White Paper

Economic Effects of Regional Habitat Conservation Plans

The Economics of Land Use

Prepared for:

California Habitat Conservation Planning Coalition

Prepared by:

Economic & Planning Systems, Inc.

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Economic & Planning Systems, Inc.
One Kaiser Plaza, Suite 1410
Oakland, CA 94612-3604
510.841.9190 tel
510.740.2080 fax

Oakland
Sacramento
Denver
Los Angeles

www.epsys.com

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EXECUTIVE SUMMARY

This White Paper evaluates the hypothesis that regional Habitat Conservation Plans confer substantial economic benefits to the private and public sectors. The study draws conclusions on the economic effects of regional Habitat Conservation Plans through the lens of four different case studies in California, as well as the body of professional reports and academic papers that have examined similar questions. The case studies are in San Diego, Riverside, San Joaquin and Contra Costa Counties. Quantification of economic effects is provided for each case study, where possible, with case study results aggregated to provide illustrative estimates of the potential California-wide effects.[1]

Background

In 1982, the federal Endangered Species Act (ESA)—which was adopted by Congress in 1973—was amended to provide a new tool intended to increase the efficiency of the Act. This tool, the Habitat Conservation Plan (HCP), grew out of conflict between economic development, private property rights, and endangered species habitat. The HCP program allowed for the "incidental take" of listed species, through the issuance of an Incidental Take Permit (ITP), in exchange for conserving the habitat of the affected species.

Initially a single-species program, HCPs in many regions of the United States have evolved to become "regional HCPs" that cover multiple species and habitats, often engaging numerous jurisdictions, landowners, and stakeholders. In 1991, the State of California adopted the Natural Communities Conservation Planning (NCCP) Act, which provided for the preparation of voluntary landscape-scale conservation plans. These comprehensive regional programs can replace project-by-project permitting.

Today, regional HCPs have been adopted or are being prepared in 22 counties across California, providing current

[1] While the four case studies represent a limited sample size, they provide important insights into the economic effects of regional HCPs. The aggregation and application of case study results to statewide approved/in-progress regional HCPs also provide illustrative estimates of overall economic effects.

and future endangered species incidental take permitting for over 1.6 million acres within a planning area of about 11.7 million acres.[2] Most of these regional HCPs are combined HCP/NCCPs, while some are simply HCPs.[3]

Benefits to the Business Community

Finding #1: Regional HCPs provide substantial benefits to the business community, providing millions of dollars in savings through reduced uncertainty, time delay, and compliance costs.

New development projects commonly confront substantial barriers when listed endangered or threatened species and their habitats are affected. Regional incidental take permits replace a project-by-project process fraught with uncertainties associated with timing, costs, and sometimes lawsuits. This provides substantial real economic benefit to landowners, developers, and other businesses.

Finding #2: The increased certainty provided by regional HCPs and HCP/NCCPs relative to the alternative case-by-case permitting process is arguably the most significant benefit to the business community.

Regional HCPs remove uncertainty associated with the presence of listed animal species, a major concern and barrier to investment in land development. Under a project-by-project process, in the absence of regional HCPs, substantial uncertainty is associated with the timeframe for receiving permits as well as species impact mitigation requirements and associated costs. Regional HCPs also insulate landowners from project-focused litigation.[4] In addition, under regional HCPs, regulatory agencies provide valuable assurances to HCP-implementing entities regarding unforeseen circumstances and the treatment of covered species that are unlisted but become listed in the future.

Developers interviewed for the case studies noted that species-related uncertainty and the associated financial risk can be the difference between pursuing a project or instead making a "no go" decision. While economists have struggled to identify an appropriate method for quantifying the economic impact of uncertainty, there is little doubt among academic and professional economists as to its significance.

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[2] From the publication "Accomplishments of Regional Habitat Conservation Plans and Natural Communities Conservation Plans", October 2013, prepared by the California Habitat Conservation Planning Coalition. Original source of information: Dr. Brenda Johnson, California Department of Fish & Wildlife.

[3] Under Regional HCPs that are not HCP/NCCPs, developments address impacts on State listed species through the California Department of Fish & Wildlife Section 2081 permitting process.

[4] The Biological Opinion issued for each regional HCP provides the legal rationale and defense for development projects consistent with the HCP permit standards.

Finding #3: Time reductions associated with HCP permit processing for land development, typically between three months and three years, result in annual savings to California developers of about $70 million.[5]

Regional HCPs provide a streamlined permitting process for endangered species impacts. Once adopted by local government, projects consistent with regional HCP standards are permitted under reduced timelines, providing a direct economic benefit to developers. The case studies in this report and prior economic evaluations show that reduced permitting delays are a key contribution of regional HCPs to the business community. Incidental take permitting under regional HCPs provides significant time savings, typically between three months and three years depending on project type and complexity.

The effect of a one-year reduction in permitting delay will reduce opportunity costs to developers by $500,000 for an average 20-acre residential development project in California ($15,000 per acre). In aggregate, a year of potential permitting under California Regional HCPs generates a private sector time value benefit of nearly $70 million.

The opportunity costs of capital investment in land (the lost returns on not making alternative investments), and associated interest payments, taxes, and maintenance, can represent substantial sums of money for a proponent whose project is delayed. These losses/costs are avoided when species-related regulatory delays are eliminated by regional HCPs.

Finding #4: Reductions in direct regulatory compliance costs for private and public development projects are often achieved under regional HCPs, sometimes resulting in savings of over $1 million for larger development projects.

Regional HCPs often reduce direct regulatory compliance costs relative to project-by-project permitting. Developer savings accrue in part from mitigation standards established with regional HCP adoption. These cost-savings benefits take the form of:

(1) less on-site land dedication, which typically is more expensive than off-site habitat mitigation;

(2) efficient, regional scale monitoring; and,

(3) alternatives for endowing preserve management.

[5] It is important to note that there is debate concerning the ability of developers to integrate the delays in incidental take permitting into the numerous other potential regulatory and market timing delays that any development project can face. As illustrated in the case studies, the effects of delay will vary based on the point in the real estate cycle; in addition, more experienced developers will be better able to reduce the delay effects of take permitting without regional HCPs. This estimate assumes that delay matters in 50 percent of cases. See **Appendix A** for detailed calculations.

Project compliance cost savings (including mitigation cost savings) vary considerably across plans and projects. The case studies in this White Paper and the prior studies reviewed indicate a saving of between $10,000 and $40,000 per acre for medium and large private development projects in California.

In one case study example, the Aviano project in East Contra Costa County, individual compliance/mitigation costs are expected to be about $6.9 million. If the project had been within the regional HCP/NCCP boundary, its cost would have been reduced to an estimated $3.7 million.

Facilitation of Regional Infrastructure

Finding #5: Regional HCPs facilitate the development of regional infrastructure, accelerating the benefits of their completion and operation and reducing costs.

Infrastructure projects such as roads and water facilities support new growth and development and are often the driving force for the development of regional HCPs. They are often region-serving and require inter-jurisdictional efforts. HCPs in East Contra Costa County, Solano County, Santa Clara County, and Riverside County were all motivated in part by the need to obtain ESA Incidental Take Permits for major infrastructure projects, which became "covered activities" under the plans.

One measure of the economic cost from delayed regional infrastructure projects is the lost social benefit associated with project timing. Social discount rates reflect society's time preference for project development sooner rather than later. Applying a well-accepted range of social discount rates (3% to 7%) to 25 major Western Riverside County regional transportation infrastructure projects, that would have been delayed "but for" the regional HCP, reveals an avoided delay benefit of between $126 million and $278 million associated with the adoption of the regional HCP.

Public Sector Efficiency Improvements

Finding #6: Regional HCPs significantly reduce the amount of time required for state and federal regulatory agency staff to review and negotiate individual take permits and outcomes.

Interviews with current and former state and federal agency staff managers indicate that an adopted regional HCP substantially reduces the amount of time required for project permitting, by staff at both the U.S. Fish & Wildlife Service (USFWS) and the California Department of Fish & Wildlife (CDFW).[6] Some of the reduced demands on regulatory staff time will be shifted toward developing and implementing regional HCPs, though interviewees indicated that there is an overall reduction in ESA-related work attributable to plan adoption. General estimates of reduced demands on regulatory staff time associated with individual permitting of projects total nearly $2 million statewide for both USFWS and CDFW.[7]

Regulators indicate that roughly 360 to 480 hours of staff time is required to provide an ESA permit for a project of moderate complexity. Aggregated across an estimate of annual development within the approved and in-process regional HCPs in California, the reduction in regulatory staff time required for permitting (if individual permitting kept up with demand for development) is estimated at between 14 to 19 full-time-equivalent jobs (for both USFWS as well as CFDW). This equates to a cost savings of about $1.4 to $1.9 million for USFWS (and likely a similar saving for CDFW).

Finding #7: Local jurisdictions as well as public agencies (e.g., water districts) benefit from adopted regional HCPs through a number of efficiencies and cost savings.

Similar to the benefits to the business community and to the facilitation of infrastructure described above, local jurisdictions (cities, counties, and special districts) benefit from the streamlined, well-defined permitting offered by regional HCPs. For example, libraries, municipal offices, emergency services facilities, and recreation spaces benefit from increased certainty and reduced delay. Participating Special Entities (e.g., public agencies like water districts as well as private entities like Southern California Edison and PG&E) reap similar benefits.

[6] Interviewees included Cay Goode and Eric Tattersall, USFWS Sacramento Field Office, Karen Goebel, USFWS Carlsbad Field Office and Ron Rempel, formerly of California Department of Fish & Wildlife.

[7] Ron Rempel, former Deputy Director of California Department of Fish & Wildlife, provided estimates of typical demands on staff time for State personnel; subsequent interview with USFWS staff indicated that these also represented reasonable estimates for the USFWS staff time.

In addition, the adoption of regional HCPs allows for improved planning for population growth, development, and regional transportation at the city and county level. General Plans and Regional Transportation Plans, for example, can expeditiously address species and habitat considerations once the implications of endangered species have been determined and clarified by a regional HCP. For example, Riverside County's General Plan Update (and Community and Environmental Transportation Acceptability Process) benefitted from the clarity about future growth and development that is provided by the Western Riverside County HCP. And finally, the local control over permitting provided by adopted regional HCPs is seen by local officials and the development community as a benefit to the regulated community, since oversight by federal and state regulatory staff is no longer required on a project-by-project basis.

"The City of Desert Hot Springs needs new development, new investment in our community. With the Coachella Valley Multiple Species HCP, our city will know where development is approvable and where it is not. That will help us bring jobs to our community - pure and simple."

- Rick Daniels, City Manager, City of Desert Hot Springs

Opportunities for Improvement

Finding #8: The economic benefits from regional HCPs could be further enhanced by additional integration with other environmental and regulatory permitting processes.

Regional HCPs, as noted above, provide regulatory streamlining benefits with a combination of reduced uncertainty, permitting time, permitting costs. Regional HCPs also streamline the significant portion of the California's environmental review (CEQA) process that addresses biological impacts. Both the development community and local jurisdictions have pointed to the potential for enhanced benefits by moving further towards "one stop shopping" for other natural resource permits.[8]

In particular, for any area with significant wetlands, the business community and public agencies would benefit from the integration of Clean Water Act Section 404 permitting within regional HCPs. This integration has been achieved with the East Contra Costa County HCP/NCCP, a first-in-the-nation Section 404 Regional General Permit that is linked to an HCP. Integration of a larger number of regional HCPs with not only Section 404 but also state-level requirements for aquatic and wetland resources would shift permitting closer to "one stop shopping" and enhance the economic benefits of the plans.

[8] For example, personal communication with Paul Campos, Senior Vice President and General Counsel, Building Industry Association Bay Area (February 2014).

1. INTRODUCTION AND DETAILED FINDINGS

Nine years into its existence, in 1982, the Endangered Species Act (ESA) was amended to add Section 10(a) that provided a new tool, the Habitat Conservation Plan (HCP), to allow private and public non-federal development projects to proceed on lands that are habitat for animal species listed under the ESA. Under this new tool, the US Fish and Wildlife Service (USFWS) approves an HCP and issues an Incidental Take Permit which allows development to impact species and habitat according to the provisions in the HCP. The Plan also spells out measures to minimize and mitigate the impact.

In the eyes of many, HCPs have gone on to become one of the most important tools in resolving conflicts between development and listed species. They are viewed as streamlining environmental regulation and supporting the expedient economic development of millions of acres of land in a manner that is consistent with State and federal laws. In addition, they are viewed as providing local stakeholders and policymakers with a stronger voice in directing future growth and development in areas with listed species and as moderating the number of lawsuits associated with land use projects.

Purpose and Organization of White Paper

This White Paper evaluates the hypothesis that regional HCPs confer economic benefits (typically avoided costs) to the private and public sectors. More specifically, this White Paper considers the economic effects attributable to regional HCPs through the lens of four different case studies in California. Each case study is drawn from a different regional HCPs in California. By considering the experiences of land use projects with and without a regional HCP, this White Paper draws insights and conclusions on the economic benefits of such plans. Due to the limited sample size, the quantitative California-wide aggregations should be seen as illustrative. Furthermore, it is important to recognize that every development project is different, each regional HCP is different, and each metropolitan region is different. Nevertheless, it is perhaps through these real life case studies that the idea of the HCP as a tool conferring regulatory streamlining and economic development benefits can be best evaluated.

Importantly, this White Paper evaluates these hypothesized benefits in the context of existing State and federal law. Major changes in these laws could change the role and importance of the Habitat Conservation Planning tool, though, if the history of the last thirty years is a guide, no such changes should be foreseen.

Economic & Planning Systems, Inc. (EPS) prepared this White Paper for the California Habitat Conservation Planning Coalition with grant funding from the Resources Legacy Fund. The White Paper relies heavily on interviews with private and public sector representatives, as well as prior studies and various planning/permitting documents. The **Executive Summary** provides an overview of the findings of this study. **Chapter 1**, this chapter, provides a more detailed description of the findings (with some overlap with the Executive Summary). **Chapters 2** through **5** describe each of the four case studies, while **Appendix A** provides supporting quantitative analysis and **Appendix B** provides acknowledgements and sources.

Historical Evolution and Benefits

- ***The addition of Section 10(a) and the Habitat Conservation Plan tool to the Endangered Species Act in 1982 provided immediate economic development benefits by relieving absolute constraints on land use and economic development.***

  Section 10(a) of the Endangered Species Act provides for HCPs, a critical tool for breaking deadlocks between development and natural land in urbanizing areas. Section 9 of the ESA is an absolute prohibition on species take (which means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct) where harm includes destruction of habitat.[9] Section 10 gives project proponents now had an avenue through which to work with the regulatory agencies (the USFWS) to develop a plan for development (and associated incidental take) and conservation.

- ***Over time, regional Habitat Conservation Plans and State of California Natural Communities Conservation Plans were developed as the next step in streamlining the process, improving on the outcomes of the project-by-project approach and addressing the broader development implications of major new infrastructure projects.***

  While the introduction of Section 10(a) relieved an immediate roadblock to economic development in the early 1980s, by the late 1980s it was becoming apparent that the need for individual projects to go through a project-specific HCP processes with the relevant regulatory agencies was time-consuming, cumbersome, expensive, and required variable and uncertain compliance measures. In areas such as Travis County, Texas, and San Diego County, California, new land use conflicts caused by growth, development, and dwindling species and habitat were emerging. ESA permitting bottlenecks threatened to severely restrict new development in these areas. In response, local jurisdictions envisioned accommodating the next waves of development for new businesses, workers, and residents through regional planning.[10] It was in this context that the first regional HCPs and State of California Natural Communities Conservation Plans (NCCP) were conceived. NCCPs grew directly out of land use conflicts in Southern California with the 1991 NCCP Act 2172 allowing for preparation of voluntary, landscape scale conservation plans in several southern California counties.[11] The subsequent 2002 NCCP Act (SB 107) expanded the program to the entire State and added specific requirements, allowing for the preparation of regional HCP/NCCPs throughout the State.

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[9] Supreme Court ruling – Sweet Home v Babbitt 11 S. Ct. 714 (1995).

[10] Timothy Beatley, "Habitat Conservation Planning: Endangered Species and Urban Growth" University of Texas Press (1994).

[11] Daniel Pollak "Natural Community Conservation Planning" Part I "The Origins of an Ambitious Experiment to Protect Ecosystems" and Part II "The NCCP Experience in Southern California" California Research Bureau, California State Library (2001).

- ***Broad arrays of partners in a diverse range of regions and geographies have worked together to develop Regional HCPs in 22 counties in the State of California alone covering development of up to 1.6 million acres within plan areas of over 11 million acres.***

  Regional HCPs promise more expedient and certain ESA permitting for "incidental take" of threatened and endangered species, growth and development, more coherent preservation of natural lands, and reductions in the time and involvement of regulatory staff in the project approval process. As such, regional HCPs were envisioned as offering mutual benefits to a broad range of interests. For economic development and growth—both private and public—they offered a more streamlined and certain process. For environmental advocates and scientists, they offered a more rational set of conservation outcomes. For local jurisdictions, they offered increased local control and clear integration of growth plans with State and federal environmental regulations. And, for the regulatory agencies, they offered a more efficient process for regulating and reduced time involved in negotiating with individual project proponents.

Benefits of Regional HCPs in Practice

This White Paper, as noted above, evaluates the extent to which the envisioned economic development benefits and regulatory efficiencies have been realized, through a detailed look at four California case studies, prior studies of the economic effects of regional HCPs, interviews with current and former regulatory agency staff, and other literature on HCPs and the economic effects of land use regulation. The White Paper does not address other potential benefits, such as the benefit to endangered species from improved habitat conservation outcomes.

Direct Impacts on the Business Community

- ***Regional HCPs remove uncertainty associated with incidental take permitting, a major concern and barrier to investment in new economic development.***

  Most regional HCPs provide clarity, if not certainty, regarding the effort and costs of complying with the federal and State endangered species acts. This clarity likely also reduces legal challenges and associated costs. Stakeholders interviewed regarding the White Paper regional HCP case studies (Western Riverside, East Contra Costa, San Joaquin, and San Diego MSCP/City of San Diego Subarea Plan) indicated a significantly higher degree of certainty concerning mitigation requirements with the plans in place. In three of the four cases, a mitigation fee schedule is available that enables public and private developers to determine the mitigation payment required. In some cases, such as Western Riverside, there are additional steps required when on-site land set-asides may be necessary.

Both the federal HCP and the state NCCP provide various assurances that are critically important to local jurisdictions and the development community.[12] Federal "No Surprises" regulations and the state NCCP Act exempt plans from having to address unforeseen circumstances that occur after approval of an HCP and/or NCCP and which have a substantial adverse impact on a covered species.[13] In addition, while HCPs provide a federal incidental take permit only for listed species, the USFWS requires all of a plan's covered species to be treated as if they were listed. If a non-listed covered species becomes listed in the future, then the USFWS will extend the incidental take permit to that species without requiring additional mitigation measures. At the state level, a NCCP incidental take permit encompasses all of a plan's covered species, including those that are initially state-unlisted.

In addition to the ways in which uncertainty makes the take permitting delays more challenging to manage and, in effect, more costly, uncertainty in and of itself is typically viewed as adding an additional cost, effectively a risk premium. Most project proponents are risk-averse and as a result see uncertainty over costs (or other outcomes) as a negative even if, on average, there is no difference between the uncertain cost outcome and a certain outcome. Risk premiums can be observed in financial markets—where returns on minimal risk and higher risk investments—can be compared. For development projects, the risk premiums associated with different types of regulations are harder to specify, though generally increase the hurdle rate of return/discount rate applied to investment decisions, effectively reducing the financial appeal of such projects.[14] Developers interviewed as part of this research indicated that species-related regulatory uncertainty could make the difference between pursuing versus not pursuing development of a project, particularly because project investors were unwilling to bear the increased financial risk.

- ***Streamlining the regulatory permitting process and reducing permitting delays are a common and valuable benefit to the business community of regional HCPs.***

  The case studies in this White Paper, consistent with prior economic evaluations of HCPs and broader assessments of the effect of land use regulation, indicate that reduced permitting delays are a key contribution of regional HCPs to the business community. Whether they save three years or three months (the typical take permitting time saving range depending on project type and complexity), time savings can generate a

[12] For changed circumstances, see 63 Federal Register 35 (1998) - amendments to 50CFR17.22(b)(5) and 222.307(g) and California Fish and Game Code section 2805(c). For unforeseen circumstances, see 50CFR Section 17.3 and California Fish and Game Code Section 2805(j).

[13] The California Department of Fish and Wildlife assurances are for NCCPs only. A HCP coupled with a state 2081 incidental take permit does not receive these assurances from the state.

[14] Art Fraas and Randall Lutter, "The Challenges of Improving Economic Analysis of Pending Regulations: The Experience of OMB Circular A-4", December 2010, Resources for the Future Discussion Paper.

direct financial benefit to project developers. Avoided opportunity costs of capital investment in land and carrying costs including taxes and maintenance can represents substantial sums of money for a delayed project proponent.

The opportunity cost savings that might accrue to private sector developers from elimination of species-related regulatory delay reflects the rate of return that developers would be able to achieve investing in other projects. For example, the developer of a 100 unit, 20-acre single-family residential project in San Diego might suffer an opportunity cost of $500,000 if delayed for a year, assuming that developer could be earning a 12 percent return on a different investment. More broadly, if in a given year 8,000 acres of new residential projects are approved through California's current and soon-to-be approved regional HCPs, the avoided permitting delays could represent a $66 million opportunity cost saving to the developers of real estate projects in these areas. **Appendix A** details these illustrative calculations.

It is important to note that there is substantial debate concerning the ability of developers to integrate the delays in take permitting into the numerous other potential regulatory and market timing delays that any development project can face. The case studies presented in the White Paper illustrate that the effects of delay are likely to vary based on the point in the real estate cycle. As noted by developers interviewed, delays during major recessions (like the most recent one) are much less costly than delays that result in missing the upcycle in the real estate market. Developers and regulatory staff have indicated that more experienced developers accustomed to managing take permitting issues can reduce the effects of delays, though, when the uncertainty of the delay for any given project is considered, even the most sophisticated developers cannot avoid incurring costs. The illustrative estimate of the impact of delay (above) considers the probability that some project delays associated with the ESA will not create a unique opportunity cost for the developer.

- ***Reductions in direct regulatory compliance costs, for private and public development projects, are often reduced under regional HCPs.***

  In addition to providing increased certainty and reduced project delay, regional HCPs often provide cost savings from (1) the reduction in the amount of on-site set-asides (typically more expensive); (2) economies of scale in the preservation efforts as well as through management and monitoring under a single entity; and (3) more flexibility in the development of the endowment for habitat preserve management. While mitigation cost savings vary depending on the specifics of the geography and plan, under almost all regional HCPs, project proponents can expect a reduction in the often-substantial consulting and legal costs associated with take permitting efforts without a regional HCP in place.

  An example of cost savings is observed in the East Contra Costa HCP/NCCP case study. There, the developer of the Aviano Project, a project that lies outside of the plan area, has estimated an overall compliance/mitigation cost of $6.9 million, about $40,000 per acre. In contrast, the estimated compliance/mitigation cost if the project were inside the plan area is estimated at $22,000 per acre or a total of $3.7 million. As an illustration, if this differential is generalized to the whole Plan and, assuming an average development of 200 residential

acres per year under the Plan, the annual cost savings to developers in direct compliance/mitigation costs from the regional HCP would be nearly $3.6 million (in 2013 dollars). Similar to earlier studies of the Balcones Canyon Plan[15], a recent study of the San Joaquin County Plan found even greater differences in expected mitigation costs between the regional Plan and a go-it-alone approach.[16] Under the San Joaquin County MSCP, a 12-acre prototype industrial development project on natural lands was estimated to incur $750,000 or more (about $62,500 per acre or more) through individual permitting versus about $173,000 ($14,400 per acre) under the MSCP. Other plan operators have indicated that they are uncertain whether there is a net mitigation cost saving, so the magnitude of saving is expected to vary considerably across plans.

It should be noted that some evaluations during the course of regional HCP development have indicated that compliance costs will not be reduced for all new types of development projects under Regional HCPs. For example, the Santa Clara County Auditor evaluated a draft of the Santa Clara Valley HCP and determined that some types of development projects would face increased mitigation costs. [17] In that case, the regional HCP was refined to reduce the number of projects of this type, though such examples may be present in some Regional HCPs. As a result, reduced compliance costs should not be assumed for all projects under regional HCPs.

Broader Economic Effects

- ***Regional HCPs facilitate the development of major infrastructure projects in addition to the substantial private development that is dependent on this infrastructure.***

  New road widening projects, freeway interchanges, transit systems, water and wastewater facilities, utility transmission infrastructure, and other public infrastructure projects support continued growth and economic development in California. These projects often represent major public, private, and public-private partnership investments and can take years, and on occasion, decades to entitle. The fundamental role of many of these projects in supporting new growth and development has often been the driving force for the development of regional HCPs. The East Contra Costa, Solano County, and Santa Clara County HCPs, and the two Riverside County regional HCPs (Western Riverside County and Coachella Valley), among others, were all motivated, at least in part, by the need to obtain an ESA Incidental

[15] George W. Gau and James Jarrett, "Economic Impact of Balcones Canyonlands Conservation Plan", Bureau of Business Research University of Texas at Austin (1992).

[16] Pennino & Associates. "The San Joaquin County Habitat & Open Space Plan: An Economic Stimulus Tool for Job Creation." Lodi, CA, 2012.

[17] Santa Clara County Auditor, "Special Study: Implementation of the Santa Clara Valley Habitat Plan", September 8, 2011.

Take Permit for major infrastructure projects. Local government staff indicated that backbone infrastructure projects, including new roads and sewer lines, can be delayed by three to five years without a regional HCP and, in some cases, more. [18]

Western Riverside County alone, as documented in the case study, has permitted over 25 major transportation infrastructure projects with a construction cost of over $2.2 billion under its HCP. The expenditures on construction of these projects is estimated to generate over 32,000 jobs directly (this does not include the associated indirect and induced economic outputs and jobs).[19] Without this HCP, the delay in infrastructure projects, estimated to average two years for each project, would have resulted in a social loss of between $126 million and $278 million based on the well-accepted range of social discount rates.[20]

- ***By reducing regulatory uncertainty, delays, and costs, Regional HCPs can limit delays in regional economic development and the negative impacts of such delays.***

  Without regional HCPs in species intensive areas, the slower pace of development that might result could have broader economic impacts for California regions than those described above. If the lack of a regional HCP results in an overall reduction in regional growth and development, there will be broader effects on regional jobs, compensation, and output as well as on housing production and housing prices. To some economists, it is these economic effects that are the most problematic impact of complex regulatory environments, in particular the consumer welfare losses associated increases in average housing prices. There is, however, debate as to whether the individual permitting process would translate into an aggregate slow-down in regional production and result in these types of economic impacts. One issue is whether the increased costs and risks can be balanced through lower payments for land. Another key issue is whether or not developers can find alternative locations in the region—substitutes—for the lost or delayed economic development in the affected areas. The answers depend on the particular circumstances of each region, including the proportion of development opportunities affected by take permitting as well as the availability of viable alternative sites for development. For many California regions, paying less for a given site and/or shifting to alternative sites is not a given in the short term. As a result, regional HCPs in several California regions likely contribute to the avoidance of delays in economic development and the associated negative economic impacts.

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[18] Personal correspondence from Loren Clark, Assistant Director, Placer County Community Development Resources Agency (March 2014).

[19] Western Riverside County Regional Conservation Authority Journal (Winter 2013).

[20] Office of Management and Budget (OMB) Circular A-4. This Circular provides the Office of Management and Budget's (OMB's) guidance to Federal agencies on the development of regulatory analysis as required under Section 6(a)(3)(c) of Executive Order12866, "Regulatory Planning and Review," the Regulatory Right-to-Know Act, and a variety of related authorities. Circular A-4 states that "For regulatory analysis, you should provide estimates of net benefits using both 3 percent and 7 percent."

Public Sector Efficiencies

- ***Regional HCPs significantly reduce the amount of time required for State and federal regulatory agency staff to review and negotiate individual take permits and outcomes.***

  As also noted in the Executive Summary, interviews with current and former State and federal agency managers indicated that an adopted regional HCP will substantially reduce the amount of staff time required to be spent on individual project permitting by staff at both the U.S. Fish & Wildlife Service (USFWS) and the California Department of Fish & Wildlife (CDFW).[21] Some of the reduced demands for regulatory staff time will be shifted toward developing and implementing regional HCPs, though regulatory staff indicated that there will be a net overall reduction in demands on staff time with regional HCP adoption.

  Interviews conducted for the White paper reveal that USFWS and CDFW staff time savings have been realized through the creation of regional HCPs. While the range of projects and the associated regulatory process that would be required in the absence of regional HCPs varies a great deal, average-sized projects with moderate complexity take roughly 360 to 480 hours of staff time to complete for each involved agency (e.g., USFWS and CDFW). Major large-scale projects with significant complexity can require 1,000 hours or more staff time over several years. Assuming 80 average-sized projects with moderate species-related complexity come through the existing and soon-to-be approved regional HCPs in a typical year (i.e., 100-acre projects on average), these HCPs might reduce demand for the equivalent of 14 to 19 full-time-equivalent (FTE) staff positions required to process individual take permits in keeping with new Statewide development for each agency. With the cost of an agency biologist at about $100,000 per year (including benefits) in California, the time efficiency benefits of existing and soon-to-be-approved HCPs could be $1.4 million to $1.9 million per year (2013 dollars) for the USFWS and an equivalent (or similar) amount for the CDFW where the plans are HCP/NCCPs. [22]

- ***Local jurisdictions (cities and counties) - as well as other public agencies (e.g., water districts) able to benefit from adopted Regional HCPs – obtain a number of efficiency/cost saving benefits from the adoption of regional HCPs.***

  As also noted in the Executive Summary, local jurisdictions (cities, counties, and special districts) and other public agencies benefit from the streamlined, more certain permitting process. In addition, the Participating Special Entities—often public agencies like water districts as well as private entities like Southern California Edison and PG&E—are able to obtain similar benefits under regional HCPs. In addition, the adoption of regional HCPs allows

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[21] Interviewees included Cay Goode and Eric Tattersall, USFWS Sacramento Filed Office, Karen Goebel, USFWS Carlsbad Field Office and Ron Rempel, formerly of California Department of Fish & Wildlife.

[22] Ron Rempel, former Deputy Director of California Department of Fish & Wildlife, provided estimates of typical demands on staff time for State personnel; subsequent interview with USFWS staff indicated that these also represented reasonable estimates for the USFWS staff time.

for improved planning for growth, development, and regional transportation and other infrastructure projects at the city and County level. And finally, the increased local control over permitting under adopted regional HCPs is seen by local officials and the development community as enhancing responsiveness to the issues faced by the regulated community in part by avoiding the uncertainty over the availability of federal and State regulatory staff to review permits under short durations.

Opportunities for Improvement

- ***The economic benefits from Regional HCPs could be further enhanced by additional integration with other environmental and regulatory permitting processes.***

  Regional HCPs, as noted above, provide a number of regulatory streamlining benefits with a combination of reduced permitting uncertainty, reduced permitting time, and, sometimes, reduced permitting costs. Regional HCPs also streamline the portion of the CEQA process that addresses species and habitat issues. Both the development community and many local jurisdictions have pointed to the potential for enhanced benefits in moving further towards "one stop shopping" regarding endangered species and other natural resources permit requirements for projects covered by a regional HCP.[23]

  For any area with significant wetlands issues, the business community and many public agencies would benefit significantly from the integration of programmatic Clean Water Act Section 404 permitting with regional HCPs. This has been achieved with the East Contra Costa County HCP/NCCP that has a first-in-the-nation Section 494 Regional General Permit linked to this regional HCP.[24] Several other northern California regional HCPs that are under preparation are also working closely with the U.S. Army Corps of Engineers (USACE) and the Environmental Protection Agency to integrate the regional conservation plans with broader aquatic resources needs and Section 404 permitting. These plans are also pursuing extension of the one-stop shopping to state of California wetlands permitting through state administration of Section 401 of the federal Clean Water Act and enforcement of the state's Porter-Cologne Act. In addition, the State Water Resources Control Board is preparing new wetlands regulations; the most recent draft document provides much of what is needed to have a programmatic approach to state permitting for wetlands in coordination with a regional conservation plan.[25]

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[23] For example, Paul Campos, Senior Vice President and General Counsel, Building Industry Association Bay Area.

[24] See http://www.spk.usace.army.mil/Portals/12/documents/regulatory/gp/GP-01-w-encls.pdf

[25] See http://www.waterboards.ca.gov/water_issues/programs/cwa401/docs/wrapp/policy_draft.pdf

2. SAN DIEGO COUNTY

San Diego County is the third most populous County in the State of California and boasts a high quality of life, a strong and diversified economic base, and 18 cities that provide a diverse array of housing options for residents. In 2013, the County's population exceeded 3.1 million. San Diego County also contains more rare, threatened, and endangered species than any comparable land area in the continental United States.[26]

Land Use Conflicts

Since the late 1980s, there have been major species-related barriers to land development in San Diego County. At that time, federal and State wildlife agencies were considering listing the California gnatcatcher (whose coastal sage scrub habitat extends through western San Diego County) and other species on the endangered list. There were more candidates for endangered species listing in San Diego than in any other region of the United States.[27] Also at that time, a species-related lawsuit halted the expansion and upgrade to the City of San Diego's metropolitan sewer system.[28] With a clear need to resolve land use conflicts and to ensure future economic development in the region, the effort to develop a regional conservation plan began.

Plan Process and Details

A major effort was launched involving then Governor Pete Wilson's administration, the U.S. Department of the Interior, the State Resources Agency, County of San Diego, City of San Diego, and other jurisdictions, along with major landowners and stakeholders. This effort drove the passage in 1991 by the California Legislature of the Natural Communities Conservation Planning Act AB 2172 (somewhat similar to the federal HCP, the NCCP allowed for regional solutions for issues involving State-listed species and their habitat).

The San Diego NCCP evolved into multiple plans including the subregional Multiple Species Conservation Plan (MSCP). Together, San Diego County and other jurisdictions developed a MSCP that (in conjunction with the Section 4d rule) laid out a number of the key parameters regarding where development and conservation would occur over a fifty-year timeframe.[29] The San Diego County MSCP covers a 582,000-acre area and identifies the need to conserve 171,920

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[26] San Diego Audubon Society.

[27] Personal communication with Michael Beck, San Diego Director, Endangered Habitat League.

[28] City of San Diego "Multiple Species Conservation Program MSCP Plan" 2.1 – 2.2

[29] Section 4(d) of the ESA allows the USFWS to establish special regulations for threatened (not endangered) species, subspecies, and Distinct Population Segments. These "4(d) rules" take the place of the normal protections of the ESA and may either increase or decrease the ESA's normal protections. USFWS used section 4(d) to formally recognize NCCPs and to permit partners who agree to produce a NCCP that protects coastal sage scrub (CSS) to develop up to 5 percent of CSS habitat and receive authorization for "take" of the California Gnatcatcher.

acres of habitat, allowing federal and state permit coverage for 85 species. Significantly, incidental take permits are issued by the local government permit holders. The MSCP Implementing Agreement (the legal contract with the federal and State wildlife agencies) summarizes the MSCP as follows:

> *The MSCP is a product of lengthy study and negotiation by the Parties and other interested persons and entities, and represents coordination of private development and conservation interests with federal, state and local governments … Consistent with the NCCP Act, the MSCP is a broad-based planning effort intended to provide for effective protection and conservation of the region's wildlife and plant heritage while continuing to allow appropriate development and growth*.[30]

The City of San Diego adopted its MSCP Subarea Plan in March 1997. This "hardline" plan identified specific areas for development and conservation. Other subarea plans followed, including the South County Subarea Plan in October 1997, the City of Poway HCP/NCCP, and the City of Chula Vista Subarea Plan. Cities in the northwestern portion of San Diego County also worked toward developing a framework plan, the Multiple Species Habitat Conservation Plan (MHCP), which was adopted in 2003. To date, however, only the Carlsbad Habitat Management Program (HMP) Subarea Plan has been adopted under that framework plan. The County of San Diego is currently working on a plan for other areas in the northern part of the County (the North County MSCP) and subsequently will focus on the remaining land in the east County (the East County MSCP).

The City of San Diego Subarea Plan encompasses about 206,000 acres of the MSCP with approximately 56,800 acres identified for preservation. The Subarea Plan provides private and public developers with regulatory permit streamlining in exchange for habitat conservation on a portion of their land. The City of San Diego MSCP has provided permits for a number of large-scale development projects, including Dennery Ranch, Remington Hills, Bougainvillea, Hidden Trails, Otay Business Park, Carmel Valley Neighborhood 10, North City Future Urbanizing Areas, Montana Mirador, Otay Corporate Center North, Carmel Mountain, Spring Canyon, Black Mountain Ranch, Robinhood Ridge, California Terraces and others. Without the MSCP and the City of San Diego Subarea Plan, these projects would have had to independently obtain federal and state ESA permits.

Permit Coverage

The Subarea Plans adopted consistent with the San Diego Multi Species Habitat Conservation Plan Framework provide participating cities, the County, and developers with a streamlined federal and State ESA regulatory process. Specifically, the City of San Diego Subarea Plan (relevant to the Case Study that follows) addresses:

- **Federal endangered and threatened species regulation.** The MSCP Subarea Plan provides an ESA Section 10(a)(1)(B) incidental take permit to allow for development of endangered/threatened species habitat, sanctioning some impacts to federally-listed species.

[30] San Diego MSCP Implementing Agreement (1997).

- **State endangered and threatened species regulation**. The San Diego MSCP was the second Habitat Conservation Plan/Natural Communities Conservation Plan in California. The NCCP provides a State ESA Section 2081 permit that allows development of endangered/threatened species habitat.

The City of San Diego's Final MSCP 2012 Annual Report indicates that the City has conserved a total of 33,839 acres inside the designated "Multi-Habitat Planning Area", 65 percent of the City's conservation target in the MSCP Subarea Plan.

MSCP Case Study

The case study of the HCPs in the San Diego region considers two large-scale master-planned development projects, one that undertook a project-specific HCP and another that took advantage of a regional HCP. The Fieldstone/La Costa project in the City of Carlsbad and the Pacific Highlands Ranch project in the City of San Diego are comparable in scope and scale. The following section describes each project and its species-related permitting process.

Fieldstone/La Costa

The Fieldstone/La Costa project is a major master-planned community in Carlsbad. The Fieldstone Company purchased nearly 2,000-acres for the project in the late 1980s, originally envisioning intensive development of home sites near the famous La Costa Resort. The Fieldstone Company invested about $180 million in the land.[31] However, the property contained approximately 950 acres of coastal sage scrub, habitat for the coastal gnatcatcher, a species which was under consideration for federal listing as endangered. By 1989, Fieldstone was pursuing an individual HCP for the property.

The Habitat Conservation Plan/Ongoing Multi-Species Plan (HCP/OMSP) was a collaborative effort undertaken by the City of Carlsbad and Fieldstone/La Costa Associates in consultation with the USFWS and California DFG. Fieldstone/La Costa Associates partnered with the City to prepare the HCP/OMSP. The City of Carlsbad was concerned about a long-planned road improvement project that cut through the Fieldstone property (and sage scrub habitat). While the City had hoped to approve a previously-prepared EIR that covered the road project, there was community opposition to that EIR's mitigation plan. Further, the acquisition costs associated with habitat mitigation land was a major constraint for the road project.[32]

The Final HCP/OMSP did not become effective until June 1995, after more than five years of work that included a Memorandum of Understanding in 1991 and a Points of Consensus document in 1992. A significant effort, the HCP/OMSP consists of the base plan (1994), two addenda, and an implementing agreement:

- Habitat Conservation Plan/Ongoing Multi-Species Plan for Properties in the Southeast Quadrant of the City of Carlsbad, California (Revised March 28, 1994)

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[31] Douglas R. Porter and David Salvesen, "Collaborative Planning for Wetlands and Wildlife: Issues and Examples", Island Press (1995).

[32] Ibid.

- Addendum to the Revised Draft for the Habitat Conservation Plan/Ongoing Multi Species Plan for Properties in the Southeast Quadrant of the City of Carlsbad, California (July 13, 1994)
- Second Addendum to the Revised Draft for the Habitat Conservation Plan/Ongoing Multi Species Plan for Properties in the Southeast Quadrant of the City of Carlsbad, California (December 21, 1994)
- Implementation Agreement for the HCP/OMSP for Properties in the Southeast Quadrant of the City of Carlsbad (Revised Draft, December 21, 1994)

Overall, the Plan called for conservation of about 36 percent of the property (about 700 acres out of the nearly 2,000-acre site). Of particular significance, the Plan required protection of over 500 acres of coastal sage scrub (out of 950 total acres of coastal sage scrub). In addition, the Plan committed the City to acquire 240 acres of gnatcatcher habitat, in part through the acquisition of lands purchased by Fieldstone at a cost up to $1 million. Additional costs borne by Fieldstone/La Costa Associates included the funding of interim land management activities (before conveyance to a habitat management entity), $50,000 in funding for gnatcatcher research, and $150,000 for completion of the City's Habitat Management Plan (HMP).[33]

One source puts Fieldstone/La Costa Associates cost for the HCP at $12.5 million (about $19 million in 2013 dollars), including extra engineering, planning, environmental studies, management, and legal expenses associated with the planning and approval, as well as City fees, landscape vegetation, and off-site acquisition.[34] This represents a cost of about $15,000 per acre for the land not set-aside onsite (this cost estimate does not include the value of the on-site habitat preserve).

In June 1995, the USFWS issued the Biological and Conference Opinions Concerning the Issuance of an Incidental Take Permit for the Fieldstone/La Costa Associates Properties in the City of Carlsbad. The USFWS found that issuance of an incidental take permit and execution of the Implementing Agreement for the project would not be likely to jeopardize the existence of endangered species in the project area.[35]

Fieldstone later sold the project to Morrow Development, who sought entitlement from the City through a process that took about six years. In 2001, City of Carlsbad City Council approved Villages of La Costa Plan, including over 1,000 acres of open space preserve and a $1.5 million endowment for conservation land maintenance. After City approval, Morrow faced a lawsuit from

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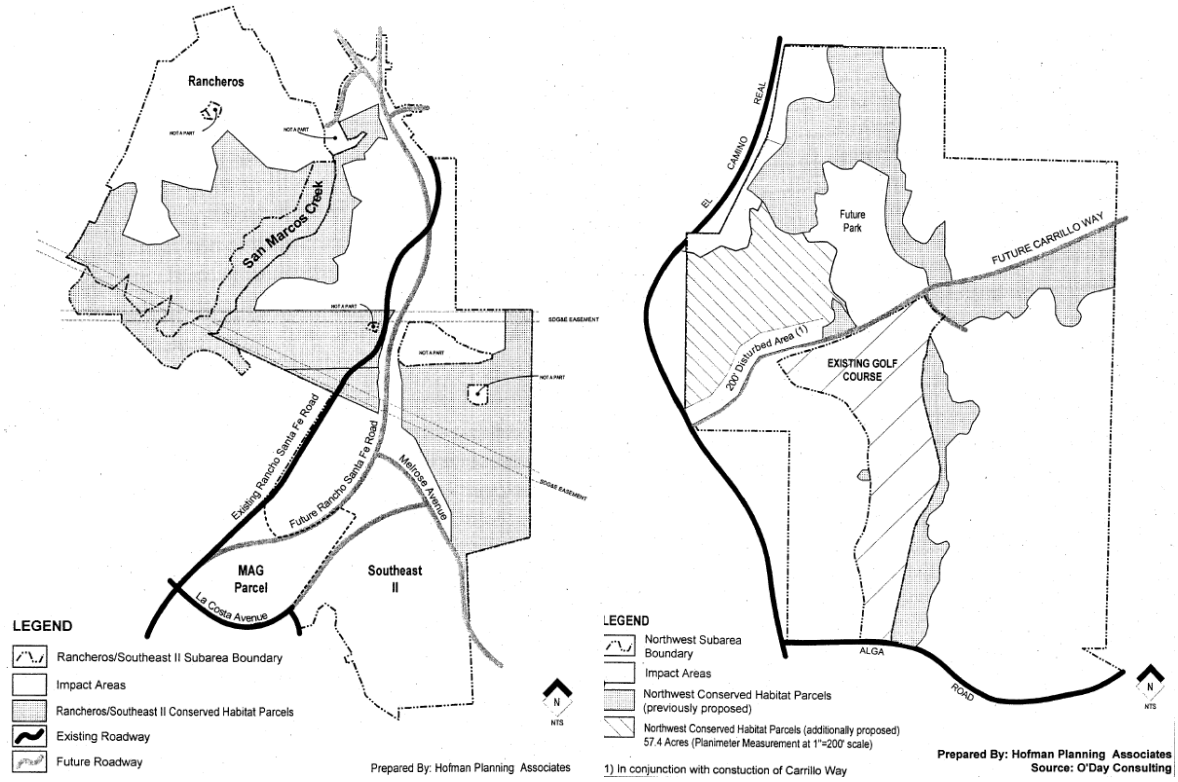
[33] Biological and Conference Opinions Concerning the Issuance of an Incidental Take Permit for the Fieldstone/La Costa Associates Properties in the City of Carlsbad California, United States Department of the Interior Fish and Wildlife Service (June 1995).

[34] Douglas R. Porter and David Salvesen, "Collaborative Planning for Wetlands and Wildlife: Issues and Examples", Island Press (1995).

[35] Biological and Conference Opinions Concerning the Issuance of an Incidental Take Permit for the Fieldstone/La Costa Associates Properties in the City of Carlsbad California, United States Department of the Interior Fish and Wildlife Service (June 1995).

the Sierra Club. The suit was settled and in 2002 and by 2004 houses were for sale within the Villages of La Costa.[36]

Figure 1 Fieldstone/La Costa HCP Map



Source: Habitat Conservation Plan/Ongoing Multi-Species Plan

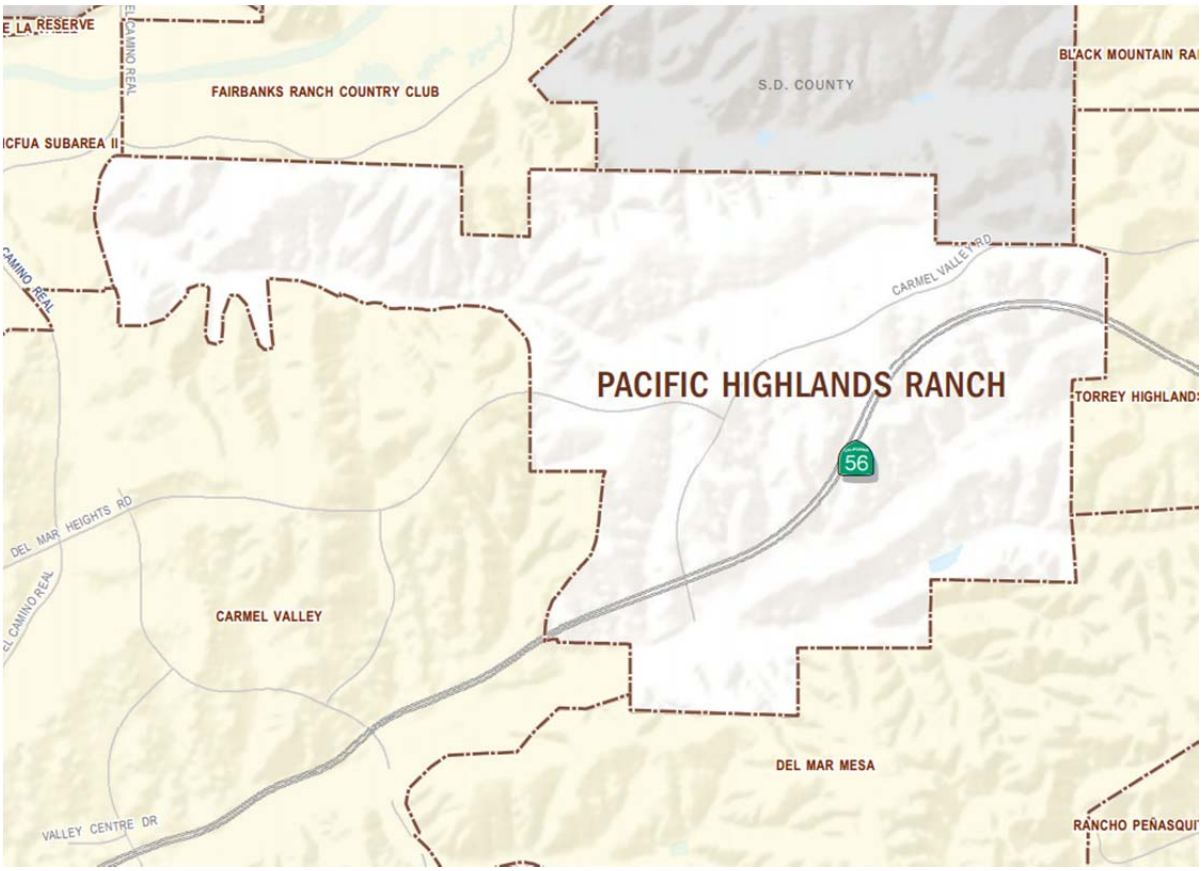
Pacific Highlands Ranch

Pardee Homes' Pacific Highlands Ranch project is a major master-planned development project in the City of San Diego, near Carmel Valley, Del Mar Mesa, and Torrey Pines State Park. At 2,600 acres, this "coastal zone" development project is significant, and the site supports a number of sensitive and listed plants and animals, including the California gnatcatcher. Pardee began development planning in 1992, roughly the same time that the City of San Diego MSCP was being negotiated between the City, federal and State wildlife agencies, and community and environmental stakeholders. The Pardee project benefitted from the MSCP, which created guidelines for project planning. The MSCP defined the mitigation requirements associated with endangered species impacts and offered an expedient process for obtaining the necessary incidental take permits. The Pacific Highlands project was designed to be consistent with the City MSCP and this consistency proved to be critical to the eventual development approvals, improving city council and public support for the project.

[36] Worth the Wait - After years in the entitlement process, San Diego County's La Costa Oaks master planned community's time has finally come, David Holzel, Builder Magazine (November 2004).

Pardee envisioned the 2,652-acre Pacific Highlands Ranch as a community of nearly 5,500 residential units, 400,000 square feet of commercial and office uses, public and semi-public uses, schools, parks, and open spaces. This vision required a vote to alter the property zoning. In 1985, City of San Diego voters had passed the Managed Growth Initiative (Proposition A), which required a majority vote of the electorate before up-zoning land to allow urban development (i.e., shifting from "Future Urbanizing" to "Planned Urbanizing"). In 1992, Pacific Highlands Ranch was a Future Urbanizing area with an agricultural land use designation. That year the City of San Diego adopted the North City Future Urbanizing Area Framework Plan as an amendment to the General Plan, identifying the development vision and potential scale of Pacific Highlands Ranch (and other Future Urbanizing Areas nearby).

Figure 2 Pacific Highlands Community Map



Source: SANDAG

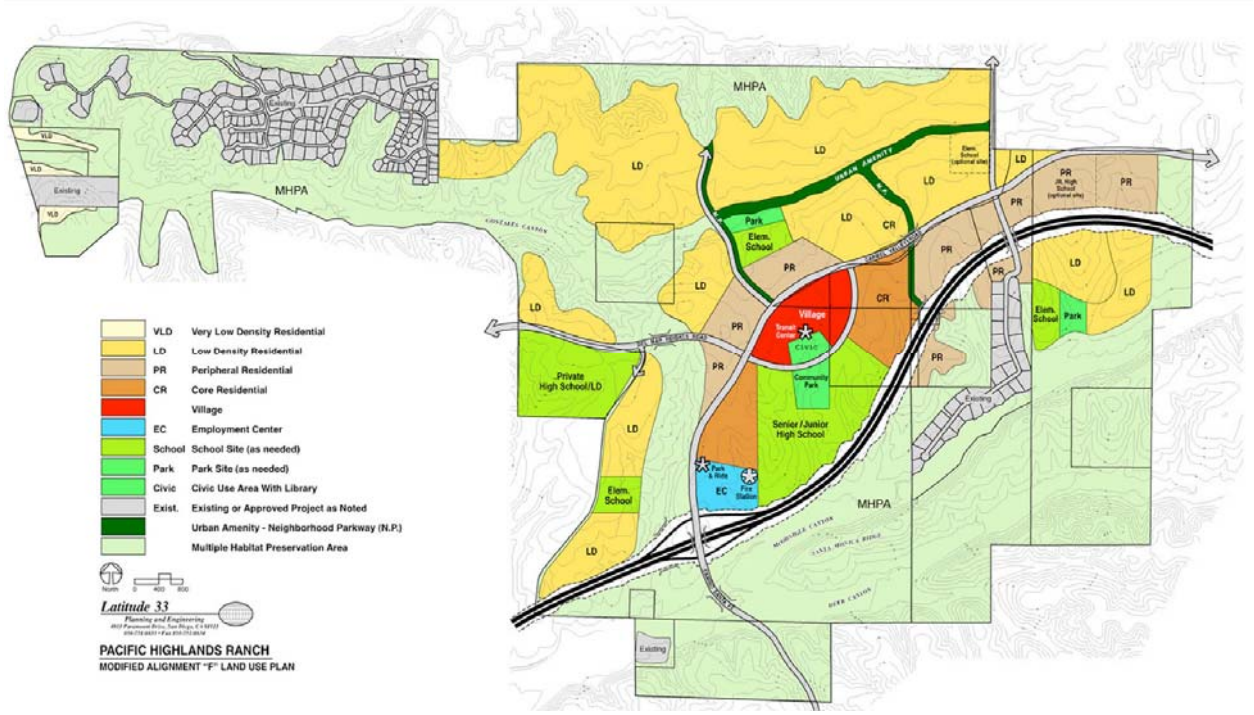
Between 1992 and 1997, a broad coalition of jurisdictions, stakeholders, and agencies worked on the San Diego MSCP to address regional conflicts between development and the region's biodiversity and increasingly threatened and endangered species. Adopted in 1997, the MSCP (Framework Plan) established an umbrella system for individual jurisdictions to adopt subarea plans. The MSCP created a streamlined system of environmental permitting associated with federal and State endangered species, in exchange for specified mitigation measures. That same year, the City of San Diego adopted its MSCP Subarea Plan. The City's MSCP Subarea Plan is a "hard line" plan that specified areas for development and areas for preservation. Under the

City's Subarea Plan, for Pacific Highlands Ranch, about 1,300 acres were identified for preservation and 1,300 acres for development.

Building on the City MSCP Subarea Plan, Pardee Homes developed the Pacific Highlands Ranch Subarea Plan, a long-range planning document required by the City of San Diego. The Pacific Highlands Ranch Subarea Plan incorporated the requirements of the City MSCP Subarea Plan by creating an open space system for Pacific Highlands Ranch that closely mirrored that shown in the City of San Diego MSCP Subarea Plan. By meeting the conditions of the MSCP, the City's ESA permit would be valid for Pacific Highlands Ranch.

In 1998 the City adopted the Pacific Highland Ranch Subarea Plan. That same year, a required vote was held on the Pacific Highlands Subarea Plan, and the voters passed Measure M ratifying the plan. This vote allowed the Pacific Highlands Ranch project to move from "Future Urbanizing" to "Planned Urbanizing" within the San Diego city limits (as required by the 1985 Proposition A).

Figure 3 Pacific Highlands Ranch Land Use Plan



Source: Pacific Highlands Ranch Subarea Plan

As part of the project's compliance with the California Environmental Quality Act (CEQA), the project proponent prepared a Draft Environmental Impact Report (EIR) in 1998. In commenting on the EIR, the CADFG and USFWS noted that "the development plan proposes to mitigate in accordance with the requirements of the City's MSCP Subarea Plan" and that "the open space design provides sufficient on-site open space to meet the mitigation requirements for the various habitat types proposed for impact."[37] The comment letter did take issue with boundary

[37] CADFG/USFWS comment letter on Draft EIR (1998)

concurrence with the MSCP which was an issue for a later phase of the proposed development project.

In the early 2000s, with species issues addressed under the MSCP, the Pacific Highlands Subarea Plan adopted, CEQA completed, and a strong residential market, Pardee Homes commenced construction. From 2000 through 2006, Pacific Highlands Ranch phases were approved, including thousands of residential units, an employment center subdivision, and numerous supporting facilities (e.g., schools and parks).

In recent years, the project has been recovering from market effects stemming from the 2007-08 economic recession. In 2013, the project achieved approval of an additional 200 market rate and affordable housing units. Another future phase of development is the "core urban village," which is anticipated to include 109 condos/affordable units, 100,000 square feet of retail, and 40,000 square feet of office on approximately 20 acres. As of 2014, Pardee Homes controls about 80 percent of Pacific Highland Ranch, and has developed 1,000 units (about one quarter of their anticipated buildout).

Case Study Findings

The comparison of the Fieldstone/La Costa experience with the Pardee Pacific Highlands experience highlights a number of important issues concerning the benefits of regional HCPs, as well as the multiple factors affecting development project timing and evolution:

- The Case Study indicates that the development of major master planned communities face a number of challenges associated with federal and State endangered species/environmental regulations, local land use regulations and processes, lawsuits, and market cycles.

- Though it is difficult to disentangle the ESA-related, species-specific time and cost effects from general environmental and community effects on land development, it is clear that species permitting contributes to a lengthy approval process in San Diego. In the case of Fieldstone/La Costa, the project developer began the HCP process in 1989 and (a second developer) delivered housing in 2004 (approximately 14 years later). In the case of Pacific Highlands Ranch, the developer began to plan for urban development in 1992 and delivered housing in 2003 (about 10 years later).

- Focusing on federal/State species regulations, the Fieldstone/La Costa project spent about five years obtaining take permits through its individual HCP process. In contrast, Pardee Homes was able to address USFWS permitting through consistency with the City of San Diego MSCP Subarea Plan. The USFWS commented on the CEQA document in 1998 and issues were resolved sufficiently for the City to issue building permits in 2000 (at most a two year process). Pardee Homes likely benefitted from their early planning and involvement in the development of the San Diego MSCP, starting in 1992.

- This approximate timeline of events presented in the Case Study suggests that Pardee Homes saved about three years of permitting time attributable to the existence of the MSCP Subarea Plan in the City of San Diego (as compared with Fieldstone/La Costa). An interview

with a Pardee representative confirmed that Pardee benefitted from the City's hard line plan because it provided certainty regarding development versus open space areas.[38]

- Though the net overall time saving is hard to discern exactly, the Case Study suggests that HCPs benefit projects in San Diego. Had the gnatcatcher and other species been covered under the regional multiple species HCP been at the time the Fieldstone/La Costa project was beginning its entitlement process, that project might have seen development occur earlier. Similarly, if the City of San Diego Subarea Plan was not in place, Pacific Highlands might have experienced delay due to the individual permitting process. Anecdotal information suggests that beyond the large complex projects, benefits of the regional HCP accrue to smaller developers and projects where State/federal species permitting might have been a primary impediment to moving forward but for the development of the MSCP Subarea Plans.[39]

- A Pardee Homes representative indicated that the Pacific Highlands Ranch project would have benefitted even more from the MSCP if it had covered a broader array of species and habitat types, most importantly vernal pools.[40]

[38] Personal Communication with Jimmy Ayala, Director, Community Development Department, Pardee Homes (January 2014).

[39] Personal Communication with Susan Wynn, Fish and Wildlife Biologist, USFWS (January 2014).

[40] Personal Communication with Jimmy Ayala, Director, Community Development Department, Pardee Homes (January 2014).

3. SAN JOAQUIN COUNTY

San Joaquin County is in California's San Joaquin Valley, east of the San Francisco Bay Area. The County has long been an important component of California's Central Valley "food basket" with a major agricultural economy and long-established cities such as the City of Stockton. As of 2012, the county was home to 700,000 persons and the latest forecasts predict continuing growth.

Land Use Conflict

During the 1990s, internal growth and proximity to expanding job centers in the Bay Area (San Francisco, Silicon Valley, and the East Bay) had combined to generate substantial demand for new development in San Joaquin County. Developers envisioned increasing numbers of residential subdivisions, business/industrial parks, and supporting infrastructure. Proposals also emerged for four to six new cities primarily slated for agricultural land. The path of growth for much of this new development coincided with habitat lands for the Swainson's Hawk, listed as threatened under the California Endangered Species Act, and the San Joaquin kit fox, listed as endangered under the federal Endangered Species Act.

Plan Process and Details

Initial attempts in the early 1990s to develop San Joaquin County HCPs for individual species faltered. In 1993, the San Joaquin Council of Governments (SJCOG), a public agency with Board representation from City Council members from each of the cities and the County Board of Supervisors, was approached to develop a regional, multi-species regional Habitat Conservation Plan. A Steering Committee was formed that included representatives of business interests (the Building Industry Association of the Delta, the Business Council, the Central Valley Rock Sand and Gravel Association), agricultural interests, conservation interests, local and regional public agencies, and the relevant State and federal regulating agencies. As noted in the 1994 Memorandum of Understanding between SJCOG, the cities and County, and the USFWS and CDFG, one of the key objectives of the Plan was to:

> *Provide consistent and predictable treatment of development proposals throughout the County to reduce costs and uncertainty and ensure a healthy economic environmental for citizens and industry.*[41]

In 2000/1, the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan (SJMSCP) was completed and permitted with broad stakeholder support.

This regional HCP identified a development area of 109,302 acres for future development and, in exchange for a one-time mitigation fee, permitted development and associated incidental take of covered species on this land. The take permits covered the Swainson's Hawk and

[41] Memorandum of Understanding for the San Joaquin Multi-Species Habitat and Open Space Plan (1994)

San Joaquin kit fox along with 95 other special status species. Activities addressed by the Plan include urban development, mining, expansion of existing urban boundaries, non-agricultural activities occurring outside of urban boundaries, levee maintenance, transportation projects, school expansions, among others. The Plan was finalized November 14, 2000 and provided permits over a 50-year period from 2001 to 2051. The Plan was designed to preserve 100,841 acres. The Plan is voluntary, meaning that private developers and individual jurisdictions can opt-out and seek to obtain the necessary permits on an individual case-by-case basis.[42]

Permit Coverage

The San Joaquin regional Habitat Conservation Plan provided cities and the County and private developers within their jurisdictions with the streamlining of a number of federal and State environmental regulatory requirements. The seven cities, San Joaquin County, water, utility, irrigation, and flood control districts all chose to participate. In exchange for the one-time payment of a fee consistent with the published mitigation fee schedule, public and private developers were automatically provided with streamlining of the following environmental regulations:

- **Federal endangered and threatened species regulation.** The ESA Section 10(a)(1)(B) incidental take permit allow for development of endangered/threatened species habitat, sanctioning some impacts to federally-listed species.
- **State endangered and threatened species regulation.** The Fish and Game Code section 2081 permit allows for development of habitat lands despite the potential impacts to State-listed species.
- **California Environmental Quality Act.** The Plan offers mitigation to offset cumulative impacts to common plant, fish and wildlife species and to offset other impacts associated with impacts to agricultural lands, impacts to scenic resources, and similar impacts to provide coverage under CEQA. CEQA compliance provided by the Plan reduces the need for additional biological studies as well as litigation related to CEQA.[43]

Development Activity and Preservation

Since its adoption in 2001, substantial new economic development in San Joaquin County has benefitted from the permitting, streamlining, and clarity provided by San Joaquin Multi Species Habitat and Open Space Conservation Plan. A total of 13,773 acres of covered activities (fee assessed acres) had received streamlined permitting through the Plan by the end of 2012 (2012 Annual Report), representing an average of over 1,000 acres of permitting each year. The period 2005 to 2007 accounted for the majority of the permitting activity with a peak of 4,348 acres permitted in 2005, while permitting levels were substantially lower during the Great Recession. Over the same period, 11,125 acres of land was preserved for habitat. The 2012 Annual Report notes that only three projects have decided to "opt out" of the Plan: two projects in

[42] San Joaquin County Multi-Species Habitat Conservation and Open Space Plan (November 2000).

[43] Other elements of the California Environmental Quality Act still apply (e.g., for transportation).

2009 and one project in 2011. None of these projects have yet received the equivalent permits.[44]

Prior Assessments of Economic Benefits

Two studies have previously evaluated the economic benefits of SJMSCP. The first, a 1997 study, was conducted at the time of Plan preparation and the second was conducted in 2012, more than a decade into Plan implementation.

1997 Cost-Benefit Evaluation

In 1997, during Plan preparation, a "cost-benefit evaluation' was conducted that compared the "No Plan" existing scenario to the SJMSCP proposed plan scenario. The study authors considered costs to private and public project proponents under the two scenarios, in addition to costs incurred by permitting agencies. The evaluation considered the 30-year period from 1997 to 2027 and was based on a forecast of about 2,000 acres of open space land conversion each year, of which 1,300 acres were associated with urban development. Mitigation costs under the "No Plan" scenario were based on typical project mitigations requirements at that time and permitting agency costs were provided by the permitting agencies for prior years.[45]

- **Private and Public Project Proponents.** The annual cost savings to private and public project proponents was estimated at about $5.9 million (1997$), with the majority of the savings from reduced project proponent time, about $3.0 million, and expenditures on consultants and legal services (about $1. 8 million). This represents about $3,000 per acre in cost savings. This cost saving to project proponents was estimated to represent, on average, about 1 percent of the construction costs of a typical new development. The evaluation noted but did not include estimates of the cost savings associated with reduced time delays.

- **Permitting Agencies.** The evaluation estimated that the cost of permitting agencies' staff time spent would be 10 percent once the Plan was in place, relative to the "No Plan" scenario. This 90 percent saving was estimated at a total of $500,000 each year, including $165,000 in federal agency staff time, $114,000 in State agency staff time, and $220,000 in local agency staff time.

2012 Economic Development Benefits Assessment

In 2012, SJCOG asked Pennino & Associates to consider the economic development benefits of the SJMSCP. The study provides insights into the economic benefits of the Plan through three different lenses. First, the study considered the permitting process for a development project obtaining permits by electing to pay the Plan's mitigation fee versus the two other alternatives available: (1) to go through the Plan but purchase land in lieu of fee payment or (2) pursue mitigation on their own with the relevant State and federal regulatory agencies (a process similar to if the Plan was not in place). The study made comparisons between likely

[44] 2012 SJMSCP Annual Report.

[45] Hausrath Economics Group, Economic Analysis for the San Joaquin Multi-Species Habitat Conservation and Open Space Plan (1997).

mitigation costs, time delays, and uncertainty. Second, the study interviewed local developers to obtain direct feedback on the utility of the Plan to the private, regulated community. Third, the Study interviewed developers and local agency officials in peer/competitor California counties without a regional conservation plan to determine the relative benefits of having the Plan in place.

The benefits to private and public developers of engaging with the Plan were demonstrated by evaluating the likely permitting process for a prototype 12-acre industrial development in a natural lands area, under the three available approaches to obtaining environmental permits, as shown in **Figure 4**.

Figure 4 San Joaquin HCP Plan Benefit Categories (Natural Lands Example)

Approach	Mitigation Cost	Duration	Certainty
Plan Participation and Fee	$14,400 per acre	30 to 45 days	High
Purchase Land in Lieu	$41,130 per acre	3 to 9 months	Medium
Mitigation with Agencies	$62,500 per acre or more	6 to 18 months	Low

Source: Pennino & Associates

As shown, participation in the Plan results in reduced delays, increased certainty (in terms of requirements and permit processing time), and a reduced mitigation cost. The difference in mitigation cost is associated with the 3:1 mitigation ratio that is applied to natural lands impacts when purchasing land in lieu of fee payment or working on an individual basis with the regulatory agencies versus a lower overall average mitigation ratio under the Plan. Comparing full plan participation (and fee) with the likely process associated with direct engagement with regulatory agencies, developers would be expected to pay $48,000 less per acre, save between 5 and 15 months, and be able to plan and proceed with much greater certainty. The mitigation cost saving alone, independent of the value of saved time and reduced uncertainty, represents about 2.5 percent of the total development costs of a new project.[46]

The economic benefits of Plan participation were further corroborated by interviewees. As noted in the study, a major San Joaquin County industrial developer noted that "having the SJMSCP provides San Joaquin County with a huge advantage over other counties". As Pennino & Associates describe:

[46] The San Joaquin County Habitat & Open Space Plan: An Economic Stimulus Tool For Job Creation, Pennino & Associates (2012).

> *…the advantage (of the Plan) is not having: to deal with multi-agencies requiring agreement on mitigation criteria, the uncertain timeframe and enormous amount of meetings, to deal with various agencies along with staffing changes, to receive last minute changes, and receive final approval and sign off by all parties.*[47]

In summary, the study notes that while the Plan does not directly create jobs, it does have an indirect impact on job creation by streamlining the environmental requirements with greenfield development areas and thereby reducing the duration of the permitting process and creating jobs sooner within the commercial and industrial sector.[48]

MSCP Case Study

The case study of the San Joaquin MSCP considers two phases of a single master-planned mixed use development project, River Islands in Lathrop. One phase was able to take full advantage of the regional HCP, while another phase was not. The following section describes the project and its species-related permitting process.

River Islands at Lathrop

River Islands is a large-scale master-planned community located in Lathrop. The 4,800-acre site is within the Sacramento-San Joaquin Delta region, west of Interstate 5. Originally it was proposed for development of a mega-resort (theme parks, golf courses, residential and other uses) during the early 1990s. The City of Lathrop approved a development agreement and annexation application for the property in 1996. The developer settled seven years of litigation concerning farmland conversion in 2003, with an agreement to fund an $8.2 million trust to preserve farmland in San Joaquin County.

Today, the community plan includes 11,000 homes, 4 million square feet of office/lab space, a waterfront retail center, 10 schools, unique recreation areas, and 18 miles of river access. A first phase of development is fully entitled (approved and permitted) and site development is under way. The master developer, Cambay Group, has sold residential development sites to home builders and home construction commenced in February 2014.

The project is being built on flood-prone Delta farmland, relying on "super levees" to provide flood protection. Despite revised approvals by the City of Lathrop for the revised project configuration in early 2003, it was not until 2006 that completed levee improvements were approved by Federal Emergency Management Agency, with the agency certifying that 900 acres of project land had been removed from the 100-year event floodplain.

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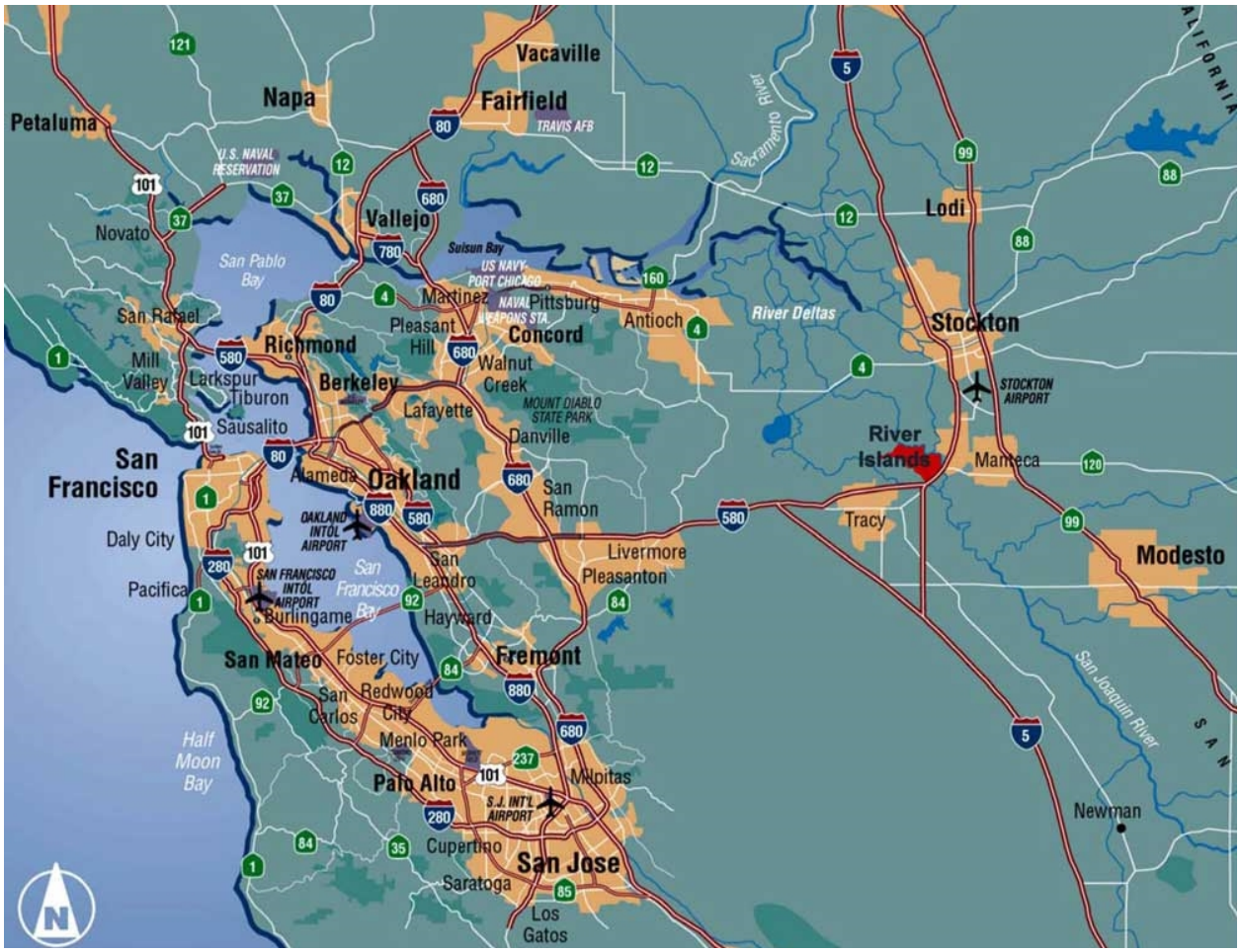
[47] The San Joaquin County Habitat & Open Space Plan: An Economic Stimulus Tool For Job Creation, Pennino & Associates (2012).

[48] The San Joaquin County Habitat & Open Space Plan: An Economic Stimulus Tool For Job Creation, Pennino & Associates (2012).

Figure 5 River Islands Regional Map

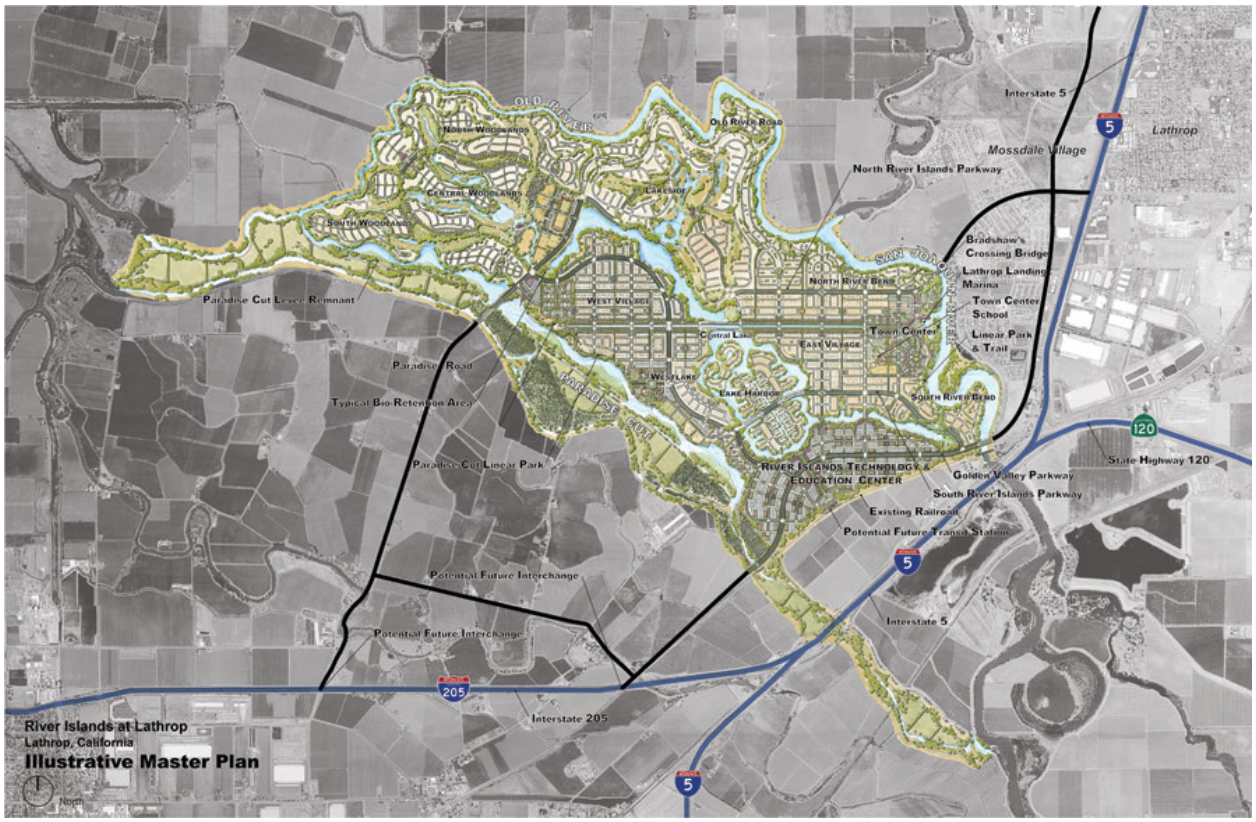


Source: River Islands at Lathrop

Phase 1 of the project occurs entirely outside of any "waters of the US" and did not require authorization from the USACE. The permit requirement for ESA incidental take was satisfied by the San Joaquin County MSCP, through the section 10 permit provided to the City of Lathrop as a participating jurisdiction. In 2005, the project applicant sought a take permit for Phase 1 and, after the payment of a total HCP fee of $3,030,181 (an average of $3,061 per acre), received the permit. The project developer began grading for streets and other improvements in 2006. However, the delivery of the project was delayed in 2007, due to deteriorating housing market conditions attributable to the economic recession.

The second phase of the River Islands project is still undergoing environmental review. For this phase, the project developer is seeking to modify levees that are part of a federal project. This proposed action triggers conditions of the Rivers and Harbors Act (Section 408), which authorizes USACE to authorize alterations to existing federal project levees under certain circumstances. The second phase of development also requires a Section 404 permit (Clean Water Act) and Rivers and Harbors Act approvals. The project proponent is preparing an Environmental Impact Statement (EIS) in compliance with the National Environmental Policy Act (NEPA) and reports to have spent roughly $5 million to date on consulting services associated with the NEPA effort for phase 2 of River Islands development.

Figure 6 River Islands Illustrative Development Plan



Source: River Islands at Lathrop

Approval and permitting of the second phase of development of River Islands will also require a formal ESA section 7 consultation with the USFWS and the National Oceanic and Atmospheric Administration (NOAA). The SJMSCP does not provide incidental take coverage for the federal- and state-listed riparian brush rabbit or giant garter snake, which may be present within the area proposed for phase 2 development. As a result, incidental take permitting through the SJMSCP is not possible for Phase 2. In 2008, the project developer executed a Memorandum of Understanding with the USFWS concerning mitigation, habitat restoration, and the need for a formal consultation under Section 7 of the ESA. The project proponent indicated that a two-year process was required to agree on the MOU with the USFWS. And, while the MOU provides a framework for satisfying species-related issues associated with the phase 2 development, there is still a level of uncertainty for the developer associated with the consultation process. The lack of clarity concerning the time and cost associated with satisfying ESA requirements for phase 2 development increases the investment risk of the project. [49]

[49] Personal Communication with Susan Dell'Osso, Project Director, The Cambay Group, Inc. (January 2014).

Case Study Findings

The River Islands project experience highlights a number of important issues concerning the benefits of regional HCPs:

- The San Joaquin MSCP Case Study reveals permit streamlining and certainty benefits of the Plan. For species-related permitting of phase 1 development, the project proponent applied to the MSCP, agreed to basic mitigation measures, and paid the MSCP fee to obtain incidental take coverage under the ESA. In an interview, the project development manager indicated that these time savings and certainty benefits associated with MSCP permitting were "extremely valuable" to the River Island project.[50]

- While isolating the species issues from other resource-related issues associated with phase 2 development (e.g., levee modification) is difficult, the project proponent indicated that a two-year process with USFWS specific to the riparian brush rabbit and giant garter snake is anticipated. The existing completed MOU provides the framework for the Section 7 consultation. However, even with that framework for mitigation in place, the development project schedule anticipates extensive ongoing negotiations regarding the mitigation requirements necessary to obtain an Incidental Take Permit. [51]

[50] Personal Communication with Susan Dell'Osso, Project Director, The Cambay Group, Inc. (January 2014).

[51] Personal Communication with Susan Dell'Osso, Project Director, The Cambay Group, Inc. (January 2014).

4. WESTERN RIVERSIDE COUNTY

Riverside County, along with San Bernardino County, is one of the two counties that make up the State of California's expansive Inland Empire. Southern California has experienced rapid growth over much of the last century with rapid development shifting into Riverside and San Bernardino Counties starting in the 1980s. During the 1980s, Riverside County led the region in population growth. With increasing population, employment opportunities expanded significantly during the 1990s. Growth continued through the 1990s and 2000s and, according to the latest California Department of Finance forecasts, Riverside County is expected to be one of the fastest growing counties in the State in coming decades.

Land Use Conflict

During the 1980s, Riverside County experienced increasing levels of new development. At the same time, the Stephens' kangaroo rat, a species with a substantial range throughout Western Riverside County, was federally listed in 1988 (it had been listed by the State in 1971). As noted in the Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP):

> *Conflicts over species conservation threaten the ability of local jurisdictions to plan for and provide the infrastructure necessary for economic development and a high quality of life in the County.*[52]

The MSHCP was ultimately developed in response to the need for future growth opportunities in Western Riverside County, while addressing the requirements of the State and federal Endangered Species Acts.

Plan Process and Details

Planning to address the Stephens' kangaroo rat with an interim/short-term HCP began with a broad group of stakeholders in early 1988 and the completion of the Stephens' kangaroo rat short-term HCP in March 1990, and the issuance of an interim take permit later that year. Due to the short-term, single-species focus of the initial plan, efforts began on a long-term plan as well as a multiple-species plan. In 1999, the Riverside County Board of Supervisors and the Riverside County Transportation Commission initiated the Riverside County Integrated Project that included the development of a new General Plan, Regional Transportation Plan, and a multiple-species conservation plan. The MSHCP, originally adopted in 2004, is a comprehensive, multi-jurisdictional HCP.

The MSHCP provides ESA incidental take permits to private and public development projects in Western Riverside County for a period of 75 years, in exchange for the payment of a one-time mitigation fee and, under specific circumstances, the dedication of an on-site habitat area. The large majority of new development within Western Riverside County (where local permittees participated) can obtain permits under the Plan. Local permittees include Riverside County,

[52] Western Riverside County Multiple Species Habitat Conservation Plan (2004).

cities in Western Riverside County, and a number of public agencies responsible for infrastructure development.[53] Through mitigation fees and other methods as appropriate, the local permittees are responsible for providing funding to the implementing entity (the Resource Conservation Authority) to conduct the preservation of an additional 97,000 acres of land, bringing the overall total up to 500,000 acres within the Plan Area. The MSHCP calls for a MSHCP Conservation Area of 500,000 acres and focuses on the conservation of 146 species.

Permit Coverage

The MSHCP serves as an HCP pursuant to Section 10(a)(1)(B) of the federal Endangered Species Act of 1973 as well as a Natural Communities Conservation Plan under the NCCP Act of 2002. The MSHCP streamlines environmental permitting by allowing the participating jurisdictions to authorize incidental take coverage for plant and wildlife species identified within the Plan Area. At the same time, Plan implementation provides a coordinated MSHCP Conservation Area and program to preserve biological diversity and maintain the region's quality of life.

Development Activity and Preservation

From the start of 2005 through the end of 2012, a total of about 88,600 residential units were developed and permitted under the MSHCP. In addition, as discussed below, a large number of major public infrastructure projects also were permitted under the Plan. By the end of 2012, about 28,400 acres of the local permittee preservation requirements had been achieved. Additional preservation also was achieved through non-local funding sources.

Assessments of Economic Benefits

In 2007, four years into Plan adoption, RAND conducted a study of the MSHCP - *Balancing Environment and Development: Costs, Revenues, and Benefits of the Western Riverside County Multiple Species Habitat Conservation Plan* (Dixon et al., 2008). As part of this assessment, RAND evaluated the streamlining effects of the regional HCP to public infrastructure projects. The study polled (through interviews and a questionnaire) stakeholders familiar with recent projects in the HCP area to determine perceptions regarding the effect of the MSHCP on costs, time, and legal outcomes. The study found that in most cases the MSHCP had improved the permitting process and reduced litigation for road projects, though there are exceptions.

More recently, in 2013, the Western Riverside County Resources Conservation Authority published a document describing a subset of transportation projects permitted through the MSCHP. The total investment in the 25 projects noted (some constructed, some soon to be constructed) was estimated at $2.2 billion with an estimated generation of 32,000 jobs. As noted in this document, "investing in better transportation projects sets the stage for western

[53] Local permittees include the Western Riverside cities, the County of Riverside, County Flood Control and Water Conservation District, County Regional Parks and Open Space district, County Waste Management District, County Transportation Commission.

Riverside County to be ready to compete to attract industrial and retail employers as the economy recovers."[54]

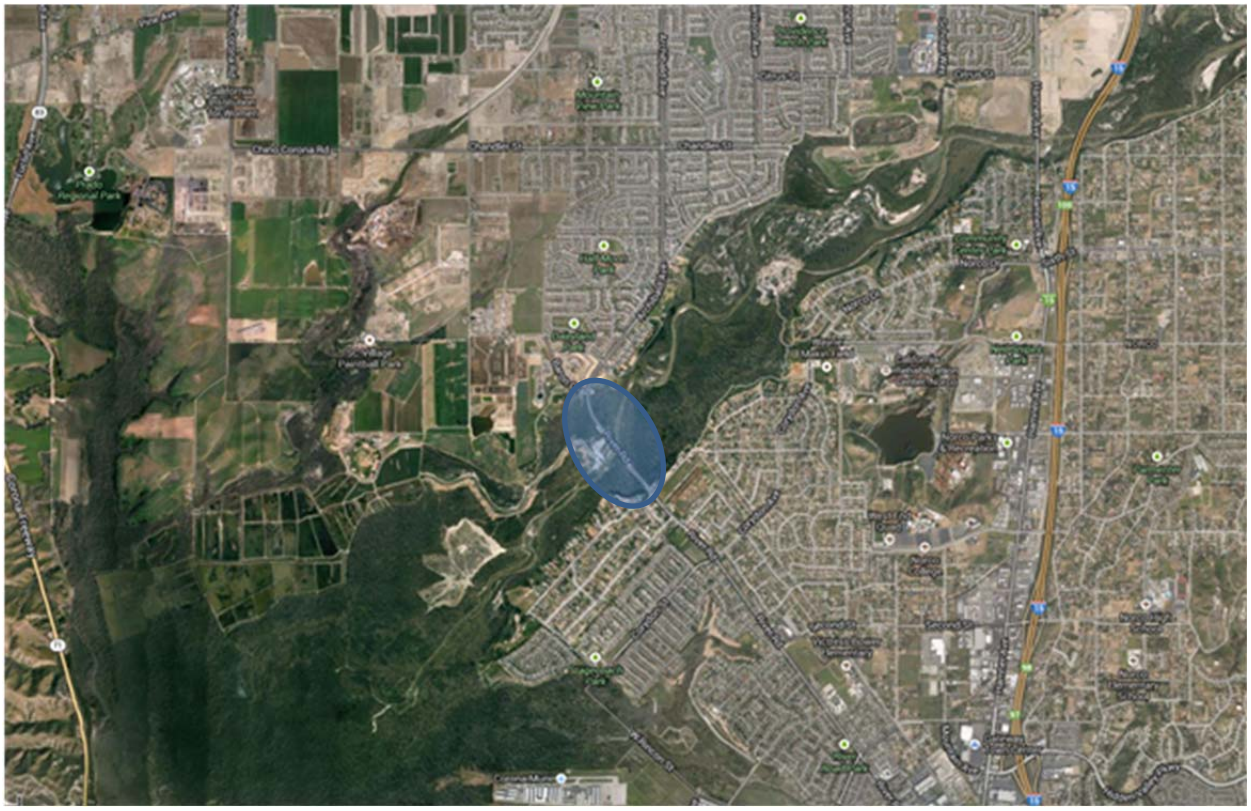
MSHCP Case Study

The case study of the Western Riverside Multiple Species HCP considers a significant bridge development project in Riverside County. The project planning process began before establishment of the HCP but took advantage of the plan once it was established. The following section describes the project and its species-related permitting process.

River Road Bridge Project

The County of Riverside Transportation Department completed the construction of the River Road bridge replacement project in 2011. The River Road Bridge crosses the Santa Ana River linking the cities of Norco and Eastvale, in northwestern Riverside County. The new bridge replaces a late 1920s bridge which was upgraded in 1963 and later became functionally obsolete and structurally deficient. Sediment loading in the River had led to debris accumulation, overtopping, and structural damage to the old bridge.

Figure 7 River Road Bridge Regional Map



Source: Google Maps

During the 1990s, storm events caused bridge closures and necessitated repair of the River Road Bridge. In March 1995, the bridge sustained significant damage during a large storm event. The

[54] Western Riverside County Regional Conservation Authority Journal (Winter 2013).

County pursued interim measures to keep the bridge functional. The presence of listed species, particularly the least Bell's Vireo and the Santa Ana Sucker, complicated the bridge replacement project and repair activities. During 1996, the County worked with the USACE to conduct an informal Section 7 consultation with USFWS to address species concerns associated with the interim repair measures. The take permit was revised in 1997 and 1998 to expand the project area. During the 2000s, the County continued to consult with USFWS on interim measures, including a formal emergency consultation to address excavation activities needed to protect the structural integrity of the old bridge.

After the Caltrans Division of Structures found the bridge to be functionally obsolete and deficient, the County was able to secure federal funds for the replacement of the existing bridge. In 1998 the County Board of Supervisors approved moving forward and the Riverside County Transportation Department embarked on the lengthy design process for replacement alternatives, as required by Federal regulations, as well as the environmental approval process. The County also commenced a rigorous Clean Water Act 404b permitting process (with the USACE, USFWS, and other agencies) that sought to address the project's water quality, wetlands, and species impacts, requiring extensive project consultation with the resource agencies to achieve concurrence at each stage of the project.

In late 2004, the Federal Highway Administration (FHWA) requested a formal Section 7 consultation with USFWS on the River Road Bridge replacement project. By March 2005, the USFWS had concurred that the proposed project was consistent with the Western Riverside MSHCP (approved by USFWS in June 2004), and that potential species effects associated with the bridge project were covered by the 10a permit that had already been issued. Interviews with current and former Riverside County staff familiar with the project indicated that there was notable project delay attributable to the 404b permit process and species issues between 998 through 2004, with about three years of delay attributable to the ESA. In 2004, the MSHCP brought quick closure to the ESA permitting processes, possibly a year earlier than without the plan, according to County staff.

During final design of the bridge in 2006, a longer-span bridge that was included as an alternative in the environmental document was selected. This required Caltrans review and reauthorization of federal funding and extended the project timeline. FHWA indicated that the revised project was covered in the consultation with the Western Riverside County Multiple Species HCP.

After planning and permitting, notice to proceed was issued to the construction contractor in December 2008. The nearly $40 million construction project took about 2.5 years to complete. The new bridge offers 4 lanes built on nine spans over 1,200 feet, and complies with current seismic and hydraulic criteria.

Figure 8 Image of Completed River Road Bridge (Before Construction)

Source: Riverside County Transportation Department

Figure 9 Image of Completed River Road Bridge (After Construction)

Source: Falcon Engineering

Case Study Findings

The River Road Bridge project experience highlights a number of important issues concerning the benefits of regional HCPs:

- It took 16 years (1995 – 2011) to plan, approve, and construct the River Road Bridge. A thorough review of the project, including interviews with current and former County staff and document review, reveals that the federal environmental documentation process (NEPA),

preliminary design, final redesign, and funding requirements were largely responsible for the extended timeline.[55]

- Species-related permitting associated with the new bridge was a key reason for the extended design process, with resource agencies pushing for a longer bridge to avoid wetland and habitat impacts. Initially, the 404b permit process was very cumbersome, requiring extensive and repeated consultations concerning species impacts. With roughly three years of delay attributable to ESA permitting, the direct cost of the delay was significant.[56]

- At an average annual direct cost in local agency staff and consulting costs of about $500,000 per year, the project could have saved about $1.5 million if the MSHCP had been in place sooner. Furthermore, the actual delay would like have been even longer than three years if the MSHCP had not been adopted in 2004 with County staff estimating an additional delay of one year or more (and an associated additional cost).[57]

- In addition to the direct costs (staff and consulting costs) of delay, the observed delay of three years associated with species permitting without the MSHCP, likely also resulted in broader economic losses associated with the longer period of use of the prior and deficient bridge. Assuming the value of the bridge was at least equal to its construction cost of $40 million (and assuming the construction cost of the bridge did not change substantially during the period of delay), the broader economic loss associated with the delay in bridge construction can be estimated using the social discount rates recommend by the Office of Management and Budget of 3 percent and 7 percent (in real terms). This indicates an economic loss of between $3.4 million and $7.4 million.[58]

- The benefits of the MSHCP are further evidenced by the consultation process and permitting that occurred during the 1990s for maintenance (with extension during the 2000's), which was very time consuming for the County, with repeated updates and consultations required to continue maintenance and repair under changing conditions. In interviews, County staff indicated that had the MSHCP been in place when the bridge first required maintenance, the species-related permitting process for these repairs could have been conducted more

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[55] Personal communication with Mary Zambon, Senior Transportation Planner, Riverside County Transportation Department (January 2014).

[56] Personal Communication with Laurie Correa, Director of Reserve Management and Monitoring, Western Riverside County Regional Conservation Authority (February 2014).

[57] Annual cost estimate by EPS, developed in consultation with Charles Landry, Executive Director Western Riverside County Regional Conservation Authority.

[58] This measure of economic loss may be an over-estimate as the baseline of the older bridge still provided some value, even though it was deficient and in need of replacement. The delay impact could also be higher or lower depending on the actual changes in real construction costs over the period of delay, though this estimate represents a reasonable average as it assumes bridge construction costs increase by the rate of inflation over the period of delay.

expeditiously, and mitigation requirements would have been less.[59] Since construction of major infrastructure projects have an extended timeframe for planning and approval, this interim coverage by the MSHCP for maintenance of existing infrastructure is critical.

Implications of Aggregated Case Study Finding

Broadening the findings from this case study provides an indication of the potential economic benefits of the MSHCP associated with the major transportation improvement projects that received expedited approvals under the MSHCP. As noted above, in 2013, the Western Riverside County Resources Conservation Authority published a document describing a subset of major transportation projects permitted through the MSCHP. These 25 projects were estimated to cost about $2.2 billion. Aggregating based on the findings of the River Road Bridge case study above, with adjustments to be conservative, the following estimated savings associated with the MSHCP (in addition to the 32,400 jobs noted in prior sections) include:

- A total of $25 million in local staff and consulting cost savings based on an assumed average time savings of two years for each project, an average annual staff and consulting cost of $500,000 each year, and the 25 projects identified in the document.

Figure 10 Project Approval Cost

Projects	Delay (years)	Staff and Consultant Cost (per year)	Total Cost
25	2	$500,000	$25,000,000

[59] Personal communication with Mary Zambon, Senior Transportation Planner, Riverside County Transportation Department (January 2014).

- A total of societal economic benefit of between $126.3 million and $278.4 million (depending on the discount rate) applied associated with the collective effects of two year delays to the 25 projects with an aggregate cost/value of $2.2 billion.

Figure 11 Foregone Social Benefits from Permitting Delay[60]

Social Discount Rate	Aggregate Project Value	Delay (years)	Lost Social Value
3%	$2,200,000,000	2	-$126,289,000
7%	$2,200,000,000	2	-$278,434,798

[60] Office of Management and Budget (OMB) Circular A-4 states: "For regulatory analysis, you should provide estimates of net benefits using both 3 percent and 7 percent."

5. EAST CONTRA COSTA COUNTY

East Contra Costa County has a history of agricultural production and has been an important location for industrial production along its waterfront. Continued growth and expansion of the San Francisco Bay Area economy saw increasing demand for homes in East Contra Costa County. During the 1990s, the cities and communities of East Contra Costa County saw substantial residential development and population growth and became popular for their more modest housing prices and new communities. With this growth has come the need for major investments in infrastructure. This trend is expected to continue as the economy recovers and as economic development efforts attract new businesses and jobs.

Land Use Conflict

By the mid-1990's, land use conflicts arose surrounding urbanization and endangered species habitat in East Contra Costa County, particularly related to protection of the California red-legged frog and Alameda whipsnake. Major public infrastructure projects required to serve the expected future development risked major delay and complication due to the potential cumulative development impacts of these investments on species and habitat.

Plan Process and Details

Preliminary conversations on the need for this HCP/NCCP began in 1997 when representatives of the U.S. Fish and Wildlife Service (USFWS) and the California Department of Fish and Game (CDFG) began meeting with representatives from the County, the Cities of Antioch, Brentwood, Clayton, and Pittsburg and the Contra Costa Water District (CCWD) to discuss the possibility of a regional HCP/NCCP in response to growing concern over the rapid pace of urban development, recent species listings, including the California red-legged frog and Alameda whipsnake, and the cumulative loss of habitat for a variety of native species. By 1999, the four cities, the County, CCWD, and the East Bay Regional Park District (EBRPD) began working together towards forming the HCPA.

On June 30, 2000, the East Contra Costa County Habitat Conservation Plan Association Agreement went into effect. This agreement established the East Contra Costa Habitat Conservation Plan Association (HCPA), a joint exercise of powers authority formed by the Cities of Brentwood, Clayton, Oakley and Pittsburg, Contra Costa County, Contra Costa Water District and the East Bay Regional Park District (EBRPD). The HCPA was the lead agency in drafting the East Contra Costa County Habitat Conservation Plan/Natural Community Conservation Plan (HCP/NCCP) for submittal to the governing boards and councils of member agencies and was the lead agency under CEQA for developing the HCP. In October 2006, the Final HCP/NCCP and Final EIR/EIS were released and by May 2007 participating cities, the County, EBRPD, the Contra Costa County Flood Control and Water Conservation District and the East Contra Costa County Habitat Conservancy (the implementing entity) approved the HCP/NCCP and Implementing Agreement. By August 6, 2007, the California Department of Fish and Game and the United States Fish and Wildlife Service approved the HCP/NCCP, approved the Implementing Agreement and issued regional permits to the local agency permittees.

The Plan was designed primarily to streamline approvals for the future growth of the cities of Clayton, Pittsburg, Brentwood, and Oakley, and unincorporated communities in the County such as Bay Point and Byron. The Plan can issue up to 11,853 acres of incidental take coverage for new urban development can obtain their endangered species permits under the Plan. In addition, a variety of public infrastructure projects could benefit from the Plan including roads, flood protection, schools, and neighborhood parks among others, totaling up to 1,126 acres of impact from rural infrastructure projects. Specific major transportation projects would also receive permits under the Plan. The total impacts allowed under the plan are 13,029 acres under the maximum impact scenario. A preserve system of between 23,800 and 30,200 acres is required (level depends on amount of development/take) with funding through mitigation fees as well as other funding sources.

The City of Antioch chose not to participate in development of the HCP/NCCP and is not a Permittee under the Plan.

Permit Coverage

The ESA Section 10(a)(1)(B) permit issued by USFWS and the NCCP permit issued by CDFG offers assurances to Permittees, including:

- **Federal endangered and threatened species regulation.** The ESA Section 10(a)(1)(B) incidental take permit allow for development of endangered/threatened species habitat, sanctioning some impacts to federally-listed species.
- **State endangered and threatened species regulation.** The NCCP Section 2835 permit allows for development of habitat lands despite the potential impacts to State-listed species.

In addition, the East Contra Costa HCP/NCCP recently became the first regional HCP to integrate take permitting under State and federal endangered species act with 404(b) wetlands permitting from the USACE under the Regional General Permit 1 (RGP). Project proponents must separately apply to the USACE to be covered under the RGP, but the avoidance and mitigation measures of the RGP are consistent with the requirements of the HCP/NCCP (e.g., payment of HCP/NCCP mitigation fees satisfies RGP conditions) This increased level of integration, as discussed elsewhere in this report, enhances the streamlining benefits of this regional plan.

Development Activity and Preservation

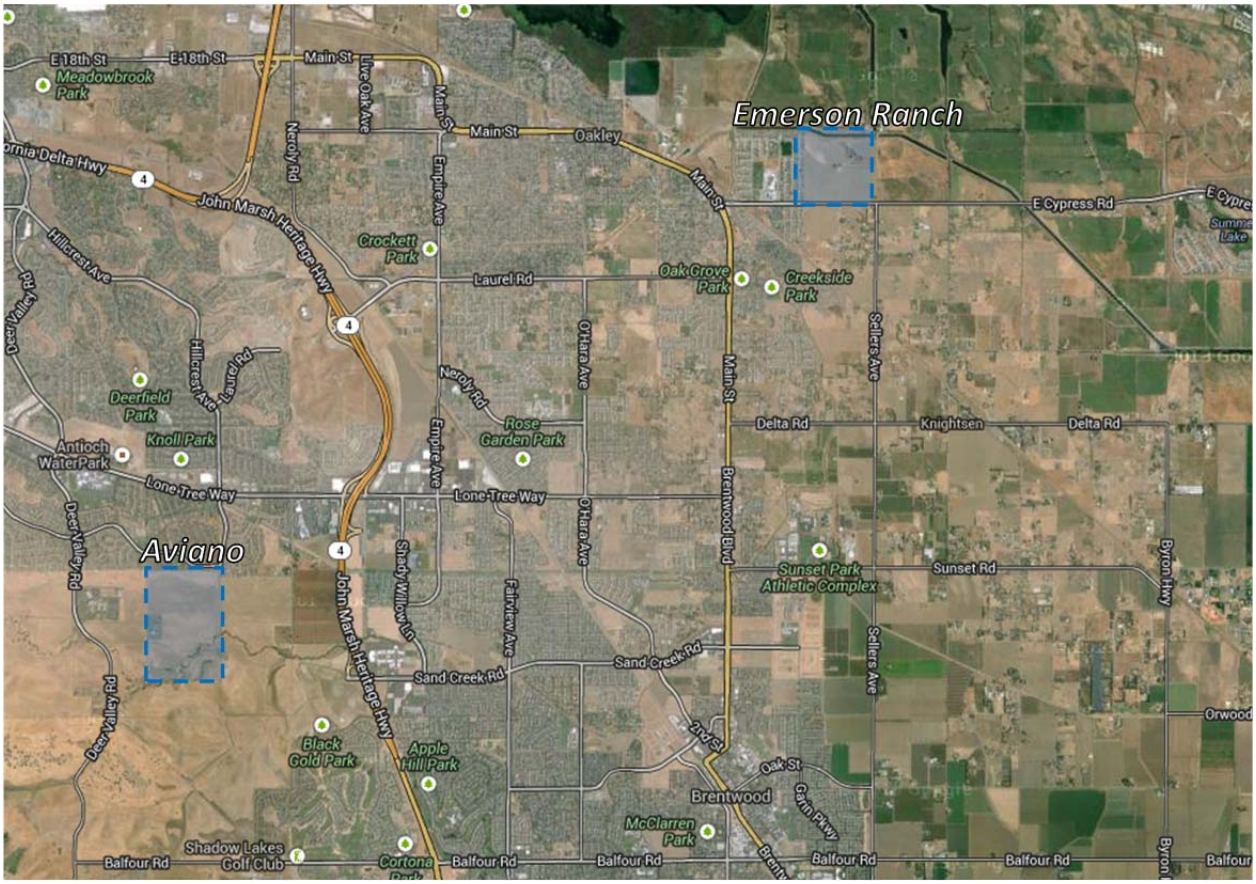
The implementation of the East Contra Costa HCP/NCCP took effect in January 2008, as the Great Recession was beginning. As a result, the level of new private real estate development has been modest, relative to before the recession. There has, however, been a large number of public infrastructure projects that have received permit coverage under the HCP/NCCP. Examples include components of the major State Route 4 Bypass Project, the East Contra Costa BART Extension Project, and Pacific Gas and Electric transmission line improvements among others. Roughly 12,000 acres of preservation has also occurred in conjunction with regional

partner, the East Bay Regional Park District, as well as through the attraction of non-local/regional funding.[61]

HCP Case Study

The case study of the East Contra Costa HCP considers two residential development projects, one that obtained coverage through the HCP and one that was not eligible for coverage under the HCP as it was outside the Plan area. The Aviano Project in the City of Antioch and the Emerson Ranch project in the City of Oakley are comparable in scope and scale, though the projects are in different HCP zones. **Figure 12** presents the approximate location and size of each project. The following section describes each project and its species-related permitting process. The Case Study compares the experience of the two projects and considers a hypothetical scenario in which the Aviano project were able to participate in the East Contra Costa HCP.

Figure 12 Regional Map of East Contra Costa County Case Study Projects



Sources: Google Maps and EPS

Aviano Adult Community Project

Aviano Farms, LLC is proposing to construct the Aviano Adult Community Project (Aviano Project), an active adult (age 55+) residential development, on about 189 acres in the City of

[61] Personal Communication with Krystal Hinojosa, East Contra Costa County Habitat Conservancy, Contra Costa County Department of Conservation & Development (February 2014).

Antioch. The project site is located within the Sand Creek Focus Area (formerly Future Urban Area #1) of the City of Antioch General Plan. The Sand Creek Focus Area encompasses about 2,700 acres for large-scale planned communities that provide housing and employment. The project site is proximate to existing residential development (constructed during the 1990s), agricultural land, Sand Creek (including the Contra Costa County Flood Control and Water Conservation District's Sand Creek Detention Basin), and a Kaiser Permanente hospital. The Aviano property is adjacent to the recently-constructed Dozier Libbey High School (2008) on 9.5 acres. Including the high school, a total of 167 acres will be either permanently or temporarily disturbed on the Aviano project site.[62]

Figure 13 Map of Aviano Project Site

Source: Aviano Adult Community Project EIR

The Aviano Project will include 533 single-family residential units, a recreation facility, open space areas, and parking. Development will occur to the north of Sand Creek. Approximately 25 acres of the site located south of the creek will be set aside as an Open Space Preserve. Vehicular access to the development will be provided by extending an existing road, Hillcrest Avenue, to the project site. A new segment of Sand Creek Road will run along the southern

[62] Development mitigation associated with the school is being addressed in conjunction with the Aviano project. "Temporary impacts" occur when land is restored within 12 months of disturbance.

border of the development area, parallel to Sand Creek. See **Figure 13** and **Figure 14** for maps of the project site and land plan.

Figure 14 Aviano Landscape Plan

Source: Aviano Adult Community Project EIR

To create the Open Space Preserve, the Aviano Project applicant will place a deed restriction on the parcel, but will retain fee title ownership. The specific requirements for management of the Open Space Preserve will be recorded in easement deed restriction. A landscape and lighting district (LLD) will fund City/conservation management of the property.

Temporary and permanent effects to California red-legged frog, Central California tiger salamander, San Joaquin kit fox, and vernal pool fairy shrimp on 167 acres will be mitigated through the preservation of habitat. Since the project is outside of the permit area of the East Contra Costa HCP/NCCP and therefore was not eligible to obtain coverage under the HCP/NCCP, the applicant had to secure regulatory permits directly from USACE and USFWS and to mitigate for endangered species impacts.

The Aviano Project is covered by a Development Agreement executed by the City of Antioch and the project sponsor (a prior owner) on October 25, 2005 (amended September 13, 2007), and permitting for species-related impacts commenced in 2006. In December 2007, the USACE formally requested the initiation of a Section 7 consultation with USFWS. The request included a Biological Assessment for the project that had been completed in July 2007. Subsequently, USFWS worked with the project proponent to develop a mitigation approach. In August 2011, the USACE received a letter from USFWS requesting additional information regarding the mitigation plan for the proposed project. However, recessionary macroeconomic conditions had stalled the project and the USACE terminated the consultation process when the project applicant withdrew. The project proponent reengaged in the regulatory permitting process and revised the Biological Assessment in March 2013. USACE requested re-initiation of the Section 7 consultation in September 2013. The Project proponent expects that the Section 7 consultation will be complete in 2014.[63]

As part of the Section 7 consultation with USFWS, Aviano Farms, LLC, has proposed that offsite mitigation will be accomplished through the placement of conservation easements on a total of 361.2 acres located on two parcels (the Ralph property and the Moller Ranch property), resulting in a mitigation ratio of approximately 2.2:1 (a relatively low ratio that reflects the high quality of habitat contained within the mitigation land[64]). The project applicant has purchased the Ralph property and possesses an option agreement to acquire a conservation easement for the Moller property. The applicant is expecting to receive species permit approval (i.e., Incidental Take Permit) during the first quarter of 2014, though it is uncertain whether the USFWS will accept the proposed mitigation package.

While the overall timeline for seeking regulatory permits is about seven years, including the recessionary period during which the project was on hold, the project proponent estimates about three years will have been spent actively pursuing the Incidental Take Permit for endangered species. The project proponent reports that USFWS used the full review periods allotted, and required additional supporting reports and site studies after initial review of the Biological Assessment. In addition, the process was drawn out by a lengthy 1½-year negotiation with the owner of one of the mitigation sites.

The project applicant reports that the anticipated cost of mitigation for species-related impacts is approximately $6.9 million, including:

- $150,000 for wildlife biologist consulting
- $2,500,000 for Ralph property acquisition (fee title)
- $440,000 for Ralph property endowment
- $1,040,000 for Moller property conservation easement[65]
- $500,000 for Moller endowment

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[63] Personal Communication with Mike Serpa, Aviano Farms LLC (January 2014).

[64] Personal Communication with East Contra Costa County Habitat Conservancy Staff, Contra Costa County Department of Conservation & Development (February 2014).

[65] Creative land acquisition/conservation strategy in which the East Bay Regional Pak District will own the land (in fee) and is paying 20 percent of conservation easement cost.

- $450,000 for ancillary reports and property studies
- $1,500,000 for carry costs associated with mitigation properties
- $350,000 for Dozier Libby High School mitigation

The project proponent indicates that the mitigation fee under the plan would have been approximately $3.7 million ($3.2 million less than the actual reported cost).[66]

Emerson Ranch Project

The Emerson Ranch Project is a 140-acre development to be located in the City of Oakley. The project includes up to 567 residential units and nearly 24 acres of commercial use, as well as trails, a park, levees, and a storm water detention pond. An additional 55-acre parcel of land to the north of the project site is held in escrow, pursuant to a Memorandum of Understanding and Development Agreement, for future conveyance to the City of Oakley as a community park. The Emerson Property project site is adjacent to the Contra Costa Water District Canal. North of the canal there are approximately 1,200 acres of open space that are currently owned by the State of California for wetlands restoration in the future as part of the State's Dutch Slough Restoration Project.

Contra Costa County was responsible for planning and land use in the Oakley community before incorporation of the City in 1999. The 1990 Contra Costa County General Plan update designated a 1,500-acre area (the Dutch Slough properties) which included the Emerson Ranch property for mixed use development. In 1997, the County approved a development agreement providing vested rights to develop these properties, including approximately 5,000 dwelling units, retail, and other uses. During the early 2000s, property owners worked with the City to craft a Memorandum of Understanding regarding future planning, and a new Development Agreement. The City supported development of a 271-acre area south of the Contra Costa Canal, including the Emerson property and in September 2010 the City of Oakley approved the Emerson Ranch Project. See **Figure 15** and **Figure 16** for maps of the project site and land plan.

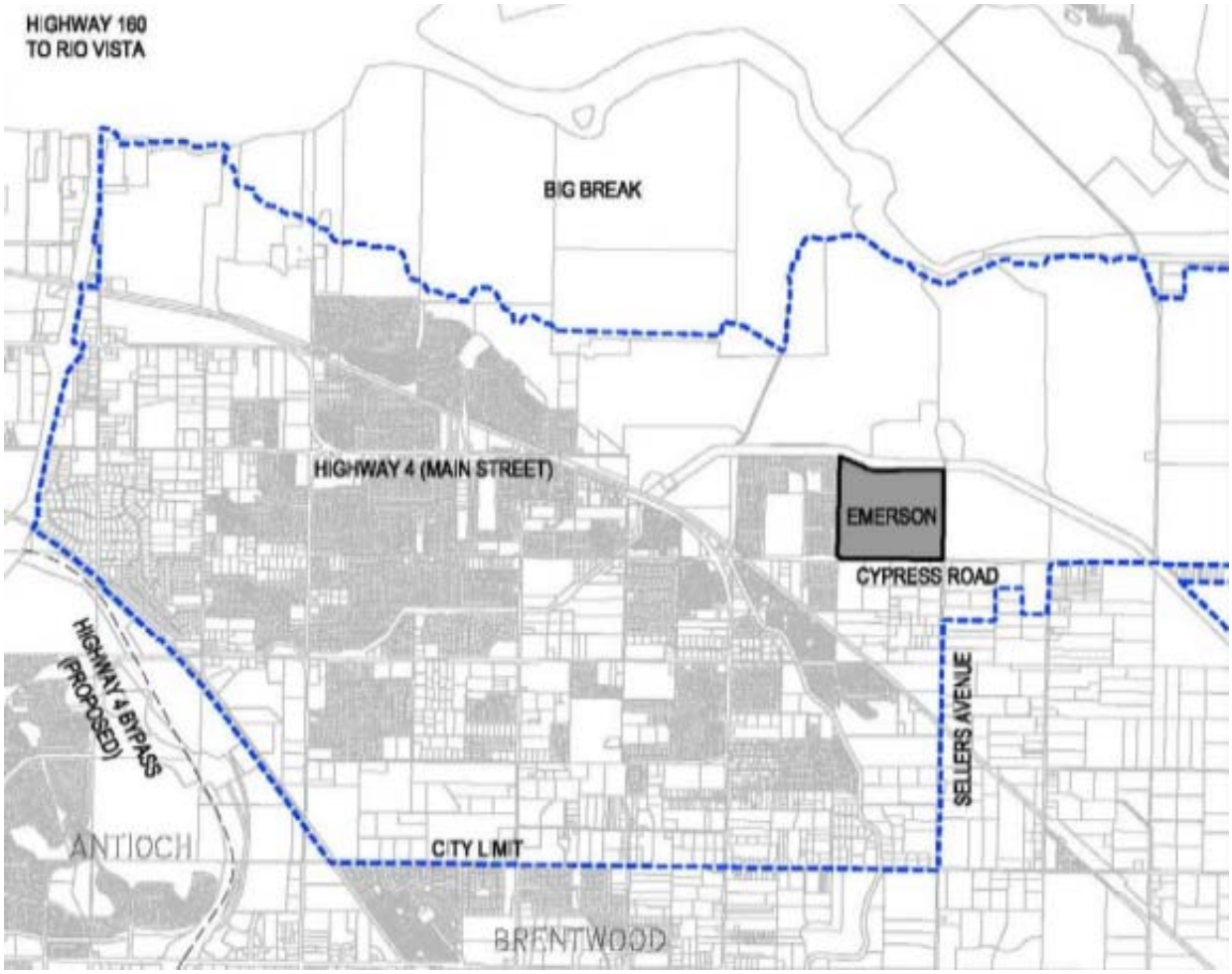
To obtain incidental take permits for endangered species, the Emerson Ranch Project participated in the East Contra Costa County Habitat Conservation Plan. The USFWS issued a Biological Opinion associated with the County HCP that found "no jeopardy/no adverse modification or destruction" supporting the Endangered Species Act (ESA) Section 10 permit in 2007. The effects of the Emerson Ranch Project on federally-listed species are covered through compliance with the existing East Contra Costa County HCP.

The applicant conducted some field work (building on prior biological assessments) and submitted a "Planning Survey Report" in July 2013 and, after receiving and addressing comments, finalized the Report in August. The species-related review only took about a month. At that point the project proponent was eligible to pay the HCP fee and obtain Incidental Take coverage, but waited until October to obtain the required grading permit. With the exception of

[66] Personal Communication with Mike Serpa, Aviano Farms LLC (January 2014).

two acres of already-urbanized land, the entire Emerson Ranch Property was mitigated for under the Plan. A fee of $10,924 was charged per-acre of impacted land and the total cost associated with listed-species impact mitigation for the project is calculated to be about $1.51 million.[67]

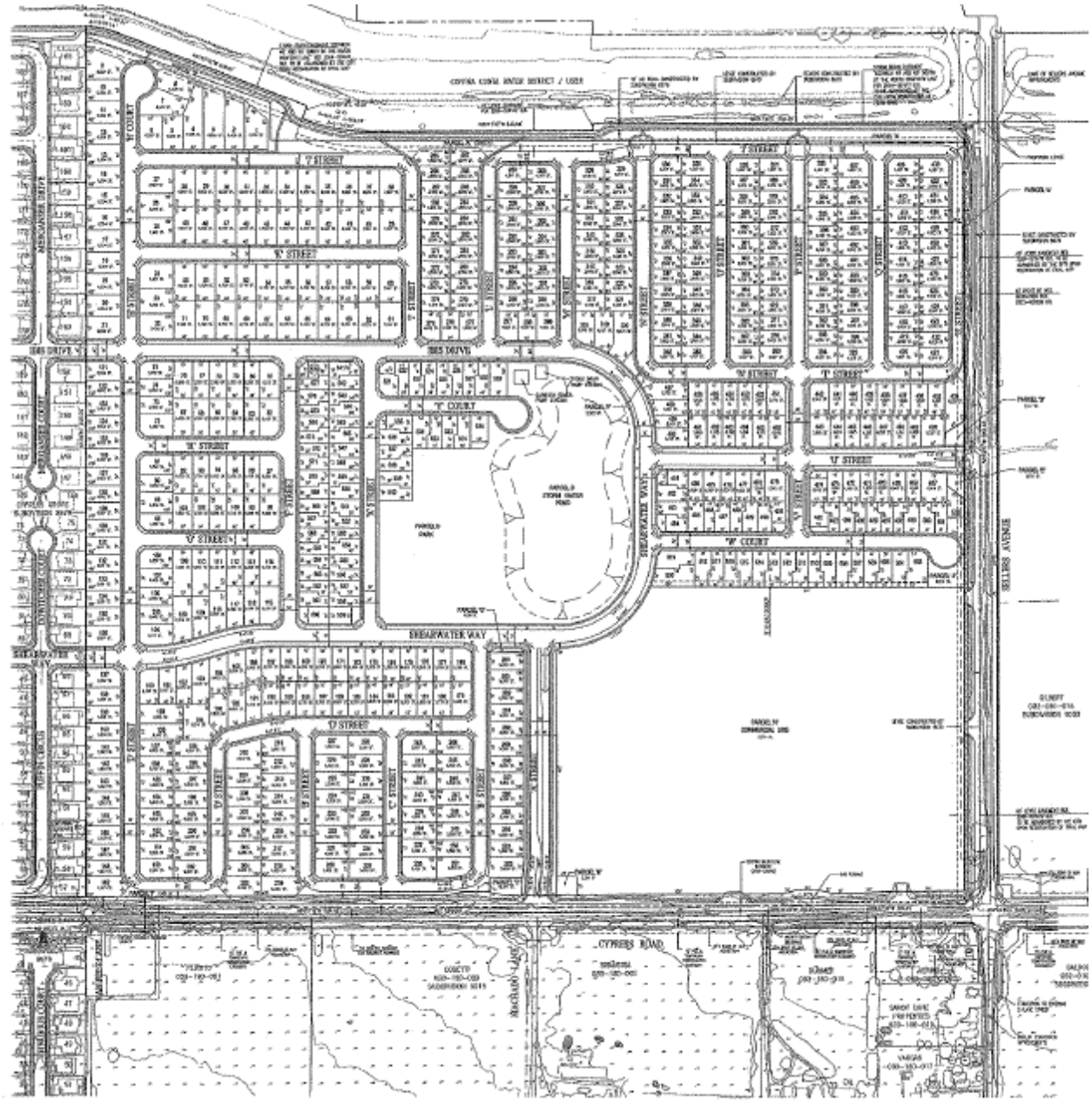
Figure 15 Emerson Ranch Regional Location Map



Source: Emerson Property Project Draft EIR

[67] Personal Communication with Josh Roden, VP Land & Planning, Brookfield Residential (January 2014).

Figure 16 Emerson Ranch Vesting Tentative Map



Source: Emerson Property Project Draft EIR

Case Study Findings

The East Contra Costa County HCP case study reveals compliance cost savings and time savings attributable to the regional HCP. The Aviano Project proponent indicates that the direct cost of compliance under the plan would have been about half of the actual cost. Further, Aviano Farms LLC, bore significant upfront cost and risk in securing offsite mitigation land. Though the project proponent has been in close contact with USFWS regarding the species mitigation proposed, the project proponent cannot be certain that the mitigation is sufficient until the USFWS has responded formally as part of the Section 7 consultation. Further, the processing time for Aviano was extensive, with the project proponent indicating that 2 to 3 years have been spent on

species-related permitting efforts. By comparison, the processing time associated with the Emerson Ranch Project was only about a month (biological fieldwork had largely been completed as part of the CEQA process for the property).

In general, interviewees indicated that the East Contra Costa HCP is highly beneficial for real estate development. Developers typically find that the cost is acceptable, and the case study here supports that notion, revealing a high cost and time delay associated with developer-performed piecemeal mitigation land acquisition. Outside of the HCP area (e.g., in Contra Costa County's 2,700-acre Sand Creek Focus Area, which might support 4,000 homes, species-related issues are a significant risk factor for land developers. Interviewees indicate that it is difficult to get State and federal agencies to work together. The uncertainty surrounding species issues can be significant enough to influence developers' go/no-go decisions. The East Contra Costa HCP offers certainty, and in some cases (as illustrated here), direct cost savings. Currently, a new HCP/NCCP planning effort to cover areas within Antioch is being contemplated, which may extend the HCPs benefits to additional areas within East Contra Costa County.

APPENDIX A:

Illustrative Calculations

APPENDIX A: ILLUSTRATIVE CALCULATIONS

This technical appendix presents order-of-magnitude illustrations of the potential for existing and soon-to-be-approved regional Habitat Conservation Plans in California to (1) provide time value benefits to community developers and (2) time efficiency benefits to USFWS regulators.

1. **Time Value Benefits:** Regional HCPs establish a streamlined permitting process for land development and infrastructure projects. The case studies find that Section 7 consultations and project-specific HCPs frequently delay project approval, construction, and delivery, as compared with regional HCPs. Project delays vary significantly, from roughly three months to more than three years. This White Paper calculates the avoided opportunity cost that would be been borne by landowners and project developers in the absence of regional HCPs.

2. **Time Efficiency Benefits:** Regional HCPs reduce project-specific review requirements for USFWS biologists. Projects that conform to the guidelines and requirements of a regional HCP are granted ESA incidental take coverage under the Section 10(a) permit granted by the HCP. Service review of conforming projects under the regional HCP requires limited time and effort relative to a Section 7 consultation or project-specific HCP that would be required in the absence of the regional HCP.

Developer Time Value Benefits

The illustration of Time Value Benefits relies on data concerning residential market value, associated underlying land value, and developer opportunity costs to estimate avoided opportunity cost benefits attributable to regional HCPs. **Figure 14** presents an example of potential time value benefits from one year of avoided permitting delay. The calculation reflects the avoided delay costs associated with a typical residential development (or phase of a large project) in San Diego County. As shown, land for a project on a 20-acre site to be developed at five units per acre is valued at roughly $4.77 million. A developer delayed by regulation suffers a financial opportunity cost, calculated using the developer's discount rate (i.e., the rate of return that could be earned on another investment). Assuming a discount rate of 12 percent, the San Diego example reveals that one year of delay reduces land value to $4.26 million, approximately $500,000 (11 percent) less than without the year of regulatory delay.

Figure 17 Time Value Benefit - San Diego County Example

Value	Description	Calculation
$477,354	Single-Family Home Value	(a)
20	Site Acres	(b)
5	Units/Acre	(c)
100	Project Units	(d) = (b) * (c)
$47,735,400	Project Value	(e) = (a) * (d)
10%	Land Value (% of Project Value)	(f)
$4,773,540	Land Value Without Delay	(g) = (e) * (f)
12%	Developer Opportunity Cost (discount rate)	(h)
$4,262,089	Land Value With Delay	(i) = (g) / (1+ (h))
-$511,451	Opportunity Cost to Developer	(j) = (i) - (g)

The potential impact of reduced regulatory delay across existing and soon-to-be-approved regional HCPs in California could be quite significant. These regional HCPs allow for significant land development in the future. As shown in **Figure 18**, 14 existing and soon-to-be approved regional HCPs provide nearly two million acres of conserved open space and allow development of approximately 1.6 million acres of land.

Home values and associated land values vary greatly across these regional HCP areas. **Figure 19** presents average single-family home values for the regional HCP areas, based on transaction data from 2012.[68] As shown, the average value of a single-family detached residence ranges from a low about $150,000 in Butte County to a high of about $770,000 in Santa Clara County. The average home value in the HCP areas (weighted by available development acreage under the plans) is an estimated $306,000. Land value is assumed to be 10 percent of home value, based on typical land development economics for single-family residential development projects in greenfield locations.

To aggregate the potential time value benefit across all existing and soon-to-be approved regional HCPs, this analysis contemplates potential average annual development of 8,000 acres in the regional HCP areas, a figure that reflects broad trends in land development and residential building permit issuance (the assumption of annual development of 8,000 acres at a typical density of 5 units per acre suggests that about 40 percent of typical statewide single-family housing permitting would occur in these HCP areas). Based on these data and assumptions regarding development within the regional HCP areas, this study estimates that the annual time value benefit of the regional HCPs could be roughly $131 million. However, as noted in the White Paper, a variety of other factors associated with project permitting and development may influence the timing of project approvals. Assuming that ESA permitting is a binding constraint

[68] RAND California Statistics.

that directly effects timing in half of the projects permitted each year, the time value benefit to project land developers is estimated at $66 million per year. **Figure 20** presents the assumptions and calculation associated with this annual benefit illustration.

Figure 18 Conservation and Development within Regional HCPs

Habitat Conservation Plan	Conservation Acres	Development Acres
Butte Regional Conservation Plan	150,000	23,000
City of San Diego MSCP Subarea Plan	52,727	37,000
Coachella Valley MSHCP/NCCP	745,000	300,000
East Contra Costa County HCP/NCCP	30,000	12,000
Natomas / Metro Air Park HCPs	9,000	18,000
Placer County Conservation Plan	60,000	115,000
San Diego County Multiple Habitat Conservation Open Space Plan NCCP	158,000	228,000
San Diego MSCP County Subarea Plan	98,000	118,000
San Diego North County MSCP / NCCP	107,000	104,000
San Joaquin County Multiple Species Conservation and Open Space Plan	101,000	109,000
Santa Clara Valley HCP / NCCP	49,390	20,000
Solano HCP	30,000	12,000
South Sacramento HCP	58,000	45,000
Western Riverside County MSHCP / NCCP	500,000	500,000
Total	**2,148,117**	**1,641,000**

Source: California Habitat Conservation Planning Coalition and EPS

Figure 19 Home Values in Regional HCP Areas

Habitat Conservation Plan	Development Acres	Home Value (2012)	Home Value Geography
Butte Regional Conservation Plan	23,000	$149,945	Butte County
City of San Diego MSCP Subarea Plan	37,000	$476,704	City of San Diego
Coachella Valley MSHCP/NCCP	300,000	$217,990	Riverside County
East Contra Costa County HCP/NCCP	12,000	$472,633	Contra Costa County
Natomas / Metro Air Park HCPs	18,000	$191,055	Sacramento County
Placer County Conservation Plan	115,000	$325,394	Placer County
San Diego County Multiple Habitat Conservation Open Space Plan NCCP	228,000	$477,354	San Diego County
San Diego MSCP County Subarea Plan	118,000	$477,354	San Diego County
San Diego North County MSCP / NCCP	104,000	$477,354	San Diego County
San Joaquin County Multiple Species Conservation and Open Space Plan	109,000	$172,163	San Joaquin County
Santa Clara Valley HCP / NCCP	20,000	$771,325	Santa Clara County
Solano HCP	12,000	$215,879	Solano County
South Sacramento HCP	45,000	$191,055	Sacramento County
Western Riverside County MSHCP / NCCP	500,000	$217,990	Riverside County
Total / Weighted Average	**1,641,000**	**$306,032**	

Source: RAND California and EPS

Figure 20 Time Value Benefit - Annual Avoided Opportunity Cost for CA HCPs

Value	Description	Calculation
$306,032	Single-Family Home Value	(a)
8,000	Site Acres	(b)
5	Units/Acre	(c)
40,000	Project Units	(d) = (b) * (c)
$12,241,298,452	Project Value	(e) = (a) * (d)
10%	Land Value (% of Project Value)	(f)
$1,224,129,845	Land Value Without Delay	(g) = (e) * (f)
12%	Developer Opportunity Cost (discount rate)	(h)
$1,092,973,076	Land Value With Delay	(i) = (g) / (1+ (h))
-$131,156,769	Opportunity Cost to Developer	(j) = (i) - (g)
50%	Probability that ESA Causes Delay	(k)
-$65,578,385	Time Value Benefit Estimate	(l) = (j) * (k)

Source: California Habitat Conservation Planning Coalition; RAND California; and EPS

Wildlife Agency Time Efficiency Benefits

Interviews conducted for the White paper reveal that USFWS staff time savings have been realized through the creation of regional HCPs. While the range of projects and the associated regulatory process that would be required in the absence of regional HCPs varies a great deal, average-sized projects with moderate complexity take roughly 360 to 480 hours of staff time to complete (section 7 or project-specific HCP). Major large-scale projects with significant complexity can require 1,000 hours or more staff time over several years. Assuming 80 average-sized projects with moderate species-related complexity ome through the existing and soon-to-be approved regional HCPs in a typical year (i.e., 100-acre projects on average), these HCPs might save the equivalent of 14 to 19 full-time-equivalent (FTE) staff positions. With the cost of an agency biologist at about $100,000 per year (including benefits) in California, the time efficiency benefits of existing and soon-to-be-approved HCPs could be $1.4 million to $1.9 million per year (2013$).

It is important to note that regulatory staff time is required is helping to establish and approve a regional HCP as well as, periodically, in regional HCP implementation support. The specific regulatory staff assigned to regional HCP development and implementation support depends, in part, on the needs of the different regional HCPs at different points in their process of establishment and implementation. As a result, some of the staff time saved due to the adoption of regional HCPs is replaced with other staff time demands and activities. Nevertheless, regulatory agency staff indicated that they would expect a net time saving (and benefit) for their personnel under regional HCPs.

Figure 21 Illustration of Time Efficiency Benefits

Scenario	Staff Days	Staff Hours	Annual Hours[1]	FTEs[2]	Staff Cost
Low	45	360	28,800	14.4	$1,404,000
High	60	480	38,400	19.2	$1,872,000

[1] Assumes 80 projects per year.

[2] Full-time-equivalent staff positions.

[3] Assumes base salary of $75,000 and benefits cost of 30 percent.

Source: Personal communications with consulting biologists and EPS

APPENDIX B:

Acknowledgements and Other Sources

APPENDIX B: ACKNOWLEDGEMENTS AND OTHER SOURCES

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