Appendix A

Economic Analysis of Natomas Basin Habitat Conservation Plan, dated March 2002, by Economic & Planning Systems, Inc.

Economic &
Planning Systems

Public Finance
Real Estate Economics
Regional Economics
Land Use Policy

FINAL REPORT

ECONOMIC ANALYSIS OF NATOMAS BASIN HABITAT CONSERVATION PLAN

Prepared for:

City of Sacramento

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March 12, 2002

EPS #10365

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I. INTRODUCTION

PURPOSE OF HABITAT CONSERVATION PLAN

The purpose of the Natomas Basin Habitat Conservation Plan (NBHCP or the "Plan") is to promote biological conservation in conjunction with economic and urban development within the permit areas. The NBHCP establishes a multi-species conservation program to minimize and mitigate the expected loss of habitat values and incidental take of covered that could result from urban development, operation and maintenance of irrigation and drainage systems, and certain activities associated with the Natomas Basin Conservancy (NBC, or "the Conservancy") management of its system of reserves established under the NBHCP. The goal of the NBHCP is to minimize incidental take of the covered species in the permit areas and to provide mitigation for the impacts of covered activities on the covered species and their habitat.

The NBHCP permit area applies to the 53,537-acre interior of the Natomas Basin, located in the northern portion of Sacramento County and the southern portion of Sutter County. The Natomas Basin contains incorporated and unincorporated areas within the jurisdictions of the City of Sacramento, Sacramento County, and Sutter County. The Sacramento International Airport is also located in the Natomas Basin. The southern portion of the Natomas Basin is urbanized, but the majority of the Basin is used for agriculture.

The Conservancy, a non-profit corporation, was established to implement the Plan to ensure that sufficient habitat land is acquired, restored/enhanced, and maintained in accordance with the provisions of the Plan. The terms acquired and restored/enhanced are also intended to reflect preservation and creation of habitat land. The NBHCP requires that urban development mitigate its impact on habitat loss by paying a mitigation fee that provides funds for land acquisition, habitat restoration/ enhancement, and continued operations and maintenance of habitat lands. Further, the Plan requires development to mitigate the impacts by complying with other take avoidance, minimization, and mitigation measures. The Plan covers incidental take resulting from urban development in portions of the City of Sacramento (South and North Natomas) and portions of Sutter County.

The Conservancy is responsible for collecting and managing mitigation fees, using the fees to acquire mitigation lands, and managing the mitigation lands for the benefit of the protected plant and animal species ("covered species") living within the Natomas Basin.

Although the NBHCP covers 26 plant and animal species, the Plan focuses on two listed species known to be widely distributed in the Basin that would be impacted by anticipated urbanization - the giant garter snake and the Swainson's hawk. The giant garter snake inhabits rice fields and drainage canals in the Basin (i.e., wetland habitats. The Swainson's hawk generally nests along the Sacramento River and forages in the

Basin (i.e., in upland habitats). Other species are more localized or believed to be present by association with particular habitats, such as vernal pools or elderberry bushes.

The primary goal of the NBHCP is to create a system of reserves that would support populations of the giant garter snake, Swainson's hawk, and other covered species at least through the life of a 50-year Incidental Take Permits (ITPs), which is required in order for development to continue in the Natomas Basin.

Funding for the Conservancy is provided through a combination of up-front mitigation fees and on-going revenues generated from operations of the NBHCP. By incidentally providing habitat for migratory wintering waterfowl, the NBC is also projected to generate revenues from the sale of waterfowl hunting rights. The NBC will also farm and lease "managed" rice lands (enhanced for giant garter snake habitat) to farmers for additional long-term revenues. Other revenue generating activities may also be considered by the NBC in the future. Income-generating activities on NBC lands will ensure long-term funding of the operations and maintenance of habitat lands.

COURT DECISION ON HABITAT CONSERVATION PLAN

The original HCP for the Natomas Basin was adopted in 1997 and an incidental take permit (ITP) was granted to the City of Sacramento and Sutter County. However, in early 1999 certain environmental groups filed suits in state and federal courts challenging the decision of the U.S. Fish & Wildlife Service (FWS) and the California Department of Fish & Game (DFG) to approve the Natomas Basin Habitat Conservation Plan and issue incidental take permits to the city. The permits provide project construction protection for public and private project proponents from civil and criminal liability for take of endangered species that inhabit the permit area. During the litigation the parties stipulated that NBC would have continued protection of the permits in conducting its duties as plan operator under the NBHCP.

In August of 2000, the federal court judge invalidated the federal permit, ruling that the findings made by the FWS prior to issuance of the permit were not supported by adequate evidence in the record. The court found the HCP itself to be valid.

The court required that the following issues be revisited:

1. **Adequacy of funding**. Because the mitigation fee as established assumes full build out of the entire 17,500 acres located within the basin, and the city need only a portion of that allowable acreage, there is an issue as to whether adequate funding will exist if only the city is designated a permittee. Additionally, if mitigation land acquisition costs rise, how can funding sufficient to acquire the last acreage required be assured given the diminishing base over which to spread the fee burden as development proceeds?

2. **Maximum extent practicable**. The evidence is insufficient on the question of whether the mitigation imposed will, to the maximum extent practicable, reduce or mitigate the impacts of development on the protected species.

3. **FWS "no jeopardy" opinion**. Assuming that the city will be the only permittee, evidence is lacking on the question of whether there are factors that would appreciably reduce the likelihood of survival and recovery of covered species.

4. **Adequacy of environmental review**. The environmental review conducted to support the issuance of the permit was inadequate; an Environmental Impact Statement should have been prepared.

In May of 2002, FWS, the environmental group plaintiffs, certain private development interests, and the city, entered into a comprehensive settlement agreement. The agreement establishes a procedure for preparation of a revised HCP, a revised incidental take permit, and a EIS/EIR. It also allows grading and development of 1668 acres in the interim.

As part of the implementation plan for the settlement agreement, the city adopted a revised mitigation fee, consisting of a base fee portion and a "settlement premium" portion. The base fee is consistent with the fee shown in this analysis under Scenario 1, described below. The settlement premium portion was added in order to compensate for anticipated preserve land acquisition cost.

The agreement also requires acquisitions in prioritized specified areas. This requirement has an inflationary effect on land prices in the targeted areas. That effect is worsened by the need to acquire preserve land so that development can proceed.

If land prices fall significantly following adoption of a revised HCP and issuance of a new permit, and if the economic studies demonstrate that it is appropriate to do so, the mitigation fee can be reduced.

PURPOSE OF ECONOMIC ANALYSIS OF HABITAT CONSERVATION PLAN

The purpose of the economic analysis of the HCP is to address the "adequate funding" issue and the "maximum extent practicable" issue. The "no jeopardy opinion" is being addressed by the Permittees through an analysis focusing on the biological issues. The fourth cause of action, the preparation of an EIS, is currently underway by CH2M HILL. The Habitat Conservation Plan is being revised to address the issues raised by the Judge. The financial analysis presented in this document is based on the revised NBHCP.

There are five scenarios presented in this economic analysis of the HCP. Scenario 1, also referred to as the Base Case, most closely resembles the previous financial analyses of the NBHCP. It assumes 17,500 acres of development and a mitigation

ratio of 0.5 mitigation acres to every gross acre of development. Four additional scenarios are considered to address the adequate funding issue and the maximum extent practicable issue. The five scenarios are summarized as follows:

Base Case

- *Scenario 1* – 17,500 acres of development, 0.5 to 1 mitigation ratio, 25 percent marsh (per revised NBHCP).

Adequate Funding

- *Scenario* 2 – 12,000 acres of development, 0.5 to 1 mitigation ratio, 25 percent marsh.
- *Scenario* 3 – 8,000 acres of development, 0.5 to 1 mitigation ratio, 25 percent marsh.

Maximum Extent Practicable

- *Scenario 4* – 17,500 acres of development, 1 to 1 mitigation ratio, 25 percent marsh.
- *Scenario* 5 – 17,500 acres of development, 0.5 to 1 mitigation ratio, 75 percent marsh.

All five scenarios are modeled over the 50-year permit period. A summary of findings is provided below.

REVISED HCP DRAFT EIR/EIS ALTERNATIVES

The Revised HCP Draft EIR/EIS analyzes five habitat mitigation Alternatives for the Natomas Basin. This section lists and describes these Alternatives and relates each to the Scenarios in this Economic Analysis as described above.

- **Alternative 1** – Increased Mitigation. The required mitigation ratio for land development would be increased from 0.5:1 to 1:1.

- **Alternative 2** – Habitat-Based Mitigation. Mitigation would be based on the habitat value of the land to be developed, and would include up to a 3:1 ratio for the highest-value habitat for giant garter snakes.

  Alternatives 1 and 2 are most similar to Scenario 4 presented in this Report which includes a 1:1 mitigation ratio.

- **Alternative 3** – Reserve Zones. Specific reserve areas identified would be the focus of acquisition activities.

  This Report did not model a scenario similar to Alternative 3 since it is not possible to identify these reserve areas in advance of habitat.

- **Alternative 4** – Reduced Development. Development in the City and Sutter County would be reduced in order to reduce the extent of development-related habitat impacts and incidental takes.

  Alternative 4 is most similar to Scenarios 2 and 3 in this Report, which include reduced development of 9,000 acres and 12,000 acres respectively.

- **Alternative 5** – No Action Alternative. No ITP would be issued to the City of Sacramento Sutter County, Reclamation District 1000, Natomas Mutual Water Company, and a comprehensive Natomas Basin HCP would not be implemented.

  Since this Alternative assumes no implementation of the NBHCP, this alternative was not modeled as part of this Economic Analysis.

NATOMAS MUTUAL AND RD 1000

In addition to the City of Sacramento and Sutter County, the Natomas Mutual Water Company and Reclamation District (RD) 1000 are potential permittees for the NBHCP. The on-going operation and maintenance activities of these agencies have the potential to impact the species covered under the NBHCP. While it is recognized that these agencies are part of the NBHCP, the economic analysis does not directly relate to their activities. These agencies will not be developing property and as such will not be required to pay NBHCP fees. Any economic or financial impacts on these agencies will be addressed separately by these agencies. It is likely that habitat mitigation provided by RD1000 and Natomas Mutual will be through changes in their O&M practices. Any costs associated with these practices currently are funded and will continue to be funded through their rate base or assessments.

BRIEF SUMMARY OF FINDINGS

- **Adequate Funding**: EPS has calculated a fee amount to implement the NBHCP for each Scenario such that the NBC will receive adequate funding throughout the 50-year permit period and beyond, i.e., annual fund balances show no deficits through the 50-year permit period. The fee estimates for each Scenario are shown in **Figure 1**. The financial model used to calculate the fees assumes land values and other costs as of 2001. There is no cap on the mitigation fee amount in the NBHCP to assure that the fees may be if adjusted if in the future costs increase, such as land acquisition costs.

- **Reduced Development**: If the number of acres of development obtaining incidental take coverage under the NBHCP were reduced from the current anticipated 17,500 acres of development within the Natomas Basin, the fee would need to be increased. Scenarios 2 and 3 model reduced development scenarios (either because development in each permit area is reduced or only 1 land use agency chooses to

participate), and as shown in **Figure 1**, the fee increases from $5,993 under the Base Case to $6,784 (12,000 acres of development) or $8,641 (8,000 acres of development). The primary reason for the increase in the fee is attributed to a reduction in habitat land used for rice farming. Less rice farming acres within the NBHCP translates into less operating revenue to run the NBHCP over the long term. This results in the need for additional funds to the NBC in order to conduct management of reserve lands over the long term.

The NBHCP would be feasible under a reduced development scenario only if the higher mitigation fees were adopted as indicated in either Scenario 2 or Scenario 3. If the permittees want to insure against the possibility of a reduced development scenario in the future, it also would be recommended to adopt such mitigation fees.

- **Maximum Extent Practicable**: The fee levels for all five Scenarios were considered in addressing the question of whether the NBHCP will provide mitigation to the Maximum Extent Practicable (MEP). The MEP funding addresses one of biology, legal, and economic considerations. This report only focuses on the economics or financial considerations in specific regard to the alternative fee levels. To address these considerations, two tests were employed - 1) a comparison with other HCP fee programs in surrounding jurisdictions, and 2) a cost burden analysis for residential and light industrial development projects. Both these tests indicate that the fee levels, particularly for Scenarios 3 through 5, would be at or near the MEP from an economic or financial viewpoint based on the following findings:

  - The fees as proposed under Scenarios 1 through 5 are considerably higher than similar fees charged by other surrounding jurisdictions.

  - Cost burdens for residential development projects are currently among the highest in the region and represent approximately 13-14 percent of the estimated sales price of the residential unit. Fifteen percent is recognized as a feasibility benchmark for cost burdens based on industry "rules of thumb" regarding how property values change with successive stages of entitlement and improvement. The cost burdens include all development impact fees, permit costs, school mitigation costs, and any bonded indebtedness of the project. While 15 percent is recognized as the feasibility benchmark, up to a 20 percent cost burden may be feasible depending on the specific financial considerations of a particular project. If a project were to exceed the 15 to 20 percent range in cost burden analysis, the financial feasibility would be jeopardized.

  - The fees calculated for Scenarios 1 through 5 slightly increase the cost burdens for residential development, in some cases from 13 to 14 percent. However, recognizing that the cost burdens already push the industry standard for feasibility, the City of Sacramento has eliminated certain programs, such as funding for some police, fire, bike trails, and community center facilities. In addition, there remains the risk that as supply and demand factors for habitat land continue to push land acquisition costs upward, the fee will continue to increase, thereby pushing the residential development projects beyond the point of financial feasibility.

Figure 1
Natomas Basin HCP
2001 Required Mitigation Fees
All Scenarios

Fee Component	2000 Fee	Scenario 1 *Base Case [1]*	Fewer Participants: Scenario 2 *70% Of Plan Implemented*	Fewer Participants: Scenario 3 *50% Of Plan Implemented*	Additional Mitigation: Scenario 4 *1 to 1 Acre Mitigation*	Additional Mitigation: Scenario 5 *Base Case Wit 75% Marsh*
		17,500 ac. of dev.; 1/2 ac. of mitigation per gr. acre of dev.; 25% marsh	*12,000 ac. of dev.; 1/2 ac. of mitigation per gr. acre of dev.; 25% marsh*	*8,000 ac. of dev.; 1/2 ac. of mitigation per gr. acre of dev.; 25% marsh*	*17,500 ac. of dev.; 1 ac. of mitigation per gr. acre of dev.; 25% marsh*	*17,500 ac. of de 1/2 ac. of mitigati per gr. acre of de 75% marsh*
Land Acquisition Fee (LA)						
Land Cost	*$2,125*	*$2,375*	*$2,375*	*$2,375*	*$4,750*	*$2,375*
Transaction Cost & Contingency	*$375*	*$625*	*$625*	*$625*	*$1,250*	*$625*
Total Land Acquisition Fee	$2,500	$3,000	$3,000	$3,000	$6,000	$3,000
Restoration/Enhancement (RE)	$423	$368	$368	$368	$736	$1,100
Administration/O & M	$750	$1,555	$2,100	$2,850	$2,000	$3,800
O & M Endowment Fund	$190	$800	$1,030	$2,100	$1,240	$2,320
Supplemental Endowment Fund	$0	$150	$150	$150	$300	$150
Fee Collection Administration	$78	$120	$136	$173	$210	$212
Total Mitigation Fee	**$3,941**	**$5,993**	**$6,784**	**$8,641**	**$10,486**	**$10,582**

fee scen

[1] Base fee, along with premium fee of $4,028, was adopted by City of Sacramento June 12, 2001.

- The cost burden analysis for non-residential projects in North Natomas and south Sutter County show cost burdens that depending on the type of development, exceed the feasibility benchmark of 10 percent for non-residential development. However this percentage could range up to 15 percent, or in some cases higher depending on the specific financial considerations of a particular project.

  The cost burden analysis for commercial/retail development shows that the cost burden for development in the North Natomas area already exceeds the benchmark of 10 percent. The cost burden for commercial development in North Natomas is estimated to be 18-19 percent of the sales price per square foot. No commercial development was assumed for south Sutter County.

  A range of feasibility is presented for light industrial space depending on whether the building is intended for warehousing or more expensive flex space. The average sales price per sqft is estimated to range from $25.00 per sqft for warehouse space to $60.00 per sqft for light industrial flex space. As such, the cost burdens also range from 18 percent for warehouse space to 8 percent for higher end light industrial space in south Sutter County.

  The range for North Natomas is at 37 percent for warehouse space and 15 percent for higher end light industrial space. The cost burdens are likely to dictate what type of warehouse/light industrial projects are constructed in the each jurisdictions. Higher-end light industrial projects will be more feasible in either case, but ultimately the level of demand for these types of projects may result in a slower absorption than if a wider variety of projects were feasible.

- The City of Sacramento is currently revising the fee program for the North Natomas development area. As a result of this updated financing plan, the development impact fees are anticipated to increase significantly and will push the cost burdens closer to the upper end of the industry thresholds. The development projects in the Natomas Basin already have cost burdens that nearly meet or exceed the benchmarks for financial feasibility, and once the new fees are adopted, it is conceivable that any further increase in the NBHCP fees is likely to impact the feasibility of development projects in the Natomas Basin.

- Land acquisition prices for habitat land have increasingly trended upward since 1997, when the HCP was originally adopted. The NBHCP fee has been adjusted upward as land acquisition prices have increased. As the supply of land suitable for habitat mitigation in the Basin diminishes over time, the land acquisition price will increase (as less land will be available for reserve lands). The upward pressure on land acquisition prices would significantly increase under an HCP that required a mitigation ratio of 1:1 or higher or which required habitat land to be purchased in specified reserve areas.

While the fees associated with Scenarios 1 through 5 in this analysis do not push residential development projects out of the realm of financial feasibility, there is the very real potential that as land prices continue to increase overtime, the financial feasibility of development projects will diminish if sales prices for residential and non-residential projects do not keep pace. The impact of the mitigation fees on non-residential development, depending on the type of product, may already exceed the limits of financial feasibility.

II. OVERVIEW & FUNDING OF NBC & NBHCP

The Natomas Basin Conservancy (NBC or "the Conservancy), is a private, non-profit, public benefit corporation and it operates as the Plan Operator for the Natomas Basin Habitat Conservation Plan (the Plan). The Conservancy acquires mitigation land necessary to meet the mitigation requirements of the NBHCP. The goal of the NBHCP is to preserve, restore, and enhance habitat values found in the Natomas Basin while allowing urban development to proceed according to the local land use plans.

The Conservancy is not named in the lawsuits, but the outcome affects its ability to collect mitigation fees to support its operations. It is also true that the Judicial ruling incorporated a stipulation allowing the NBC its incidental take permit to continue to facilitate mitigation of the protected species.

The Conservancy has acquired land for habitat mitigation every year since beginning operation in January 1999. The Conservancy completed its year 2000 mitigation requirement with acquisition of the Frazer property on July 31, 2000. The Conservancy completed the acquisition of the Souza property (44.68 acres) and the Natomas Farms property (96.46 acres) in 2001.

Figure 2 summarizes mitigation land acquisition to date. **Map 1** shows the location of the acquired mitigation land and the general boundary of the Natomas Basin.

Figure 2
NBHCP Mitigation Land Acquisition to Date

Property	Date Acquired	Acres
Silva	1/07/99	159.20
Betts	4/05/99	138.99
Kismat	4/16/99	40.29
Bennett (C.L)	5/17/99	226.68
Bennett (H&B)	5/17/99	132.49
Lucich North*	5/18/99	267.99
Lucich South	5/18/99	331.21
Brennan	6/15/00	241.38
Frazer	7/31/00	92.60
Souza**	7/2/01	44.68
Natomas Farms	7/9/01	96.46
Total		**1,792.64**

* Lucich North may be reduced from records reflecting 20.68 acres to SAFCA.

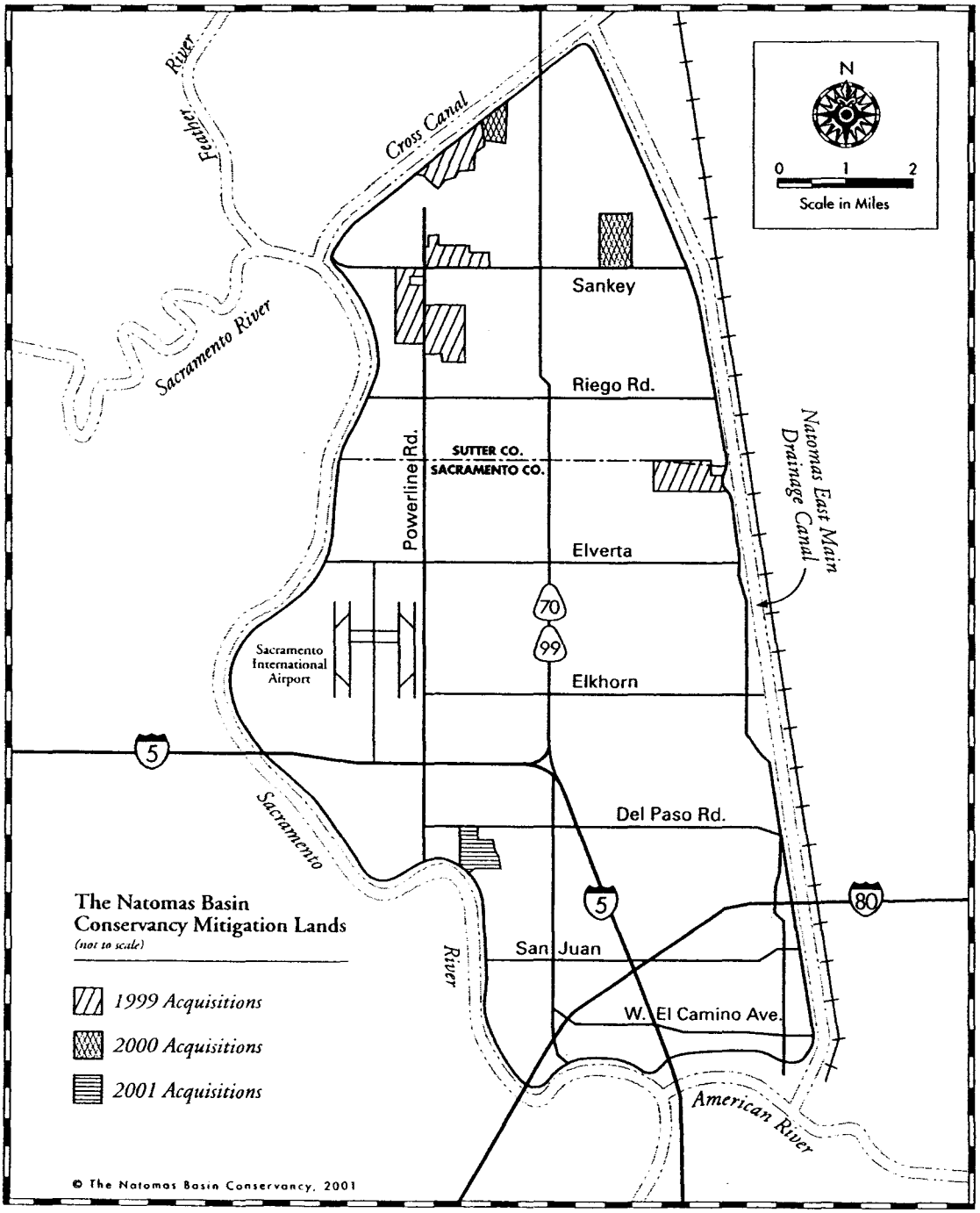
**Agreement of Purchase and Sale provides that seller can partition 4.68 acres during a 24-month period following sale.

MAP 1

THE NATOMAS BASIN CONSERVANCY

2001

Base Map



In addition to purchasing habitat acreage for preservation, the Conservancy has proceeded with habitat restoration and enhancement. At its August 2000 meeting, the Conservancy Board approved a site specific land management plan for the first 1,631 acres of mitigation land acquired. The *Site-Specific Management Plans for The Natomas Basin Conservancy's Mitigation Lands, Sacramento and Sutter Counties, California* was completed by Wildlands, Inc. in June of 2000 and provides a detailed habitat restoration and enhancement program for the following properties:

- Betts-Kismat-Silva Property;
- Lucich North Property;
- Lucich South Property; and,
- Bennett South Property.

The site-specific management plans also provide detailed instruction/direction on water, vegetation, pest, and agricultural management. Habitat monitoring, annual work plans, adaptive management, and other issues are also considered as part of the document prepared by Wildlands.

FUNDING OF THE NBC AND NBHCP

In order to provide for preservation acquisition of the habitat acreage and funding of the monitoring, restoration, and enhancement of the habitat sites, as well as provide funding for the operations of the NBC and on-going operation and maintenance of the habitat reserves, a funding plan was established in 1997 when the original HCP was adopted that utilizes various revenue sources, including:

- **Habitat Mitigation Fee** – a one-time up-front fee charged to new development on a per gross acre basis at a ratio of one-half acre of mitigation to every one acre of development;
- **Rice Revenues** – many of the properties in the habitat conservation plan will continue to be operated as rice farms. The rice farms are known to provide seasonal habitat for the giant garter snake, particularly when the rice fields are flooded. The NBC will generate revenue from leasing these properties to rice farmers.
- **Hunting Revenues** – a certain percentage of the habitat reserves were assumed to be utilized as seasonal water fowl hunting blinds, from which the NBC would earn revenues from the hunting operations.

EPS, beginning in 1995, developed a *pro-forma* financial model that analyzes the projected revenues and expenditures of the NBC dependent on a forecast of development of the Natomas Basin and the corresponding habitat mitigation required. Based on various assumptions, the financial model calculates the Habitat Mitigation Fee that would be required of new development. This financial model has been updated annually since 1998.

The financial model is currently composed of five funds:

- Land Acquisition (LA);
- Restoration and Enhancement (RE);
- Administration and Operations & Maintenance (O&M);
- O&M Endowment Fund; and,
- Supplemental Endowment Fund.

The financial model is intended to be a dynamic, fluid analysis of each of these funds and allows for interaction between the funds. The funds have been modeled over the 50-year permit period of the NBHCP. However, one of underlying goals of the financial analysis is to insure that the on-going operations and maintenance of the habitat preserves would be maintained in perpetuity (forever). Therefore, the O&M Endowment Fund, which is drawn on in later years to supplement funding of the Admin./O&M fund, is modeled such that it generates interest earnings in perpetuity. The interest earnings on the Endowment Fund, not the principal, will be used to generate funds for the management and on-going operations of the habitat reserves. The financial model has proven to be a useful tool to test how various assumptions of expenditures and/or revenues impact the fee required from new development.

To date the Natomas Basin Conservancy has been able to purchase land in accordance with the land costs and corresponding fee requirements as adopted by the NBC. As market forces have pushed land acquisition costs upward, the mitigation fee has been adjusted to account for projected increases in land acquisition costs, as well as other restoration & enhancement costs and O&M/Administration costs. **Figure 3** shows HCP mitigation fee amounts per gross acre from 1997 to 2001.

Figure 3
NBHCP Mitigation Fee Per Gross Acre (nominal $)

Year	Amount
1997	$2,240
1998	$2,656
1999	$3,292
2000	$3,942
2001	Base Fee - $5,993
	Settlement Premium - $4,028
	Total Fee - $10,021

The Natomas Basin Conservancy has also been able to meet the timing and other requirements related to land acquisition, conversion of rice land to managed marsh, and on-going O&M administration of the Conservancy.

III. ECONOMIC ANALYSIS OF THE NBHCP

As stated in **Chapter I**, the purposes of the economic analysis of the NBHCP are (1) determine whether adequate funding would be available for varying levels of development and mitigation requirements and (2) whether the proposed mitigation fee would provide for mitigation which minimizes and mitigates to the maximum extent practicable. Five scenarios were developed to test the funding of the NBHCP in regard to the issues of adequate funding and maximum extent practicable.

Scenario 1, also referred to as the Base Case, most closely resembles the previous financial analyses of the NBHCP and the analysis of the current base fee amount. Under this Scenario 17,500 acres would be developed in the Basing with a mitigation ratio of 0.5 mitigation acres to every gross acre of development. Four additional scenarios are considered to address the adequate funding issue and the maximum extent practicable issue. The five scenarios are summarized as follows:

Base Case

- *Scenario 1* – 17,500 acres of development, 0.5 to 1 mitigation ratio, 25 percent marsh (with revised HCP).

Adequate Funding

- *Scenario 2* – 12,000 acres of development, 0.5 to 1 mitigation ratio, 25 percent marsh.
- *Scenario 3* – 8,000 acres of development, 0.5 to 1 mitigation ratio, 25 percent marsh.

Maximum Extent Practicable

- *Scenario 4* – 17,500 acres of development, 1 to 1 mitigation ratio, 25 percent marsh.
- *Scenario 5* – 17,500 acres of development, 0.5 to 1 mitigation ratio, 75 percent marsh.

While Scenarios 2 and 3 are geared toward evaluating Adequate Funding for varying levels of development and Scenarios 4 and 5 are geared toward determining mitigation costs consistent with the Maximum Extent Practicable ("Practicability") finding, all five scenarios were analyzed in terms of these two issues as follows:

- ***Adequate Funding for HCP over 50-Year Permit Period.*** A fee level was established based on the parameters outlined for each Scenario and that provides adequate funding of the HCP for each fund account for the 50-year permit period. While the funding is modeled over the 50-year permit period, the fee levels estimated for the O&M/Admin. fund and O&M Endowment are intended to allow the funds to be sustained in perpetuity. The fees for each Scenario are summarized in **Figure 1**.

- ***Financial Feasibility or "Practicability"***. Two tests were used to examine financial feasibility – 1) fee comparisons with other established or proposed HCPs in the Central Valley, and 2) total infrastructure cost burden analysis for the North Natomas area and South Sutter County areas.

Each of the alternative scenarios was analyzed by customizing the cash flow model to reflect the assumptions of each scenario. For each Scenario, the fee level(s) was determined such that the cash flow model annual fund balances were positive for the 50-year permit period. The O&M/Administration and O&M Endowment funds are structured to go on in perpetuity (forever).

The next two chapters discuss the Adequate Funding issue and the Maximum Extent Practicable issues in regard to the financial modeling in greater detail.

IV. ADEQUATE FUNDING

Under Section 10 of the Endangered Species Act, the Service must ensure that the funding sources and levels proposed by the applicants are reliable and will meet the purpose of the HCP. The primary revenue source for funding of the NBHCP are development impact fees collected from new development paid on a per gross acre basis when a grading permit is pulled. Additional funding is projected based on the estimated revenues from leasing land owned by the NBHCP for rice farming and from the sale of waterfowl hunting rights.

The habitat mitigation fee calculated under each Scenario provides sufficient revenue to accomplish the "goals" under each Scenario. For example, under Scenario 4, which calls for a mitigation ratio of 1:1, the fee calculated provides adequate funding for each of the five funds included in the financial model. The financial model used to estimate the fee levels is discussed in **Chapter VI** of this Report.

Of specific concern regarding the question of adequate funding is whether or not the fee would provide sufficient funding if there is less development in the Basin than the projected total development of 17,500 acres allowable under the original NBHCP (which includes the City of Sacramento and Sutter County). If either the City of Sacramento or Sutter County were the sole participant to the NBHCP, development would approximate 8,000 acres. Scenario 2 and Scenario 3, were designed to specifically test the impacts on the fee of reduced development alternatives. These two scenarios are discussed in greater detail below.

A further consideration to determine adequate funding levels, is whether or not there will be sufficient funding to acquire the remaining acres of mitigation land if costs rise before all land acquisition is completed and all mitigation fees have already been paid.

SCENARIOS 2 AND 3 - REDUCED DEVELOPMENT

As stated above, if either the City of Sacramento or Sutter County were the sole permittee under the NBHCP, total development would approximate only 8,000 acres as opposed to the currently estimated 17,500 acres. **Scenario 3**, therefore, assumes a reduced development alternative of 8,000 acres. A provision of the NBHCP requires each permittee to complete a mid-point program review. The mid-point review program is designed to ensure that habitat modifications or other take would not occur before mitigation is implemented or at minimum they would occur contemporaneously. The City's mid-point review will be completed between 4,000 to 5,000 acres of development. Sutter County's mid-point review will be conducted between 3,500 to 5,000 acres of development. The combined total area necessitating the mid-point review is between 7,500 to 10,000 acres.

Scenario 2 assumes a reduced development alternative of 12,000 acres. A provision of the NBHCP requires an overall mid-point program review. This overall program

review is intended to provide a mechanism to evaluate the performance and effectiveness of the Plan. This program review would be initiated at the point where urban development reached 9,000 acres and would be completed before development exceeds 12,000 acres. Therefore, **Scenario 2** was structured to model a development alternative of 12,000 acres of total development.

The financial modeling demonstrated that the fee level needed to be increased relative to the Base Case to fund O&M/Admin. expenditures under these reduced development scenarios. The primary reasons for this increase are as follows:

- ***Reduced development results in reduced mitigation acres obtained.*** Consequently, the amount of mitigation acres that can be assumed to be revenue-generating through rice/crop farm leasing or hunting is also reduced. Revenues will vary with the extent of development undertaken. A reduction in the farm leasing and hunting revenues result in the need to increase the mitigation fee for the O&M/Administration fund as well as the O&M Endowment fund, which provides revenues to the O&M/Admin. fund in later years of the HCP.

- ***No off-setting reduction in administrative costs is assumed relative to the Base Case.*** In the Base Case, administrative costs are reduced by 15 percent at the completion of the land acquisition phase. This same assumption is made for the reduced development scenarios based on discussions with the NBC. Therefore, at the same time revenues are decreased in a reduced development scenario, there is no offsetting reduction assumed in the ongoing administrative or the species-monitoring costs of the NBC. In other words, while revenues are estimated to be variable, expenses are considered to be fixed.

These assumptions result in the need for greater fee revenue to be generated to support the ongoing operations & maintenance functions of the NBC and the NBHCP in the reduced development scenarios. As a result, the mitigation required for **Scenario 2** and **Scenario 3** are greater than in the Base Case.

LAND ACQUISITION COSTS

All Scenarios address the question of whether or not there will be sufficient funding to acquire the last acres of mitigation land if costs rise before all land acquisition is completed and all fees have already been paid. In order to address the concern regarding funding available to purchase the remaining acres of mitigation land, a fifth fund was created – the "Supplemental Endowment Fund" – that had not previously been included in the financial model. This Supplemental Endowment Fund will allow the NBC to purchase mitigation land in advance of requirements at any point in the 50-year permit period, given sufficient funds. It would also allow the NBC to build up a monetary reserve that can be utilized in the event that at the last stages of development, land prices spike upward and not all habitat mitigation land has been purchased.

If the Supplemental Endowment Fund reserve is not required, this funding can be transferred to the Administration/O&M fund and contribute to the on-going provision of these services.

V. ANALYSIS OF FINANCIAL PRACTICABILITY

A Habitat Conservation Plan must demonstrate that it meets a number of findings in order for the US Fish and Wildlife Service (USFWS) to issue an incidental take permit. One of these findings is that the HCP minimizes and mitigates the impact of the incidental take to the "maximum extent practicable." This funding typically requires consideration of two factors: (1) adequacy of the mitigation program, and (2) whether this program is the maximum that the applicants can implement from a practical stand point.

However, there are no precise standards set forth in the law or implementing guidelines for demonstrating adherence to this condition. Nevertheless, the standard should be considered from the biological, legal, and financial perspectives. This report documents consideration of the financial perspective.

Biological considerations will generally define the areas to be preserved, restored, and enhanced as part of the HCP. The biological analysis is being addressed through a separate study conducted by CH2M Hill and May Consulting, consultants to the Permittees and the USFWS.

In general, biological goals, e.g., the extent and type of mitigation to be performed, carry with them a financial burden or cost, such as the costs of land acquisition, habitat restoration, enhancement and on-going stewardship, biological monitoring, and enforcement. The ability to meet these biological goals will depend on the availability of funding. Different levels of proposed biological mitigation will require different levels of funding, some of which may be achievable and others not.

From the financial perspective, mitigating impacts to the maximum extent practicable requires a comprehensive exploration of potential funding sources, and the establishment of secure funding mechanisms that can be expected to provide adequate funding over time. **Chapter IV** of this Report describes how adequate funding for each of the Scenarios was determined by setting a mitigation fee sufficient to meet the goals of the program on an annual basis through the 50-year permit period.

This chapter takes the fee level for each Scenario and analyzes them from a feasibility or practicability standpoint. Two methods were employed to test the financial feasibility of the estimated fees for each Scenario as described below:

- *Fee Comparison*: Comparison of the proposed fee to other fees proposed as part of other similar HCPs. If the fee is significantly above those charged in other actual or proposed HCPs, the fee may be impracticable from an equity standpoint. In other words, charging a development project an HCP fee that is much greater than those fees charged to other comparable projects, results both in an unfair burden for habitat preservation and increased infeasibility for development projects.

- ***Cost Burden Analysis***: Cost burden analysis evaluates the impact of the habitat fee on the financial feasibility of a development project within the Basin. If the total cost burden on development, when including the habitat fee, is above supportable levels, some private development may not occur. This will result in a reduction in levels of development, and, consequently, less HCP funding than required as well as a series of other unintended consequences such as failure to implement a jurisdiction's General Plan or Community Plan. Setting the fee at such a level is therefore not supportable and the conservation program may not be practicable if other funding sources are unavailable.

A fee charged to new development largely funds the NBHCP. In the economic analysis, as described above, different fee levels have been estimated under alternative scenarios. This chapter analyzes the fee levels for Scenarios 1-5 under the two practicability tests – regional fee comparisons and the cost burden analysis.

FEE COMPARISONS

In order to explore the financial feasibility or practicability of the fee levels determined in this economic analysis, we have compared the Scenario 1-5 HCP fee levels to development impact fees for habitat preservation for other jurisdictions in the Central Valley region. Most HCP fees for other jurisdictions are proposed fees as the habitat conservation plans remain in the planning stages. It is also important to note that no two habitat conservation plans are alike. They differ in many respects, including types of habitat and species to be mitigated, estimated costs of mitigation, mitigation ratios, amount of outside funding, etc. Also, the fees may differ depending on whether they are funding land acquisition (fee title) costs or land easements, which would be less expensive. The NBHCP fees are based on land acquisition costs within the Natomas Basin. The fees compared are all on a per acre of development basis.

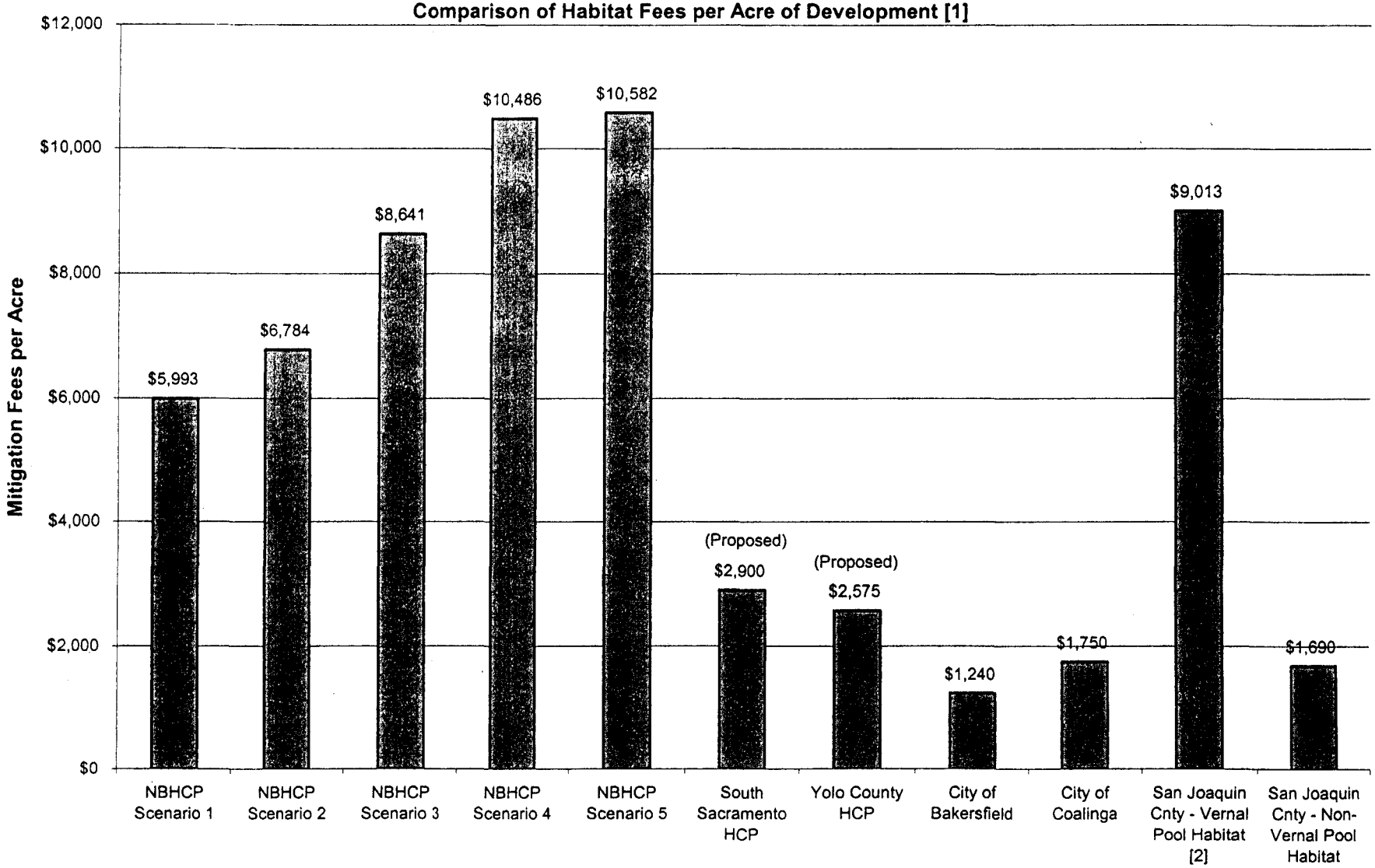
The range of NBHCP fees for Scenarios 1-5 was compared to five other Central Valley regions – South Sacramento, Yolo County, San Joaquin County, City of Bakersfield, and City of Coalinga, as shown in **Figure 4**.

The City of Bakersfield adopted its HCP and enacted the development impact fee of $1,240 per gross acre in 1994. The fee has not been adjusted for inflation. The plan mitigates for four animal species and five plant species and covers 405 square miles. The City of Coalinga HCP mitigates for 22 species on over 16,000 acres of land. The City of Coalinga charges $1,750 per acre of development.

All of the cities within San Joaquin County have adopted the San Joaquin Multi-Species Conservation Plan over the past year. Fees are collected for three types of habitat land including vernal pool habitat (average of $9,013 per acre), agricultural lands/non-vernal pool lands ($1,690 per acre), and multi-purpose open space land ($845 per acre). The County of San Joaquin is currently in the process of adopting the SJMSCP.

Two habitat conservation plans are proposed for South Sacramento and Yolo County. The fee as currently estimated for South Sacramento is $2,900 per acre of development.

Figure 4
Comparison of Habitat Fees per Acre of Development [1]



[1] The Habitat Plans vary by many factors including the number of species mitigated for, mitgation ratios, use of funds, amount of outside funding, etc.
[2] Vernal pool fees are proposed at $33,802 per wetted surface acre and $5,634 per upland acre for an average fee of $9,013 per acre for vernal pool grassland Conversions.

Prepared by EPS

10365 Fees Chart.xls 3/11/02

and covers only land acquisition and restoration costs. Funding for ongoing operations and maintenance is yet to be decided.

Yolo County HCP is proposing an average fee of $2,575 per acre of development. An estimated 11,672 acres are planned for development and the mitigation ratio currently contemplated is one acre of mitigation to one acre of development.

The NBHCP fees for Scenario 1-5 range from $5,993 to $10,582, which are significantly higher than the other four jurisdictions in the comparison. Scenario 1 has the lowest fee of $5,993, which is nearly double the next highest fee of $2,900 for South Sacramento. The fee comparison, therefore, does give an indication of impracticability.

TOTAL BURDEN COMPARISON

EPS has also analyzed the NBHCP fees for Scenarios 1 through 5 in the context of total backbone infrastructure to compare the overall burden of backbone infrastructure in the North Natomas and South Sutter County areas. The purpose was to determine if the total burden for new development in North Natomas is significantly higher than feasibility benchmarks for single family development.

Most fees and special taxes are set on a per single family unit basis. However, some fees, such as the NBHCP mitigation fee, are determined on a per acre basis. To compare the HCP fees in relation to the overall infrastructure cost burden, the HCP fees were converted to a per unit fee amount. The fees were converted assuming an average density, or number of units per acre based upon approved dwelling unit types which may be constructed in the Basin. The analysis also looks at two housing types, 1,800 sqft and 2,400 sqft. The per acre fees were converted as follows:

	1,800 Sqft SF Unit		2,400 Sqft SF Unit	
	Fee/Acre	Fee/Unit	Fee/Acre	Fee/Unit
Assumed Density		7 Units/Acre		5 Units/Acre
Scenario 1- Base Case	$5,993	$856	$5,993	$1,199
Scenario 2	$6,784	$969	$6,784	$1,357
Scenario 3	$8,641	$1,234	$8,641	$1,728
Scenario 4	$10,486	$1,498	$10,486	$2,097
Scenario 5	$10,582	$1,512	$10,582	$2,116

The analysis focuses on two of four quadrant areas in North Natomas, Quadrant 2 and Quadrant 4, as these are the areas where the greatest amount of single family development is planned to occur. However, the analysis is applicable to all residential areas in the permit area.

EXPLANATION OF BURDEN COMPONENTS

Many jurisdictions in California charge development impact fees on new development. In addition to city/countywide fees, localities have several techniques for financing backbone infrastructure. These financing methods include project specific fees; assessment districts; Mello-Roos Community Facilities Districts; school fees and special taxes; and conditions of approval implementation through the entitlement and subdividing process.

The city/county fees are comprised of processing fees (building permit and plan check fees) and development impact fees, which may include water, wastewater, traffic, drainage, library, fire/police, and park fees. The largest of the city/countywide fees are usually one-time water, wastewater, and traffic fees. Most jurisdictions present their fees on a per square foot, per unit, or per acre basis. The building permit and plan check fees, also a component of city/ countywide fees, are usually based on the building value which is determined from per square foot value factors provided by the individual jurisdiction.

In addition to the city/countywide development impact fees discussed above, school districts throughout Northern California often require developments to pay school mitigation fees, such as Sterling Fee, and/or participate in School Mello-Roos Special Tax programs. Any school General Obligation bonds are not included in this analysis.

Backbone infrastructure that benefits a specific project or is needed to mitigate the impacts of the project on the community as a whole is usually funded through project specific fees, special assessments, or Mello-Roos CFD special taxes.

The fees and taxes discussed in this report generally fund backbone infrastructure, not in-tract on-site infrastructure. It is assumed that the developer pays for all in-tract, on-site infrastructure. However, this distinction between on and off-site infrastructure is not absolute. Areas with high project specific fees and/or high special taxes for infrastructure are more likely to have their in-tract arterials and collectors funded. On the other hand, areas without project specific fees or special taxes are more likely to have greater on-site infrastructure needs.

Taken together, city/countywide fees, school mitigation costs, project specific fees, assessments and the present value of special taxes represent the total cost of backbone infrastructure.

RESIDENTIAL BACKBONE INFRASTRUCTURE COST COMPARISON

Figure 5 and **Figure 7** summarize the infrastructure cost burden on the two sample homes types of 1,800 sqft and 2,400 sqft. The existing HCP fee (on a per unit basis) is given as well as the incremental increase in the fee related to the five scenarios analyzed in this economic analysis. The average total existing infrastructure cost burden for an 1,800 sqft home in North Natomas is estimated at $31,756 per unit, and $36,474 per unit

for a 2,400 sqft home. The increase in the HCP fee increases the burden amount by an amount ranging from $293 to $949 per unit for a 1,800 sqft house to $410 to $1,328 for a 2,400 sqft house.

The Impact of Total Infrastructure Cost on Housing Market

Figure 6 and **Figure 8** show the total infrastructure cost burden as a percentage of the average home prices for a 1,800 sqft unit and a 2,400 sqft unit in North Natomas. Backbone infrastructure and school mitigation costs typically average around 15 percent of sales price of the house, although this cost may range from 10 to 20 percent. As the share of backbone costs starts exceeding 15 percent, the feasibility of the project starts to diminish. Either sales prices have to rise, limited by competition in the region, or the developers of the project take less of a profit. As profits are reduced to below required rates of return, the product will not be delivered in the market.

The cost burdens as they currently exist are around 13 to 14 percent of the home price for both comparisons. The increase in HCP mitigation fees per unit has little impact on the overall fee burden under all scenarios.

The City of Sacramento is currently revising the financing plan for the North Natomas area. As a result of this update, it is anticipated that the development impact fees specific to North Natomas will increase. As a result, the infrastructure cost burdens are expected to increase potentially pushing the project closer to the upper threshold of 20 percent for the overall cost burdens.

NON-RESIDENTIAL BACKBONE INFRASTRUCTURE COST COMPARISON

For non-industrial development, backbone infrastructure and school mitigation costs typically average around 10 percent of sales price per sqft, although this cost may range up to 15 percent. As the share of backbone costs starts exceeding 15 percent, the feasibility of the project starts to diminish. Either sales prices have to rise, limited by competition in the region, or the developers of the project take less of a profit. As profits are reduced to zero, the product will not be delivered in the market.

Figure 9 and **Figure 12** present a similar infrastructure cost burden analysis for retail/commercial development and warehouse/light industrial development in south Sutter County and North Natomas. Currently, commercial development is planned for North Natomas while warehouse/light industrial development is planned for south Sutter County.

Figure 9 and **Figure 10** shows the analysis for a retail/commercial development consisting of a 109,125 sqft building. The existing HCP fee (on a per square foot basis) is given as well as the incremental increase in the fee related to two scenarios analyzed in this economic analysis, Scenario 1 and Scenario 5. The average total existing infrastructure cost burden for a 109,000 sqft commercial building in the NBHCP area is estimated to be $21.79 per sqft in North Natomas. The proposed HCP fee increases the

burden amount by $0.19 to $0.61 per sqft depending on the scenario. For North Natomas, the cost burdens are estimated at 18 to 19 percent of the sales price per square foot, considerably higher than the 10 to 15 percent feasibility threshold.

Figure 11 and **Figure 12** summarizes the infrastructure cost burden on warehouse/light industrial development. The analysis assumes a 100,000 sqft building. The average total existing infrastructure cost burden for a 100,000 sqft warehouse/light industrial building in the NBHCP area is estimated at $4.15 per sqft in Sutter County and $8.90 per sqft in North Natomas. The proposed HCP fee increases the burden amount by $0.12 to $0.38 per square depending on the scenario. Depending on whether the building is intended for warehousing or more expensive flex space, the average sales price per sqft is estimated to range from $25.00 per sqft to $60.00 per sqft. Likewise the cost burdens also range from 18 percent for warehouse space to 8 percent for higher end light industrial space in south Sutter County.

The range for North Natomas is at 37 percent for warehouse space and 15 percent for higher end light industrial space. The cost burdens are likely to dictate what type of warehouse/light industrial projects are constructed in the two jurisdictions.

DISCUSSION OF NORTH NATOMAS FINANCING PLAN SHORTFALLS

The August 1999 Financing Plan Update for North Natomas compared the infrastructure and community facility cost burdens for the North Natomas area with other projects in the Greater Sacramento region. North Natomas had infrastructure costs comparable to nearby areas, although the costs were at the high end of the range for most land uses.

To maintain feasibility of the North Natomas Financing Plan, not all facilities were funded. Several facility improvements, such as those for bike trails, fire stations, library, and police station, as well as community centers, draw on funding from other regional sources, including the City's General fund, beyond the development impact fees charged to new development. For example the North Natomas Public Facilities Fee (NNPFF) funds only the off-street bike trails, but not the separated crossings for major roads and drainage canals (estimated at $6.8 million). Also of the two fire stations planned for the North Natomas area, the NNPFF will fund one fire station while the City is proposing fund the second station.

The residential infrastructure cost burdens of the North Natomas area remain in the range of feasibility due in large part to the fact that City planners and policy makers made a conscious decision to keep the public facilities financed in the Financing Plan reasonable. However, as stated above, the infrastructure cost burdens are at the high end of the range, and any increase in fees, including the HCP fee, pushes the burden even higher, and other facilities necessary to complete the community may go unfunded, relying on City, regional, state, and federal funding sources to provide facilities for a complete community.

Figure 5
Natomas Basin
Comparison of Burden of Impact Fees
on Residential Development - 1,800 Sqft Unit [1]

Fee Category	Sacramento County					Placer County		Yolo County	
	Natomas Basin			Sac. County	Folsom	Roseville	Rocklin	West Sac.	Woodland
	North Natomas Quadrant 2	North Natomas Quadrant 4	North Natomas Average	Laguna West	Broadstone Unit 2	North Central SP	Stanford Ranch	Southport	Sycamore Ranch
Existing Fees, Taxes & Assessments									
City/County Fees, Excluding Mitigation Fees	$10,782	$10,782	$10,782	$12,321	$17,597	$21,253	$19,903	$19,106	$12,772
Plan Area Fees	$5,806	$5,806	$5,806	$0	$0	$0	$0	$0	$4,702
School Mitigation	$6,030	$6,030	$6,030	$7,332	$5,292	$5,585	$9,658	$3,690	$9,055
Infrastructure Bonds/Assessments	$8,593	$8,557	$8,575	$9,331	$9,826	$13,790	$4,569	$0	$2,391
Subtotal	**$31,212**	**$31,175**	**$31,193**	**$28,984**	**$32,716**	**$40,628**	**$34,130**	**$22,796**	**$28,920**
Existing Habitat Mitigation Fees [2]	$563	$563	$563	$0	$0	$0	$0	$358	$358
Total Existing Fees, Taxes & Assessments	**$31,775**	**$31,738**	**$31,756**	**$28,984**	**$32,716**	**$40,628**	**$34,130**	**$23,154**	**$29,278**
Proposed Increase in NBHCP Fee Per Unit [2]									
Scenario 1	$293	$293	$293						
Scenario 2	$406	$406	$406						
Scenario 3	$671	$671	$671						
Scenario 4	$935	$935	$935						
Scenario 5	$949	$949	$949						
Total After Fee Increase									
Scenario 1	**$32,068**	**$32,031**	**$32,050**						
Scenario 2	**$32,181**	**$32,144**	**$32,163**						
Scenario 3	**$32,446**	**$32,410**	**$32,428**						
Scenario 4	**$32,710**	**$32,673**	**$32,691**						
Scenario 5	**$32,723**	**$32,687**	**$32,705**						

"Summ 1,800 Sqft"

[1] All fees shown are for Fiscal Year 2001-02.
[2] Fee is charged on a per acre basis. This analysis assumes there are 7 units per acre.

Figure 6
Natomas Basin
Comparison of Total Backbone Cost
as a Percentage of Average Home Prices

1,800 Square Foot Unit

Districts	Project Areas	Scenario	Average Home Price [1]	Existing/Current Mitigation Fees			Proposed Increase in Mitigation Fees		
				Habitat Mitigation Fees	Average Backbone Cost [2]	Percentage of Average Home Prices	NBHCP Mitigation Fees	Average Backbone Cost [2]	Percentage of Average Home Prices
NBHCP Service Areas									
North Natomas	Sacramento	#1-Low	$229,000	$563	$31,756	14%	$293	$32,050	14%
North Natomas	Sacramento	#5-High	$229,000	$563	$31,756	14%	$949	$32,705	14%
Major Development Areas									
Laguna West	Sacramento	n/a	$215,000		$28,984	13%			
Broadstone 2	Folsom	n/a	$261,000		$32,716	13%			
North Central Roseville	Roseville	n/a	$240,000		$40,628	17%			
Stanford Ranch	Rocklin	n/a	$243,000		$34,130	14%			
Southport	West Sacramento	n/a	$210,000	$358	$23,154	11%			
Sycamore Ranch	Woodland	n/a	$232,000	$358	$29,278	13%			

Source: City of Sacramento, North Natomas Drainage CFD No. 97-01

"1,800sf %"

[1] Based on data from The Gregory Group New-Home database.
[2] Total backbone costs include city/county-wide fees, including mitigation fees, school mitigation fees and project specific fees/bonds.

Figure 7
Natomas Basin
Comparison of Burden of Impact Fees
on Residential Development - 2,400 Sqft Unit [1]

Fee Category	Sacramento County					Placer County		Yolo County	
	City of Sacramento			Sac. County	Folsom	Roseville	Rocklin	West Sac.	Woodland
	North Natomas Quadrant 2	North Natomas Quadrant 4	North Natomas Average	Laguna West	Broadstone Unit 2	North Central SP	Stanford Ranch	Southport	Sycamore Ranch
Existing Fees, Taxes & Assessments									
City/County Fees, Excluding Mitigation Fees	$11,451	$11,451	$11,451	$12,583	$18,314	$22,155	$20,544	$20,761	$13,228
Plan Area Fees	$5,806	$5,806	$5,806	$0	$0	$0	$0	$0	$4,702
School Mitigation	$8,040	$8,040	$8,040	$9,354	$7,056	$5,585	$10,942	$4,920	$9,055
Infrastructure Bonds/Assessments	$9,161	$11,616	$10,389	$13,712	$9,826	$13,790	$4,776	$0	$2,391
Subtotal	**$34,458**	**$36,914**	**$35,686**	**$35,649**	**$35,197**	**$41,530**	**$36,262**	**$25,681**	**$29,376**
Existing Habitat Mitigation Fees [2]	$788	$788	$788					$502	$502
Total Existing Fees, Taxes & Assessments	**$35,247**	**$37,702**	**$36,474**	**$35,649**	**$35,197**	**$41,530**	**$36,262**	**$26,183**	**$29,877**
Proposed Increase in NBHCP Fee Per Unit [2]									
Scenario 1	$410	$410	$410						
Scenario 2	$569	$569	$569						
Scenario 3	$940	$940	$940						
Scenario 4	$1,309	$1,309	$1,309						
Scenario 5	$1,328	$1,328	$1,328						
Total After Fee Increase									
Scenario 1	**$35,657**	**$38,112**	**$36,885**						
Scenario 2	**$35,815**	**$38,270**	**$37,043**						
Scenario 3	**$36,187**	**$38,642**	**$37,414**						
Scenario 4	**$36,556**	**$39,011**	**$37,783**						
Scenario 5	**$36,575**	**$39,030**	**$37,802**						

"Summ 2,400 Sqft"

[1] All fees shown are for Fiscal Year 2001-02.
[2] Fee is charged on a per acre basis. This analysis assumes there are 5 units per acre.

Figure 8
Natomas Basin
Comparison of Total Backbone Cost
as a Percentage of Average Home Prices

2,400 Square Foot Unit

NBHCP Service Areas:	Average of Project Areas	Scenario	Average Home Price [1]	Existing/Current Mitigation Fees			Proposed Increase in Mitigation Fees		
				Habitat Mitigation Fees	Average Backbone Cost [2]	Percentage of Average Home Prices	NBHCP Mitigation Fees	Average Backbone Cost (1)	Percentage of Average Home Prices
NBHCP Service Areas									
North Natomas	Sacramento	#1-Low	$279,000	$788	$36,474	13%	$410	$36,885	13%
North Natomas	Sacramento	#5-High	$279,000	$788	$36,474	13%	$1,328	$37,802	14%
Comparable Development Areas									
Laguna West	Sacramento	n/a	$240,000		$35,649	15%			
Broadstone 2	Folsom	n/a	$360,000		$35,197	10%			
North Central Roseville	Roseville	n/a	$290,000		$41,530	14%			
Stanford Ranch	Rocklin	n/a	$324,000		$36,262	11%			
Southport	West Sacramento	n/a	$245,000	$502	$26,183	11%			
Sycamore Ranch	Woodland	n/a	$300,000	$502	$29,877	10%			

Source: City of Sacramento, North Natomas Drainage CFD No. 97-01

"2,400sf%"

[1] Based on data from The Gregory Group New-Home database.
[2] Total backbone costs include city/county-wide fees, including mitigation fees, school mitigation fees and project specific fees/bonds.

Figure 9
Natomas Basin
Comparison of Burden of Impact Fees Per Sqft
on Non-Residential Development - Retail

Fee Category	Sacramento County						Placer County		Yolo County	Sutter Co.
	City of Sacramento			Sac. County	Folsom	Sac. County	Roseville	Rocklin	West Sac.	
	North Natomas Quad. 1, Basin 6	North Natomas Quad. 2, Basin 1	North Natomas Average	Laguna West	Broadstone Unit 2	Northeast Galt	North Central SP	Stanford Ranch	Southport	South Sutter
Existing Fees, Taxes & Assessments										
City/County Fees, Excluding Mitigation Fees	$4.90	$4.90	$4.90	$7.09	$8.73	$16.06	$8.49	$10.42	$10.55	$5.53
Plan Area Fees	$9.15	$9.15	$9.15	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Infrastructure Bonds/Assessments	$7.77	$7.00	$7.38	$4.70	$4.89	$3.96	$5.65	$4.04	$9.35	$0.00
Subtotal	**$21.82**	**$21.05**	**$21.43**	**$11.79**	**$13.62**	**$20.01**	**$14.14**	**$14.47**	**$19.89**	**$5.53**
Existing Habitat Mitigation Fees [1]	$0.36	$0.36	$0.36	$0.00	$0.00	$0.00	$0.00	$0.00	$0.23	$0.36
Total Existing Fees, Taxes & Assessments	**$22.18**	**$21.41**	**$21.79**	**$11.79**	**$13.62**	**$20.01**	**$14.14**	**$14.47**	**$20.12**	**$5.89**
Proposed Increase in NBHCP Fee Per Sqft [1]										
Scenario 1	$0.19	$0.19	$0.19							$0.19
Scenario 2	$0.26	$0.26	$0.26							$0.26
Scenario 3	$0.43	$0.43	$0.43							$0.43
Scenario 4	$0.60	$0.60	$0.60							$0.60
Scenario 5	$0.61	$0.61	$0.61							$0.61
Total After Fee Increase										
Scenario 1	**$22.37**	**$21.60**	**$21.98**							**$6.08**
Scenario 2	**$22.44**	**$21.67**	**$22.06**							**$6.15**
Scenario 3	**$22.61**	**$21.84**	**$22.23**							**$6.32**
Scenario 4	**$22.78**	**$22.01**	**$22.39**							**$6.49**
Scenario 5	**$22.79**	**$22.02**	**$22.40**							**$6.50**

"Summ Retail"

[1] All fees shown are for Fiscal Year 2001-02.
[2] Fee is charged on a per acre basis. This analysis assumes there are 7 units per acre.

Figure 10
Natomas Basin
Comparison of Total Backbone Cost
as a Percentage of Average Sales Price per Sqft

Retail Development
Assumes 109,000 Sqft Building

Project Area	District	Scenario	Average Sales Price per Sqft [1]	Existing/Current Mitigation Fees			Proposed Increase of Mitigation Fees		
				Habitat Mitigation Fees	Average Backbone Cost [2]	Percentage of Average Sales Prices	NBHCP Mitigation Fees	Average Backbone Cost [1]	Percentage of Average Sales Prices
NBHCP Service Areas:									
North Natomas [3]	Sacramento	#1-Low	$120.00	$0.36	$21.79	18%	$0.19	$21.98	18%
North Natomas [3]	Sacramento	#5-High	$120.00	$0.36	$21.79	18%	$0.61	$22.40	19%
South Sutter County	Sutter County	#1-Low	$120.00	n/a	n/a	n/a	n/a	n/a	n/a
South Sutter County	Sutter County	#5-High	$120.00	n/a	n/a	n/a	n/a	n/a	n/a
Major Development Areas									
Laguna West	Sacramento	n/a	$120.00	$0.00	$11.79	10%			
Broadstone 2	Folsom	n/a	$120.00	$0.00	$13.62	11%			
Northeast Area	Galt	n/a	$120.00	$0.00	$20.01	17%			
North Central Roseville	Roseville	n/a	$120.00	$0.00	$14.14	12%			
Stanford Ranch	Rocklin	n/a	$120.00	$0.00	$14.47	12%			
Southport	West Sacramento	n/a	$120.00	$0.23	$20.12	17%			

"Retail %"

[1] Based on information provided by commercial developers and brokers.
[2] Total backbone costs include city/county-wide fees, plan area fees including mitigation fees, and project specific infrastructure fees/bonds.
[3] Backbone Infrastructure cost for North Natomas is based on the average cost of Quad 3 Basin 8c and Quadrant 1 Basin 9.

Figure 11
Natomas Basin
Comparison of Burden of Impact Fees Per Sqft
on Non-Residential Development - Warehouse/Light Industrial [1]

Fee Category	Sacramento County						Placer County		Yolo County		Sutter Co.
	City ofSacramento			Sac. County	Folsom	Galt	Roseville	Rocklin	West Sac.	Woodland	Sutter Co.
	North Natomas Quad 3, Basin 8c	North Natomas Quad 1, Basin 9	North Natomas Average	Laguna West	Broadstone Unit 2	Northeast Area	North Central SP	Stanford Ranch	Southport	East Main St. Assess. District	South Sutter
Existing Fees, Taxes & Assessments											
City/County Fees, Excluding Mitigation Fees	$3.70	$3.70	$3.70	$4.62	$5.09	$4.08	$6.49	$6.84	$5.20	$3.04	$3.92
Plan Area Fees	$1.82	$1.82	$1.82	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Infrastructure Bonds/Assessments	$3.82	$2.50	$3.16	$2.10	$3.06	$0.48	$2.63	$1.60	$4.25	$1.62	$0.00
Subtotal	**$9.33**	**$8.01**	**$8.67**	**$6.72**	**$8.15**	**$4.56**	**$9.12**	**$8.44**	**$9.45**	**$4.65**	**$3.92**
Existing Habitat Mitigation Fees [2]	$0.23	$0.23	$0.23	$0.00	$0.00	$0.00	$0.00	$0.00	$0.14	$0.14	$0.23
Total Existing Fees, Taxes & Assessments	**$9.56**	**$8.24**	**$8.90**	**$6.72**	**$8.15**	**$4.56**	**$9.12**	**$8.44**	**$9.60**	**$4.80**	**$4.15**
Proposed Increase in NBHCP Fee Per Sqft [2]											
Scenario 1	$0.12	$0.12	$0.12								$0.12
Scenario 2	$0.16	$0.16	$0.16								$0.16
Scenario 3	$0.27	$0.27	$0.27								$0.27
Scenario 4	$0.38	$0.38	$0.38								$0.38
Scenario 5	$0.38	$0.38	$0.38								$0.38
Total After Fee Increase											
Scenario 1	**$9.68**	**$8.35**	**$9.02**								**$4.27**
Scenario 2	**$9.72**	**$8.40**	**$9.06**								**$4.31**
Scenario 3	**$9.83**	**$8.51**	**$9.17**								**$4.42**
Scenario 4	**$9.94**	**$8.61**	**$9.27**								**$4.52**
Scenario 5	**$9.94**	**$8.62**	**$9.28**								**$4.53**

"Summ Lt Ind"

[1] All fees shown are for Fiscal Year 2001-02.
[2] Fee is charged on a per acre basis. This analysis assumes there are 7 units per acre.

Figure 12
Natomas Basin
Comparison of Total Backbone Cost
as a Percentage of Average Sales Price per Sqft

Warehouse Light Industrial Development
Assumes 100,000 Sqft Building

Project Area	District	Scenario	Average Sales Price per Sqft [1]	Existing/Current Mitigation Fees			Proposed Increase of Mitigation Fees		
				Habitat Mitigation Fees	Average Backbone Cost [2]	Percentage of Average Sales Prices	NBHCP Mitigation Fees	Average Backbone Cost [1]	Percentage of Average Sales Prices
			Low - High						
NBHCP Service Areas:									
North Natomas [3]	Sacramento	#1-Low	$25.00 - $60.00	$0.23	$8.90	36% - 15%	$0.12	$9.02	36% - 15%
North Natomas [3]	Sacramento	#5-High	$25.00 - $60.00	$0.23	$8.90	36% - 15%	$0.38	$9.28	37% - 15%
South Sutter County	Sutter County	#1-Low	$25.00 - $60.00	$0.23	$4.15	17% - 7%	$0.12	$4.27	17% - 7%
South Sutter County	Sutter County	#5-High	$25.00 - $60.00	$0.23	$4.15	17% - 7%	$0.38	$4.53	18% - 8%
Major Development Areas									
Laguna West	Sacramento	n/a	$25.00 - $60.00	$0.00	$6.72	27% - 11%			
Broadstone 2	Folsom	n/a	$25.00 - $60.00	$0.00	$8.15	33% - 14%			
North Central Roseville	Roseville	n/a	$25.00 - $60.00	$0.00	$9.12	36% - 15%			
Stanford Ranch	Rocklin	n/a	$25.00 - $60.00	$0.00	$8.44	34% - 14%			
Southport	West Sacramento	n/a	$25.00 - $60.00	$0.14	$9.60	38% - 16%			
East Main St.	Woodland	n/a	$25.00 - $60.00	$0.14	$4.80	19% - 8%			
Northeast Area	Galt	n/a	$25.00 - $60.00	$0.00	$4.56	18% - 8%			

"Lt Ind %"

[1] Based on information provided by commercial developers and brokers.
[2] Total backbone costs include city/county-wide fees, plan area fees including mitigation fees, and project specific infrastructure fees/bonds.
[3] Backbone Infrastructure cost for North Natomas is based on the average cost of Quad 3 Basin 8c and Quadrant 1 Basin 9.

CURRENT CONDITIONS VERSUS FUTURE CONDITIONS

As discussed in an earlier section of this Chapter, the proposed increase in the NBHCP fee from the 1999 fee level, is projected to have minimal impact on the cost burdens of new development projects. However, recognizing that the costs burdens are already high, any future increases in the fee, beyond the levels shown in this report, could negatively impact the feasibility of new development projects.

Over the last five years, increasing land values, as shown in **Figure 13,** have resulted in the need to increase the fee level. Land values increased over 11 percent from 1998 to 1999. From 2000 to 2001, land values increased over 28 percent.

As a result of the Settlement Agreement entered into by the City of Sacramento in 2001, land prices have spiked to $11,000 per acre. This has occurred due to the requirement that the City purchase habitat lands in specified areas within the Basin. This limit (restriction) on the supply of land suitable for habitat has increased the price of land, since demand has remained unchanged. It is anticipated that adoption of the revised NBHCP and elimination of the Settlement Agreement requirements specifying the location of habitat land acquisition, the cost per acre of habitat land will recede.

Nevertheless, there is anticipated to be on-going pricing pressure on habitat land as the potential supply of habitat land is reduced. **Figure 14** shows the distribution of the

Figure 13
Natomas Basin
In-Basin Land Values for Habitat Lands Acquired 1995-2001
(Excluding Transaction Costs)

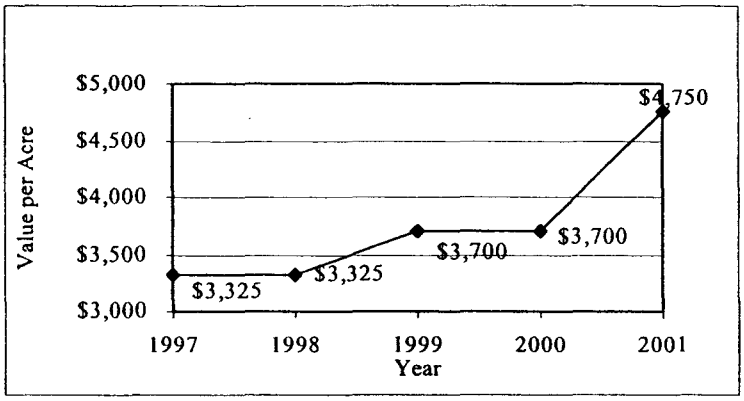
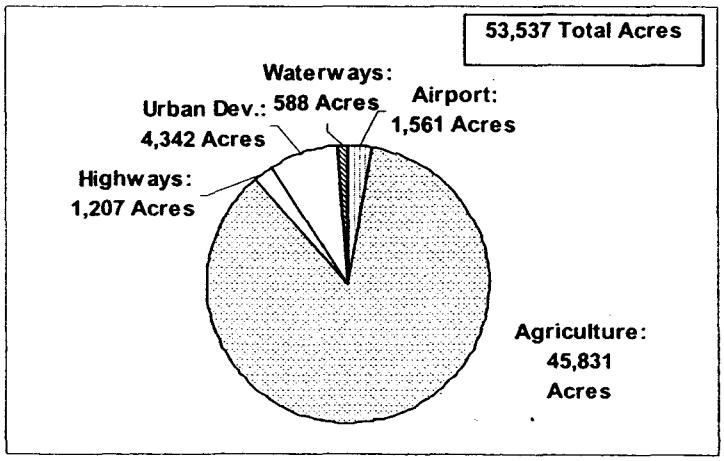


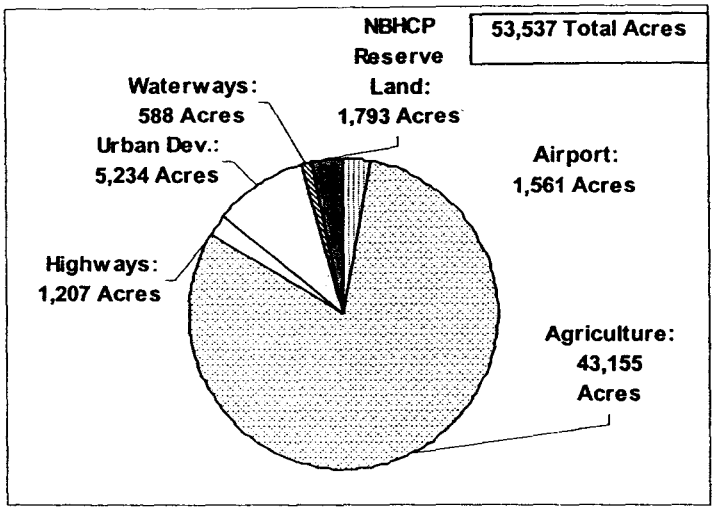
Figure 14
Natomas Basin
1997 Distribution of Acres by Land Use
Assuming 0.5:1 Mitigation Ratio



Source: HCP Tech Memo and EPS

approximately 53,500 acres in the basin among various land uses in 1997. In 1997, there were approximately 45,800 acres of agricultural land out of 53,500 acres total in the Natomas Basin.

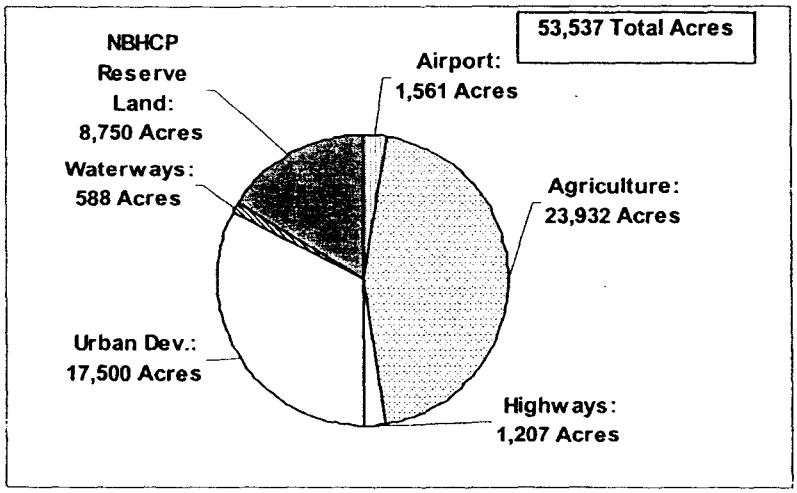
Figure 15
Natomas Basin
2001 Distribution of Acres by Land Use
Assumes 0.5:1 Mitigation Ratio



Source: HCP Tech Memo and EPS

In 2001, as shown in **Figure 15**, there were approximately 2,700 fewer agricultural acres. As urban development continues to occur, the pool of available agricultural land that can be purchased for habitat land decreases. As evidenced by the phenomenon occurring with implementation of the Settlement Agreement, this will undoubtedly drive the land acquisition costs up over time, and consequently the NBHCP Fee will need to increase over time to generate sufficient revenues for land acquisition.

Figure 16
Natomas Basin
Distribution of Acres by Land Use at Buildout
Assumes 0.5:1 Mitigation Ratio



Source: HCP Tech Memo and EPS

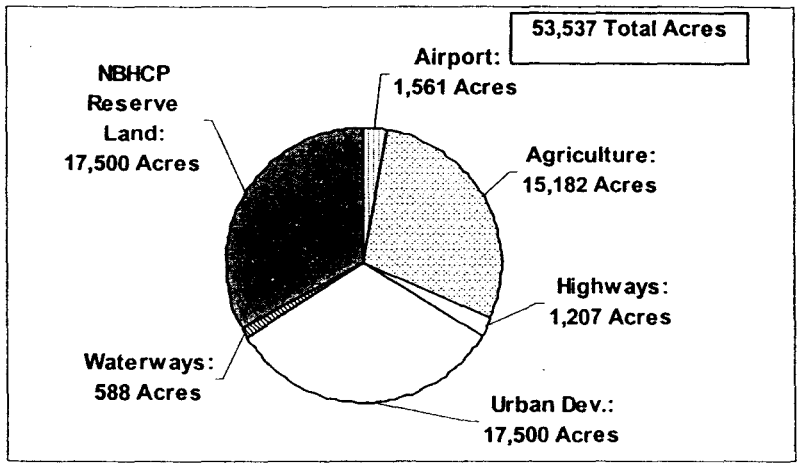
Figure 16 shows the likely distribution of acres in the Natomas Basin at buildout. Agricultural land, excluding habitat land, will have diminished to approximately 23,932 acres.

Each of the pie charts shown in **Figure 14** through **Figure 16** are based on a mitigation ratio of one-half acre of habitat mitigation to one acre of development. Scenario 4 presented in this Report contemplates a mitigation ratio of one acre of habitat mitigation to one acre of development.

Figure 17 presents a pie chart of the distribution of land uses at buildout assuming a 1:1 habitat mitigation ratio. In this scenario, the habitat mitigation acres at buildout total 17,500 acres. The remaining agricultural acres are reduced from 23,932 acres (as shown in **Figure 16**) to 15,182 acres, representing a 37 percent decline in total remaining agricultural acres.

Figure 18 shows the historical trend in land costs as well as three alternative projected trends in land costs through 2005 - increasing at 5%, 10%, and 20% annually. The historical annual average increase has been approximately 11%. By 2005, the land costs could range between $5,800 to $7,600 per acre excluding transaction costs and contingencies. Transaction and contingency costs are estimated to be approximately 20% of the land value. This would push the total acquisition costs between approximately $7,000 and $9,100 per acre.

Figure 17
Natomas Basin
Distribution of Acres by Land Use at Buildout
Assumes 1:1 Mitigation Ratio



Source: HCP Tech Memo and EPS

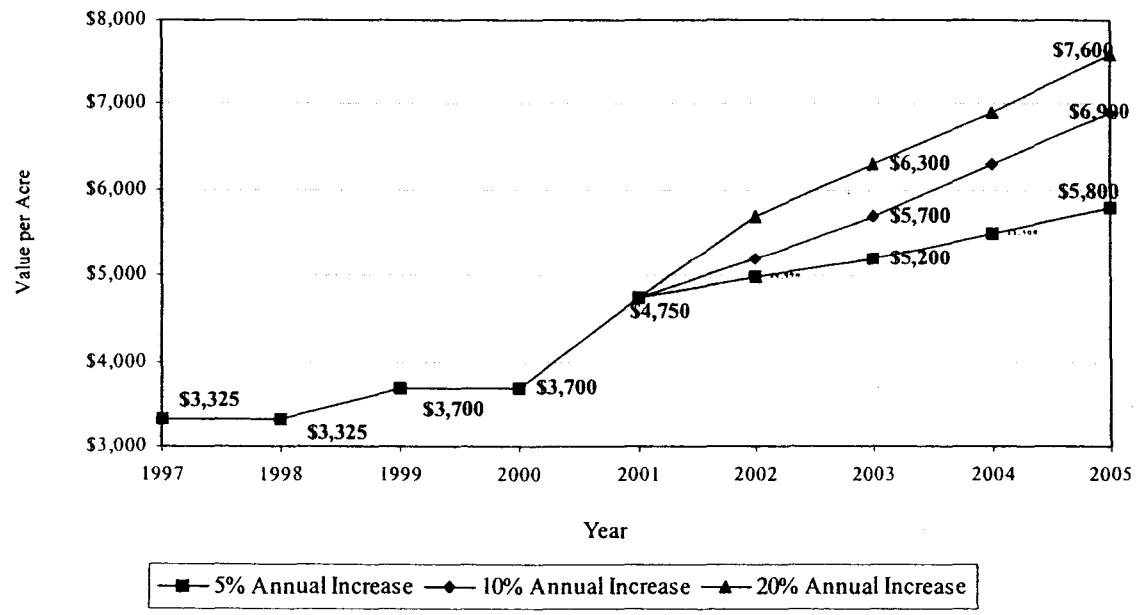
Land cost increases would be even greater under Scenario 4 (1:1 habitat mitigation ratio) due to the greater demand for habitat acres with a fixed supply of potential habitat land. While it is not possible to predict the actual land costs under such a scenario, it would most likely negatively impact the financial feasibility of the projects in the Natomas Basin. The fee estimated under Scenario 4 is $10,486, nearly double the fee estimated for the base case of $5,993 per acre - both of which assume the same land acquisition cost per acre. With the increased demand for habitat land under Scenario 4 and a static supply of acres from which to buy habitat land, the impact, over time, will be a significant increase in the land acquisition prices. This will require even greater fee increases potentially pushing the development projects out of the realm of feasibility.

While the economic analysis and financial modeling in this analysis did not model the 3:1 mitigation requirement included in the EIR Alternative 2, it can reasonably be assumed that the impact on land prices would be similar, if not greater, than under the 1:1 mitigation alternative. By inference, therefore, such an alternative would also negatively impact the feasibility of development projects in the Natomas Basin over time.

Similarly, the impact of a mitigation requirement to purchase habitat land in specified areas, as described in EIR Alternative 3 (also not modeled as part of this analysis) would result in increased land acquisition costs, as evidenced by the most recent NBC land acquisition costs of $11,000 an acre under the Settlement Agreement. While this is believed to be a temporary increase in land acquisition costs, past practice indicates requiring specific reserve areas as part of the HCP would increase the land costs on an on-going basis and negatively impact the financial feasibility of development projects.

In general, as land costs continue to increase and the NBHCP fee increases as a result, the financial feasibility of the development projects within the Natomas Basin area are likely to diminish over time as well.

Figure 18
Natomas Basin
Projected Land Costs (Excluding Transactions Costs) Over Time
Assuming a 0.5:1 Mitigation Ratio



VI. OVERVIEW OF FINANCIAL MODEL

This Chapter provides an overview of the financial model of the NBHCP. This discussion focuses on the general cash flow model assumptions and provides a detailed description of the model using the Base Case scenario.

IMPORTANT CONSIDERATIONS

Before describing the cash flow model and financial analysis in detail, there are several factors that should be noted and kept in mind when considering the financial analysis. They are as follows:

- ***Interaction of Funds***: Although the fee is based on the sum of several cost components, the portion of the fee funding the NBC annual costs may be used for any of the NBC annual activities given the priorities established by the NBHCP. Only the fee components for the O&M Endowment Fund and the 2 percent administrative fee are to be used entirely and exclusively for their respective purposes. In other words, the financing mechanism as established provides the ability to transfer monies between the Land Acquisition fund, the Restoration & Enhancement Fund, and the O&M/Administration fund.

- ***Viability Under Specific Set of Conditions***: The economic analysis and cash flow modeling incorporate the major provisions of the NBHCP into a working model to indicate whether the Plan is financially viable under a specific set of conditions. It is not intended to depict how the NBHCP will necessarily be implemented on an annual basis.

- ***Mitigation Fee Reviewed and Adjusted Annually***: The financial analysis assumes that costs, such as land acquisition costs, are constant through the 50-year permit period, for purposes of the cash flow modeling. In actuality costs will fluctuate over time in response to market conditions and other factors. The fee program is monitored and can be adjusted on an annual basis to adapt to changes in cost assumptions and revenue projections.

CASH FLOW MODEL ASSUMPTIONS

The cash flow model is based on a series of assumptions regarding expenditures and revenues for the HCP. The majority of these assumptions are presented in **Figure 19** through **Figure 21**.

Figure 19 shows the assumptions regarding land acquisition values per acre, the projected use of In-Basin lands, and the use of rice lands. The land acquisition values are based on the recent experience of the NBC in their acquisition of land to date. Land values within the Basin are likely to be higher than out of Basin because there is greater

land availability out of Basin and less development pressure. The HCP allowed for up to 20 percent of mitigation land to be purchased out of Basin. However, the financial analysis assumes that no land is purchased out of Basin, and therefore the land acquisition value assumed in the analysis may actually be higher, or reflect a more conservative assumption, than may prevail in implementation of the HCP. Transaction and contingency costs are added to the land acquisition value for a total land acquisition cost of $6,000 per acre.

The assumptions regarding the use of mitigation lands are based on the program as outlined in the HCP. **Figure 22** shows the distribution of mitigation land based on use for the Base Case scenario over the 50-year period of the ITPs and HCP.

Figure 19 also includes the assumptions regarding the average cost per acre of restoring and enhancing mitigation land. The only cost assumed with restoration and enhancement is in relation to the conversion of agricultural (predominantly rice) land to managed marsh. The cost per acre is estimated to be $2,919, based on the "Site-Specific Management Plans for the Natomas Basin Conservancy's Mitigation Lands for Sacramento and Sutter Counties" prepared by Wildlands, Inc. in June of 2000. The cost per acre of the conversion of marsh land, assumed to be 25 percent of total mitigation lands, is averaged over all of the mitigation lands acquired to determine a weighted average cost per acre of $621.

An average cost per acre of $116 is included to provide for the costs of conducting the site-specific plans for the mitigation lands. The total average cost per acre for restoration and enhancement is estimated to be $736 per habitat acre. (Note: this cost per habitat acre changes if the assumed percent of marsh land converted is changed.)

Figure 20 and **Figure 21** provide the expenditure and revenue assumptions for the ongoing O&M and administrative costs of the NBHCP. The O&M costs are based on estimates provided in the June 2000 Site-Specific Plan prepared by Wildlands, Inc. The property tax assumptions are based on the property tax bills for existing mitigation lands.

The administrative costs are based on the budget of the NBC. A breakdown of these costs is shown in **Figure 21**.

O&M revenues are assumed from rice or crop land farming leases and hunting of water fowl. The revenue assumed per acre for these activities is shown in **Figure 19.**

Figure 19
Natomas Basin HCP
Land Acquisition and Restoration/Enhancements Cost and Acquired Habitat Land Utilization Assumptions

Base Case
17,500 acres of development
1/2 acre of mitigation land per gross acre of developed land
25% marsh

Part A - Assumptions				Notes:
Inflation	**0.0%**			
Interest Rate	**3.0%**			
Land Acquisition Values per Acre	Land Value	Permitted by Plan	Assumed in Financial Analysis	
In-Basin Lands	$4,750	80%	100%	Estimated $4,500-$5,500 per acre range
Out-of-Basin Lands	$3,000	20%	0%	Estimated $2,500-$3,500 per acre range per Recent Experience of NBHCP
Average Land Value (1)	**$4,750**	Use In-Basin Land Value		
Plus Transaction Costs & Contingency	$1,250	per Acre		
Average Land Acquisition Cost	**$6,000**	**per acquired acre**		Beginning 1/1/01
Estimated Use of In-Basin Lands				
Marsh	25%			
Existing Rice	50%			
Other/Upland	25%			
Total Initial Use	**100%**			
Rice Converted to Marsh		After year 5, 324 acres in marsh 25% thereafter		
Rice Lands				
Uplands/Fallow	10%			
Leased for Other Crops	0%			
Leased Rice Base Land	90%			
Total Rice Lands	**100%**			
Initial Restoration/Enhancement	Use of Land	Initial Costs	Weighted Cost (5)	
Expended At Time Land Is Acquired				
Marsh (2)	0%	$0	$0	Note (3)
Existing Rice	75%	$0	$0	Note (3)
Dry Converted to Rice	0%	$0	$0	Note (3)
Other Upland	25%	$0	$0	Note (3)
Subtotal	**100%**		**$0**	
Expended At Time Land Is Converted				
Rice/Other Converted to Marsh	25%	$2,482	$621	Note (4)
Site Specific Plan Costs			$116 per acre	Based on initial Site Specific Plan for 1,297 acres
Average Cost per Habitat Acre			**$736**	Weighted average cost per acre

"assumptions1"

Source: Natomas Basin Conservancy

(1) Assumes all acquisition occurs at the average in-basin land value.

(2) Initial use of marsh land estimated at 0% because NBHCP estimates that little to no marshland is available for acquisition. However, rice land will be converted to marsh land.

(3) The initial costs of marsh, existing rice, dry land converted to rice and other upland have been set to zero as no initial restoration or enhancement costs are anticipated.

(4) The current estimate of $2,482 per acre is calculated from the May 2001 cost estimate of $2.13 million for 858 acres and is based on creation/maintenance of habitat for the giant garter snake and the Swainson's hawk.

(5) The cost of restoration and enhancement is weighted by the percent of acres assumed to be converted or used for that particular land use.

Figure 20
Natomas Basin HCP
Operations & Maintenance Assumptions

Base Case
17,500 acres of development
1/2 acre of mitigation land per gross acre of developed land
25% marsh

Part A - Assumptions Con't				Notes:
Operations & Maintenance Costs				
Marsh	$281	per acre		Updated Cost -- May 2001
Upland/Fallow	$18	per acre		Based on Wildlands, Inc. Estimates
Land Leased for Planted Rice Base	$3	per acre		Based on Wildlands, Inc. Estimates
Land Leased for Other Crops	$3	per acre		alfalfa, safflower, etc.
Other	$0	per acre		
Hunting	$0	per acre		Updated Cost -- May 2001
Misc./Monitoring/Adaptive Mgmt.	$27	per acre		Based on Wildlands, Inc. Estimates
Special Assessment & Property Tax Costs				
Sacramento County				
Reclamation District #1000	$13.1	per acre		Based on Existing Sacramento County Lands
NCMWA	$0.4	per acre		Based on Existing Sacramento County Lands
SAFCA O&M Assessment #1	$5.7	per acre		Based on Existing Sacramento County Lands
CSAI Safety Lights	$0.1	per acre		Based on Existing Sacramento County Lands
Property Tax [1]	$25.6	per acre		Assumes average assessed value of land at $2,400 per acre
Subtotal Sacramento County	**$45**	per acre		
Sutter County				
Reclamation District #1000	$13.1	per acre		
NCMWC	$0.4	per acre		
Property Tax	$24.0	per acre		Assumes average assessed value of land at $2,400 per acre
Subtotal Sutter County	**$37**	per acre		
Administrative Costs				
During Development	$447,695	per year		Figure 5 for detail phased in over 3- 5 years
After All Land Acquired	$380,541	per year		
Operations & Maintenance Revenues				
Crop Land Leases				
Through 2002				
Planted Rice Base Acreage	$160	per acre/year	normal ag. practices	$135 - $210 range
Other Crops (Flex. acreage)	$80	per acre/year	normal ag. practices	$75 - $100 range
2003 +				
Planted Rice Base Acreage	$160	per acre/year	normal ag. practices	$135 - $210 range
Other Crops (Flex. acreage)	$80	per acre/year	normal ag. practices	$75 - $100 range
Hunting				
Hunting Revenue per Acre	$12	per acre		Based on Wildlands Estimate for initial Site Plan

"assumptions2"

Source: Natomas Basin Conservancy

[1 Includes G.O. bond assessment.

Figure 21
Natomas Basin HCP
Estimated Annual Natomas Basin Conservancy (NBC) Administrative Costs

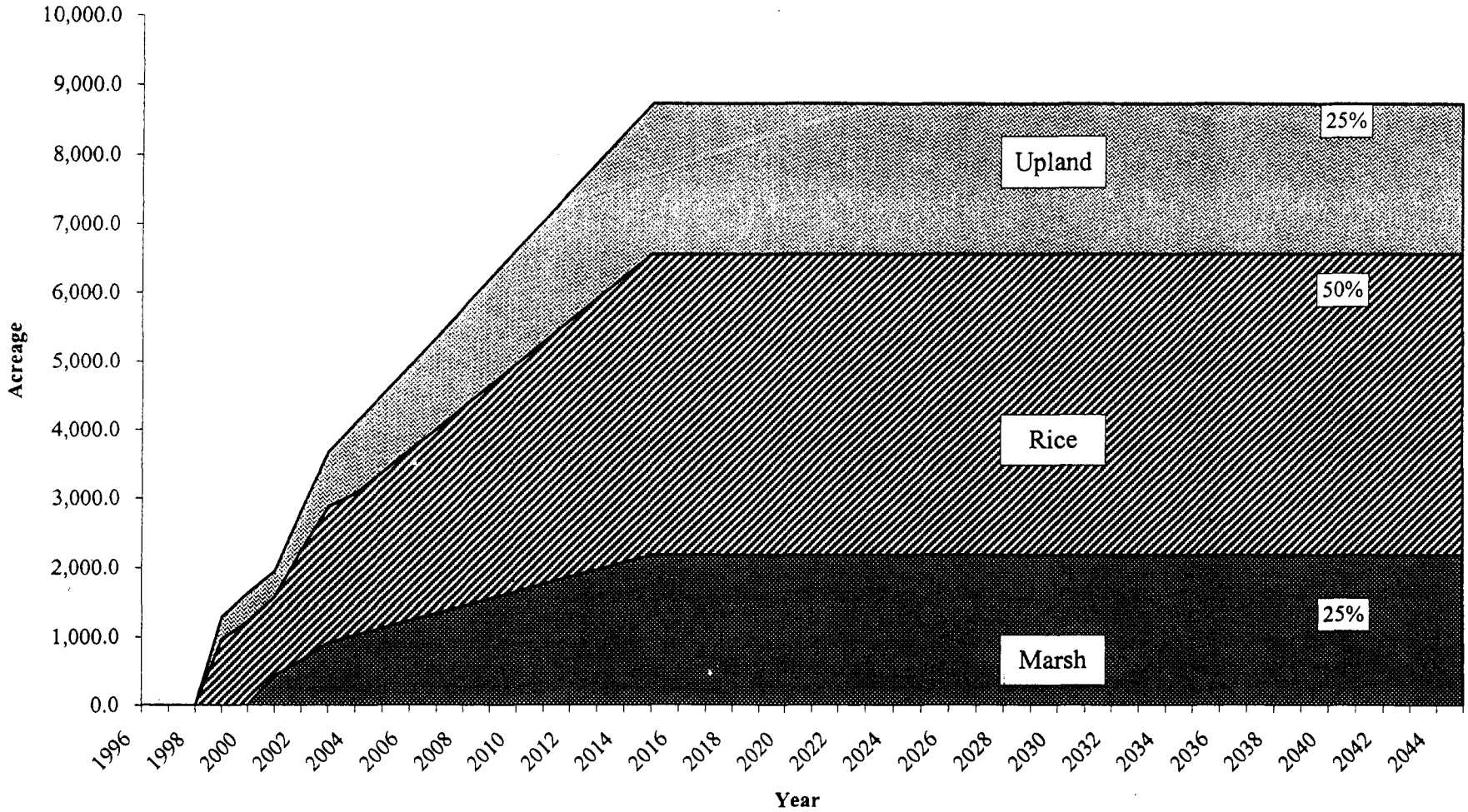
	Annual Cost	Notes
Administrative Expenses		
Staff	$150,000	
Benefits	$49,500	
Board Expense	$6,000	
Subtotal	**$205,500**	
Office Expense		
Rent	$15,000	
Telephone	$1,700	
Copying & Printing	$16,000	
Office Supplies	$5,000	
Postage	$600	
Equipment	$2,500	
Auto Expense	$6,500	
Subtotal	**$47,300**	
Miscellaneous Expense		
Insurance	$23,000	Liability and E&O
Accounting	$16,500	
Legal	$60,000	
Corporate Taxes	$1,000	
Subtotal	**$100,500**	
Contract Work/ Public Education/ Publications/Monitoring/Reports, etc.	**$36,000**	
Subtotal Costs	**$389,300**	
Contingency	$58,395	15% Contingency
Total Administration During Habitat Acquisition Phase	**$447,695**	
Total Administration After Habitat Acquisition	**$380,541**	[1]

"admin"

Source: NBC FY 2001 budget estimate

[1] Administrative costs are reduced by 15% after all habitat lands have been acquired per John Roberts.

Figure 22
Natomas Basin HCP
Summary of Habitat Acreage
Base Case



Prepared By EPS

10365 model update 3/11/02

UPDATES TO FINANCIAL ANALYSIS

The financial analysis for the Base Case relies in part on the last financial analysis of the HCP completed in July of 2000. The Base Case also incorporates updates based on the revised HCP and other revisions such that the cash flow modeling more accurately reflects the experience and projected operations of the NBC. These updates include:

- ***Rice Revenue Projections***: Rice revenues were modeled to more precisely match current estimates of projected revenue over the next two years.
- ***Revised Administrative Cost Estimates***: Administrative costs were revised based on the current budget estimates of the NBHCP.
- ***Fund Balance Adjustments***: The cash flow analysis was adjusted such that beginning balances in 2001 match actual fund balances of the NBHCP as of December 31, 2000.
- ***Transfer from O&M/Admin to Restoration & Enhancement***: The HCP fee program, since conception, was structured to allow transfers of funds between the Land Acquisition, Restoration & Enhancement, and Administration/O&M funds based on any surpluses or deficits that might exist in those funds. Currently, the O&M/Administration fund has operating surpluses due to operating and administrative efficiencies of the NBC while the revenues for Restoration & Enhancement need to be supplemented over the next few years due to higher than anticipated restoration and enhancement costs for marsh lands. Not only is the cost to restore and enhance managed marsh significantly higher than the original plan estimated, it is also anticipated that managed marsh restoration and enhancement obligations will be far more intense and concentrated than provided in the original plan due to a more condensed period of development activity. Therefore, a transfer from the O&M/ Administration fund to the Restoration & Enhancement fund was assumed in 2003 and 2004 in the cash flow model.
- ***No Reduction in Administrative Costs Post-Land Acquisition***: Previous versions of the financial analysis have assumed that administration costs would be reduced by 67 percent after all mitigation lands have been acquired. Based on discussions with the NBC and information provided by John Roberts, we have come to the conclusion that it is unrealistic to assume a significant decrease in administrative costs once all land acquisition has been completed. Therefore we have assumed a 15 percent reduction in administration costs. The reduction allows for a decrease in legal expenses, but leaves intact funding for most other administrative expenses. This revision to administration costs over the long term represents approximately a 20 percent increase in the Admin./O&M expenditures on an annual basis. However, the Admin./O&M fee is a relatively small component, approximately 16 percent, of the overall fee program including the Settlement Agreement Premium for land acquisition.
- ***Acceleration of Fees Paid (Grading Permits Pulled):*** Past cash flow model analyses have assumed a 50- year development absorption schedule for the 17,500 acres of planned development in the Natomas Basin. Historical development over the last three years has been substantially greater than anticipated by the original cash flow

analysis. Given recent market trends, it is likely that development activity will continue to be at higher levels than originally projected. Even if the market slows, and as a result development activity also slows, there is a very high probability that developers will pull grading permits even if they do not plan to develop the property in the immediate future in order to avoid future delays in the permitting process due to potential legal challenges to the NBHCP fee. Therefore, the current cash flow analysis assumes a 15-year development period, during which grading permits are projected to be pulled and the NBHCP fees paid. Actual development may substantially lag the grading permit stage.

FINANCIAL MODELING DISCUSSION FOR BASE CASE

The financial model includes a series of cash flows over a 50-year period. The financial analysis has historically included four major funds—Land Acquisition (LA), Restoration/Enhancement (RE), O&M/Administration, and the O&M Endowment fund. The current financial analysis has included a fifth fund that is the Supplemental Endowment Fund to be used for advanced acquisition of habitat mitigation lands. If the money generated for the Supplemental Endowment fund is not required to purchase land or not all funds are expended, the balance in the fund, at the discretion of the NBC Board of Directors, would be transferred to either the O&M Endowment fund or the O&M/ Administration fund at the end of the land acquisition phase of the HCP.

A summary of the cash flow for each of these funds is shown in **Figure 23** and **Figure 24**. The summary presents the status of the fund in five year intervals on a pro forma basis. A more detailed explanation of each of these cash flows is provided in **Figure 25** through **Figure 29**. The cash flow analysis is presented in nominal dollars as opposed to real dollars (no inflation is assumed in the analysis), which allows for a comparison of the end-term fund balances in today's dollars.

The Base Case assumes the level of development and mitigation ratios historically assumed by the NBHCP. It assumes a total of 17,500 acres of development occur over the next 30 years. The mitigation ratio is 0.5 acres of mitigation for every gross acre of development. Distribution of rice, marsh, and upland/other lands remains consistent with the historical cash flow model. Based on updates to the model as described above, the estimated fee is $5,993, which is currently the base fee under the settlement agreement.

The land acquisition cost has been increased based on discussions with the NBC (and is consistent across all scenarios). The August 2000 update assumed that combined land acquisition costs, transaction costs, and contingency costs totaled of $5,000. This amount has been increased to $6,000 to more accurately reflect current market conditions.

In addition, the Land Acquisition cash flow was adjusted such that the contingency is not deducted as an expense, but is maintained in the revenue portion of the cash flow. As a result, the fund balance is substantial at the end of the fifty-year time horizon

projected by the cash flow analysis. To the extent the contingency revenues are drawn upon, the fund balance surplus will decrease. If at the end of the land acquisition phase of the NBHCP there remains a fund balance surplus, it will be transferred to either the O&M/Administration fund or the O&M Endowment fund.

Besides the increase in land acquisition costs, the next largest increase in costs relates to O&M/Administration and the O&M Endowment fund. Because the administrative costs are assumed to go on in perpetuity at a higher level than assumed in past financial analyses, i.e., a 15 percent rather than a 67 percent reduction after all land has been acquired, the fee was increased accordingly.

The O&M Endowment fund fee component was also increased, because it is the O&M Endowment that provides operating revenues to the O&M/Administration fund after land acquisition. In year 50, the O&M endowment fund provides approximately 32 percent of operating revenues. The remaining revenues are assumed to come from rice and hunting revenues. **Figure 30** provides a comparison of funding sources for the O&M/Administration fund over the 50-year period.

Figure 23
Natomas Basin HCP
Cash Flow Summary
Land Acquisition, Supplemental Endowment, and Restoration and Enhancement Funds

Base Case
17,500 acres of development
1/2 acre of mitigation land per gross acre of developed land
25% marsh

Assumes:	0.0%	Inflation
	3.0%	Interest Rate

	Total 1995-2045	0 1995	1 1996	5 2000	10 2005	20 2015	30 2025	40 2035	50 2045
LAND ACQUISITION									
Beginning Balance		$0	$0	$587,176	$1,902,545	$6,382,454	$7,009,270	$7,009,270	$7,009,270
Less Land Costs	($43,320,901)	$0	$0	($1,614,279)	($2,182,526)	($2,182,526)	$0	$0	$0
Plus LA Fee Revenue	$48,453,077	$0	$55,641	$1,220,119	$2,534,546	$2,534,546	$0	$0	$0
Plus Interest Earnings	$1,574,349	$0	$0	$67,352	$66,556	$133,755	$0	$0	$0
Plus Transfer from O&M	$0	$0	$0	$0	$0	$0	$0	$0	$0
Plus Drawdown on Supp. Endowment Fund	$0	$0	$0	$0	$0	$0	$0	$0	$0
Plus Adjustment (to balance to 2000 end bal)	$302,745								
Ending Balance	**$7,009,270**	**$0**	**$55,641**	**$260,368**	**$2,321,121**	**$6,868,229**	**$7,009,270**	**$7,009,270**	**$7,009,270**
SUPPLEMENTAL ENDOWMENT									
Beginning Balance	**$0**	**$0**	**$0**	**$0**	**$722,767**	**$2,424,124**	**$3,423,171**	**$4,600,455**	**$6,182,627**
Less Drawdown on Supp. Endowment Fund	$0	$0	$0	$0	$0	$0	$0	$0	$0
Plus Supplemental Endowment Fee Revenue	$2,088,119	$0	$0	$0	$126,727	$126,727	$0	$0	$0
Plus Interest Earnings	$4,279,986	$0	$0	$0	$21,683	$72,724	$102,695	$138,014	$185,479
Ending Balance	**$6,368,106**	**$0**	**$0**	**$0**	**$871,177**	**$2,623,575**	**$3,525,866**	**$4,738,469**	**$6,368,106**
RESTORATION & ENHANCEMENTS									
Beginning Balance		$0	$0	$589,200	$1,100,820	$766,024	$127,745	$127,745	$127,745
Less Restoration/Enh. Costs	($6,441,343)	$0	$0	$0	($751,710)	($310,968)	$0	$0	$0
Plus R&E Fee Revenue	$5,839,422	$0	$0	$132,951	$310,968	$310,968	$0	$0	$0
Plus Transfer from O&M/Admin. Fund	$600,000	$0	$0	$0	$0	$0	$0	$0	$0
Plus Interest Earnings	$282,132	$0	$0	$12,373	$23,117	$16,087	$0	$0	$0
Plus adjustment (to balance to 2000 end bal)	($152,466)	$0	$0	($152,466)	$0	$0	$0	$0	$0
Ending Balance	**$127,745**	**$0**	**$0**	**$582,058**	**$683,196**	**$782,111**	**$127,745**	**$127,745**	**$127,745**

"cash_flow_sum1"

Prepared by EPS.

10365 model update 3/11/02

Figure 24
Natomas Basin HCP
Cash Flow Summary
Administration/Operations & Maintenance Fund, Endowment Fund, and Ending Balances Summary for All Funds

Base Case
17,500 acres of development
1/2 acre of mitigation land per gross acre of developed land
25% marsh

Assumes:	0.0%	Inflation
	3.0%	Interest Rate

	Total 1995-2045	0 1995	1 1996	5 2000	10 2005	20 2015	30 2025	40 2035	50 2045
ADMINISTRATION / OPERATIONS & MAINTENANCE									
Beginning Balance		$0	$0	$1,203,378	$5,823,281	$13,734,117	$10,632,160	$4,836,878	$0
Less O & M Costs	($64,768,078)	$0	$0	($502,829)	($1,084,975)	($1,584,646)	($1,517,492)	($1,517,492)	($1,517,492)
Plus Admin/O&M Fee Revenue	$23,568,011	$0	$4,561	$475,466	$1,313,740	$1,313,740	$0	$0	$0
Plus Rice Revenues	$25,436,070	$0	$0	$176,148	$325,856	$630,002	$630,002	$630,002	$630,002
Plus Hunting Revenues	$2,410,524	$0	$0	$0	$20,366	$63,000	$63,000	$63,000	$63,000
Plus Other Revenues (1)	$0	$0	$0	$0	$0	$0	$0	$0	$0
Plus Interest Earnings	$10,125,364	$0	$0	$36,101	$174,698	$412,024	$318,965	$145,106	$0
Subtotal Revenues	**$61,539,968**	**$0**	**$4,561**	**$687,715**	**$1,834,660**	**$2,418,765**	**$1,011,967**	**$838,108**	**$693,002**
Less Transfer to RE Fund	($600,000)	$0	$0	$0	$0	$0	$0	$0	$0
Less Transfer to Land Acquisition Fund	$0	$0	$0	$0	$0	$0	$0	$0	$0
Plus Adjustment (to balance to 2000 end bal)	$161,275	$0	$0	$161,275	$0	$0	$0	$0	$0
Drawdown on Endowment Fund	$3,666,835	$0	$0	$0	$0	$0	$0	$0	$824,490
Subtotal of Fund Transfers & Adjustment	**$3,228,110**	**$0**	**$0**	**$161,275**	**$0**	**$0**	**$0**	**$0**	**$824,490**
Ending Balance	**$0**	**$0**	**$4,561**	**$1,549,539**	**$6,572,966**	**$14,568,236**	**$10,126,635**	**$4,157,495**	**$0**
ENDOWMENT									
Beginning Balance	**$0**	**$0**	**$0**	**$323,846**	**$4,393,039**	**$13,728,746**	**$19,445,653**	**$26,301,336**	**$32,643,989**
Less Drawdown on Endowment Fund	($3,666,835)	$0	$0	$0	$0	$0	$0	$0	($824,490)
Plus Endowment Fee Revenue	$11,554,990	$0	$3,041	$113,645	$675,879	$675,879	$0	$0	$0
Plus Interest Earnings	$24,923,590	$0	$0	$26,490	$137,415	$420,188	$595,693	$807,282	$1,006,322
Plus Adjustment (to balance to 1999 end bal)	$14,076	$0	$0	$0	$0	$0	$0	$0	$0
Ending Balance	**$32,825,821**	**$0**	**$3,041**	**$463,981**	**$5,206,333**	**$14,824,812**	**$20,041,346**	**$27,108,618**	**$32,825,821**
SUMMARY OF FUND ENDING BALANCES									
Land Acquistion	**$7,009,270**	**$0**	**$55,641**	**$260,368**	**$2,321,121**	**$6,868,229**	**$7,009,270**	**$7,009,270**	**$7,009,270**
Supplemental Endowment	**$6,368,106**	**$0**	**$0**	**$0**	**$871,177**	**$2,623,575**	**$3,525,866**	**$4,738,469**	**$6,368,106**
Restoration and Enhancements	**$127,745**	**$0**	**$0**	**$582,058**	**$683,196**	**$782,111**	**$127,745**	**$127,745**	**$127,745**
Operations and Maintenance	**$0**	**$0**	**$4,561**	**$1,549,539**	**$6,572,966**	**$14,568,236**	**$10,126,635**	**$4,157,495**	**$0**
Endowment	**$32,825,821**	**$0**	**$3,041**	**$463,981**	**$5,206,333**	**$14,824,812**	**$20,041,346**	**$27,108,618**	**$32,825,821**
COMBINED FUNDS ENDING BALANCE	**$46,330,942**	**$0**	**$63,242**	**$2,855,946**	**$15,654,793**	**$39,666,963**	**$40,830,862**	**$43,141,597**	**$46,330,942**

(1) "Other" revenues represents upfront funding from Federal, State or development fees to fund the initial acquisition and restoration/enhancement costs.

"cash_flow_sum2"

Prepared by EPS.

odel u *1/02*

Figure 25
Natomas Basin HCP
Land Acquisition Cash Flow Summary

Base Case *17,500 acres of development*
1/2 acre of mitigation land per gross acre of developed land
25% marsh

Assumes:	0.0%	Inflation
	3.0%	Interest Rate

	Total 1994-2045	0 1995	1 1996	5 2000	10 2005	20 2015	30 2025	40 2035	50 2045
LAND ACQUISITION									
Beginning Balance		$0	$0	$587,176	$1,902,545	$6,382,454	$7,009,270	$7,009,270	$7,009,270
Less Land Costs	($43,320,901)	$0	$0	($1,614,279)	($2,182,526)	($2,182,526)	$0	$0	$0
Plus LA Fee Revenue	$48,453,077	$0	$55,641	$1,220,119	$2,534,546	$2,534,546	$0	$0	$0
Plus Interest Earnings	$1,574,349	$0	$0	$67,352	$66,556	$133,755	$0	$0	$0
Plus Transfer from O&M	$0	$0	$0	$0	$0	$0	$0	$0	$0
Plus Drawdown on Supp. Endowment Fund	$0	$0	$0	$0	$0	$0	$0	$0	$0
Plus Adjustment (to balance to 2000 end bal)	$302,745	$0	$0	$0	$0	$0	$0	$0	$0
Ending Balance (2)	**$7,009,270**	**$0**	**$55,641**	**$260,368**	**$2,321,121**	**$6,868,229**	**$7,009,270**	**$7,009,270**	**$7,009,270**

The Land Acquisition Cash Flow Summary provides a snapshot of the status of the fund at the end of multi-year periods. The detailed, year-by-year cash flow analysis is provided in the Appendix.

- **Beginning Balance**: Funds available at the start of the year.
- **Land Costs**: Represents money spent to buy land that year. Land costs are estimated based on the experience of the Natomas Basin Conservancy. Land acquisition costs are assumed to $4,750 per acre. Transaction costs and contingency costs are assumed to be $1,250 per acre. However the contingency costs are not charged in the cash flow analysis which results in a surplus. If land prices are higher than anticipated, the contingency would be drawndown, and the fee would be adjusted upward the following year to reflect current
- **Land Acquisition Fee Revenue**: Represents the fees collected to cover land acquisition, transaction costs, and contingencies. Based on the mitigation ratio of 0.5 to 1.0, the fee revenue collected per acre is half that of the land cost.
- **Interest Earnings**: Interest earned on the prior year's fund balance. An interest rate of 3% is assumed to be earned on 50% of the prior year's fund balance. No inflation is assumed, therefore the 3 percent interest is intended to reflect a real increase in interest earnings. Once land acquisition is completed, interest is no longer assumed to be earned.
- **Drawdown on Supplement Endowment Fund**: Represents a transfer of funds from the Supplemental Endowment Fund to the Land Acquisition Fund. No drawdown is assumed in this analysis. It is the intent of the Supplemental Endowment Fund to allow for advance purchase of mitigation lands or to pay for higher than anticipated land costs.
- **2000 Fund Balance Adjustment**: Represents a one-time fund balance adjustment in 2000 so that the ending year fund balance matches the actual fund balance for the Land Acqusition fund as of Dec. 31, 2000.
- **Ending Balance**: Represents funds available at the end of the year. The overall ending balance projected in this cash flow is positive, largely because the contingency revenues are reserved. To the extent that the contingency revenue is drawndown, the ending balance would be less. Any positive fund balance remaining after all mitigation lands had been purchased would be transferred to the O&M/Administration Fund or the O&M Endowment Fund.

Figure 26
Natomas Basin HCP
Supplemental Endowment Cash Flow Summary

Base Case *17,500 acres of development*
1/2 acre of mitigation land per gross acre of developed land
25% marsh

Assumes:		
	0.0%	Inflation
	3.0%	Interest Rate

0

	Total 1994-2045	0 1995	1 1996	5 2000	10 2005	20 2015	30 2025	40 2035	50 2045
SUPPLEMENTAL ENDOWMENT									
Beginning Balance	$0	$0	$0	$0	$722,767	$2,424,124	$3,423,171	$4,600,455	$6,182,627
Less Drawdown on Supp. Endowment Fund	$0	$0	$0	$0	$0	$0	$0	$0	$0
Plus Supplemental Endowment Fee Revenue	$2,088,119	$0	$0	$0	$126,727	$126,727	$0	$0	$0
Plus Interest Earnings	$4,279,986	$0	$0	$0	$21,683	$72,724	$102,695	$138,014	$185,479
Ending Balance (2)	**$6,368,106**	**$0**	**$0**	**$0**	**$871,177**	**$2,623,575**	**$3,525,866**	**$4,738,469**	**$6,368,106**

The Supplemental Endowment Cash low Summary provides a snapshot of the status of the fund at the end of multi-year periods. The detailed, year-by-year cash flow analysis is provided in the Appendix.

- **Beginning Balance**: Funds available at the start of the year.
- **Drawdown on Supplemental Endowment**: Represents money transferred from the Supplemental Endowment fund to the Land Acquisition Fund. No drawdown is assumed in the analysis and therefore reflects the contingency available to purchase mitigation land in advance or provide a cushion in the event that land prices are higher than anticipated.
- **Supplemental Endowment Fee Revenue**: Represents the fees collected to allow for advance purchase of mitigation land.
- **Interest Earnings**: Interest earned on the prior year's fund balance. An interest rate of 3% is assumed to be earned on 100% of the prior year's fund balance.
- **Ending Balance**: Represents funds available at the end of the year.

Figure 27
Natomas Basin HCP
Restoration & Enhancement Cash Flow Summary

Base Case *17,500 acres of development*
1/2 acre of mitigation land per gross acre of developed land
25% marsh

Assumes:	0.0%	Inflation
	3.0%	Interest Rate

	Total 1994-2045	0 1995	1 1996	5 2000	10 2005	20 2015	30 2025	40 2035	50 2045
RESTORATION & ENHANCEMENTS									
Beginning Balance		$0	$0	$589,200	$1,100,820	$766,024	$127,745	$127,745	$127,745
Less Restoration/Enh. Costs	($6,441,343)	$0	$0	$0	($751,710)	($310,968)	$0	$0	$0
Plus R&E Fee Revenue	$5,839,422	$0	$0	$132,951	$310,968	$310,968	$0	$0	$0
Plus Transfer from O&M/Admin. Fund	$600,000	$0	$0	$0	$0	$0	$0	$0	$0
Plus Interest Earnings	$282,132	$0	$0	$12,373	$23,117	$16,087	$0	$0	$0
Plus adjustment (to balance to 2000 end bal)	($152,466)	$0	$0	($152,466)	$0	$0	$0	$0	$0
Ending Balance	**$127,745**	**$0**	**$0**	**$582,058**	**$683,196**	**$782,111**	**$127,745**	**$127,745**	**$127,745**

The Restoration & Enhancement Cash Flow Summary provides a snapshot of the status of the fund at the end of multi-year periods. The detailed, year-by-year cash flow analysis is provided in the Appendix.

- **Beginning Balance**: Funds available at the start of the year.
- **Restoration & Enhancement Costs**: Represents money spent to restore or enhance wetlands, i.e., creating marsh land. Restoration & Enhancement per acre cost estimates are based on the cost estimates provided in the Draft Site Specific Management Plan for the current 1,631 acres.
- **Restoration & Enhancement Fee Revenue**: Represents the fees collected to cover restoration and enhancement of mitigation lands. Based on the mitigation ratio of 0.5 to 1.0, the fee revenue collected per acre is half that of the land cost.
- **Interest Earnings**: Interest earned on the prior year's fund balance. An interest rate of 3% is assumed to be earned on 70% of the prior year's fund balance. Once land acquisition is completed, interest is no longer assumed to be earned.
- **2000 Fund Balance Adjustment**: Represents a one-time fund balance adjustment in 2000 so that the ending year fund balance matches the actual fund balance for the Land Acqusition fund as of Dec. 31, 2000.
- **Ending Balance**: Represents funds available at the end of the year.

Figure 28
Natomas Basin HCP
Operations & Maintenance/Administration Cash Flow Summary

Base Case *17,500 acres of development*
1/2 acre of mitigation land per gross acre of developed land
25% marsh

Assumes:		
	0.0%	Inflation
	3.0%	Interest Rate

	Total 1994-2045	0 1995	1 1996	5 2000	10 2005	20 2015	30 2025	40 2035	50 2045
OPERATIONS & MAINTENANCE									
Beginning Balance		$0	$0	$1,203,378	$5,823,281	$13,734,117	$10,632,160	$4,836,878	$0
Less O & M Costs	($64,768,078)	$0	$0	($502,829)	($1,084,975)	($1,584,646)	($1,517,492)	($1,517,492)	($1,517,492)
Plus Admin/O&M Fee Revenue	$23,568,011	$0	$4,561	$475,466	$1,313,740	$1,313,740	$0	$0	$0
Plus Rice Revenues	$25,436,070	$0	$0	$176,148	$325,856	$630,002	$630,002	$630,002	$630,002
Plus Hunting Revenues	$2,410,524	$0	$0	$0	$20,366	$63,000	$63,000	$63,000	$63,000
Plus Other Revenues (1)	$0	$0	$0	$0	$0	$0	$0	$0	$0
Plus Interest Earnings	$10,125,364	$0	$0	$36,101	$174,698	$412,024	$318,965	$145,106	$0
Subtotal Revenues	$61,539,968	$0	$4,561	$687,715	$1,834,660	$2,418,765	$1,011,967	$838,108	$693,002
		$0	$0	$0	$0	$0	$0	$0	$0
Less Transfer to RE Fund	($600,000)	$0	$0	$0	$0	$0	$0	$0	$0
Less Transfer to Land Acquisition Fund	$0	$0	$0	$0	$0	$0	$0	$0	$0
Plus Adjustment (to balance to 2000 end bal)	$161,275	$0	$0	$161,275	$0	$0	$0	$0	$0
Drawdown on Endowment Fund	$3,666,835	$0	$0	$0	$0	$0	$0	$0	$824,490
Subtotal of Fund Transfers & Adjustment	$3,228,110	$0	$0	$161,275	$0	$0	$0	$0	$824,490
Ending Balance (2)	**$0**	**$0**	**$4,561**	**$1,549,539**	**$6,572,966**	**$14,568,236**	**$10,126,635**	**$4,157,495**	**$0**

The Operations & Maintenance/Administration Cash Flow Summary provides a snapshot of the status of the fund at the end of multi-year periods. The detailed, year-by-year cash flow analysis is provided in the Appendix.

- **Beginning Balance**: Funds available at the start of the year.
- **O&M/Admin Costs**: Represents the estimated expenditures for the following general categories for that year:
  - -- Maintenance for rice & other crop land, marsh, hunting, and other lands
  - -- Property taxes & special district assessments
  - -- Administration of the Natomas Basin Conservancy
  - -- Species monitoring
- **O&M/Admin Revenue**: Represents the revenues generated to pay for expenditures. Several revenue sources are assumed:
  - -- Mitigation fees collected
  - -- Rice farming lease revenues
  - -- Hunting revenues
  - -- Other revenues (none assumed)
- **Interest Earnings**: Interest earned on the prior year's fund balance. An interest rate of 3% is assumed to be earned on 100% of the prior year's fund balance.
- **Drawdown on O&M Endowment Fund**: Represents a transfer of funds from the O&M Endowment Fund to the O&M/Admin. Fund. Drawdowns occur after the acquisition phase of the plan. The endowment revenues supplement revenues earned from rice farming and hunting.
- **2000 Fund Balance Adjustment**: Represents a one-time fund balance adjustment in 2000 so that the ending year fund balance matches the actual fund balance for the Land Acqusition fund as of Dec. 31, 2000.
- **Ending Balance**: Represents funds available at the end of the year. In approximately the last ten years of the 50-year period, annual ending balances go to 0. This means that in each year costs equal revenues. The cash flow is intended to go on in perpeptuity and is able to do this by drawing on the O&M Endowment fund.

Figure 29
Natomas Basin HCP
O&M Endowment Cash Flow Summary

Base Case *17,500 acres of development*
1/2 acre of mitigation land per gross acre of developed land
25% marsh

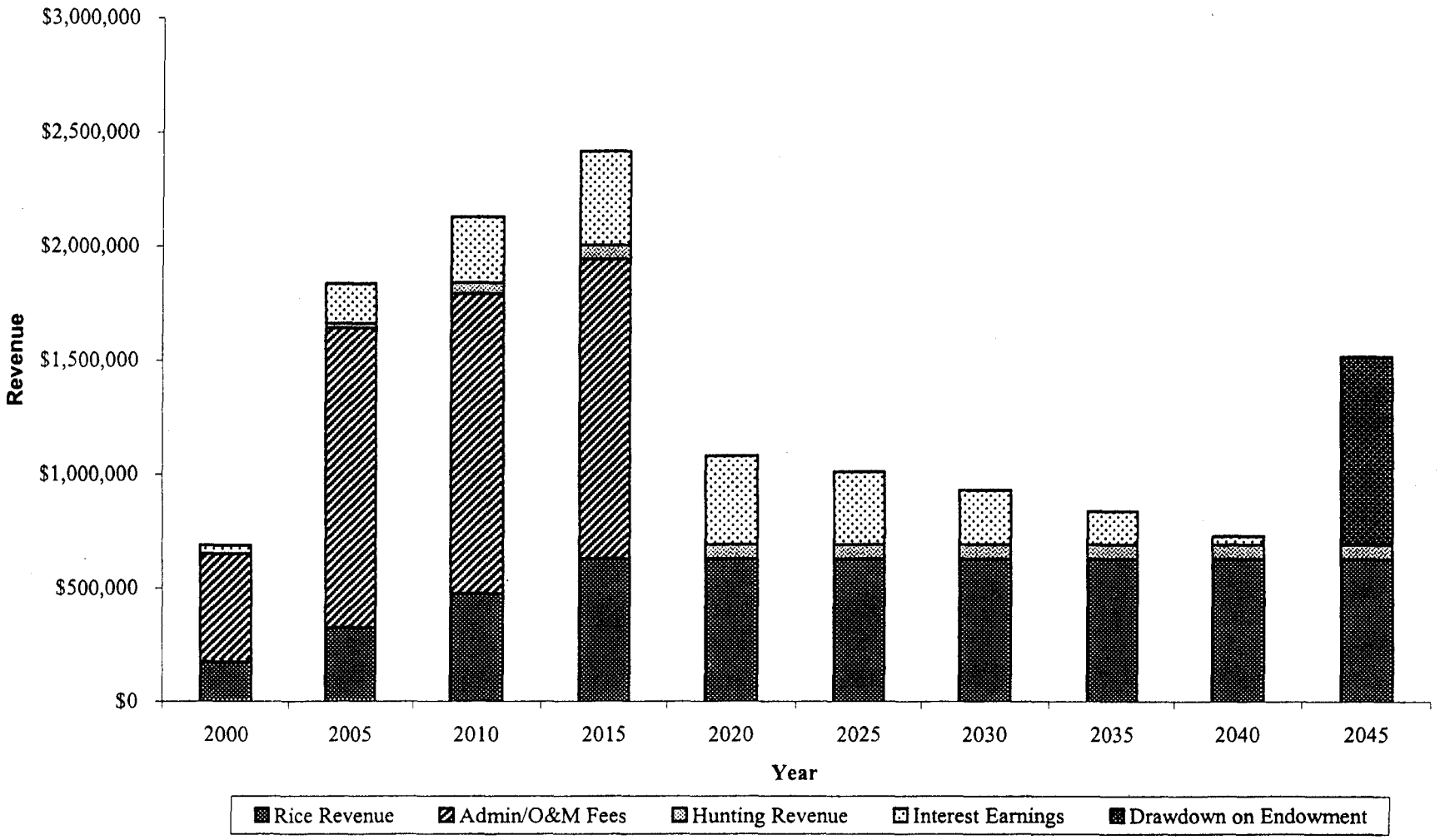
Assumes:		
	0.0%	Inflation
	3.0%	Interest Rate

	Total 1994-2045	0 1995	1 1996	5 2000	10 2005	20 2015	30 2025	40 2035	50 2045
SUPPLEMENTAL ENDOWMENT									
Beginning Balance	$0	$0	$0	$323,846	$4,393,039	$13,728,746	$19,445,653	$26,301,336	$32,643,989
Less Drawdown on Endowment Fund	($3,666,835)	$0	$0	$0	$0	$0	$0	$0	($824,490)
Plus Endowment Fee Revenue	$11,554,990	$0	$3,041	$113,645	$675,879	$675,879	$0	$0	$0
Plus Interest Earnings	$24,923,590	$0	$0	$26,490	$137,415	$420,188	$595,693	$807,282	$1,006,322
Plus Adjustment (to balance to 1999 end bal)	$14,076	$0	$0	$0	$0	$0	$0	$0	$0
Ending Balance (2)	**$32,825,821**	**$0**	**$3,041**	**$463,981**	**$5,206,333**	**$14,824,812**	**$20,041,346**	**$27,108,618**	**$32,825,821**

The O&M Endowment Cash low Summary provides a snapshot of the status of the fund at the end of multi-year periods. The detailed, year-by-year cash flow analysis is provided in the Appendix.

- **Beginning Balance**: Funds available at the start of the year.
- **Drawdown on O&M Endowment**: Represents money transferred from the O&M Endowment fund to the O&M/Admin Fund.
- **O&M Endowment Fee Revenue**: Represents the fees collected to fund the O&M Endowment Fund.
- **Interest Earnings**: Interest earned on the prior year's fund balance. An interest rate of 3% is assumed to be earned on 100% of the prior year's fund balance.
- **Ending Balance**: Represents the estimated fund balance at the end of the year.

Figure 30
Natomas Basin HCP
O & M Revenue --Changing Mix of Revenue Sources Over Time
Base Case



Prepared By EPS

10365 model update 3/11/02

DRAFT
ADDENDUM: ECONOMIC ANALYSIS OF THE NBHCP

In March 2002, EPS completed the Final Report of the Economic Analysis of the Natomas Basin Habitat Conservation Plan (NBHCP). In the Report, EPS analyzed two main issues in response to the Judge's ruling on the NBHCP in August of 2000. The two main issues analyzed were:

- Adequate Funding of the NBHCP under a reduced development scenario, and the
- Financial Feasibility or "Practicability" of the NBHCP based on an analysis of five scenarios presented in the Report.

The analysis in the Report focused on five scenarios as follows:

- *Scenario 1 (Base Case)* - 17,500 acres of development, 0.5 to 1 mitigation ratio, 25 percent marsh (per revised NBHCP).
- *Scenario 2* - 12,000 acres of development, 0.5 to 1 mitigation ratio, 25 percent marsh.
- *Scenario 3* - 8,000 acres of development, 0.5 to 1 mitigation ratio, 25 percent marsh.
- *Scenario 4* - 17,500 acres of development, 1 to 1 mitigation ratio, 25 percent marsh.
- *Scenario 5* - 17,500 acres of development, 0.5 to 1 mitigation ratio, 75 percent marsh.

The five scenarios provide a methodology to analyze the range of alternatives inlcuded in the NBHCP Draft EIR/EIS. Each scenario was analyzed using a series of cash flows for land acquisition, restoration and enhancement, on-going operation and maintenance including administration of the Natomas Basin Conservancy (NBC), an endowment fund, and a supplemental endowment fund targeted at land acquisition. The cash flows are used to determine the Habitat Mitigation Fee (the "Fee") required to fully fund the NBHCP over the 50-year permit period and beyond. The fees as calculated are summarized in **Figure 1**.

Subsequent to completing the Final Report on the Economic Analysis of the NBHCP, several issues were raised by interested parties and EPS was requested to provide additional analysis or clarification on certain issues. This Addendum to the Report addresses the following issues:

1. Analysis of a "Specific Reserve" Alternative
2. Impact of increased mitigation monitoring and adaptive management requirements
3. Clarification on EPS discussion and findings in regard to the Cost Burden Analysis
4. Clarification on distinction between Administration/O&M Fund and O&M Endowment Fund
5. Clarification on how the calculated Fees are to be interpreted and, perhaps, implemented given uncertainties regarding development in the Natomas Basin

Each of these points is discussed in greater detail below.

SPECIFIC RESERVE ALTERNATIVE

Alternative 3 of the Revised HCP Draft EIR/EIS considers the possibility of identifying specific reserve areas or "reserve zones" that would then be the focus of the acquisition activity of the Natomas Basin Conservancy (NBC). The Economic Analysis prepared by EPS did not analyze this Alternative via the cash flow models as it would require speculation as to the timing and cost of reserve acquisitions.

However, the potential impacts of a specific reserve scenario was discussed qualitatively in the Report on page 37. The law of supply and demand dictates that if supply is restricted, as it would be under a specific reserve alternative, and demand remains unchanged, the result is an increase in price. Land acquisition costs have indeed risen as a result of current restrictions on acquisition of habitat mitigation land due to the Settlement Agreement.

Under the Settlement Agreement the NBC is directed to purchase habitat mitigation land around Fisherman's Lake. When the Settlement Agreement was entered into in May of 2001, the most current land acquisition transactions adjacent to Fisherman's Lake was a price per acre of $11,000 for habitat mitigation land. The fee adopted pursuant to the Settlement Agreement therefore, included land acquisition costs of $11,000. This represented an increase of $6,000 per acre for land acquisition above the $5,000 per acre price (2000 HCP Fee) which was in place prior to adoption of the Settlement Agreement Fee in 2001.

Since adoption of the Settlement Agreement, land acquisition costs, particularly for land in the vicinity of Fisherman's Lake, have continued to increase. Land owners are currently indicating that they will not sell land for less than $15,000 per acre. If the fees calculated for Scenarios 1 through 5 were adjusted to account for this higher land acquisition costs, the Fee would need to increase by approximately $4,500 (excluding any corresponding increase in transaction costs and contingency for land acquisition).

The fees would then range from $10,493 per acre for the Base Case to $15,082 per acre for Scenario 5.

The experience of the NBC over the last several years has been that the cost for land acquisition included in the fee becomes the floor for land acquisition prices rather than the ceiling. Therefore, it is likely that if the fee was raised to account for the possibility of land price increases in the future, due to restrictions on where habitat mitigation land could be purchased, land prices throughout the Natomas Basin would see a corresponding increase as well.

Unless new home values and non-residential lease rates continue to increase, the financial feasibility of new development projects are likely to be negatively impacted by significant increases in the NBHCP fee. As discussed in the EPS Report, development projects in the Natomas Basin already have cost burdens that nearly meet or exceed the benchmarks for financial feasibility. The future financial feasibility of development projects in the Natomas Basin will also be affected by the likely increase in development impact fees to be heard by the City of Sacramento City Council in May of 2002 and the most recent increase in the citywide park fee (an increase of approximately $600 per single family unit).

INCREASED MITIGATION MONITORING AND ADAPTIVE MANAGEMENT

The Economic Analysis of the NBHCP included specific costs assumptions for mitigation monitoring, species monitoring, and adaptive management. These cost assumptions were built into the Administration/O&M fund cash flow analysis. The assumptions, as shown below in **Figure 2**, remained constant for each of the five scenarios included in the Report.

Figure 2
Estimated Species & Habitat Monitoring Cost Assumptions
Included in EPS March 2002 Report

ITEM	COST ASSUMPTION
Monitoring and Adaptive Management	$27 per acre per year ($239,344 per year at buildout)
Reporting/Public Education	$36,000 per year
Species Monitoring	
Giant Garter Snake	$45,000 per year
Swainson's Hawk	$12,000 per year
All Species Inventory	$12,000 per year
TOTAL AT BUILDOUT	**$344,344 per year**

Source: NBC

The revised NBHCP, as currently proposed, would require more extensive mitigation and species monitoring and adaptive management practices. As shown in **Figure 3**, the costs associated with mitigation monitoring nearly double (as estimated at buildout).

Figure 3
Estimated Species & Habitat Monitoring Cost Assumptions
Based on February 2002 Revised HCP

Item	Cost	Recurrence Interval *(years)*	Annualized Cost
Conduct annual assessment of habitat conditions	$60,000	1	$60,000
Conduct GGS annual field surveys	$10,000	1	$10,000
Conduct GGS five-year assessment	$60,000	5	$12,000
Conduct Swainson's Hawk survey	$15,000	1	$15,000
Conduct all species baseline inventory	$15,000	43	$350
Conduct all species five-year inventory	$120,000	5	$24,000
Prepare reports	$25,000	1	$25,000
Accounting and evaluations	$25,000	1	$25,000
TOTAL	**$330,000**		**$171,350**
Habitat Acres Through 2002			2,089
Annual Cost Per Acre			**$82.02**
Total At Buildout (8,750 Acres)			**$716,675**

habitat o&m

Source: NBC

The increase in mitigation monitoring costs has a direct impact on the estimated NBHCP. The costs shown above represent annual costs to the NBC and it is estimated that the buildout cost will be reached by 2015. The one-time NBHCP Fee would need to be increased significantly in order to provide sufficient funding for the NBC over the entire 50-year permit period and beyond. As shown in **Figure 4**, the estimated NBHCP fee would need to be increased by approximately $1,700 to $3,200 depending on which Scenario is determined as the basis of the fee.

Figure 4
Comparison of Estimated NBHCP Fee
With and Without Increase in Species & Habitat Mitigation Costs

Scenario	Estimated Fee Prior to Revised Mitigation Monitoring Costs (March 2002)	Estimated Fee After Revised Mitigation Monitoring Costs (April 2002)	Difference
Scenario 1 - Base Case	$5,993	$7,722	$1,729
Scenario 2 - 70% of Plan Implemented	$6,784	$8,620	$1,836
Scenario 3 - 50% of Plan Implemented	$8,641	$10,753	$2,112
Scenario 4 - 1 to 1 Mitigation Ratio	$10,486	$13,649	$3,163
Scenario 5 - 75% Managed Marsh	$10,582	$12,449	$1,867

Source: EPS

COST BURDEN ANALYSIS

One of the tasks EPS was requested to undertake in the Economic Analysis of the NBHCP was to determine whether the mitigation imposed, will to the maximum extent practicable, reduce or mitigate the impacts of development on the protected species. As discussed in the March 2002 Report, the issue of whether the mitigation imposed under Scenarios 1 through 5 mitigates to the Maximum Extent Practicable requires consideration of biological, legal, and financial/economic factors.

EPS addressed only the financial/economic issues in the March 2002 Report. From an economic view point, the question of Maximum Extent Practicable (MEP) was interpreted as one of financial feasibility or practicability. Assuming that the HCP adequately provides for the biological and legal issues, does the fee as proposed "work" from the perspective of providing for financially feasible development. It is not our understanding, that the fee need not push development to the brink of in-feasibility to meet the test of the MEP.

Two tests were applied to Scenarios 1 through 5 to test the financial viability of new development under the mitigation required for each Scenario. The first test was a comparison of the NBHCP fees calculated under Scenarios 1 through 5 with the fees charged by other HCP programs in surrounding jurisdictions. Based on the this analysis it was determined that fees proposed for Scenarios 1 through 5 were considerably higher than similar fees charged by other surrounding jurisdictions for habitat mitigation.

The second test was a cost burden analysis for generic residential, retail, and light industrial development projects in the Natomas Basin and including a comparison to cost burdens for jurisdictions in surrounding areas. The cost burden analysis compares

the total backbone infrastructure costs estimated for the generic project to the estimated sales price of a residential unit or square foot of a retail or light industrial project.

In general, it was found that the infrastructure cost burdens for residential and retail projects in the Natomas Basin were high but not currently out of the range of financial feasibility. For light industrial development, it was found that the financial feasibility will likely depend on what type of product is constructed, e.g., low-end warehousing projects vs. high-end light industrial projects. Given the cost burdens, higher-end light industrial projects will be more feasible, but ultimately the level of demand for these types of projects may result in a slower absorption than if a wider variety of projects were feasible.

The cost burden analysis is a "static" analysis, or, in other words, it reflects the costs and projected product sales prices as of March 2002. To the extent these assumptions change, the results will inevitably change as well.

Whether or not the financial feasibility is impacted will depend on whether home sales price or lease/sales price of non-residential development will change to offset the higher burden. There is less certainty over sales or lease prices keeping pace with cost increases, as it is the market that drives the price at which developers can sell their product. Other development areas in the region, which are not subject to the NBHCP Fee, might be able to deliver their product more inexpensively, depending on supply and demand and other economic factors. If the infrastructure cost burdens continue to increase and there is no off-setting increase in product sales prices, the financial feasibility of development projects in the Natomas Basin will be jeopardized.

The NBHCP Fee has been and will continue to be adjusted annually to account for increases in land prices and other changes in assumptions regarding the NBHCP. To date, the fee increases have not impacted the financial feasibility of the projects in the Natomas Basin because product sales prices of homes and non-residential development have also increased overtime. As long as this trend continues, financial feasibility of development projects in the Natomas Basin will remain intact.

ADMIN/O&M FUND VS. O&M ENDOWMENT FUND

In concept, the Administration/O&M Fund (Admin/O&M Fund) and the O&M Endowment Fund are closely linked, however, they serve very different purposes.

The Admin/O&M Fund serves as the operating cash flow for the NBC. All expenses related to operating, maintaining, and administering the NBHCP are charged to the Admin/O&M Fund. This includes expenses such as species and mitigation monitoring costs, payment of ad valorem taxes, salaries of NBC employees, office rent, legal, reporting costs, etc.

Revenues for operations, maintenance, and administration of the NBC come from three primary sources: annual fee revenues, rice revenues, and hunting revenues. Rice and hunting revenues are projected to continue through the life of the NBHCP. However, fee revenues cease once all allowable grading permits have been pulled in the Natomas Basin (representing development of 17,500 acres).

Rice and hunting revenues are insufficient to cover all of the operating, maintenance, and administration costs of the NBC. Therefore, it was determined at the inception of the financing plan for the NBHCP, that another source of funding would be required in the out years of the Plan. As a result, the O&M Endowment Fund was created. The sole purpose of the O&M Endowment Fund is to provide revenue, in the form of interest earnings on the accumulated principal, to fund the shortfall in revenues for the Admin/O&M Fund in the later years of the Plan (approximately 2032 and beyond). No direct operating expenses are charged to the O&M Endowment Fund.

In running the cash flow model and calculating the NBHCP mitigation fee, EPS always insures that the interest earnings are greater than the drawdown (to the Admin/O&M Fund), so that the shortfall funding will remain available in perpetuity.

IMPLEMENTATION OF THE NBHCP FEE

As mentioned above, the March 2002 Report included five scenarios. Based on comments received by EPS regarding the analysis, it seems necessary to clarify how the Scenarios and corresponding fees should be interpreted in regard to implementing the NBHCP.

Scenario 1 represents the Base Case, which assumes no major change to the parameters of the NBHCP. Projected total development remains at 17,500 acres, the mitigation ratio remains at ½ acre of mitigation land for every gross acre of developed land, and the requirement for managed marsh remains at 25 percent of reserve land acquired by the NBC. Assuming no change to any of these parameters, the Base Fee could be adopted and the financing plan for the NBHCP would not be jeopardized[1].

In Scenario 2 and Scenario 3, the total estimated developed acres was reduced from 17,500 acres to 12,000 acres and 8,000 acres respectively. Under these reduced development scenarios, the estimated fee increases. The fee increases to reflect that under a reduced development scenario, less rice and hunting acres and corresponding revenues will be available. If the reduced development scenarios are a likely future outcome, the higher fee should be adopted at the outset to insure that the financing plan remains viable. The fee as calculated assumes that the fee would be adopted concurrent with the adoption of the revised HCP (in 2002). If the fee were to be adopted in later

[1] In April of 2002 EPS revised the Base Fee for the Natomas Basin Conservancy. The Base Fee increased from $5,993 in 2001 (and as shown in the March 2002 Report) to $7,934 per acre of development.

years given a reduced development scenario, the fee would need to be higher than is presently calculated.

Similarly, if the revised HCP calls for either a higher mitigation ratio or an increase in the allocation of managed marsh acres, the higher fee would need to be adopted concurrent with the revised HCP to insure financial viability of the Plan. It should be noted that the Economic Analysis assumed that each of these Scenarios posed a discrete alternative. The fees as calculated assume that no more than one of these parameters is changed with the revised HCP. If, for example, the revised HCP called for a reduced development scenario and adopted a higher mitigation ratio, the fee would need to be recalculated and would likely be much greater than the fees as currently estimated.