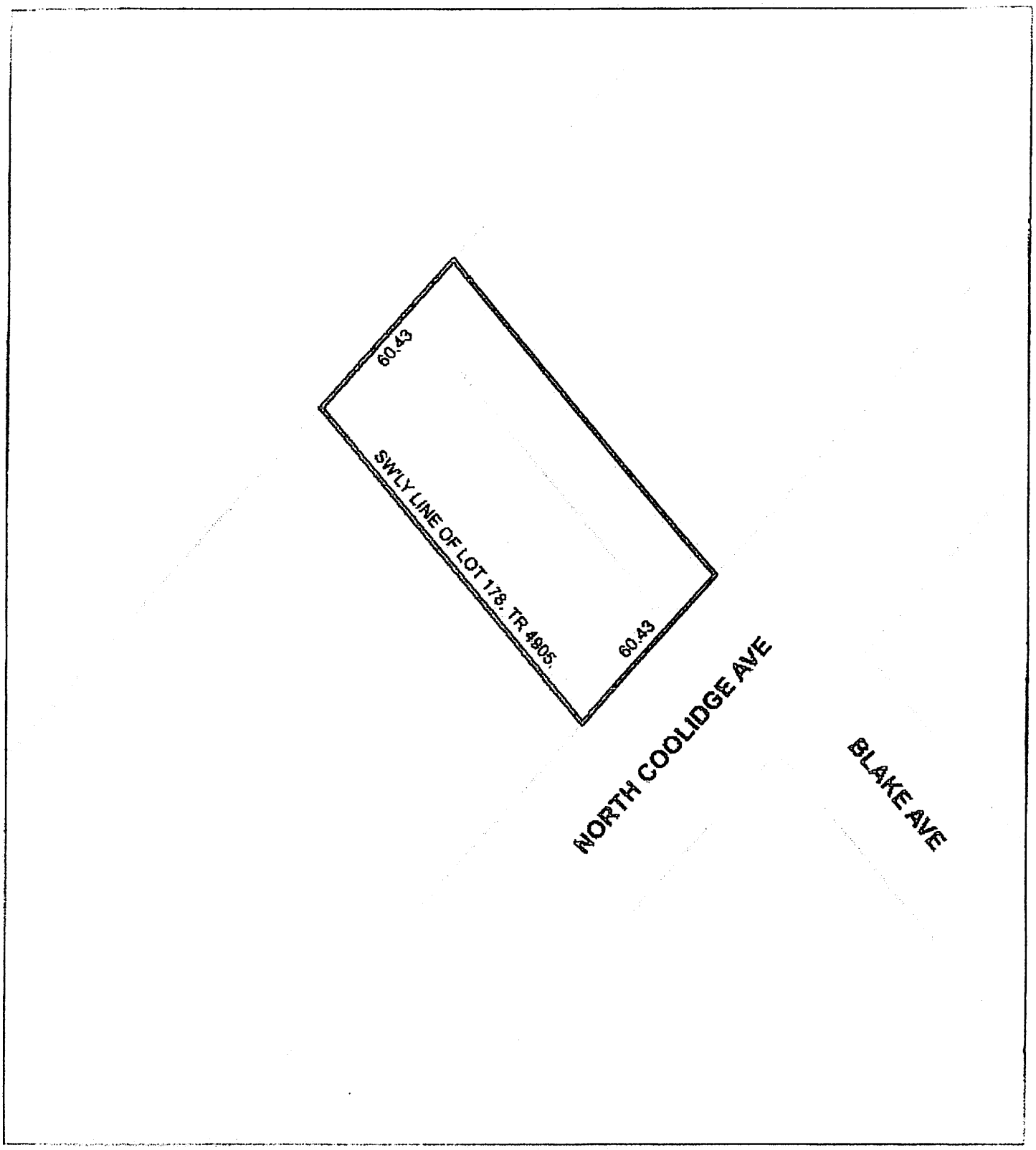
C M 147 A 213, 147 A 215 144 B 213, 145 5 A 217	CPC-2015-1295-HD-ZC

CF

Silver Lake CPU

070715

Area Maps



COMMERCIAL
MANUFACTURING

50 25 0 50 Feet

C.M 150 B 213 | CPC-2015-1295-HD-ZC

CF:

Silver Lake - Echo Park - Elysian Valley

07/07/15

Area Mapped

[Q] QUALIFIED CONDITIONS OF APPROVAL

Section 2. Pursuant to Section 12.32-G of the Los Angeles Municipal Code, and any amendment thereto, the following limitations are hereby imposed upon the use of those properties described in Section 1 and are preceded by the "Q" in Brackets ([Q]). The conditions and limitations imposed by the new "Q" Qualified Classification are set forth as follows:

1. **Uses:**
   - **a.** Residential dwelling units are prohibited except for the following:
     - i. Live/Work dwelling units are permissible at a ratio of one unit per 1,200 square feet of lot area and must comply with the following development standards:
       1. A minimum unit floor area of 750 square feet;
       2. A minimum work space of 150 square feet;
       3. Open floor plans at the ground floor (exclusive of restrooms/bathrooms, storage areas);
       4. Ground floors are comprised of a minimum floor-to-ceiling height of 12 feet (adaptive re-use projects exempt where not feasible within an existing structure);
       5. All Live/Work dwelling units shall be built in conformance with Section 419 of the Los Angeles Building Code and the provisions of this ordinance, subject to verification by the Los Angeles Department of Building and Safety.

   - **b.** Individual Food Service establishments are limited to 8,000 square feet.

   - **c.** Individual Retail establishments are limited to 10,000 square feet.

   - **d.** The following uses are prohibited;
     - i. Any use involving the service, repair, storage, sales, or dismantling of new or used automobiles, trucks, trailers, or parts therein.
     - ii. Any use involving the deposit, storage, transfer, or sorting of recyclable waste materials
     - iii. Adult Entertainment
     - iv. Bail Bond Broker
     - v. Pawnshop
     - vi. Public Storage Facility (Storage Building for Household Goods)
     - vii. Open Storage Area
     - viii. Drive-throughs of Any Kind
     - ix. Shooting Gallery
     - x. Tow Truck Dispatching

2. **Development Standards:** Projects will comply with the provisions of Ordinance No. 183,145 (River Improvement Overlay), except where the provisions of this ordinance are in conflict with the River Improvement Overlay, the provisions of this ordinance shall prevail.

   a. **Building Facades**. New buildings that are adjacent to Residentially Zoned properties shall provide articulation along Residential Zone frontages such that there is a break in plane or change in material (excluding glazing) in intervals of 10 to 15 horizontal feet.

   b. **Building Height.**
      (1) New buildings shall not exceed a height of 30 feet, excluding parapet walls.
      (2) New buildings with frontages along the Los Angeles River shall not exceed a height of 20 feet within 10 feet of the river-fronting landscape buffer (20 feet of the river-fronting property line), excluding parapet walls.

   c. **Industrial Buffer.** Industrial development adjacent to residentially zoned lots shall be designed with no loading area or bay door facing residentially zoned properties, with a five-foot-deep continuous landscape buffer that is inclusive of 24-inch box trees planted in 20-foot intervals, and with a minimum 6-foot solid decorative masonry perimeter wall adjacent to these properties.

   d. **Lighting.** Projects across from, or adjacent to residentially zoned parcels shall have outdoor, on-site lighting designed and installed with shielding, such that the light source is directed down and away from adjacent residential properties. Prior to the issuance of building permits, a lighting plan showing the location of all exterior lighting facilities within the required parking areas shall be submitted to the Department of City Planning.

   e. **Parking:** Any additional parking required as part of a change of use to a non-residential use, within an existing building, may be offset entirely through the provision of onsite bicycle parking, provided that the bicycle parking configuration complies with the provisions of LAMC 12.21A.16, and that any existing automobile parking spaces are maintained onsite.

   f. **Loading.** New loading and unloading activities shall not impede traffic on any public street. Public sidewalks, alleys and/or other public ways shall not be used for parking or loading or unloading of vehicles. The location of loading areas shall be clearly identified on the site plan to the satisfaction of the Department of City Planning. Loading, unloading, and storage of materials and products shall be limited to the project site and located as far away from residentially zoned properties as possible. Deliveries and loading and unloading shall be restricted to the hours of 7:00 a.m. to 7:00 p.m. Monday through Saturday. No deliveries shall be permitted on Sundays and legal holidays.

g. **Lot Coverage.** Buildings and structures shall cover no more than 60 percent of the area of a lot.

h. **Noise (Operational, Electronic Devises, Machinery).** Any electronic or mechanical equipment or machinery, when abutting a residential zone, shall be enclosed in structures designed with noise-attenuating features by a licensed acoustical engineer.

i. **Public Address and Paging System.** Outdoor address or paging systems are prohibited.

j. **Residential Open Space.** On lots fronting the Los Angeles River and developed with residential uses, required open space pursuant to LAMC 12.21.G.2 shall be oriented to the river.

k. **Signs (Permitted).** Signs shall be limited to one per business establishment, per façade, and shall not exceed 1.5 square feet for every foot of building frontage or up to a maximum of five percent of the frontage.

l. **Signs (Prohibited).** Monument and pole signs are prohibited. Internally illuminated, digital, animated, or other non-static sign displays are prohibited.

DECLARATION OF POSTING ORDINANCE

I, VERONICA COLEMAN-WARNER, state as follows: I am, and was at all times hereinafter mentioned, a resident of the State of California, over the age of eighteen years, and a Deputy City Clerk of the City of Los Angeles, California.

Ordinance No.183954 – Zone change, Height District change and Code Amendment for parcels adjacent to the Los Angeles River – CPC 2015-1295-HD-ZC - a copy of which is hereto attached, was finally adopted by the Los Angeles City Council on **October 30, 2015**, and under the direction of said City Council and the City Clerk, pursuant to Section 251 of the Charter of the City of Los Angeles and Ordinance No. 172959, on **November 16, 2015** I posted a true copy of said ordinance at each of the three public places located in the City of Los Angeles, California, as follows: 1) one copy on the bulletin board located at the Main Street entrance to the Los Angeles City Hall; 2) one copy on the bulletin board located at the Main Street entrance to the Los Angeles City Hall East; 3) one copy on the bulletin board located at the Temple Street entrance to the Los Angeles County Hall of Records.

Copies of said ordinance were posted conspicuously beginning on **November 16, 2015** and will be continuously posted for ten or more days.

I declare under penalty of perjury that the foregoing is true and correct.

Signed this **16th** day of **November, 2015** at Los Angeles, California.

Veronica Coleman-Warner

Veronica Coleman-Warner, Deputy City Clerk

Ordinance Effective Date: **December 26, 2015** **Council File No. 14-0214**

SECTION 3. The City Clerk shall certify to the passage of this ordinance and have it published in accordance with Council policy, either in a daily newspaper circulated in the City of Los Angeles or by posting for ten days in three public places in the City of Los Angeles: one copy on the bulletin board located at the Main Street entrance to the Los Angeles City Hall; one copy on the bulletin board located at the Main Street entrance to the Los Angeles City Hall East; and one copy on the bulletin board located at the Temple Street entrance to the Los Angeles County Hall of Records.

I hereby certify that this ordinance was passed by the Council of the City of Los Angeles at its meeting of OCT 30 2015.

HOLLY L. WOLCOTT, City Clerk

By _____

Deputy

Approved 11/13/15

_____

Mayor

File No(s). 14-0214

Pursuant to Charter Section 559, I approve this ordinance on behalf of the City Planning Commission and recommend that it be adopted....

October 22, 2015

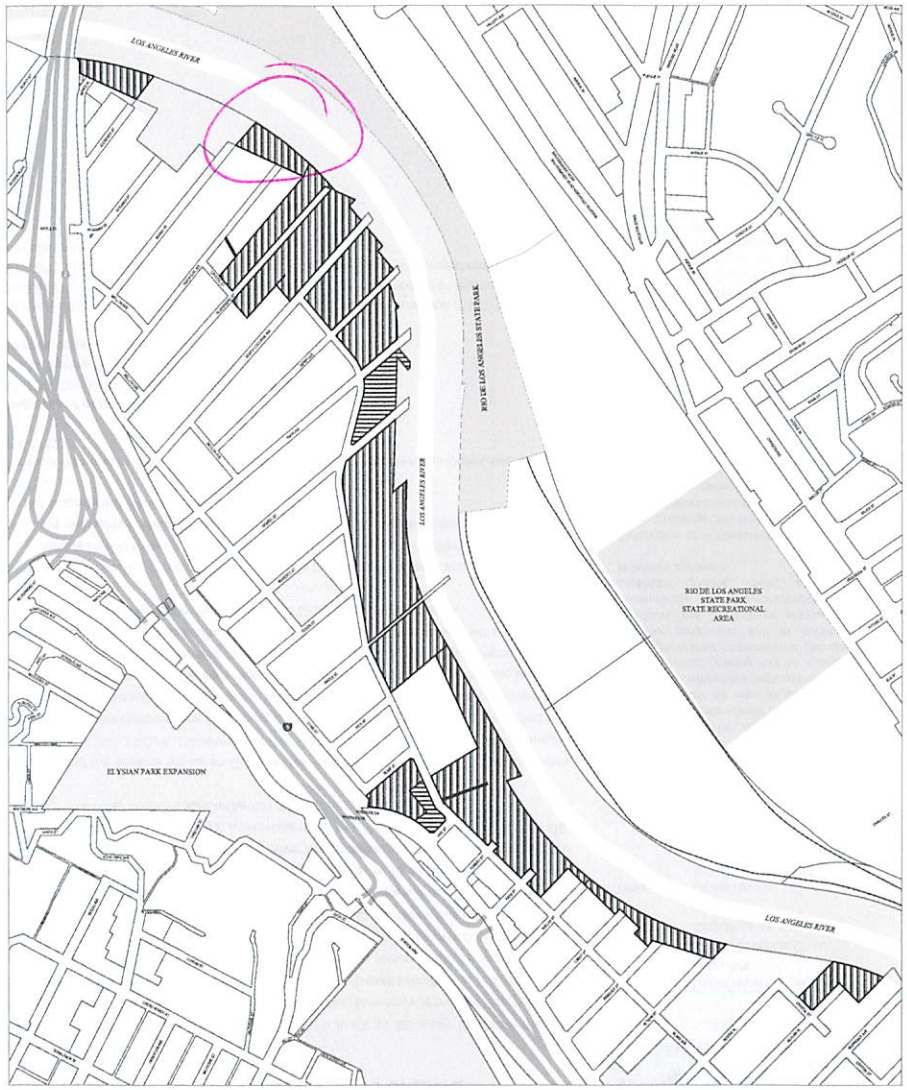
See attached report.

_____ FOR

Michael LoGrande
Director of Planning

FIGURE 2

OUTREACH DOCUMENTS & MAP FROM PUBLIC HEARING



DRAFT MAP OF THE ELYSIAN VALLEY Q CONDITIONS UPDATE

AREAS AFFECTED BY DRAFT Q CONDITIONS UPDATE

The Los Angeles Department of City Planning
is pleased to announce an upcoming

Open House and Public Hearing

for the

Elysian Valley Community

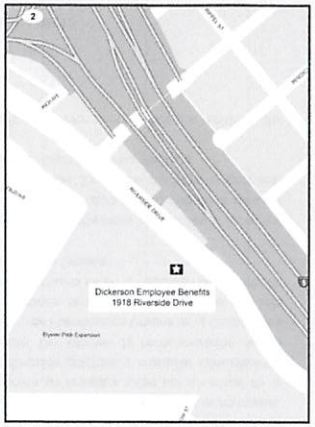
Please share this notice with your neighbors and friends in the community.

Date: Tuesday, June 9, 2015

Location: **Dickerson Employee Benefits**
1918 Riverside Drive
Los Angeles, CA 90039

Time: Open House:
5:00 PM - 6:00 PM

Public Hearing:
6:00 PM



para el

Communidad de Elysian Valley

Por favor comparta este aviso con sus vecinos y amigos en la comunidad.

Fecha: Martes, 9 de Junio, 2015

Lugar: **Dickerson Employee Benefits**
1918 Riverside Drive
Los Angeles, CA 90039

Tiempo: Sesión Abierta:
5:00 PM - 6:00 PM

Audiencia Pública:
6:00 PM

PRESORTED
FIRST CLASS MAIL
US POSTAGE
PAID
LOS ANGELES, CA
PERMIT 12932

Los Angeles Department of City Planning
200 North Spring Street
Room 667
Los Angeles, CA 90012

City of Los Angeles - Department of City Planning

Notice of Public Hearing

City Planning Case: CPC-2015-1295-HD-ZC
Environmental Case: ENV-2015-1296-ND

Council District 13

DRAFT ELYSIAN VALLEY Q CONDITIONS UPDATE

Pursuant to Los Angeles Municipal Code Sections (LAMC) 12.32, a city initiated ordinance to revise existing Q conditions in the Elysian Valley area, commonly known as "Frogtown" for parcels between Blake Avenue and the Los Angeles River (please see attached map for parcels that are a part of this revision). Per LAMC 12.32, update the zoning to CM for one parcel that is currently zoned M2 but is designated by our General Plan for Commercial Manufacturing uses. The proposed update includes revisions to existing Q conditions that provide additional standards and restrictions to permitted uses, development standards, including industrial buffers, noise, and aesthetics, including lighting and signs, all of which are compatible with or stricter than the regulations found in the River Implementation Overlay Ordinance and the LAMC. In addition, per LAMC 12.32, a decrease of the height district from 1VL (45 feet) to 1XL (30 feet). The River Implementation Overlay (RIO) zoning remains as is.

The format of the session will be an Open House followed by a Public Hearing. At the Open House, from 5:00 – 6:00pm, Department of City Planning staff will present proposed changes and will answer related questions. Beginning at 6:00pm, a Public Hearing will be conducted by a Hearing Officer, who will consider all public testimony and any written communication received prior to, or at the hearing. A written recommendation report will subsequently be prepared by the Department of City Planning for consideration by the City Planning Commission. No decision on the project will be taken at this meeting; however, your comments will be taken into consideration in the final recommendation to the City Planning Commission.

The City sends notice of proposed land use matters to all property owners and occupants within the project area and within a 500-foot radius of the project area and other interested parties who have requested notification. You may have received this notice even though you do not live or own property within the affected area.

For more information or to send your comments, please contact Haydee Urita-Lopez at (213) 978-1162.

Department of City Planning
ATTENTION: HAYDEE URITA-LOPEZ
200 N. Spring Street, Room 667, Los Angeles, CA 90012
Haydee.Urita-lopez@lacity.org

Per the California Environmental Quality Act (CEQA) and pursuant to section 21082.1(c)(3) of the California Public Resource Code, the Department of City Planning prepared a Negative Declaration (ENV-2015-1296-ND) as the environmental clearance. You may contact project staff to view case files and ask questions at (213) 978-1162.

PUBLIC HEARING

Date: Tuesday, June 9, 2015

Location: **Dickerson Employee Benefits**
1918 Riverside Drive
Los Angeles, CA 90039

Time: Open House:
5:00 PM - 6:00 PM

Public Hearing:
6:00 PM

The Department of City Planning invites your testimony or written comments. Written comments should be received in the Department as soon as possible. In order that all viewpoints may be presented, speakers at the hearing may be limited in the length of their presentations. Because of time constraints and to minimize repetition, the Department encourages presentations by representatives of organized groups, in-lieu of many individual speakers.

Exhaustion of Administrative Remedies - If you challenge this matter in court, you may be limited to only those issues you or someone else raises at the public hearing described in this notice, or in written correspondence on the matter delivered to this agency at, or prior to the public hearing. Any written correspondence delivered to the Department before the Planning Commission's action on the matter will become a part of the administrative record. Please note that this may not be the last hearing on this matter.

As a covered entity under Title II of the Americans with Disabilities Act, the City of Los Angeles does not discriminate. The meeting facility and its parking are wheelchair accessible. Sign language interpreters, assistive listening devices, or other auxiliary aids and/or services may be provided upon request. ***To ensure availability of services, please make your request no later than three working days (72 hours) prior to the meeting by calling Cherry Yap at (213) 978-1477.***

City of Los Angeles - Department of City Planning

Aviso de Audiencia Pública

City Planning Case: CPC-2015-1295-HD-ZC
Environmental Case: ENV-2015-1296-ND

Distrito Consejo 13

BORRADOR DE ACTUALIZACIONES A LA RESTRICIONES "CONDICIONES Q" A LA AREA DE ELYSIAN VALLEY

El Departamento de Planificación Urbana de la Ciudad de Los Ángeles organizara una junta abierta y audiencia pública con respecto a las restricciones o "condiciones Q" a la área de Elysian Valley. De acuerdo con el código municipal de la ciudad de Los Ángeles ("LAMC") sección 12.32, se inician una ordenanza para proponer revisiones a las restricciones o "condiciones Q" en el área de Elysian Valley, comúnmente conocido como "Frogtown", las parcelas afectadas se encuentran entre la "Blake Avenue" y el Río de Los Ángeles (favor de ver el mapa adjunto de parcelas que forman parte de esta revisión). Por medio de la sección LAMC 12.32, actualizar la zonificación a CM para una parcela que se encuentra actualmente zonificada M2 pero está señalada por nuestro General Plan para los usos y aplicaciones de fabricación comercial. La propuesta es una actualización que incluye revisiones a las restricciones o condiciones existentes Q que proporcionan estándares y restricciones adicionales a los usos permitidos, incluyendo estándares de desarrollo, las áreas de transición industriales, ruido y estética, incluyendo iluminación y signos. Las revisiones son más estrictas o compatibles con las normas de la ordenanza "RIO" (Ordenanza de Implementación del Rio de Los Ángeles) y también son más estrictas o compatibles que las normas que se encuentran en nuestro código municipal "LAMC". Mas aparte, por medio de la sección LAMC 12.32, también se propone una disminución de altura permitida de 45 pies a 30 pies. En el código municipal esta disminución se refiere técnicamente así: de 1VL (45 pies) altura a 1XL (30 pies). La ordenanza de implementación del Rio de Los Ángeles ("RIO") permanecerá igual.

El formato de la sesión será una sesión abierta donde el público puede hacer preguntas y conocer aún más sobre el cambio de la altura propuesta; después de la sesión abierta habrá una audiencia pública. La sesión abierta es de 5:00 a 6:00, y el personal del Departamento de Planificación Urbana presentará cambios propuestos y responderá a preguntas relacionadas. Comenzando a las 6:00 pm, una audiencia pública se llevará a cabo por un oficial de la audiencia, que tendrá en cuenta todos los testimonios públicos y cualquier comunicación escrita presentada antes o durante la audiencia. Un informe de recomendación escrita posteriormente será preparado por el Departamento de Planificación Urbana de la Ciudad para la consideración de la Comisión de Planificación Urbana. Ninguna decisión sobre el proyecto será tomada en esta reunión, sin embargo, sus comentarios serán tomados en consideración en la recomendación final a la Comisión de Planificación Urbana.

La ciudad envía la notificación de los asuntos de usos terrenales propuestos a todos los propietarios y ocupantes dentro del área del y dentro de un radio de 500 pies de la zona del proyecto y otros interesados que han solicitado notificación. Es posible que haya recibido esta notificación a pesar de que usted no vive o propiedad dentro del área afectada:

Para más información ó para enviar sus comentarios, por favor comuníquese con Haydee Urita-Lopez a (213) 978-1162.

Department of City Planning
ATENCIÓN: HAYDEE URITA-LOPEZ
200 N. Spring Street, Room 667, Los Angeles, CA 90012
Haydee.Urita-lopez@lacity.org

Por la Ley de Calidad Ambiental de California [CEQA], una excepción por categorías ha sido emitido por la clase 5, Categoría 38 de las reglas de CEQA de la ciudad, porque el cambio de altura propuesta reduce la intensidad del desarrollo de usos terrenales. Usted puede comunicarse con el personal del proyecto para ver los expedientes y hacer preguntas al (213) 978-1162.

AUDIENCIA PÚBLICA

Fecha: Martes, 9 de Junio, 2015

Lugar: **Dickerson Employee Benefits**
1918 Riverside Drive
Los Angeles, CA 90039

Tiempo: Sesión Abierta:
5:00 PM - 6:00 PM

Audiencia Pública:
6:00 PM

El Departamento de Planificación Urbana de la Ciudad invita a su testimonio o comentarios por escrito. Los comentarios por escrito deben ser recibidos en el Departamento tan pronto como sea posible. Con el fin de que todos los puntos de vista pueden ser presentados, los oradores en la audiencia pueden estar limitadas en la longitud de sus presentaciones. Debido a limitaciones de tiempo y reducir al mínimo la repetición, el Departamento promueve presentaciones de representantes de grupos organizados, en lugar de muchos oradores individuales.

Agotamiento de los Recursos Administrativos - Si usted desafía este asunto en la corte, usted puede estar limitado únicamente a aquellos asuntos que usted u otra persona plantea en la audiencia pública descrita en este aviso o en la correspondencia escrita sobre el asunto entregado a esta agencia en o antes a la audiencia pública. Cualquier correspondencia escrita entregada al Departamento antes de la actuación de la Comisión de Planificación sobre el asunto pasará a formar parte del expediente administrativo. Tenga en cuenta que esto puede no ser la última audiencia sobre este asunto.

Como entidad cubierta bajo el Título II de la Ley de Americanos con Incapacidades, la Ciudad de Los Angeles no discrimina. La sala de reuniones y su aparcamiento para minusválidos. Intérpretes de lenguaje de señas, dispositivos de ayuda auditiva, u otras ayudas auxiliares y / o servicios de traducción pueden ser disponibles bajo petición. ***Para asegurar la disponibilidad de los servicios, por favor haga su solicitud a más tardar tres días (72 horas) antes de la reunión llamando a Cherry Yap at (213) 978-1477.***