

353. This section evaluates how conservation activities to protect the flycatcher and its habitat affect real estate development. Specifically, the analysis focuses on the past and future economic effects resulting from flycatcher conservation activities and “co-extensive” land use regulations affecting residential and commercial real estate development within proposed flycatcher CHD. Related impacts are addressed in other chapters. For example, real estate development increases demand for domestic, commercial, and industrial water use, transportation infrastructure, and recreational opportunities, each of these activities is addressed elsewhere in this report. This section presents a summary of economic impacts on real estate development, relevant background information, an overview of the methodology used to evaluate economic impacts and a detailed presentation of the analysis. A discussion of the number of residential customers that could be affected if changes to water management within proposed CHD is included in Section 4.

6.1 Summary of Economic Impacts

354. This analysis examines past and future economic impacts on residential and commercial real estate development resulting from flycatcher conservation activities. The section below summarizes the past economic impacts and the estimated future economic impacts. This section considers the costs of modifications to projects and other indirect impacts of flycatcher conservation activities. Administrative costs associated with consultations regarding the flycatcher and habitat are quantified in Section 3 of this report.

6.1.1 Summary of Past Economic Impacts

355. Past section 7 consultations addressing development projects impacting the flycatcher have occurred in the Verde Management Unit in Yavapai County, Arizona. The Service has consulted on two non-Tribal residential development projects with potential to affect the flycatcher in this management unit. While the Service prepared biological opinions for both of the projects, only one of the projects (the Homestead project) is expected to proceed. The other project has been delayed due to factors

unrelated to the flycatcher. This analysis estimates the economic impact resulting from flycatcher conservation activities associated with the active project range from \$4,445,000 to \$4,775,000.²³⁴

6.1.2 Summary of Future Economic Impacts

356. Future economic impacts are anticipated in the Coastal California Recovery Unit and Basin and Mojave Recovery Unit in California. Development impacts are not expected in other CHD units because demand is projected to be insufficient to support new development in these areas. In particular, development in these units is expected to be cost prohibitive due to the riparian-nature of flycatcher habitat. A summary of the total future economic impact of flycatcher conservation activities on real estate development is shown in Exhibit 6-1. The total costs of future project modifications, flycatcher-related California Environmental Quality Act (CEQA) costs, and project delay costs are estimated to be approximately \$5.3 million. The derivation of these costs is detailed in Sections 6.5 through 6.8.

Exhibit 6-1						
SUMMARY OF ESTIMATED FUTURE ECONOMIC IMPACTS BY MANAGEMENT UNIT						
Management Unit	Acres of Development	Land Value Loss	Other Project Modifications	CEQA Costs	Delay Costs	Total Cost
Mojave	8	\$3,037,017	\$1,365,503	\$9,670	\$868	\$4,413,058
Santa Ana	2	\$643,815	\$282,741	\$2,002	\$184	\$928,742
Total	10	\$3,680,833	\$1,648,243	\$11,672	\$1,052	\$5,341,800

Note: Impacts are discounted at 7 percent and presented in present value terms using 2004 dollars.

6.2 Background on Residential Development in the Proposed CHD

357. The proposed flycatcher CHD is located within the FEMA 100-year floodplain. Generally, Federal guidelines govern real estate development in floodplains. Many jurisdictions in flood-prone areas participate in the National Flood Insurance Program (NFIP), managed by the Mitigation Division of the Federal Emergency Management Agency (FEMA). Communities voluntarily adopt FEMA's floodplain management ordinances in exchange for Federally-backed flood insurance.

358. The 100-year floodplain is defined as all land subject to inundation by the 100-year flood (i.e., the flood elevation with a one percent chance of being equaled or exceeded each year). FEMA defines these lands as Special Flood Hazard Areas and places special requirements on development within them. The lowest floor of all new residential buildings in the floodplain must be at or above the level of the 100-year flood, in order to qualify for FEMA-backed insurance. Non-residential buildings must be at or

²³⁴ While the biological opinion regarding the Homestead project defines specific project modifications for which costs are estimated, these costs have not been borne to date. Although the cost of the project modifications is an accurate estimate of the loss in land value, these costs have not been discounted to account for the timing of the project modifications.

above the level of the 100-year flood, or be flood-proofed to that level. Using these guidelines, construction in a floodplain is possible in lower-risk locations such as areas where the floodplain is wide. While FEMA regulates development in these areas, individual jurisdictions may place additional restrictions on construction above and beyond FEMA regulations.

359. Within the floodplain, the “floodway” is defined as all land required to convey the 100-year flood without structural improvements and/or all land required to convey the 100-year flood without increasing water surface elevation by more than one foot at any single point. It is the part of a waterway where water is likely to be fastest and highest, and it is therefore important that the floodway be kept free of obstructions in order to avoid increasing the water level. FEMA does not prohibit all construction in floodways, but does require developers to obtain a “No Rise Certificate” by demonstrating that there will be no increase in water level as a result of construction. This FEMA development regulation may require flood control facilities or other special engineering, often making development in floodways impractical and prohibitively expensive.²³⁵ Furthermore, individual jurisdictions may establish additional, more stringent restrictions on construction in the floodway.

6.3 Analytical Approach

360. Potential modifications to land use projects stemming from flycatcher conservation activities can affect landowners, consumers, and real estate markets in general. The total economic impact depends on the scope of flycatcher conservation activities, pre-existing land use and regulatory controls in the region, and the nature of regional land and real estate markets. In order to accurately account for all of these factors, and to estimate the corresponding economic impacts, this analysis employs the following series of methodological tasks.²³⁶

6.3.1 Estimate Future Development within Proposed CHD

361. The first step in evaluating the effect of flycatcher conservation activities on private land development is to identify the amount, type and location of land included within CHD. Economic effects on private development stem from projects on land within proposed CHD that can be feasibly developed during the timeframe being considered. Because flycatcher habitat is contained within the 100-year floodplain, the analysis limits flycatcher impacts on development to areas within CHD where real estate demand is great enough to justify the costs associated with developing the floodplain. In addition, to isolate potentially impacted areas, the analysis removes non-developable areas such as bodies of water, public parks, and other permanent open space.

²³⁵ Personal communication with Mekbib Degaga, Riverside County Flood Control and Water Conservation District, August 18, 2004. Personal communication with Clark Pharr, Kern County Engineering and Survey Services Department, August 18, 2004.

²³⁶ The steps described below outline the methodological approach used to estimate the economic impacts associated with future land development in proposed CHD; past development projects in California have not required project modification due to flycatcher concerns.

Geographically based development projections are then used to estimate the amount of future development (residential and commercial) expected to occur on developable acreage within proposed CHD for the flycatcher.

6.3.2 Identify Flycatcher Conservation Activities

362. The effects of flycatcher conservation activities on land value ultimately depend on the type and level of project modifications recommended. Thus, the second step is to estimate the expected modifications to land use projects associated with flycatcher conservation activities. Due to the scarcity of past flycatcher consultations addressing development projects, this analysis relies on an assumed offsetting compensation ratio and additional project modifications derived from various past section 7 consultations addressing the flycatcher to forecast future impacts. Requirements associated with pre-existing regulations or land use restrictions, including Federal, State, local, or regional laws and agreements, that are co-extensive with flycatcher protection under section 7 are included in this analysis.

6.3.3 Evaluate Effects on Regional Real Estate Market and Associated Cost Incidence

363. The third step is to determine the significance of flycatcher-related land use project modifications relative to regional real estate market dynamics, and the resulting regulatory cost incidence. The incidence or burden of the project modifications and other compliance costs will ultimately depend on their scope and the nature of the regional real estate markets.
364. The economic impacts are likely to extend beyond the regulated landowners and affect the real estate market, real estate consumers, and the regional economy if: (1) the amount of land set-aside (i.e., land not developed as a result of flycatcher conservation activities) is high relative to the total developable land in the region, and/or (2) other compliance costs are high relative to real estate development value and cover a significant proportion of developable land. In these cases, landowners and developers may pass on the costs to real estate consumers in the form of higher prices.
365. Conversely, if project modification costs are low and/or flycatcher conservation activities only affect a small fraction of the total developable land supply in a region, then the economic effects are likely to be limited to that sub-set of individual landowners and/or projects. In this case, the regulated landowners will not be able to pass on their increased costs to consumers and their development projects will either relocate to other available sites or proceed with a reduced land value.

6.3.4 Estimate Economic Impacts

366. The fourth step involves applying the data and conclusions from steps one through three to estimate the potential economic costs associated with flycatcher conservation activities. The approach to economic cost estimation is different depending

on the cost incidence. If the project modification requirements do not affect the overall regional real estate market dynamics, cost impacts as estimated are borne by the regulated landowners. The economic costs are determined based on the loss in land value associated with required on-site set-asides and other project modifications that may be incurred by individual landowners/developers.

367. If, however, the scale and intensity of the proposed designation is sufficient to affect regional real estate dynamics, regulatory requirements may affect consumers through some mix of increased real estate prices and reduced real estate production. Developers or landowners will also be affected, although those with land outside of the designation area could gain from the reduced supply and corresponding price increase. The total economic effect is measured through the change in producer and consumer surplus, a measure of social welfare.

6.4 Estimated Future Development within Proposed CHD

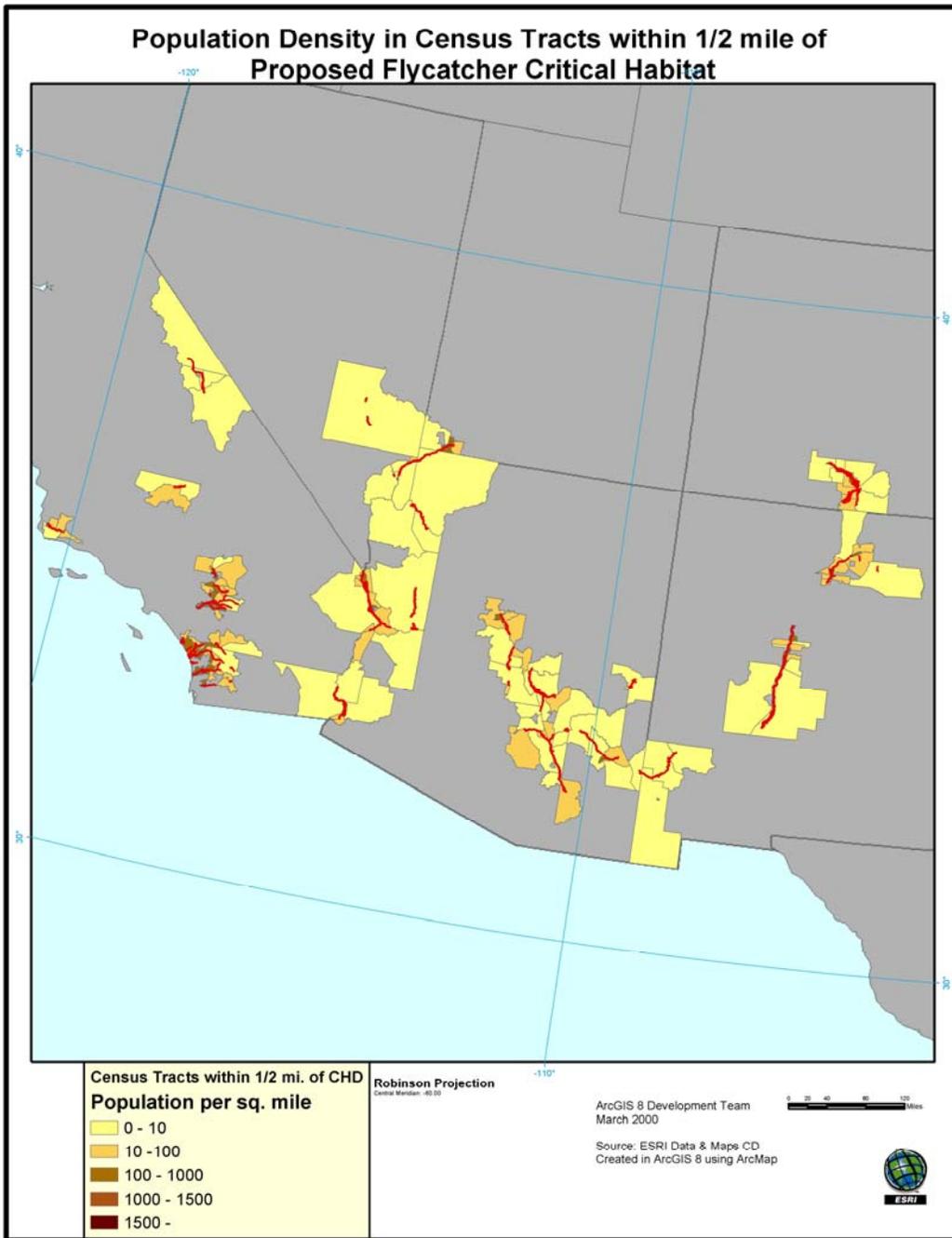
368. The analysis limits flycatcher impacts on real estate development to areas within proposed CHD where real estate demand is great enough to support floodplain development in the future. While the additional construction and insurance costs specific to floodplain development make it unlikely in most areas, real estate markets in some high-demand locations may support new development in the floodplain. This analysis identifies the areas within CHD where floodplain development is most likely.

6.4.1 Identifying Areas Where Floodplain Development is Most Probable

369. The analysis relies on population density and land scarcity measures (where available) to identify areas where floodplain development is most probable. First, Geographic Information System (GIS) analysis is used to identify census tracts intersecting proposed flycatcher habitat. Next, population density is calculated from Census 2000 data for each census tract intersecting proposed flycatcher habitat. Exhibit 6-2 presents the population density for census tracts that cross flycatcher CHD. Then, for each census tract intersecting proposed habitat in California, developable acreage is calculated and divided by land area to determine the proportion of each census tract that is developable.²³⁷ This calculation is not performed elsewhere, as the data necessary to identify developable lands within the proposed CHD are not available for Arizona, Colorado, New Mexico, Nevada, or Utah.

²³⁷ Developable acreage is calculated as total private acreage proposed less (private) water acreage and (private) urbanized acreage based on GIS land ownership data provided by the Service and California's Farmland Mapping and Monitoring Program (FMMP) data regarding urbanization. FMMP data is not available for Inyo or Mono Counties but these areas are known to be very rural.

Exhibit 6-2



370. Floodplain development is assumed to be most probable in those census tracts that are densely populated and largely devoid of opportunities for new development (thereby necessitating development within the floodplain). Specifically, in California, those census tracts intersecting flycatcher habitat that are both the most densely populated (i.e., the densest 25 percent of tracts intersecting habitat) and least developable (i.e., the least developable 25 percent of tracts intersecting habitat) are isolated for further analysis. Where developable acreage is unknown (i.e., Arizona, Colorado, New Mexico, and Utah), population density alone is used to identify tracts where floodplain development is most likely occur in the future. In these states, census tracts with at least 1,000 persons per square mile were considered most likely to support floodplain development. In sum, 117 census tracts located in 12 Counties are identified as likely to support floodplain development. Exhibit 6-3 presents the Counties identified as most likely to support floodplain development.

Exhibit 6-3	
COUNTIES IDENTIFIED AS MOST LIKELY TO SUPPORT DEVELOPMENT WITHIN PROPOSED FLYCATCHER CHD	
State	County(s)
Arizona	La Paz, Yuma
California	San Bernardino, San Diego, Santa Barbara
Colorado	None
New Mexico	Bernalillo, Rio Arriba, Sandoval, Santa Fe, Valencia
Utah	Washington
Nevada	Clark
Source: Based on GIS analysis of Census 2000 population density, land ownership data provided by the U.S. Fish and Wildlife Service, and Farmland Mapping and Monitoring Program (FMMP) data.	

371. While the GIS analysis utilizes the best available data, some areas identified as most likely to support floodplain development may be constrained by existing flood control infrastructure, local floodplain and floodway ordinances, or other factors not reflected in the GIS data available for this analysis. To account for factors not captured in the GIS analysis, County and City planners were contacted to verify development potential in floodplain areas identified as the most likely to support development. Maps of the census tracts where development in the floodplain is most likely were emailed to the appropriate agencies. Based on information provided, development projects in California are anticipated to be affected by conservation measures associated with the flycatcher. However, development projects in Arizona, Colorado, New Mexico, Nevada, and Utah are not anticipated to be affected. Specific findings for each management unit are discussed in Section 6.9.

6.4.2 Development Projections

372. In addition to identification of areas most likely to support development, estimation of future flycatcher-related impacts on private development within CHD requires consideration of projected level of development in those areas. To analyze development projections, GIS maps of the proposed CHD boundaries were correlated with census tract level data provided by the Southern California Association of Governments (SCAG), the San Diego Association of Governments (SANDAG), and the U.S. Census Bureau.
373. SCAG and SANDAG are quasi-governmental agencies responsible for providing official demographic projections for (a) the Counties of Los Angeles, Ventura, Riverside, San Bernardino, and Orange Counties, and (b) San Diego County, respectively. The regional agency responsible for demographic projections in Santa Barbara County (the Santa Barbara County Association of Governments [SBCAG]) does not develop land use projections on a census tract basis. The rate of past growth in the number of households based on 1990 and 2000 census data is therefore used to evaluate future development by census tract in this County.
374. The SCAG and SANDAG land use projections are used to identify undeveloped acres slated for residential, retail, office, or industrial development. SANDAG provides acreage estimates for these land use categories while SCAG data were converted to an acreage format based on assumptions regarding employees and households per acre. In Santa Barbara County, census data indicate a reduction in the number of households between 1990 and 2000 in the one tract where floodplain development is most probable. Thus, no future development is forecasted for this Santa Barbara tract. Further according to the Public Works Department for San Diego, development within the floodplain areas identified is not expected to occur. These areas have not been subject to development in the past, despite population growth patterns, and no plans for future development exist.²³⁸
375. For census tracts that are partially covered by proposed CHD, projected growth is assumed to be evenly distributed throughout all land available for development in that census tract.²³⁹ The amount of growth projected within proposed CHD is then estimated according to the proportion of developable land within the entire census tract that is also within proposed CHD. In some census tracts, projected development is limited by developable acreage. Also, development is not projected to occur in infeasible areas, as determined through interviews with local and regional planners (See Section 6.9 for additional detail).
376. Of the 117 proposed CHD acres in California, GIS analysis indicates that 66 acres of CHD are developable. Based on development projections and information collected

²³⁸ Personal communication with Greg Mayer, Deputy City Engineer, Public Works Department, City of Oceanside, MA, September 9, 2004.

²³⁹ This is a simplifying assumption. In reality, costs associated with development in the floodplain make such development less likely than non-floodplain areas. This assumption will lead the analysis to overstate rather than understate the economic cost of flycatcher protection on real estate development.

from County and City planners, future demand is estimated support approximately 38 acres of new development in proposed CHD through 2023. Exhibit 6-4 presents projected development within CHD.

Exhibit 6-4		
DEVELOPMENT PROJECTIONS IN CENSUS TRACTS WHERE FLOODPLAIN DEVELOPMENT IS MOST PROBABLE		
Management Unit	County (Census Tract)	Projected Development (Acres)
Mojave	SAN BERNARDINO (009800)	31.7
San Diego	SAN DIEGO (18300)	0.0
San Diego	SAN DIEGO (18400)	0.0
Santa Ana	SAN BERNARDINO (008301)	6.6
Santa Ana	SAN BERNARDINO (008702)	0.0
Santa Inez	SANTA BARBARA (002703)	0.0
Total		38.3

6.5 Flycatcher Conservation Activities

377. The economic impact of proposed CHD on private sector land development requires information on the type and level of offsetting compensation and other conservation activities likely to be associated with future impacts to the flycatcher.

6.5.1 Offsetting Compensation

378. The Service may request a range of offsetting compensation for impacts to flycatcher habitat. For example, it is possible that the Service may request that developers avoid permanent impacts to flycatcher habitat in the future. That is, due to the scarcity of flycatcher habitat, the Service may ask that developers not undertake projects in flycatcher habitat. A more common result is that the Service may request an offsetting compensation ratio to replace affected habitat. For example, the Service requested an average offsetting compensation ratio of 1.25-to-1 for impacts to arroyo toad habitat (See the *Economic Analysis of Critical Habitat Designation for the Arroyo Toad*).

379. There are only two past biological opinions addressing the effect of development projects on the flycatcher. Both past development projects required offsetting compensation. Although the ratio of impacted habitat to set-aside is difficult to ascertain from the biological opinions, it appears that the ratio is greater than 1.25:1. Thus, this analysis relies on an offsetting compensation ratio of 3-to-1 for permanent impacts to flycatcher habitat. This corresponds to the mitigation ratio described by the Service for the California tiger salamander. That is, for every project acre developed, three on-site acres must be preserved.²⁴⁰ The acreage of offsetting compensation projected within flycatcher CHD is presented in Exhibit 6-5.

²⁴⁰ The Service states that a more realistic ratio would be 1.25 to 1. Written comments of California/Nevada Operations Office, Service, January 18, 2005.

Exhibit 6-5		
DEVELOPMENT SET-ASIDES IN CENSUS TRACTS WHERE FLOODPLAIN DEVELOPMENT IS MOST PROBABLE		
Management Unit	County (Census Tract)	Projected On-Site Set-Aside (Acres)^a
Mojave	SAN BERNARDINO (009800)	23.8
San Diego	SAN DIEGO (18300)	0.0
San Diego	SAN DIEGO (18400)	0.0
Santa Ana	SAN BERNARDINO (008301)	4.9
Santa Ana	SAN BERNARDINO (008702)	0.0
Santa Inez	SANTA BARBARA (002703)	0.0
Total		28.7

^a Based on an offsetting compensation ratio of 3:1. The Service states that a more likely ratio would be 1.25 to 1. Written comments of California/Nevada Operations Office, Service, January 18, 2005.

6.5.2 Regional Real Estate Effects

380. The cost incidence or economic burden of real estate development project modifications stemming from flycatcher protection will be determined by their impact on the regional real estate market (i.e., on overall real estate production and prices). To determine the regional significance of flycatcher conservation activities, this analysis compares the reduction in acres slated for development to market-wide demand and supply conditions.
381. Ideally, land set-aside requirements should be compared with the total supply of developable acreage in the region. However, accurate estimates of total regional development potential are not readily available. Consequently, for the purposes of this analysis, projected acres of growth through 2023 in the three Counties where floodplain development is most probable are used as proxies for regional market supply. Total land development potential is based on SCAG and SANDAG forecasts.
382. A comparison of the total acres of on-site habitat set-aside in proposed CHD resulting from flycatcher conservation activities and the total projected acres of growth through 2023 for each County is provided in Exhibit 6-6. As shown, the estimated on-site habitat set-aside in proposed CHD represents between approximately zero and 0.04 percent of future growth at the County level.

Exhibit 6-6

REGIONAL SIGNIFICANCE OF PROJECTED LAND SET-ASIDE			
County	Total County Growth through 2023 (Acres)	Regional Significance of CH	
		On-site Acres Set-Aside	Percent of Projected County Growth
San Diego, California (1)	235,641	0	0.00%
San Bernardino, California (2)	80,213	29	0.04%
Santa Barbara, California (3)	4,989	0	0.00%
Total	320,842	29	0.01%

Notes:

1. Land development projections provided by SANDAG.
2. Land development estimated based on SCAG demographic and employment projections.
3. Based on countywide projections of new residential units and commercial land from 2005 to 2023, from *SBCAG Regional Growth Forecast 2000-2030*.

383. It is important to note that the set-aside estimates presented in Tables 6-5 and 6-6 are an overestimate of the flycatcher conservation activities on regional development opportunities. The following factors suggest that the flycatcher-related on-site habitat set-aside will actually represent a much smaller proportion of the regional real estate market.

- **Regional land supply is greater than projected demand through 2023.** The above estimates rely on projected land consumption through 2023 as a proxy for long-term supply. In reality, the long-term land supply is greater than demand through 2023 because many of the communities within the three-County area are not expected to reach build-out until significantly beyond that date.
- **Developers will adjust to reduced land supply by increasing density.** The above estimates assume that development in areas both inside and outside of CHD cannot occur at higher densities. In practice, increased densification as well as revitalization of under-utilized “in-fill” sites can continue to provide significant development opportunities in land constrained markets.

384. Given the factors described above, and the fact that 0.04 percent is a very small proportion of real estate supply, the set-aside land associated with flycatcher protection is not expected to affect the dynamics of the regional real estate market. Hence, housing prices in each County are not likely to be affected. However, regulated landowners will bear the cost associated with flycatcher protection, in the form of lower property values. As this analysis assumes that the total supply of housing will be met, some projects may be distributed to other locations while others may proceed with higher flycatcher protection costs and lower land values. No broader effects on regional real estate prices are anticipated.

6.6 Economic Impact of Lost Land Development Opportunities

385. This section calculates the loss in land value for on-site set-aside due to flycatcher conservation activities projected for private development projects.

6.6.1 Real Estate Land Value Data and Assumptions

386. Residential, commercial, and industrial market data for each of the three Counties were used to estimate the cost, or lost value, resulting from on-site habitat set-aside. A summary of relevant market data and calculation of the “residual land value” by real estate product type are presented in Exhibit 6-7.

Exhibit 6-7				
RESIDENTIAL AND COMMERCIAL RESIDUAL LAND VALUE CALCULATIONS				
Land Use / Item		Land Value Calculations by County		
		San Diego	San Bernardino	Santa Barbara
Residential	Median home price (1)	\$408,336	\$247,587	\$303,435
	Gross property value (2)	\$2,041,678	\$1,237,936	\$1,517,174
	Residual Value / Acre @ 11% (3)	\$224,802	\$136,305	\$167,051
Office	Annual Lease Rate (NNN) [4]	\$21.60	\$20	N/A
	Gross Revenue / Gross Ac. (5)	\$265,921	\$242,283	N/A
	Net Operating Income (6)	\$257,943	\$235,015	N/A
	Capitalized Value / Ac. (7)	\$2,866,035	\$2,611,276	N/A
	Residual Value / Acre @ 10% (3)	\$286,603	\$261,128	N/A
Retail	Annual Lease Rate (NNN) [8]	\$23.28	\$17	N/A
	Gross Revenue / Gross Ac. (5)	\$268,781	\$195,351	N/A
	Net Operating Income (6)	\$260,718	\$189,491	N/A
	Capitalized Value / Ac. (7)	\$2,896,862	\$2,105,452	N/A
	Residual Value / Acre @ 15% (3)	\$434,529	\$315,818	N/A
Industrial (3)	Annual Lease Rate (gross) [9]	\$11.04	\$4	N/A
	Gross Revenue / Gross Ac. (5)	\$97,082	\$39,044	N/A
	Net Operating Income (6)	\$77,666	\$31,235	N/A
	Capitalized Value / Ac. (7)	\$862,953	\$347,057	N/A
	Residual Value / Acre @ 10% (3)	\$86,295	\$34,706	N/A

1. Based on the average median new home price in six Counties from 2000 to 2004, inflated to 2004 dollars, based on data from DataQuick.

2. Assumes 5 units per gross acre.

3. Residual land value is the value of raw, unimproved land that is zoned for development. It is calculated as a percentage of finished product value, as shown (see Table 9 for calculation for residential residual land value). NNN lease rates do not reflect property insurance, tax, or maintenance/improvements. Office lease rate data from CB Richard Ellis Q4, 2003.

4. Lease rate (/SqFt) converted to a per-acre basis and multiplied by (a) 'floor-to-area' ratio, (b) occupancy rate, and (c) a 'net-to-gross' factor to account for parking, landscaping, and other vacant site uses.

5. Operating expenses assumed to be 3.0% of gross revenue for office and retail, and 20% of gross revenue for industrial.

6. Assumes nine percent capitalization rate.

7. Retail lease rate data from Marcus & Millichap Retail Research Report, February 2004 and CB Richard Ellis Q4, 2003; Ventura County lease rate data from NAI Capital Commercial 2004 Global Market Report.

Industrial lease rate data from CB Richard Ellis 4Q, 2003 and 1Q, 2004.

Sources: Data Quick; CB Richard Ellis; Marcus & Millichap; Economic & Planning Systems, Inc.

387. The residual land value is an estimate of the value of a raw, unimproved parcel (with no infrastructure) that is zoned for the development type in question (e.g., single family residential, office, etc.). The use of unimproved land value is appropriate because a developer seeking project entitlement will not invest money in infrastructure or other improvements on land designated as a habitat set-aside – using improved land prices would overstate the land value lost due to flycatcher protection.
388. Land was assumed to be appropriately zoned because this analysis is based on demographic projections provided by official regional agencies; the fact that growth is projected to occur assumes that the underlying land is (or will be) zoned appropriately by the time that growth is expected to occur. This assumption is more likely to overestimate than underestimate the actual cost of the designation than a calculation that assumed no entitlements (i.e., zoning) are in place.
389. This analysis assumes that the value of raw, unimproved land will range from 10 to 15 percent of finished product value, depending on the type of land use in question. In reality, raw land values can vary substantially depending on unique physical and geographical factors as well as the market conditions that exist at the time of sale. However, given that reliable raw land sales data are not available, this analysis relies on a residual land value estimate calculated using observed market values for finished products (e.g., home sales or industrial and commercial lease rates).
390. A residual land value calculation for a typical single-family residential product is provided in Exhibit 6-8. The home price of \$374,000 represents an average for residential units in the Counties where flycatcher impacts are most probable. As shown, the residual land value for a typical residential product represents approximately 11 percent of the finished product price. The residual land value for office, retail, and industrial land generally exhibit a similar relationship to finished product value.

Exhibit 6-8

RESIDUAL LAND VALUE CALCULATIONS FOR RESIDENTIAL PRODUCT

Cash-Flow Item	Assumptions	Amount
Project Summary		
Avg. Price Per Unit (1)		\$374,000
Avg. sq.ft. / Unit (1)		2,132
Avg. FAR (2)		23%
Net to Gross Ratio (3)		80%
Avg. # of Units / Gross Acre		3.8
Avg. Lot Size		16,154
Revenues		
Avg. Price Per Unit (1)		\$374,000
Avg. Median Price per SF (1)		\$175
Total Revenues / Gross Acre		\$1,406,924
Direct Costs (excluding land)		
Building costs / Sqft. (3)		91
Total		\$732,701
In Tract Costs / lot		\$15,000
Total		\$56,427
Subtotal		\$789,128
Indirect Costs (excluding land)		
Planning & Entitlement	0.35% of direct costs	\$2,762
Fees & Permits	3.00% of direct costs	\$23,674
Architecture & Engineering	1.65% of direct costs	\$13,021
Construction Management	2.00% of direct costs	\$15,783
General & Administrative	3.00% of direct costs	\$23,674
Financing & Charges	5.00% of direct costs	\$39,456
Sales & Marketing	5.00% of unit value	\$39,456
Contingency	3.00% of direct costs	\$23,674
Subtotal		\$181,500
Total Development Costs		\$970,628
Per Unit		\$258,020
Per Sqft.		\$121
Developer Profit @	25.00% of development and land cost (4)	\$281,385
Per Unit		\$74,800
Residual Land Value		
Project Wide		\$154,911
Per Unit		\$41,180
Land Value/Unit Sales Price		11%

1. Represents the average median new home price and square footage in years 2000 through 2004 in six Counties based on data from DataQuick, inflated to 2004 based on the CPI. This price adjustment does not consider real appreciation in home prices in order to control for housing market cycles.

2. Floor-to-Area Ratio. Based on new home living area and lot size data from years 2000 through 2004 in six Counties from DataQuick.

3. Based on data from RSMMeans Square Foot Costs 2004. Per square foot construction costs are based on an average quality 1.5 story single family residence with heating and air conditioning.

4. Based on standard real estate industry pre-tax return on investment criteria.

Source: Economic & Planning Systems, Inc.

391. It is important to note that the data presented in Exhibits 6-6 and 6-7 are not specific to floodplain development. This is important because meeting NFIP requirements can add significant costs to development projects. Building residential structures with the first floor above the 100-year flood level requires fill to raise the base elevation of the structure or stilt construction. Commercial buildings require flood-proofing, also an additional cost not experienced outside the floodplain. Furthermore, the consumer bears increased insurance costs in the floodplain. Additional development and insurance costs create downward pressure on home and land prices in the floodplain. Development in the floodway is generally even more costly than development within the floodplain. The lower land values in the floodplain and floodway are not captured by this analysis. Thus, the residual land values used in this analysis are likely to overstate rather than understate land value losses from habitat set-aside.
392. Finally, this analysis assumes that raw land values will experience real appreciation through time, reflecting the relatively strong performance of California's real estate markets over the last ten to 20 years. Specifically, raw land values are assumed to appreciate at a rate of 4.25 percent per year in real terms (i.e., adjusted for inflation) over the next 20 years, or through 2024. This rate reflects an average of a 10-year and a 20-year trend in repeat sales or refinancing of the same residential properties in California, a method that controls for changes in housing quality, location, and size.²⁴¹
393. Based on this indexing method, the real value of housing grew at 2.0 percent per year between 1980 and 2003 and at 6.5 percent between 1994 and 2003. The average of these rates, or 4.25 percent, is judged appropriate for this analysis given the 20-year timeframe and the fact the bulk of the potential development within flycatcher essential habitat is residential.

6.6.2 Estimated Future Land Value Losses

394. Future land value losses for private development projects through 2023 are estimated by calculating the lost residual land value of on-site acres expected to be set aside due to flycatcher protection. Projected development (and on-site set aside) is assumed to be evenly distributed through 2023. The economic impact associated with on-site set-aside is therefore calculated as the present value of future annual land value losses, assuming a seven percent discount rate. The results of these calculations are summarized by management unit in Exhibit 6-1. The present value of future land value losses associated with flycatcher conservation activities is estimated to be approximately \$3.7 million.
395. As described above, the total amount of land projected to be set aside due to flycatcher conservation activities does not represent a significant proportion of the total land supply. No regional price increases are therefore expected, and the cost burden of

²⁴¹ Based on data from Office of Federal Housing Enterprise Oversight (OFHEO), "House Price Index for the First Quarter of 2004," June 1, 2004, available at <http://www.ofheo.gov/HPI.asp>. U.S. Department of Labor, Bureau of Labor Statistics, Bureau of Labor Statistics Data, as viewed on June 1, 2004 at www.bls.gov.

the proposed rulemaking is expected to fall entirely on landowners in the form of reduced raw land prices for parcels affected by CHD.

6.6.3 Estimated Past Land Value Losses

396. Past section 7 consultations addressing development projects impacting the flycatcher have been located in the Verde Management Unit in Yavapai County, Arizona. The Service has consulted on two non-tribal residential development projects affecting the flycatcher in this management unit. While the Service prepared biological opinions for both of the projects, only one of the projects has been constructed. The other past development project has been delayed (i.e., not constructed to date) due to factors unrelated to the flycatcher. This analysis estimates that the historical land value loss resulting from offsetting compensation (i.e., habitat set-aside) associated with the active project ranges from \$1,320,000 to \$1,650,000.²⁴²

397. No past development projects requiring flycatcher protection measures have been identified within CHD in California. However, it is possible that development projects covered by a habitat conservation plan (HCP) occurred without project-specific consultation with the Service. Because flycatcher habitat is adjacent to stream reaches, it is likely that development projects would have required Clean Water Act permitting and, therefore, consultation with the Service. The consultation history does not reflect any such consultation in California. Nevertheless, the flycatcher is a listed species in the regional HCPs that currently exist in a number of southern California Counties.

6.7 Other Project Modification Costs

398. In addition to offsetting compensation, flycatcher conservation measures may also include biological monitoring, fencing and additional project modifications – referred to hereafter as “other” project modifications. This section examines past project modification costs and presents the “other” project modification costs that are applied future projects.

399. The two past real estate development project consultations addressing the flycatcher provide information on a range of project modifications associated with flycatcher conservation, as shown in Exhibit 6-9.

²⁴² Personal communication with Doug Zuber, Harvard Investments, September 21, 2004

Exhibit 6-9

**EXAMPLE PROJECT MODIFICATIONS FROM PAST
FORMAL CONSULTATIONS ON FLYCATCHER**

Development restrictions:

- Conservation of floodplain riparian habitat/open space that shall not be developed for residential, commercial, or recreational purposes. (c)
- Construction of a six-foot masonry wall adjacent to the riparian corridor and designation of a development setback between the wall and residential development.

Offsetting compensation for habitat impacts:

- Conservation (through donation) of floodplain and flood-prone habitat. (a)

Cowbird trapping:

- Implementation of a cowbird trapping program for the life of the project. (a)

Resident education:

- Development and implementation of a flycatcher, threatened and endangered fish, and critical habitat education program for residents and other interested parties annually for 10 years and then every other year for 20 years. (a, c)
- Delivery of educational materials to the residents annually (for at least 30 years) describing the closing and opening of the breeding area closure, fire restrictions, trespass, and other pertinent data on flycatcher success, riparian restoration, etc. (a)

Resident covenants, conditions, and restrictions:

- Implementation of a 25-mile per hour speed limit on designated streets. (a, c)
- Ban on swimming or in-stream recreation in the vicinity of the Conservation Area. (a)
- Distribution of a list of approved plants and prohibited plants to homeowners. (a)
- Limit on grass lawns in front of housing (20 percent of the front yard). (a)
- Confinement of pets to the homeowner's property or be leashed at all times. (a)
- Ban on birdfeeders. (a)
- Limited vehicle access to the preserve for fire or other emergency purposes. (a)
- Retirement of water wells from use. (a)

Maintenance and construction restrictions:

- Repair work on the bridge should be completed in 30 days during the months of November and December.

Studies:

- Fund and carry out a research and monitoring program to examine the effects of vehicular traffic type and volume on the behavior of flycatchers at the Tuzigoot Bridge site. (c)

Management plans:

- Development of a response and action plan to minimize the risk and effect of fire on riparian habitat. (a)

Monitoring:

- Conduct storm water monitoring, including all monitoring and maintenance requirements. Evaluate receiving water monitoring data that are higher than AZ Water Quality standards. Measure the actual contaminants of organics and metals to soil particles. Conduct visual inspections to indicate evidence of a violation of the AZ Surface Water Quality narrative standards. Report the results of the monitoring to the Service annually. (b)

Flycatcher surveys and monitoring:

- Development of a Recreation and Habitat Monitoring Plan and establishment of an environmental baseline of the Conservation Area. (a)
- Implementation of annual flycatcher surveys and nest monitoring for the life of the project, including documentation of cowbird parasitism in suitable habitat. (a)

Sources: (a) 2-21-01-F-148, Homestead at Camp Verde, Yavapai County, AZ, December 26, 2001; (b) 2-21-94-F-309, Issuance of a NPDES Storm Water Permit for the Verde Valley Ranch Development, Yavapai County, AZ, October 7, 1997; (c) 2-21-94-F-020, Section 404 permit for the Valley Verde Ranch, Yavapai County, AZ, February, 1996.

400. The “other” project modifications described in Exhibit 6-9 are based on conversations with the private developers undertaking such measures. While the Service prepared biological opinions for two past projects, only one of the projects has been carried out. The other past development project has been delayed due to factors unrelated to the flycatcher. This analysis estimates the cost of “other” project modifications associated with the past project that did occur (i.e., the Harvard Investments Project) to be roughly \$3,125,000.²⁴³ Exhibit 6-10 presents the estimated cost of each past project modification implemented.

Exhibit 6-10	
PAST “OTHER” PROJECT MODIFICATION COSTS	
“Other” Project Modification	Cost
Fencing	\$100,000
Educational materials for homeowners	\$200,000
Scientific studies over 20 years	\$2,000,000
Surveying and monitoring over 20 years	\$800,000
Cowbird trapping program	\$25,000
Total	\$3,125,000
Source: Personal communication with Doug Zuber, Harvard Investments, September 21, 2004.	

401. This analysis assumes that all future real estate development projects will be required to implement the same suite of “other” project modifications (i.e., fencing, educational materials for homeowners, studies, surveying and monitoring, and cowbird trapping). The total cost of “other” project modifications is estimated to be approximately \$3,125,000 for each future project. This figure is based on data from the Harvard Investments project in Arizona as detailed in Exhibit 6-10.

6.8 Other Future Impacts on Real Estate Development

402. This section discusses whether the designation of critical habitat provides new information that triggers additional administrative costs under the California Environmental Quality Act (CEQA). It explains how CEQA functions to protect species and habitat and to what degree any CEQA-imposed costs may be linked to these activities.²⁴⁴ CEQA costs only affect projects in California; similar statutes are not in place in Arizona, Colorado, New Mexico, Nevada, or Utah. In addition, this section addresses delay costs associated with future development projects located within CHD.

²⁴³ Personal communication with Doug Zuber, Harvard Investments, September 21, 2004. Note that while the biological opinion regarding the Homestead project defines specific project modifications for which costs estimated, these costs have not been borne to date. Although the cost of the project modifications is an accurate estimate of the loss in land value, these costs have not been discounted to account for the timing of the project modifications.

²⁴⁴ Please note that this section focuses exclusively on whether critical habitat triggers an additional administrative burden under CEQA for landowners or project proponents that would not exist without the designation of critical habitat. CEQA may also require project modifications which were addressed in previously in this Section.

6.8.1 CEQA Background

403. CEQA is a California State statute that requires state and local agencies (known here as “lead agencies”) to identify the significant environmental impacts of their actions and to avoid or mitigate those impacts, if feasible. Projects carried out by Federal agencies are not subject to CEQA provisions. CEQA regulations require a lead agency to initially presume that a project will result in a potentially significant adverse environmental impact and to prepare an Environmental Impact Report (EIR) if the project may produce certain types of impacts,²⁴⁵ including when:

*[t]he project has the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of an endangered, rare, or threatened species, or eliminate important examples of the major periods of California history or prehistory.*²⁴⁶

404. State law instructs the lead agency (typically a County or City community development or planning department in the case of land development projects) to examine impacts from a very broad perspective, taking into account the value of animal and plant habitats to be modified by the project. The lead agency must determine which, if any, project impacts are potentially significant and, for any such impacts identified, whether feasible mitigation measures or feasible alternatives will reduce the impacts to a level that is less than significant. It is within the power of a lead agency to decide that negative impacts are acceptable in light of economic, social, or other benefits generated by the project.
405. Projects without a mandatory finding of significance and in which the applicant finds no significant impact according to CEQA regulations may be approved by a lead agency in what is known as a “negative declaration.” Alternative project scenarios are not examined in a negative declaration, and the administrative expenditures are typically much lower than what would be required to complete an EIR.
406. Alternatively, an applicant may request that a lead agency issue a permit or some other discretionary approval for a project that is redesigned to either avoid or mitigate all impacts to the environment. Typically, the project is accompanied by mitigation measures in the form of a “mitigated negative declaration.” Similar to a negative declaration, the expenditures required for the approval of a project with a mitigated negative declaration are on average much lower than costs associated with an EIR.

²⁴⁵ Categories of “environmental impact” evaluated in the context of CEQA review and/or EIR preparation typically include geological, air quality, water quality, noise, light/glare, land use planning, population, housing, transportation/circulation, public service, utility system, energy, human health, aesthetic, recreational, and cultural resource impacts.

²⁴⁶California Natural Resources Code §15065(a).

407. Finally, minor projects that fit one of eleven classifications as defined by the CEQA statutes may be found to have no significant effect on the environment. Some of these classifications are listed here:

- Certain alterations of existing facilities;
- Replacement or reconstruction of existing structures;
- Smaller development projects such as restaurants smaller than 2500 square feet;
- Certain projects involving landscaping or temporary trenching;
- Lot line adjustments;
- Experimental management or research;
- Habitat restoration;
- Certain safety inspections and mortgage lending; and
- Signs and small parking lots.

408. Many of these types of minor projects are eligible for a categorical exemption from the provisions of CEQA altogether, and compliance costs are usually limited to completion of the paperwork required by the lead agency.

6.8.2 Indirect Effects through CEQA

409. The question of whether habitat designation can change the public review process for a project that requires a discretionary action by lead agencies in California does not appear to have been answered either by the implementation of CEQA or by litigation over the allowable extent of CEQA's exemption language. It is likely that the next 10 to 20 years will establish a regulatory record or the judicial review required for an adequate assessment of the actual effects of critical habitat designation.

410. In the absence of empirical evidence, this analysis assumes that State law will disqualify project proponents from claiming a categorical exemption if the project is located in CH, and that these projects will be required to prepare an EIR. Second, this analysis assumes that all projects that would have submitted either a mitigated negative declaration or a negative declaration under CEQA prior to the designation of critical habitat will also need to complete an EIR due to the potential impact to flycatcher proposed CHD.

411. This analysis estimates the number of future projects that would have sought either a categorical exemption or a negative declaration in the absence of proposed CHD by consulting the historical rate of CEQA document submittal in each County, as shown in Exhibit 6-11. The number of CEQA documents submitted in each County between 1995 and 2004 are converted to an historical annual rate, which is used to project future document submittals in proposed CHD based on population growth and development forecasts. The resulting projections are shown in Exhibit 6-11.

Exhibit 6-11				
CEQA DOCUMENT SUBMITTALS BY COUNTY				
County	CEQA Document Type (1995 – 2003)			
	Notice of Exemption	Negative Declaration	EIR	Total
San Diego	1,238	1,842	379	2,221
San Bernardino	716	792	146	1,654
Santa Barbara	505	393	114	1,012
Total	2,459	3,027	639	6,125
Source: CEQAnet database (accessed online at http://www.ceqanet.ca.gov/queryform.asp?)				

412. The economic impact of the proposed rulemaking is estimated as the difference between the cost to perform an EIR and the cost either to (a) perform a negative declaration or (b) apply for and receive a categorical exemption. Based on interviews conducted with biological consultants who frequently develop CEQA documents, this analysis assumes the costs to apply for and receive a categorical exemption, prepare a negative declaration, and prepare an EIR are approximately \$500, \$7,500, and \$50,000, respectively, for small projects.²⁴⁷

413. As shown in Exhibit 6-12, the present value of indirect CEQA costs following designation of critical habitat is estimated to be approximately \$12,000. Because information on projected development projects requiring CEQA documentation is available at the County level, this estimate is adjusted to account for the probability that the development project occurs within the proposed flycatcher CHD (probability is based on the percent of total acres in county that are within the proposed CHD). As there is a low number of potential development projects to begin with, the adjusted numbers are small, as highlighted in Exhibit 6-12.

²⁴⁷ Personal communication with senior staff from RBF Consulting (San Jose, California), EDAW (Sacramento, California) and HT Harvey & Associates (Watsonville, California), February 24–28, 2003.

Exhibit 6-12

CEQA COSTS FOR ESTIMATED PROJECTS

Management Unit	County (Census Tract)	Annual CEQA Documents in CH (1)				Present Value of CEQA Cost (2)		
		Notice of Exemption	Negative Declaration	EIR	Total	Notice of Exemption	Negative Declaration	Total
Mojave	SAN BERNARDINO (009800)	0.009	0.010	0.002	0.022	\$4,960	\$4,710	\$9,670
San Diego	SAN DIEGO (18300)	0.000	0.000	0.000	0.000	\$0	\$0	\$0
	SAN DIEGO (18400)	0.000	0.000	0.000	0.000	\$0	\$0	\$0
Santa Ana	SAN BERNARDINO (008301)	0.002	0.002	0.000	0.005	\$1,027	\$975	\$2,002
	SAN BERNARDINO (008702)	0.000	0.000	0.000	0.000	\$0	\$0	\$0
Santa Ynez	SANTA BARBARA (002703)	0.000	0.000	0.000	0.000	\$0	\$0	\$0
Total		0.011	0.013	0.002	0.026	\$5,987	\$5,686	\$11,672

1. Based on historical rate of CEQA document submittal (by County). Projections were estimated based on historical and projected population growth, and allocated among habitat units based on projected growth acres in CH vs. the County as a whole.
2. Assumes CHD causes projects that might otherwise have received a Categorical Exemption or produced a Negative Declaration will be required to prepare an EIR. For "small projects," the assumed cost to produce these document types are \$500, \$7,500, and \$50,000, respectively.

6.8.3 Regulatory Delay Impacts

414. Land use projects are generally required to undertake a variety of planning- and entitlement-related activities prior to actual approval. While flycatcher conservation-related regulatory requirements are likely to increase the administrative costs of most land use projects, they will not necessarily delay the implementation of the project. Given sufficient knowledge of the regulatory environment, the various administrative activities associated with the Act can generally be coordinated with other regulatory processes (such as tentative map approvals or action on project EIRs) and do not necessarily increase the time to obtain approvals.
415. Flycatcher conservation activities can, however, cause time delays to some private land development projects due to requirements not to conduct certain construction activities during specific periods of the year (e.g., during the flycatcher-breeding season). In addition, projects pursued by applicants unfamiliar with the requirements of the Act may be delayed until compliance requirements become well understood. Consequently, this analysis estimates the potential impact of project delays that may occur in the short-term.
416. The following assumptions were made to estimate the economic cost of time delay associated with breeding season requirements and other factors:
- Projects expected to begin more than 12 months after critical habitat designation are not expected to face any additional delay, as land development activities can be planned around the breeding season.
 - The average delay to projects slated to occur in the next 12 months is 6 months (the approximate breeding season duration).
 - Private land development will occur at a constant rate through 2024.
 - The land value loss associated with this delay can be estimated by applying the appropriate discount rate – a measure of the time value of money. As discussed above, the private land developer annual discount rate is about seven percent. This discount rate is halved to calculate the time loss associated with a six-month delay.
417. As mentioned above, about 38 acres of private land development is expected to occur in proposed CHD through 2023. Assuming this development occurs evenly throughout the 20-year timeframe of this analysis, roughly 3 acres are expected to be developed in the first year after designation and are expected to be delayed by an average of six months. Assuming 4.25 percent real appreciation in land value and a 7 percent discount rate, time delay results in a total land value loss of approximately \$1,100.

6.9 Total Economic Impacts to Development Projects by Proposed CHD Unit

6.9.1 Coastal California Recovery Unit

418. There are three management units within the Coastal California Recovery Unit that may be impacted by future flycatcher conservation activities to real estate development projects. These include the Santa Ynez, Santa Ana, and San Diego management units. This analysis estimates that flycatcher conservation activities related to real estate development in the Coastal California Recovery Unit will cost roughly \$928,700 over the next 20 years, in present value terms.

Santa Ynez Management Unit

419. While approximately 4,989 acres of growth are projected for Santa Barbara County through the year 2023, none of this development is projected to occur within proposed CHD. Therefore, no development impacts are estimated to be borne within the Santa Ynez Management Unit.

Santa Ana Management Unit

420. Approximately 6.6 acres of CHD are projected to be developed in the Santa Ana Management Unit through 2023. This analysis estimates that roughly 1.7 acres will be developed and 4.9 acres will be set aside as offsetting compensation for habitat impacts. The value of the land set aside is \$643,800 (see Exhibit 6-1). Project modification costs, CEQA costs, and delay costs are estimated to be approximately \$282,700, \$2,000 and \$200, respectively. Total costs associated with the San Diego Management Unit are estimated to be \$928,700 over the next 20 years, in present value terms.

San Diego Management Unit

421. While approximately 235,641 acres of growth are projected for San Diego County through the year 2023, none of this development is anticipated to occur within proposed CHD. Therefore, no development impacts are anticipated in the Santa Ana Management Unit.

6.9.2 Basin and Mojave Recovery Unit in California

422. Development projects in the Mojave Management Unit in California may be impacted by future flycatcher conservation activities. Total costs associated with the Basin and Mojave Recovery Unit are estimated to \$4.4 million over the next 20 years, in present value terms.

Mojave Management Unit

423. Approximately 32 acres of CHD are projected to be developed in the within the Mojave Management Unit through 2023. This analysis estimates that roughly 7.9 acres

will be developed and 23.8 acres will be set aside as offsetting compensation for habitat impacts. Project modification costs, CEQA costs and delay costs are anticipated to be approximately \$1,366,000, \$10,000, and \$1,000, respectively. Total costs associated with the Mojave Management Unit are estimated to be \$4.4 million over the next 20 years, in present value terms.

6.9.3 Gila River Recovery Unit in Arizona and New Mexico

424. Development projects in the Verde Management Unit, a subunit of the Gila River Recovery Unit, has been impacted by flycatcher conservation activities in the past. The total past cost of flycatcher conservation measures in the Gila River Recovery Unit is approximately \$4,445,000 to \$4,775,000. Future impacts related to real estate development are not expected.

Verde Management Unit

425. The Service has consulted on two residential development projects with potential to affect the flycatcher: the Homestead master planned community and the Verde Valley Ranch developments. While the Service prepared biological opinions for both of the projects, only Homestead project is expected to proceed. The Verde Valley development project has been delayed (i.e., not constructed to date) due to factors unrelated to the flycatcher. This analysis estimates the economic impact resulting from conservation activities associated with the Homestead project range from \$4,445,000 to \$4,775,000.
426. While the Homestead project investor is currently interested selling the project, it is expected that the project will be constructed in the future. Project modification costs of \$4,445,000 to \$4,775,000 are expected to influence the sale price for the property. This analysis assumes that the value of the property has been reduced by the full \$4,445,000 to \$4,775,000 due to flycatcher conservation requests.²⁴⁸
427. While the Service completed the consultation regarding the Verde Valley Ranch Development in 1997, the project has not progressed. The proposed 977 acre project includes construction of 1,200 residential homes, a golf course, and a small commercial area.²⁴⁹ The golf course is planned for an area containing a capped copper tailings pond. Conservation activities requested for the flycatcher are a small component of the overarching environmental constraints faced by the developer. Further, the project has been subject to legal battles unrelated to the flycatcher.²⁵⁰ Due to uncertainty regarding the feasibility of the Verde Valley Ranch Development, economic costs related to this project are not estimated.

²⁴⁸ Note that the land value loss associated with land set aside and other project modifications has not been discounted to reflect the time value of money.

²⁴⁹ U.S. Fish and Wildlife Service. Biological Opinion on the Issuance of a NPDES Storm Water Permit for the Verde Valley Ranch Development, Yavapai County, AZ, October 7, 1997.

²⁵⁰ Greene, Terry. "From Dust to...Golf." Phoenix New Times. March 21, 1996. NPDES Appeal No. 01-07. In RE Phelps Dodge Corporation Verde Valley Ranch Development. 10 E.A.D. 460. May 21, 2002.

6.9.4 Lower Colorado Recovery Unit

428. Data concerning Parker to Southerly International Border and Virgin, two subunits of the Lower Colorado Recovery Unit, suggest that real estate development may be impacted by flycatcher conservation activities. However, personal communication with local and regional planners and other data suggests otherwise. The potential impacts in each of these management units are discussed below. Nonetheless, development impacts are not forecasted to occur within the Lower Colorado Recovery Unit.

Parker to Southerly International Border Management Unit

429. Census tract data from La Paz and Yuma Counties indicate that population density is high in these areas (i.e., population density exceeds the 1,000 persons per square mile threshold established within this analysis for consideration of impacts on development). In particular, the population density in Parker City (La Paz County/Colorado River Indian Tribes Reservation) suggests potential for floodplain development and related habitat impacts. However, as discussed in Section 8, future economic development along the Colorado River within the Reservation is uncertain; therefore no costs related to real estate development have been estimated as in this area.

430. The City and County of Yuma also support high population density. Currently, the area within proposed CHD is largely agricultural, and is expected to remain in this agriculture for the foreseeable future.²⁵¹ As such, flycatcher-related impacts to development are not projected in this area.

Virgin Management Unit

431. The Virgin Management Unit includes a portion of the City of Mesquite in Clark County, Nevada. Zoned land uses within proposed CHD include land reserves/park land, agriculture and public facilities land.²⁵² Due to the existing zoning, flycatcher CHD is unlikely to impact development in Mesquite.

432. The Virgin Management Unit also includes segments of Washington County, Utah. Over the past 20 years, two development projects have been constructed in floodplain areas. These development projects were located outside of flycatcher habitat and project modifications for the flycatcher were not requested. Future real estate development is not expected within flycatcher CHD.

6.9.5 Rio Grande Recovery Unit

433. Data concerning the Middle Rio Grande Management Unit, a subunit of the Rio Grande Recovery Unit, suggest that real estate development may be impacted by

²⁵¹ Personal communication with Matthew Spriggs, Senior Planner, City of Yuma, September 16, 2004. Personal communication with Kevin Eatherly, City of Yuma Project Manager, September 24, 2004.

²⁵² City of Mesquite, Nevada. Zoning Map and Land Use Plan. July 25, 2004. Map produced by the City of Mesquite Planning and Redevelopment Department.

flycatcher conservation activities. However, personal communication with local and regional planners and other data suggests otherwise. The potential impact in this management unit is discussed below. Nonetheless, development impacts are not forecasted to occur within the Rio Grande Recovery Unit.

Middle Rio Grande Management Unit

434. Census data from the City of Albuquerque, New Mexico indicates high population density. As such, demand for new development may be strong enough to support floodplain development. However, personal communication with the Albuquerque Planning Department indicates that development is not anticipated in the floodplain in Albuquerque.²⁵³ Further downstream, in Valencia County, development within proposed flycatcher CHD is not feasible due to an existing levee system.²⁵⁴ Therefore, real estate development impacts are not anticipated within the Middle Rio Grande Management Unit.

6.10 Land Development Assumptions and Caveats

435. The economic cost impacts estimated above are based on a series of assumptions. The following factors should be taken under consideration when evaluating the costs described above:

- **Off-setting Compensation Standards.** While the assumption of a 3-to-1 offsetting compensation ratio is reasonable given conversations with the Service and observed offsetting compensation for impacts to similar habitat for other species, a flycatcher-specific offsetting compensation ratio has not been identified from the consultation history. It is possible that offsetting compensation for impacts to flycatcher habitat might be greater or less than the 3-to-1 ratio relied upon in this analysis.
- **Net or Effective Land Development Set-Aside.** Development rarely occurs on 100 percent of the project area assembled by a developer, regardless of the degree of species protection in place. A development site will naturally include acreage set aside for a variety of factors, including slope, avoidance of hydrologic features (e.g., floodway), parcel configuration, and creation of “amenity features” such as landscaping, parks, and open space. The streambeds and riparian areas that constitute the flycatcher’s primary habitat are highly correlated with the areas a developer would be most likely to set aside, irrespective of flycatcher conservation activities. This analysis does not attempt to quantify set-aside that would occur in the absence of the flycatcher.

²⁵³ Personal communication with Richard Sertich, Albuquerque Planning Department, September 2004.

²⁵⁴ Personal communication with Richard Padilla, Planning and Zoning Department, Valencia County, September 8, 2004.

- **Land set-aside in the floodplain and floodway is valued using residual land values that do not incorporate floodplain characteristics.** Developing floodplain to meet NFIP requirements can be costly. Construction of residential structures with the first floor above the 100-year flood level requires fill to raise the base elevation of the structure or stilt construction. Commercial buildings require flood-proofing. Furthermore, consumers bear increased insurance costs in the floodplain. Additional development and insurance costs create downward pressure on home and land prices in the floodplain. Development in the floodway is generally even more costly than development within the floodplain. Lower land values for floodplain and floodway land are not estimated. Thus, the residual land values used in this analysis are likely to overstate rather than understate land value losses from habitat set-aside.
- **Economic losses not off-set by economic gains.** This analysis endeavors to capture the net economic impact imposed on regulated entities and the regional economy resulting from flycatcher conservation activities. To the extent possible, the estimated net economic impact should account for any offsetting benefits that might accrue to the regulated community from flycatcher habitat conservation activities. For example, in certain cases real estate development that effectively incorporates flycatcher habitat set-aside on-site might realize a value premium typically associated with additional open space. Any such premium will offset conservation costs borne by landowners/developers. Reliable data revealing the premium that the market places on nearby open space in Southern California is not readily available. However, it is likely that any such value is minimal given the nature of the flycatcher habitat.