

# QUANTIFYING OUR QUALITY OF LIFE

An Economic Analysis  
of the East Bay's  
Unique Environment

2017







Photo: Janet Ellis

**PREPARED FOR:**

East Bay Regional Park District

**PREPARED BY:**

Economic & Planning Systems, Inc.

**IN ASSOCIATION WITH:**

Strategy Research Institute

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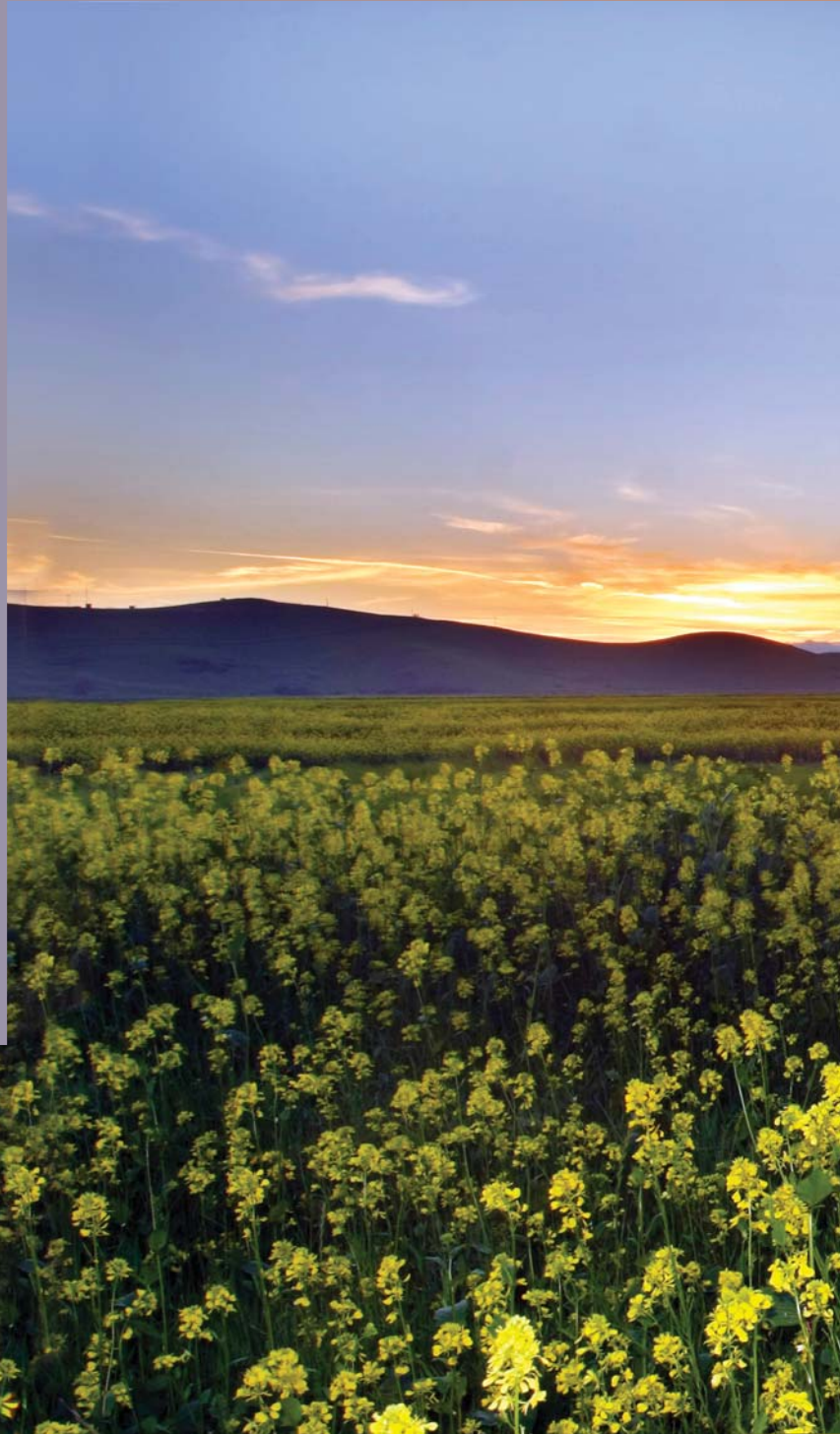






Photo: Bill Clark





# FOREWORD

BY ROBERT E. DOYLE  
GENERAL MANAGER EAST BAY REGIONAL PARK DISTRICT



In 1930 a small group of forward thinkers commissioned a study by Frederick Law Olmsted and Ansel Hall to create the East Bay Regional Park District. They had a vision for a new kind of park organization that would create “a park system for recreation in a nature setting.”

Over the past 80+ years, the District has become an important and irreplaceable part of life in the East Bay. You can see it when children take the Iron Horse Trail to get to school. You see it at Point Pinole Regional Park where men and women fish from the pier on weekends. The hundreds of jobs the District creates each year for young adults show how the District provides more than just a pretty place. Clearly, the District is interconnected with the quality of life, the community infrastructure, and the local and regional economies of the East Bay in diversified ways.

In the year 2000, a comprehensive study by economists was commissioned to scientifically identify the value and impact of the District on both the local and regional economies, as well as other dimensions that impact life in the East Bay. The study was conducted by Economic and Planning Systems (EPS), an independent consulting firm with decades of experience assessing the economic value of land use. They found the District provided significant value to the East Bay across several areas. Over the past 16 years, much has changed. For example, Park District land has increased by 32% to 120,000 acres and 11 new regional parks have been opened. Annual visits to our parks exceed 25 million.

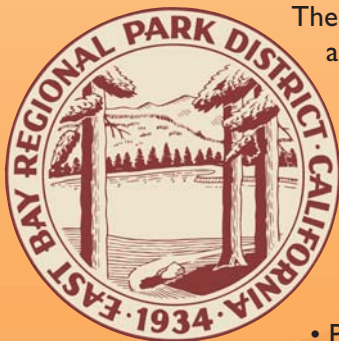
The District is also deeply involved in addressing future challenges facing our parks and shorelines related to climate resiliency, sea level rise and other eco-system adaptations. Thus, we felt it time to commission a new study to understand the District’s economic benefits today.

The economic value and impact of the District has increased significantly over the past 16 years, as well. Specifically, the District:

- Provides a range of benefits to residents, businesses, and visitors that total about \$500 million annually.
- Produces an annual return on investment of nearly 400 percent with its annual General Fund budget of about \$127 million.
- Generates nearly \$200 million in annual economic activity in the East Bay that would not occur in its absence.

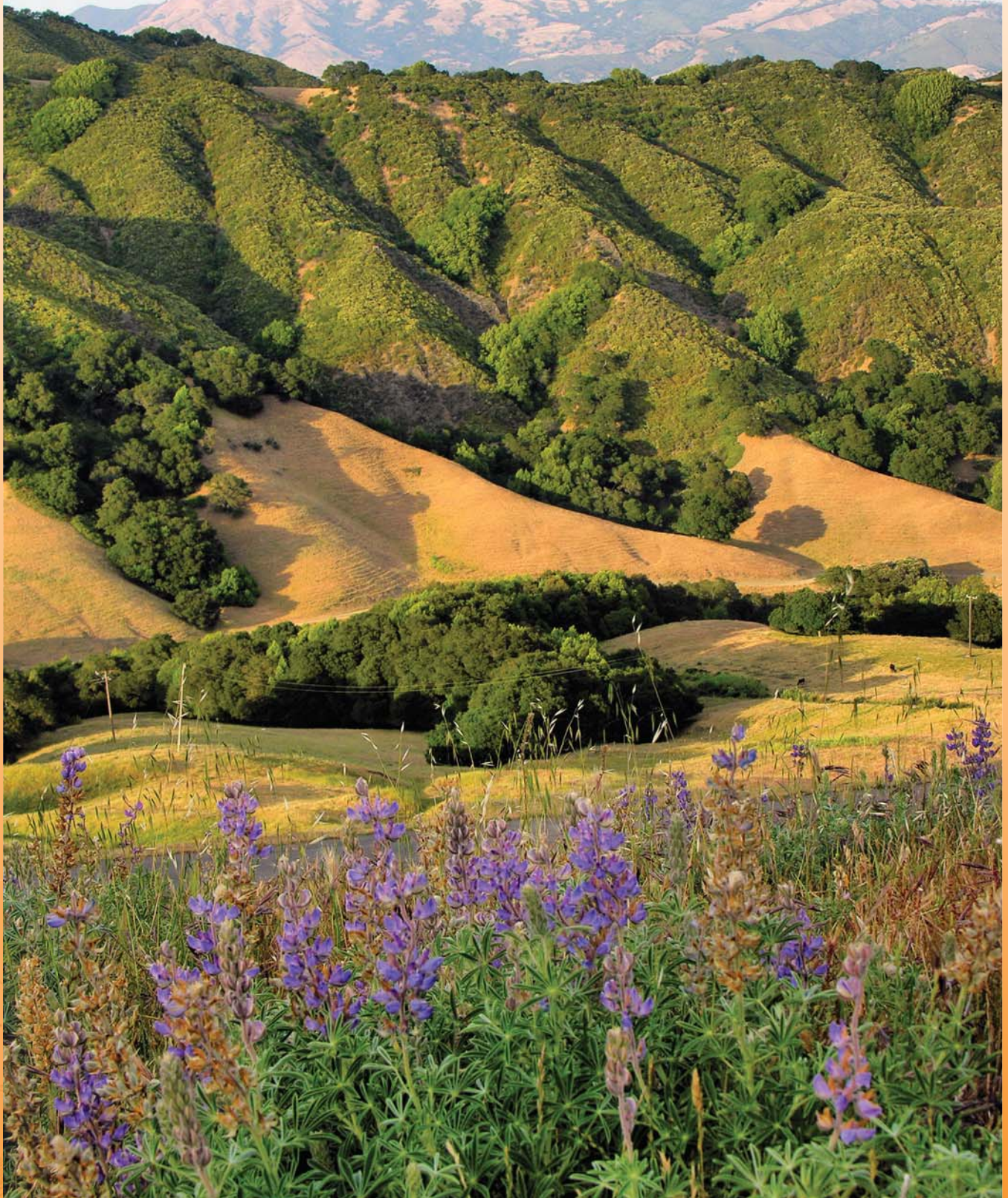
## Can we afford to ignore the role the District plays in the lives of East Bay residents?

We don’t think so. This report provides the hard data which makes the case for the continued support of parks and open spaces in the East Bay. The District plays an irreplaceable and interconnected role in the quality of life and community infrastructure for East Bay families. We owe it to future generations that this key park system remains a vibrant part of our community and economy.



- Ⓜ Map legend
- Ⓜ Land parcel as described
- Ⓜ Approach to park trail
- Ⓜ Site for service center





**Las Trampas Regional Wilderness, San Ramon**



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## 2. INTRODUCTION

The East Bay Regional Park District (the District) was an early proponent of illuminating the connection between open space, quality of life, and economic vitality. In year 2000, the District commissioned a study entitled: ***Quantifying our Quality of Life: An Economic Analysis of the East Bay's Unique Environment.***<sup>1</sup> This report compiled leading research on the linkages between local and regional economies, and parks and open space, including:

- recreational opportunities;
- business attraction and retention;
- property values, user utility, park user expenditures;
- ecosystem services;
- public health;
- education;
- public safety; and
- other quality of life factors.

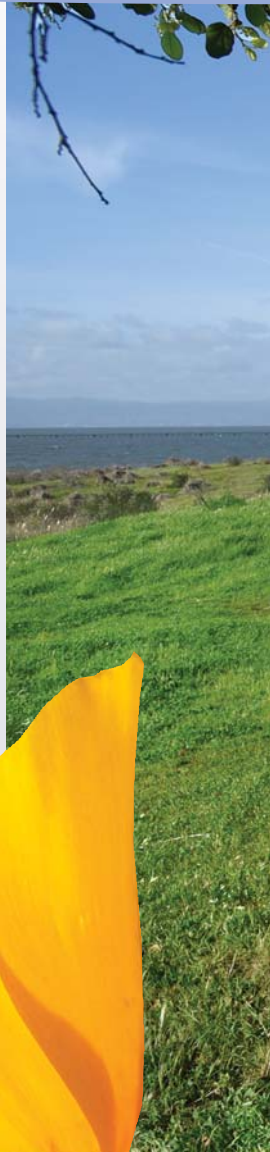
The 2000 study applied findings from academic studies and professional research previously commissioned by the East Bay Regional Park District.

Since then, the District has continued to pursue innovative research about the economic importance of regional parks, trails, open space, and recreational/educational programs, including research updates and independent studies.

Concurrently, much has changed throughout the District and the East Bay over the past 16 years. In 2016, District officials concluded it was time to revisit this important dimension of life in the East Bay.

The intent of the original study was to **quantify**, as much as possible, the impact of the District on the **quality of life** that virtually all East Bay residents enjoy, as do those who are doing business here (both in the private and public sectors). This economic analysis is unique because it is focused on the role the District plays in local and regional economies, as well as the **quality of life** in the region. These roles are so closely linked they cannot be pulled apart and treated as discrete components. Furthermore, this topic cannot be broached without addressing the need to preserve economic prosperity, environmental quality, and social equity.

<sup>1</sup> EAST BAY REGIONAL PARK DISTRICT WITH ECONOMIC & PLANNING SYSTEMS, INC. (EPS) AND STRATEGY RESEARCH INSTITUTE (SRI), 2000, QUANTIFYING OUR QUALITY OF LIFE: AN ECONOMIC ANALYSIS OF THE EAST BAY'S UNIQUE ENVIRONMENT.







Oyster Bay Regional Shoreline, San Leandro

***Quantifying our Quality of Life: An Economic Analysis of the East Bay's Unique Environment, 2017*** is intended to update the economic benefits of the District on the local and regional economies. This analysis takes into account the District's current portfolio of lands, trails, and programs. It applies new data and methods from recent research publications and studies. More specifically, this study focuses on valuing the societal and economic significance of the District using five primary inter-related lenses:

- Ecosystem Services
- Real Estate
- Recreation
- Public Health
- Additional benefits

In addition, it evaluates the regional economic impacts associated with changes in inter-regional spending attributable to District operations and visitation.



# 3. BACKGROUND

The quality of life available in the San Francisco Bay Area, and the East Bay in particular, is well documented as fundamental to its vital, innovative, and diverse economy.<sup>3</sup> This quality of life is afforded by a Mediterranean climate, easily accessible high-quality park-lands, open spaces, waterways, world-class educational and cultural/ arts institutions, a culturally diverse and well-educated work force, vital urban centers, and transportation connectivity. As a result, it has attracted the best and brightest employers, workers and students from around the world, while also creating economic opportunities.

The Bay Area’s cultural tradition of creating and preserving great parks and open spaces goes back more than 100 years. Early on, residents and local leaders recognized the value of preserving open lands for enjoyment by current and future generations. Today, the East Bay has one of the most significant and diverse park and open space complexes in the nation. Parks, trails, recreational facilities, and open space in the East Bay are well-integrated into the urban environment and community infrastructure. The District provides a great range of recreational activities and educational programming. The East Bay Regional Park District is the largest regional park district in the nation. The Trust for Public Land ranked Oakland as the #1 high-density U.S. city for parkland acres per resident in 2014.<sup>4</sup>

The founding of the East Bay Regional Park District was an expression of the historical values and traditions of East Bay residents, businesses, and civic leaders. Following a period of rapid urban development early in the 20th century, it became clear the quality of life and vitality of the East Bay depended, in no small way, on saving open hillside lands that provide a framework for the urbanized bayside and inland valleys. Over the past 80 years, the District’s land holdings have grown to approximately 120,000 acres of land.

The East Bay is entering a new phase in its urban evolution. The current era is characterized by revitalization of older city centers and urban corridors, increasing housing densities in transit-served areas, and reuse of obsolete industrial facilities. This evolution is driven by a range of factors including economic expansion and immigration to the region, changing market preferences, State mandates (e.g., to reduce greenhouse gas emissions), and congestion that limits the capacity for more suburban growth. In the East Bay of today, the District’s parks, trails, and open spaces play an increasingly important role supporting the quality of life, including the regional economy.

<sup>3</sup> EAST BAY ECONOMIC DEVELOPMENT ALLIANCE; EAST BAY QUALITY OF LIFE 2014

<sup>4</sup> 2014 CITY PARK FACTS, THE TRUST FOR PUBLIC LAND, FEBRUARY 2014

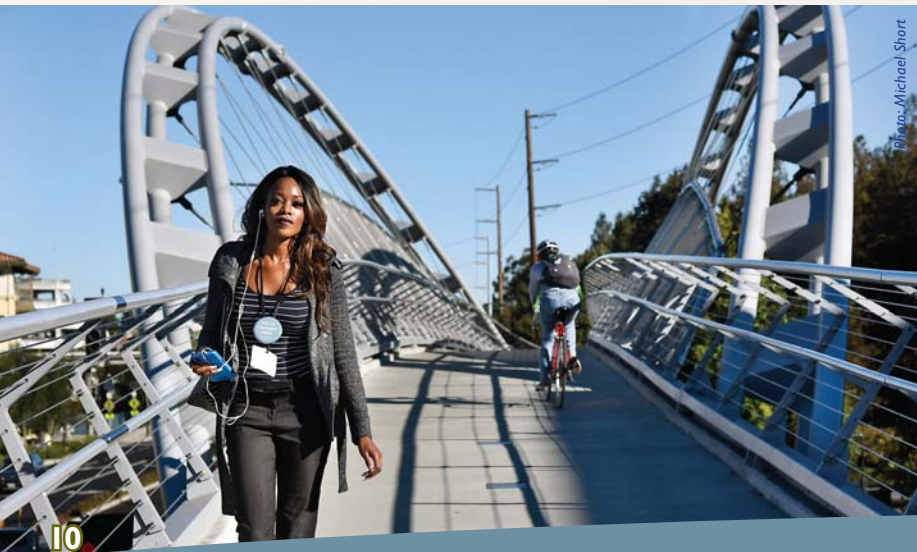






Photo: Michael Short

Photo: Michael Short

*Iron Horse Regional Trail, Walnut Creek*





Redwood Regional Park, Oakland

Photo: Jeffrey Van Auster

This study offers quantitative measures of the economic benefits generated by the East Bay Regional Park District. The analytics build on an earlier assessment of the economic benefits of the East Bay’s parklands, as well as emerging academic and professional literature. The goal of this effort is to provide the public, businesses, and civic leaders with a better understanding of the contributions of District lands and programming in the East Bay, particularly quality of life and economic strength.

Academic studies, professional research, and public policies have increasingly underscored the societal value and economic significance of open space, parks, and recreation. A variety of publications have cited the strong connection between quality of place, wellness, and economic vibrancy. Robust park and open space systems have been identified as a critical factor in attracting successful, innovative businesses and skilled labor. They also contribute significantly to enhance and sustain local and regional economies. The importance of recreational opportunity to healthful living and productivity has become a national dialogue. In addition, the economic value of ecosystem services and green infrastructure is increasingly a focus of public policymakers.

In the Bay Area, a number of recent studies have quantified the societal value and economic significance of our regional open space and park resources. Notable among these is the Trust for Public Land (TPL) Center for City Park Excellence 2014 study, entitled: *The Economic Benefits of San Francisco’s Park and Recreation System*. This is the twelfth TPL study looking at park values in different cities across the United States. Also noteworthy is the work of Earth Economics on ecosystem services valuation. In 2014, this group authored: “Nature’s Value in Santa Clara County,” in conjunction with the Santa Clara Open Space Authority. This study applies quantitative findings from a broad base of academic literature to estimate “the economic value of protecting and stewarding natural capital.” This unique valuation study reflects an expansive array of open space benefits, including protecting water supply and quality, reducing the risk of fire and flood, maintaining local food systems, and increasing the resiliency of urban communities to the effects of population growth and climate change.<sup>5</sup>

<sup>5</sup> BATKER, D., SCHWARTZ, A., SCHMIDT, R., MACKENZIE, A., SMITH, J., ROBINS, J. 2014. NATURE’S VALUE IN SANTA CLARA COUNTY. EARTH ECONOMICS, TACOMA, WA & THE SANTA CLARA VALLEY OPEN SPACE AUTHORITY, SAN JOSE, CA.



## The District

The East Bay Regional Park District is the largest regional park system in the United States. Since its founding in 1934, the District has grown consistently in terms of acres of parkland, open space, and miles of trails; partnerships with local, regional, State, and federal initiatives; and investments in recreation, health, education, and habitat preservation. With 120,000 acres and 65 parks currently under its stewardship, the District is guided by a vision to “preserve a priceless heritage of natural and cultural resources open space, parks and trails for the future and [to] set aside park areas for enjoyment and healthful recreation for generations to come.” Through balanced stewardship and investment policies, the District has amassed a diverse and geographically distributed portfolio of open space resources and recreation programs throughout the East Bay.

As one of the most significant regional park systems in the United States, the District has taken a leadership role in new and emerging areas of public policy, including social justice, public health, and environmental issues. From its early mission of ensuring land conservation and park access for the benefit of East Bay residents, the District’s progressive approaches to leveraging the value of open space for society have placed the organization at the forefront of parkland management. Of particular note, the District pioneers partnerships to improve access to nature for lower-income residents; provides environmental education for a new generation of conservationists; connects District parklands and trails with local, State, and federal parklands; and supports the efforts of local agencies, through the provision of funding, stewardship, and other services. Similarly, as awareness concerning the connection between exercise and health outcomes has increased, the District has been at the forefront of the “Healthy Parks, Healthy People” movement to improve the nation’s physical and economic well-being through the inclusion of nature.





Mariposa Lily

## A Note about Economic Estimates

This analysis provides estimates of both economic **value** and economic **impact**. Economic value measures how much a good or service is worth to residents of a specified geographic area. Economic impacts are measures of economic activity within a specified geographic area (e.g., jobs, employee compensation, sales). These distinct economic concepts cannot be added together.

Estimation of the economic value of natural resources is complex because total value includes “non-market” benefits (value that is not expressed through a market transaction).

Economists use a variety of techniques to estimate non-market benefits. This analysis employs a number of estimation approaches, some of which generate economic values that overlap.

The Annual Economic Significance of the East Bay Region Park District includes distinct estimates of economic **value** and economic **impact**. The estimate of economic value details the findings from the various methodologies, some of which are distinct and some of which are estimates of value subcomponents (e.g., recreation value is one of many values captured within the parkland service value estimate).

### Lake Chabot Regional Park, Castro Valley



Photo: Allan Mendez



Photo: S. Harper

### Castle Rock Regional Recreation Area, Walnut Creek



**FIGURE I**

# THE DISTRICT THEN AND NOW

Metric	Year 2000	Year 2016	Percentage Increase
<b>East Bay Regional Park District – Selected Economic Measures</b>			
Recreation Value	\$101 Million	\$199 Million	<b>97%</b>
Regional Impact of Visitor Spending	\$116 Million	\$191 Million	<b>65%</b>
<b>East Bay Regional Park District – Selected Characteristics</b>			
Annual Visitation	~14 million	25 Million	<b>78%</b>
Acres of Parks, Open Space, and Trails	91,000	120,000	<b>32%</b>
Unique District Parks	55	65	<b>18%</b>
Miles of District Regional Trails	1,000	1,250	<b>20%</b>
<b>East Bay Counties (Alameda and Contra Costa) Population and Households</b>			
East Bay Population	2.4 Million	2.7 Million (2014)	<b>13%</b>
East Bay Households	0.87 Million	0.95 Million (2014)	<b>10%</b>

This study finds the District’s economic significance likely has outpaced population growth in the East Bay over the past 16 years. Considering economic measures that are comparable between the year 2000 study and this study, the estimates suggest the economic value of the District may have nearly doubled during a time when population has increased about 13 percent, as shown in **Figure I**. This dramatic shift is due in large part to the increase in visitation at District-owned and operated regional parks, trails, and recreation facilities. Annual visitation has increased by about 80 percent in the past 16 years. This increased usage of District assets may be attributable to the public’s soaring interest in, and commitment to, better health. The Summary of Economic Benefits (**Section 3**), and subsequent sections of this report, offer detailed discussion of the East Bay Regional Park District’s societal value and impact on the regional economy.



**FIGURE 2**

# ANNUAL ECONOMIC VALUE OF THE EAST BAY REGIONAL PARK DISTRICT

**Figure 2** illustrates the estimated \$500 million annual economic value of the East Bay Regional Park District.<sup>6</sup> Economic value measures how much a good or service is worth to residents of a specified geographic area.



**HEALTHCARE VALUE**  
\$20 MILLION



**PROPERTY VALUE**  
ACCESS TO RECREATION  
AND AESTHETICS  
\$65 MILLION

<sup>6</sup> THE ANNUAL BENEFIT TO SOCIETY IS DERIVED FROM MULTIPLE DISTRICT CONTRIBUTIONS, INCLUDING AN ESTIMATED \$500 MILLION IN PARKLAND SERVICES (COMMONLY REFERRED TO AS “ECOSYSTEM SERVICES,” A TERM THAT SEEKS TO CAPTURE THE AESTHETIC, RECREATIONAL, HEALTH, WATER QUALITY, FLOOD CONTROL, AND CLIMATE CHANGE-RELATED CONTRIBUTIONS) OF THE DISTRICT LANDS AND OPERATIONS (AS SHOWN IN **FIGURE 2**).





**RECREATION VALUE**  
25 MILLION VISITS A YEAR  
**\$200 MILLION**

**OTHER ECOSYSTEM SERVICES**  
**\$215 MILLION**





### FIGURE 3

# ANNUAL ECONOMIC IMPACT OF THE EAST BAY REGIONAL PARK DISTRICT

Figure 3 presents the components of the \$191 million annual economic impact of the District on the economic output in the regional economy.<sup>7</sup> Economic impacts are measures of economic activity within a specified geographic area (e.g., jobs, sales).



<sup>7</sup> WHILE IT IS TEMPTING TO ADD THE ECONOMIC VALUE AND ECONOMIC IMPACT FIGURES TOGETHER, CONSISTENT WITH WELL-ACCEPTED ECONOMIC PRACTICE, WE LEAVE THEM AS DISTINCT ESTIMATES.



**VISITOR  
SPENDING**

**\$111 MILLION**

**ECONOMIC  
OUTPUT**

**MULTIPLIER  
EFFECT IN THE  
REGIONAL  
ECONOMY OF  
VISITOR SPENDING**

**\$66 MILLION**

**ECONOMIC  
OUTPUT**

**GRANT-FUNDED  
CAPITAL  
INVESTMENTS**

**\$9 MILLION**

**ECONOMIC  
OUTPUT**

**MULTIPLIER  
EFFECT IN THE  
REGIONAL  
ECONOMY OF CAPITAL  
INVESTMENTS**

**\$5 MILLION**



## 4. SUMMARY OF ECONOMIC BENEFITS

The East Bay Regional Park District plays a critical role in the well-being of the East Bay sub-region of the San Francisco Bay Area (Alameda and Contra Costa counties). The East Bay's 2.7 million residents and 1.4 million workers in 33 cities and unincorporated communities benefit from the District's diverse network of green infrastructure. The benefits of the District and the return provided for the taxpayer investment can be assessed from numerous angles — environmental, social, and economic, among others. This study considers the economic values that can be placed on the important and diverse ways in which District lands, programs, and investments intertwine with the East Bay's economy, quality of life, and well-being.

### Economic Value

- **District lands provide services with an economic value of about \$500 million annually.**

District open space preservation, parks, and trails support the continuing natural functions of our landscape as well as recreation value and natural beauty. These parkland services provide an estimated annual value of about \$500 million to East Bay residents and others. The benefits include the economic value associated with:

1. **Provisioning Services** including food and water supply;
2. **Regulating Services** including air quality, waste treatment, and climate stability;
3. **Cultural Services** including recreation and tourism; and
4. **Supporting Services** including species habitat and genetic resources.

With such expansive considerations, this services valuation provides the most comprehensive estimate of the direct economic value provided by District land and resources.

- **Recreation users place an annual value of about \$200 million on their District park visits.**

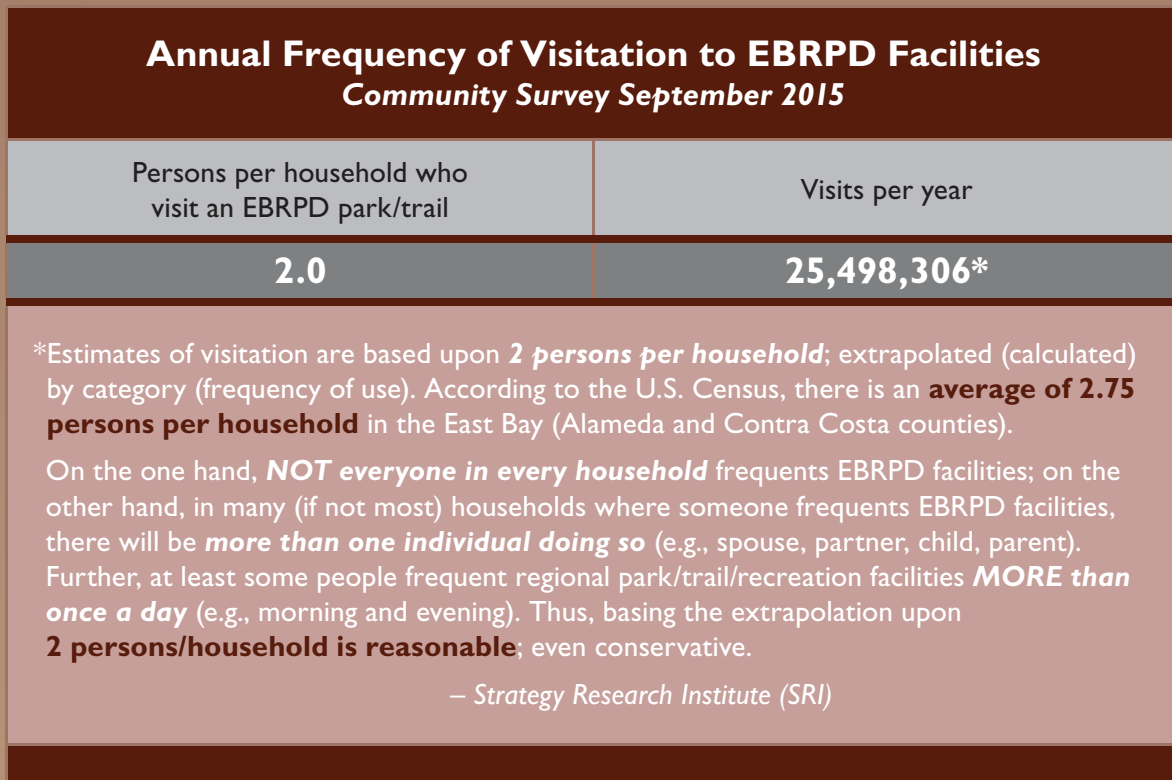
Economists frequently estimate the “willingness to pay” (economic value) that individuals place on open space resources and recreational opportunities. Based upon a variety of sources and estimation techniques, this study estimates visitors to District lands and facilities value each visit at about \$8, which reflects activities that range from a stroll in the park (\$3) to a golf outing (\$58). With about 25 million visits each year (see **Figure 4**)<sup>8</sup> to District lands and facilities, recreational visits are valued at about \$200 million. This recreational value represents a subset of the values assessed under the services analysis.

<sup>8</sup> STRATEGY RESEARCH INSTITUTE, EAST BAY REGIONAL PARK DISTRICT 2013 COMMUNITY SURVEY (REFER TO **FIGURE 4**).



FIGURE 4

## ANNUAL VISITATION



**Burrowing owl**  
**Martin Luther King Jr.**  
**Regional Shoreline, Oakland**



Photo: Michael Yee



- **Properties proximate to District lands exhibit a sales value premium of about \$65 million annually.**

A recent review of property value studies that use statistical analysis to reveal the price home buyers place on being near open space indicates that value effects vary widely. One study finds being near open space increases property value by as much as 17 percent. This analysis conservatively assumes the market prices for residential properties within 1,500 feet of District lands and facilities include a pricing premium of 2 to 6 percent, depending upon their proximity to District lands. With an estimated \$43 billion in residential property value located within 1,500 feet of District lands, the value of the District that is expressed in housing prices totals about \$1.3 billion. This represents about \$65 million in value each year due to the District.



Photo: Hillary Van Austen





- **Recreational activities on District lands provide healthcare cost savings of \$20 million annually.**

Open space, parks, trails, and recreation programs encourage people to exercise and ultimately result in improved public health outcomes. According to the Surgeon General, 300,000 deaths each year in the United States are attributable to obesity. Regular exercise is essential to treat and prevent obesity. There is increasing agreement the presence of parks, trails, and other recreation infrastructure promote beneficial levels of physical activity. In the East Bay, District lands are frequently used for a variety of highly-physical recreation activities. This study estimates that nearly 60,000 visitors would fail to exercise in the absence of District-provided recreation opportunities. Exercise directly attributable to District lands and facilities translates into medical cost savings of about \$20 million per year. These estimates are conservative as they do not include the economic value associated with enhanced worker productivity (fewer work absences for health reasons).

- **The economic value of the other services associated with District lands contribute over \$200 million each year.**

The remaining annual economic value not captured through the metrics of recreational value, property value, or healthcare cost savings represents a substantial portion of the overall annual value estimate. These services include critical value-enhancing and cost-saving roles such as flood control, water quality, air quality, carbon sequestration, and habitat value. Included in these estimates, though potentially undervalued, are broader contributions to regional resiliency/climate change risk reduction, as well as other public benefits (e.g., shifts to green transportation, environmental education, and other hard-to-measure effects).

## Regional Economic Impact

- **District parks and open space attract visitors and grant funds from outside the East Bay resulting in an additional contribution to the East Bay economy of nearly \$200 million annually.**

With about one quarter of District visitation associated with visitors to the East Bay, this study finds a significant amount of regional economic activity is attributable to the District. Including economic “multiplier effects” associated with successive rounds of spending, visitors to the District from outside the East Bay contribute \$177 million annually to East Bay economic activity, including approximately \$156 million in direct visitor expenditures. In addition, the District’s consistent ability to secure an average of \$9 million each year in outside grants (primarily State and federal funding) results in an economic impact of an additional \$14 million, including “multiplier effects”.



# 5. TOTAL ECONOMIC SIGNIFICANCE: ECOSYSTEM SERVICES

## Valuation Concept

“Ecosystem services” is the term used to capture the broad array of green infrastructure benefits provided by the preservation of open space, habitat, agricultural land, parkland, and water bodies, many of which are not captured in typical economic valuation analyses. Ecosystem services include benefits that people directly or indirectly receive from natural functions. Because ecosystem services are often not captured in market transactions and consumers do not pay for these services, they are frequently undervalued benefits of open space.



## Method

Over the last 20 years, environmental scientists and economists have increasingly focused their attention on the concept of ecosystem services, improving the characterizations and values associated with the diverse suite of benefits gained from the preservation of parkland, open space, and working landscapes.

Of particular importance, the United Nations Millennium Ecosystem Assessment (MA), initiated in 2001, assessed the consequences of global ecosystem change and the scientific basis for sustainability actions. More than 1,360 international experts contributed, with findings regarding ecosystem services and the alternatives that exist to restore, conserve, and enhance global ecosystems. Recognizing some categories overlap, the MA classifies ecosystem services along functional lines, including provisioning, regulating, cultural (**Figure 5**), and broad supporting services.

**FIGURE 5**

# CATEGORIES OF ECOSYSTEM SERVICES

<b>Categories of Ecosystem Services</b>		
<b>Provisioning Services</b> <i>Products obtained from ecosystems</i>	<b>Regulating Services</b> <i>Benefits obtained from regulation of ecosystem processes</i>	<b>Cultural Services</b> <i>Non-material benefits obtained from ecosystems</i>
Food	Climate regulation	Spiritual and religious
Fresh water	Disease regulation	Recreation and ecotourism
Fuelwood	Water regulation	Aesthetic
Fiber	Water purification	Inspirational
Biochemicals	Pollination	Educational
Genetic resources	Carbon sequestration	Sense of place
		Cultural heritage
<b>Supporting Services</b> <i>Services necessary for the production of all other ecosystem services</i>		
Soil formation	Nutrient cycling	Primary production

– Source: United Nations Millennium Ecosystem Assessment (2003)









This categorization of ecosystem services (or similar ones) have driven much of the subsequent literature and are consistent with some of the earlier efforts to evaluate ecosystem services. These categories included not only the provisioning services and regulating services (many of which are unique to open lands and waters), but also cultural services. This cultural services category captures the recreational value of open space/parklands to users (often termed recreational value) as well as the aesthetic (natural beauty) that affects property values and other measures of value.

Many studies serving to quantify the economic value of ecosystems services in specific regions have used the “benefits transfer” approach to value estimation. The cost of conducting primary studies on the broad range of ecosystem services provided is prohibitive for an individual region. Typically, these studies have reviewed academic and professional literature from a broader range of geographies and transferred their findings to the region(s) being studied.



Two particular studies of note use the benefits transfer approach and were conducted by prominent experts in this field:

- **The Value of New Jersey’s Ecosystem Services and Natural Capital.**

This report, conducted by Dr. Costanza et al., compiled and summarized over 100 academic studies encompassing 210 individual value estimates.<sup>9</sup> The study identifies a number of economic methods for estimating the value of ecosystem services (for example, Avoided Cost Replacement Cost, Travel Cost, Hedonic Pricing, and Contingent Valuation).<sup>10</sup> Then, using a “value transfer” approach, the study relies on existing valuations from the literature to estimate the total value of ecosystem services in the State of New Jersey. The study identifies specific land cover types and appropriate ecosystem values for each, estimating the value of ecosystem services in the state at \$24.6 billion annually (2015), about \$6,000 per acre of open space.

- **Nature’s Value in Santa Clara County.** This report, conducted by Dr. Batker et al. at Earth Economics with the Santa Clara Valley Open Space Authority, is the first study from the “Healthy Lands and Healthy Economies: Demonstrating the Economic Value of Natural Areas and Working Landscapes” initiative.<sup>11</sup> This report follows the United Nations Millennium Ecosystem Assessment categorization of ecosystem services and draws from a large database of peer-reviewed economic studies and scientific literature to select over 85 appropriate studies (and results) for the use in valuing Santa Clara County’s ecosystem services. Preference was given to studies with similar geographic location, demographic characteristics, and ecological characteristics. The study estimates the economic value of the ecosystem services provided by all of the open spaces and parklands in Santa Clara County’s 835,186 acres at between \$1.6 billion and \$3.6 billion annually.



*Ardenwood Historic Farm, Fremont*



<sup>9</sup> COSTANZA ET AL. THE VALUE OF NEW JERSEY’S ECOSYSTEM SERVICES AND NATURAL CAPITAL. NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION DIVISION OF SCIENCE, RESEARCH AND TECHNOLOGY. REPORT NUMBER: SR04 075 (2006)

<sup>10</sup> IBID.

<sup>11</sup> BATKER, D., SCHWARTZ, A., MACKENZIE, A., SMITH, J., ROBINS, J. 2014. NATURE’S VALUE IN SANTA CLARA COUNTY, EARTH ECONOMICS, TACOMA, WA & THE SANTA CLARA VALLEY OPEN SPACE AUTHORITY, SAN JOSE, CA.





Photo: Michael Short



Roberts Regional Park, Oakland  
Flower: Mules Ear, Sunol Regional Wilderness, Sunol



## Key Categories of Ecosystem Services

- **Water Supply** – Replenishment of groundwater supplies.
- **Air Quality** – Absorption of pollutants in the air.
- **Moderation of Extreme Events** – Open space buffers that absorb storm water and reduce flood risks.
- **Climate Stability** – Regulation of greenhouse gases in the atmosphere.
- **Soil Formation and Retention** – Natural processes such as decomposition of organic materials and avoided soil erosion.
- **Habitat** – Protection of unique soil and plant communities that support species.
- **Pollination** – Protection of species that contribute to other species' reproduction.
- **Waste Treatment** – Natural purification of waste water and solid wastes.
- **Aesthetic Beauty** – Enjoyment of scenic vistas and undisturbed nature
- **Carbon Sequestration** – Storing of greenhouse gases.
- **Recreation** – Active use of District parklands, trails, and facilities.



## District Valuation Estimate

The Park District's 120,000 acres of parks, open space, and trails includes actively used recreation areas, agricultural lands, as well as preserved grasslands, forests, wetlands, and riparian zones. These lands offer a broad range of ecosystem services, consistent with the United Nations Millennium Ecosystem Assessment categories.





*Bird: Ridgway's rail  
Pleasanton Ridge Regional Park, Pleasanton*



The range and level of various ecosystem services provided by unique parklands within the Park District offer different benefits to East Bay residents. The valuation of the Park District's provision of ecosystem services relies on an analysis of the District's land cover types that are similar to the land cover types from the Nature's Value in Santa Clara County study. The Santa Clara County study has drawn conclusions on ecosystem system services value by land cover for an adjacent County with a similarly diverse blend of park and open space types, demographic characteristics, and broader regional influences. Analytical steps included:

### **Identify Land Cover Types of Districts Lands**

- Geographic Information System (GIS) data on the locations of all Park District lands
- GIS data on the vegetation/land cover of all Park District lands

### **Identify Annual per Acre Value of Ecosystem Services by Land Cover**

- Review of Dr. Batker et al.'s Nature's Valley in Santa Clara County publication
- Identification of a range of annual per acre values by land cover type from this study

### **Aggregate Estimates of Park District Annual Ecosystem Services Value**

- Application of annual per acre value range to Park District land cover acreage
- Estimate of annual value of Park District land's ecosystem services



**Redwood Regional Park, Oakland**

**Figure 6** presents the key findings from the ecosystem services value analysis of Park District lands. As shown, the over 120,000 acres of Park District properties includes substantial grasslands, woodlands, and other land cover types. These lands sequester 300,000 CO<sub>2</sub>, translating to the removal of 60,000 vehicles from the roads each year. Other land cover types include open water, wetlands, scrubland, and cropland among others. Wetlands, in particular, provide significant ecosystem services. Specifically, as stewards of 55 miles of Bay-Delta Shoreline, the Park District provides the first line of defense against sea level rise for millions of people, families, and businesses in the East Bay.

Collectively, Park District lands are estimated to provide ecosystem services with an average annual value of about \$517 million. This is equivalent to an average, annual value of about \$4,300 per acre, the mid-point between the low and high estimates of \$2,700 and \$5,900 per acre. As discussed further, it is important to note these estimates include the value of cultural services (for example, recreational value) as well as the other services associated with ecosystem services.





**FIGURE 6**

## ECOSYSTEM SERVICES VALUE ESTIMATE

Land Cover	Acres	Low Annual Value/Acre	High Annual Value/Acre	Average Annual Value/Acre	Average Annual Value
Grassland	54,800	\$3,300	\$7,000	\$5,150	\$282.2 Million
Woodland	44,300	\$2,600	\$6,200	\$4,400	\$194.9 Million
Other *	20,900	\$1,300	\$2,500	\$1,900	\$39.7 Million
<b>Total</b>	<b>120,000</b>	<b>\$2,700</b>	<b>\$5,900</b>	<b>\$4,300</b>	<b>\$516.8MM</b>

\* The “Other” category includes a combination of wetlands, water bodies, shrubland, rock, and cropland. The shoreline benefits are captured primarily through the wetlands and water bodies categories.



## 25 MILLION VISITS

To put District visitation in perspective, consider that District lands and facilities attract:

- More annual visits than the combined attendance of the Oakland A's, San Francisco Giants, Golden State Warriors, San Francisco 49ers, Oakland Raiders, San Jose Sharks, and San Jose Earthquakes.
- About the same annual visitation as Disneyland, California's most-visited theme park.



## 6. ECONOMIC SIGNIFICANCE: RECREATION VALUE

### Valuation Concept

Visitors to District lands enjoy a variety of valuable recreational activities and experiences. Economists commonly define the economic benefits from recreation using measures of participants' "willingness to pay" for the activities, regardless of market price. In many cases, there is minimal out-of-pocket cost associated with a visit to a park. Despite the low cost of the experience, a park visitor may place a high value on their experience. Because willingness to pay cannot be measured by studying direct market transactions, economists commonly rely on survey research or data on indirect but related economic activity to establish recreation value.

### Methodology

Recreation value has been well established in academic literature and professional studies dating back to the 1960s. "Stated preference studies" estimate recreation value by asking recreation participants what value they place on specific activities. "Revealed preference studies" infer the value a recreation participant places on a specific experience, by considering the travel costs incurred to visit a park, for example. This analysis relies on a range of existing studies that use both stated and revealed preference valuation approaches to establish unique daily values for the array of recreational activities occurring on District property. Values are standardized into per-day values for specific recreational activities and applied to visitation estimates by activity type, an accepted method referred to as the "Unit Day Value" approach.

### District Valuation Estimate

This application of the Unit Day Value approach applies per-day values, ranging from \$3 to nearly \$60, to estimates of total visitor days, by recreation activity type. Estimates of total visitation are derived from a recent survey that indicates an estimated 25 million visits annually to District lands and facilities.<sup>12</sup> These data suggest the total annual recreation value of the District is nearly \$200 million, with an average visit valued at about \$8. **Figure 7** presents detailed findings from the analysis of recreation value estimates.

<sup>12</sup> STRATEGY RESEARCH INSTITUTE, EAST BAY REGIONAL PARK DISTRICT 2013 COMMUNITY SURVEY





**FIGURE 7****RECREATION VALUE ESTIMATE**

Recreation Activity	Visitor Days	Value Per Day	Total Value
Hiking, Cycling, Swimming, and Fishing	14,134,000	\$6.00	\$84,804,000
Strolling, Bird Watching, and Dog Walking	6,281,000	\$3.00	\$18,843,000
Picnicking	2,372,000	\$7.00	\$16,604,000
Equestrian	686,000	\$55.00	\$37,565,000
Education Programs	521,000	\$35.00	\$18,235,000
Camping	431,000	\$10.00	\$4,310,000
Golfing	200,000	\$58.00	\$11,600,000
Boating and Kayaking	180,000	\$28.00	\$5,040,000
Special Events	144,000	\$10.00	\$1,440,000
Other	54,000	\$8.00	\$432,000
<b>Total</b>	<b>25,000,000</b>	<b>\$7.95</b>	<b>\$198,873,000</b>



# 7. ECONOMIC SIGNIFICANCE: PROPERTY VALUE

## Valuation Concept

Consumers reveal their willingness to pay for parks, open space, and recreational opportunities in the price that they pay for real estate. Research has shown that in many cases, the value of real estate adjacent to and near parks and open space exhibits a price premium attributable to enhanced access and proximity to recreational activities and natural beauty, among other beneficial attributes.<sup>13</sup>

## Methodology

There is a substantial body of literature dating back to the 1970s that measures the value parks through the examination property value patterns, using statistical methods to isolate the value of parks from other property attributes. There have been hundreds of published studies that rely on these “hedonic price models” to estimate the benefits of environmental amenities.<sup>14</sup> Hedonic property value studies infer the value of open space by estimating the market value of a property based on the characteristics of the property, including proximity to open space. Over the past 25 years, researchers have used property value analysis to study the economic effects of a broader variety of open space types than traditional parks, including natural lands, greenbelts, wetlands, forest lands, agricultural lands. These research efforts have identified statistically significant connections between open space and property values across a range of open space types and geographies. Key determinants include the property’s distance from open space, the accessibility of the open space, the range of activities available, as well as the quality of land management and park stewardship (e.g., maintenance and safety).

Professor John L. Crompton from the University of Texas A&M, a leading expert on the influence





*Clayton Ranch Regional Park, Clayton*

of parks and open space on property values, has authored a comprehensive overview of the body of literature on the topic of hedonic valuation of open space. Key general findings about Dr. Crompton's extensive review of relevant studies include the following:

- Value premiums for parks can vary substantially from negative 3 percent to positive 30 percent.
- Negative property premiums are associated with urban parks with poor public safety and poor maintenance.
- The highest property premiums are associated with single-family detached homes adjacent to larger, passive-use open space.
- Park premiums are highest for properties within one-eighth of a mile (660 feet or less).
- Park premiums also are often statistically significant for parks within one-third of a mile (about 1,750 feet), though commonly drop off quickly beyond this distance.

<sup>13</sup> THE BODY OF ECONOMIC LITERATURE THAT RELIES ON HEDONIC PRICE MODELS TO INFER OPEN SPACE VALUES HAS FOCUSED ON RESIDENTIAL USES. WHILE COMMERCIAL REAL ESTATE PRICES ALSO MAY INCLUDE VALUE ATTRIBUTABLE TO OPEN SPACE, THIS ANALYSIS RELIES SOLELY ON THE WELL-ESTABLISHED CONTRIBUTION OF PARKS AND OPEN SPACE TO NEARBY HOMES.

<sup>14</sup> MCCONNELL AND WALLS, THE VALUE OF OPEN SPACE: EVIDENCE FROM STUDIES OF NONMARKET BENEFITS, 2005.





## District Valuation Estimate

The District offers a broad range of park types and has an exemplary record in terms of management, maintenance, and safety at its parks. Relying on key findings from relevant studies and considering the characteristics of District lands in the context of the East Bay's residential communities, this study employs the following analytical approach to estimate the economic significance of the District as indicated through local residential real estate market values.

### Identify Residential Properties Proximate to District Lands<sup>15</sup>

- GIS data on the locations of all District Lands.
- County Assessor data and GIS parcel data for Alameda and Contra Costa counties.

### Estimate Current Real Estate Market Values

- ZIP code-level single-family residential market data from Zillow and multifamily residential market data from CoStar Group.



Photo: Marc Crumpler

*Briones Regional Park, Martinez*

<sup>15</sup> FOR THE PURPOSES OF THIS ANALYSIS, A RESIDENTIAL PROPERTY IS DEFINED AS A RESIDENTIAL UNIT THAT IS OWNED AND TAXED (E.G., A SINGLE FAMILY HOME, A CONDOMINIUM UNIT, OR AN APARTMENT PROPERTY WOULD ALL COUNT AS A SINGLE PROPERTY). DISTRICT LANDS CONSIDERED INCLUDED PARKLAND AS WELL AS LAND BANK LAND.

Bird: northern flicker  
 Leona Canyon Regional Open  
 Space Preserve, Oakland



Photo: Jerry Ting

### Identify Value Premium Attributable to District Lands

- Residential properties within 500 feet of District lands over one half acre receive an average property value premium of 6.0 percent.
- Residential properties between 500 and 1,500 feet of District lands of over one half acre receive an average property value premium of 2.0 percent.

### Aggregate Estimates of Value Attributable to District Lands

Figure 8 presents key findings from the property value analysis of District lands. As shown in this chart, there are nearly 60,000 residential properties within 1,500 feet of District-owned property. About one-quarter of these properties are within 500 feet of a District park and three-quarters between 500 and 1,500 feet away. In aggregate, these properties have an estimated current market value of about \$43 billion. Of this value, about \$1.3 billion or about 3 percent is attributable to the District.<sup>16</sup>

**FIGURE 8**

## RESIDENTIAL PROPERTY VALUE ESTIMATE

Residential Properties Proximate to East Bay Regional District Lands	<b>59,000 Parcels</b>
Estimated Market Value of Proximate Residential Properties	<b>\$43 Billion</b>
Residential Market Value Attributable to East Bay Regional Park District	<b>\$1.3 Billion</b>
<b>Estimated Annual Residential Market Value Attributable to East Bay Regional Park District</b>	<b>\$65 Million</b>
Applying an annual turnover rate of 5.0 percent to these properties suggests an annual property value turnover of \$2.15 billion for residential properties proximate to District lands. About \$65 million of this annual turnover value is associated with property proximity to District parks and open space.	

<sup>16</sup> THIS ESTIMATED VALUATION SHOULD BE CONSIDERED CONSERVATIVE AS IT ATTRIBUTES NO BENEFITS TO SMALLER PARKS, TRAILS OR OPEN SPACES (LESS THAN HALF AN ACRE), DOES NOT CONSIDER VALUE PREMIUMS ON COMMERCIAL PROPERTIES, AND ASSUMES NO VALUE PREMIUM FOR PROPERTIES LOCATED MORE THAN 1,500 FEET AWAY. WHILE THIS DISTANCE CUT-OFF IS GENERALLY CONSISTENT WITH THE LITERATURE, IT EXCLUDES THE BROADER REGION-WIDE PROPERTY VALUE EFFECTS OF HAVING ACCESS TO A LARGE AND GEOGRAPHICALLY DISPERSED REGIONAL PARK SYSTEM, EVEN WHEN OVER ONE-THIRD OF A MILE AWAY.



# 8. ECONOMIC SIGNIFICANCE: HEALTHCARE VALUE

## Valuation Concept

There is widespread agreement that parks, trails, and recreation facilities provide opportunities to participate in physical activity which is beneficial to one's health. District lands and facilities offer East Bay residents easy access to parks, open space, and trail systems. With a significant share of visitors engaging in exercise (moderate- and vigorous-intensity) activities, District lands and facilities are contributing to positive health outcomes and reducing medical costs. Survey data on District visitors' recreational usage, in combination with existing estimates of the potential for avoided medical cost, are used to determine the healthcare value of the District.

## Methodology

This analysis seeks to identify the level of exercise undertaken by District visitors that would not occur in the absence of District lands and facilities. It then seeks to establish the economic value of the avoided medical cost attributable to that recreational activity. This approach recognizes recreational substitutes may exist and if District lands and facilities were unavailable, some visitors would find alternative venues for their recreational pursuits. For example, visitors may have gym memberships, play recreational sports, or engage in other physical activities that promote wellness. However, through survey data collected from East Bay residents, this study finds some exercise activity is attributable to the District since some respondents indicated they would "stay home" and not engage in physical activity if the District were to temporarily close. This analysis applies existing estimates of potential healthcare savings attributable to the estimated quantity of physically rigorous activity that would not occur without the District.

## District Valuation Estimate

Using SRI survey data and established values for medical cost savings attributed to physical activity, EPS was able to estimate the health benefits associated with the District. Based upon recent research on physical activity, this analysis assumes 15 percent of the total visitors to the District exercise at moderate to vigorous intensity (consistent with the CDC's definition of exercise).<sup>17</sup> Furthermore, survey data collected from East Bay residents indicates about 15 percent of all park visitors likely forego exercise in the absence of District lands and facilities. Based on these findings, this analysis estimates nearly 60,000 individuals who currently exercise regularly in District facilities would cease regular activity were it not for the existence of the District.

Relying on prior studies, EPS estimates regular exercise on average prevents roughly \$300 in medical costs per year for persons under the age of 65 and roughly \$600 per year for individuals over the age of 65. As shown in **Figure 9**, applying cost savings to the estimated number of visitors who would otherwise not engage in physical activity, this study estimates that the District generates healthcare cost savings of over \$20 million per year.<sup>18</sup>

<sup>17</sup> THE CDC DEFINES EXERCISE AS AT LEAST 150 MINUTES PER WEEK OF MODERATE-INTENSITY ACTIVITIES OR 75 MINUTES PER WEEK OF VIGOROUS-INTENSITY ACTIVITIES

<sup>18</sup> RESEARCH INDICATES ON AVERAGE PERSONS OVER THE AGE OF 65 RECEIVE APPROXIMATELY DOUBLE THE HEALTH CARE COST BENEFIT FROM PHYSICAL ACTIVITY THEN DO PERSONS UNDER THE AGE OF 65.

**FIGURE 9**

# ANNUAL HEALTH BENEFIT

Exercise at District Lands and Facilities		
<b>Total Recreation Visits</b>	<b>25 Million</b>	
Average Visits/Year	10	
Unique Visitors	2.5 Million	
Visitors Participating in Exercise	15%	375,000
Exercise Visitor Who Would “Stay Home” (of those participating in exercise)	15%	57,188
Persons Under 65 Who Would “Stay Home”	74%	42,295
Persons Over 65 Who Would “Stay Home”	26%	14,893
Cost Savings for Exercise Visitors Under 65	\$300	\$12,688,477
Cost Savings for Exercise Visitors Over 65	\$600	\$8,935,547
<b>Annual Healthcare Benefit</b>		<b>\$21,624,023</b>



# 9. ECONOMIC SIGNIFICANCE: ADDITIONAL BENEFITS

The economic significance of the District includes a range of additional benefits that are typically hard-to-capture in the metrics of economic significance. Selected additional District functions that are also of economic significance are described briefly below.

## Agricultural Production

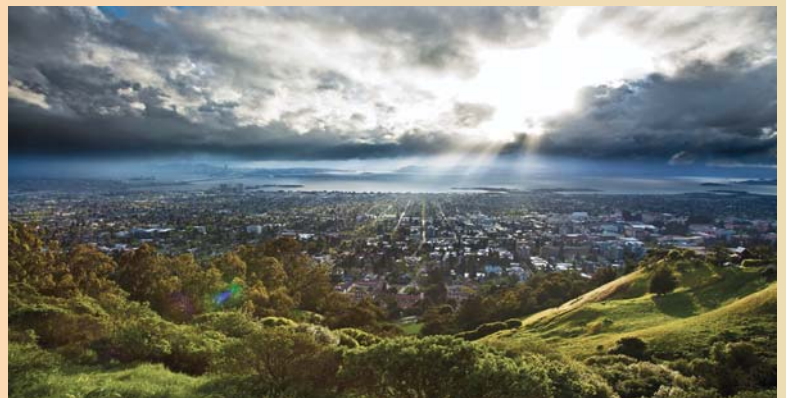
**The District leases about 60,000 acres for grazing providing important support for local agriculture in the East Bay as well as effective land management.**

The District's roughly 60,000 acres of grazing land offers an important contribution to sustaining working landscapes in the East Bay. Grazing continues to be an important part of the District's land management strategy to enhance biodiversity of native flora and to reduce wildfire fuels, thereby supporting wilderness fire prevention efforts. This practice generates operating revenue for the District, enhances the local farm economy, and provides a linkage to the historic land use pattern in the region. Further, public interest in locally-grown food and grass-fed animals may create a value premium for the District's grazing lands, in addition to offering alternatives to growing cattle in feedlots, which is currently the dominant approach to cattle ranching. With roughly 60,000 acres under grazing leases, District land accounts for about 14 percent of the 413,000 acres of grazing land in the East Bay.

## Land Use Form

**District open space and parks provide a defacto urban limit line to the urban intensity present in areas of the East Bay, contributing to local planning goals and programs.**

The District's provision of regional parks, open space, wildlife habitat, and recreation facilities is an integral part of the East Bay's land use balance. District lands and other public open spaces provide important natural



*Claremont Canyon Regional Preserve, Oakland*

Photo: Fred Rowe





Photo: Shireen Khatib

**Coyote Hills  
Regional Park,  
Fremont**

open spaces and help to contain sprawl in the East Bay, and in so doing, contribute to a sustainable future for our cities and towns. Over the past several years the Bay Area's regional planning agencies, the Association of Bay Area Governments (ABAG) and Metropolitan Transportation Commission (ATC) have engaged in a regional planning to respond to climate change. As mandated by SB 375, ABAG and MTC have linked housing and transportation planning together. This regional planning envisions a future in which growth occurs proximate to transit and generally within existing urbanized areas. District lands and facilities provide critical support to this vision, with District lands helping to define the urban limits and providing ample access to open space, parks, and trails.





*Black Diamond Mines  
Regional Preserve, Antioch*



*Temescal Regional Park,  
Oakland*



## Environmental Education

The District is committed to supporting the use of parks and other outdoor environments as extended opportunities for student exploration and study. Programs include:

- Field trip programs for schools and youth groups;
- Mobile education outreach programs that visit schools;
- Visitor center exhibits and naturalists;
- Educators Academy programs for educators;
- Recreation services and programs;
- Naturalist programs; and
- Special events.

## Public Safety

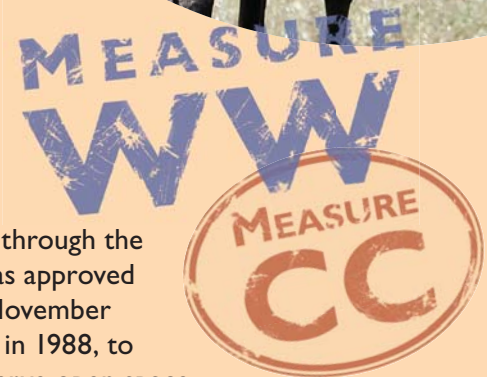
The District offers public safety benefits through police and fire services. During the peak summer season, the District's Public Safety Division is staffed by approximately 500 personnel, including sworn police officers, industrial firefighters, lifeguards, and trail safety volunteers. The Public Safety Division's annual budget is approximately \$27 million. The Divisions facilities include headquarters located at Lake Chabot in Castro Valley and sub-stations at the EBMUD San Pablo Reservoir in Orinda and Contra Loma Regional Park in Antioch, and an Air Support Unit at the Hayward Municipal Airport. The Public Safety Division provides around-the-clock services, including air support, marine patrol, equestrian patrols, special enforcement, and investigations.



Photo: Michael Short

## District Grantmaking

The District directs funding to the local communities through the Measure WW local grant program. Measure WW was approved by voters in Alameda and Contra Costa counties in November 2008. The measure extended Measure AA, approved in 1988, to help the District meet the increasing demand to preserve open space for recreation and wildlife habitat. Measure WW includes a local grant program component that provides funding directly to cities (based on population) for high priority community park projects. To date a total of \$125 million has been awarded to 33 cities, park districts, and the Oakland Zoo.





# 10. REGIONAL ECONOMIC IMPACT

## Valuation Concept

District operations support jobs and generate regional economic activity, including nearly 1,000 jobs. The District supplements its core local funding sources by drawing regional, State, and federal funding to the East Bay. With current General Fund appropriations and transfers out totaling \$127 million, the District supports a total 781 full-time-equivalent employees.

Regional economic impacts are generated when the East Bay Regional Park District attracts spending from outside the region to the East Bay, which would not occur in the absence of the District. Both visitor spending and District spending of non-local funds, such as grants, generate economic impact in Alameda and Contra Costa counties.

While the majority of visitors to the East Bay Regional Park District are residents of the East Bay, the variety of natural and recreational amenities available in the regional park system draws visitors from throughout the Bay Area, the State of California, and even from other states and counties. These visitors often choose to pair their park visit with shopping at local retailers or eating and drinking at local restaurants and bars. Spending by visitors to the East Bay represents new dollars flowing into the East Bay economy that would not otherwise occur.

In addition, each year the District undertakes capital investment projects that have an effect on the regional economy. A portion of the capital spending comes from grant funds awarded to the District. Data from the District's Finance and Management Services Division indicates in recent years grants for capital projects have been about \$9 million annually of the typical \$26 million in total spending (i.e., about \$1 of financial "leverage" for every \$2 of money from the District's tax revenue sources). These grant contributions largely reflect new funds coming into the region, and would not be spent in the East Bay but for the efforts of the District.

## Methodology

Economic impact analyses commonly are employed to quantify the effect of spending within a regional economy. In the case of the East Bay Regional Park District, visitors to the regional parks that are not residents of either Alameda or Contra Costa Counties generate "new" spending in the East Bay. In addition, grant funds awarded to the District also support new spending in the regional economy.

To quantify economic impacts attributable to visitors, this analysis relies on survey data indicating the proportion of District visitors from outside the region and estimates (from the Trust of Public Land) concerning their average daily spending. Visitor spending attributable to the East Bay Regional Park District is derived by multiplying the total number of visitors to the park from outside of the East Bay by this average daily spending profile. To quantify the economic impact of capital spending by the District, the analysis uses grant data from the District to estimate additional impacts. Expenditures attributable to visitors to the District and grant fund expenditures by the District represent new regional economic activity that would not occur "but for" District lands and programs.

Visitor spending and capital investments in turn support new jobs and further spending throughout the East Bay. This ripple effect associated with successive rounds of spending can be quantified using established economic multipliers for various industries such as retail, food and beverage establishments, transportation services, and construction, resulting in a total estimated economic impact on the East Bay economy.



*Point Isabel Regional Shoreline, Richmond*

## District Valuation Estimate

Using survey data to estimate the total number of out-of-area visitors to the District and average visitor spending figures, EPS estimates total visitor spending attributable to the District. This analysis assumes 25 percent of all visitors are residents of counties other than Alameda and Contra Costa and the average visitor spends \$25 per day in the local economy. Based on these data, this analysis estimates the presence of the District generates annual direct visitor spending in the East Bay of over \$156 million. Visitor spending is the focus as this spending represents “net new” spending in the East Bay due to the District. In the absence of the District, it is the out-of-town visitor spending that would be lost from the regional economy. Residents will also spend substantial sums associated with their park visits, though they would spend much of this income on other leisure activities in the absence of park system.

This total visitor spending is assumed to include expenditures on retail goods, food and beverages, and transportation. Spending in these areas generates economic ripple effects throughout the local economy with successive rounds of spending. Using regional economic multipliers generated by the IMPLAN software model (an input/output model that draws upon data from several state and federal sources, including the Bureau of Economic Analysis, Bureau of Labor Statistics, and the Census Bureau), the \$156 million in visitor spending results in an estimated East Bay economic output of \$111 million (as a portion of the overall sales will on inputs imported from outside the East Bay). This output in turn generates ripple effects in the East Bay economy that are estimated at \$66 million, resulting in a net new economic output of \$177 million annually in the East Bay (**Figure 9**). In addition, \$9 million in grant funds are spent on capital projects annually, generating a total contribution of about \$14 million to East Bay output (**Figure 10**). In total, over 1,800 East Bay jobs are attributable to the District.







FIGURE 10

# ANNUAL VISITOR SPENDING

Category	Amount
Total Annual District Visitation	25 Million
Visitation from Outside District <sup>1</sup>	6.25 Million
Visitor Spending per Day	\$25
Total Non-Resident Spending	\$156 Million
Output from Direct Spending	\$111 Million
Multiplier Effect in the East Bay	\$66 Million
<b>Total Contribution to the East Bay Economic Output</b>	<b>\$177 Million</b>

<sup>1</sup>Estimate based on information from 2000 Economic Impact Study based on prior findings from SRI finding that approximately 25 percent of all EBRPD visitation is generated by residents outside of Alameda and Contra Costa counties.

FIGURE 11

# ANNUAL GRANT FUND EXPENDITURES

Category	Amount
Direct Spending	\$9.0 Million
Multiplier Effect in the East Bay	\$5.1 Million
<b>Total Contribution to the East Bay Economic Output</b>	<b>\$14.1 Million</b>

Photo: Hillary Van Aartsen



## II. CONCLUSION

In summary, by combining prior research with new thinking, methods, and outcomes, it is demonstrated the East Bay Regional Park District, at the present time, is contributing over \$500 million annually in Economic Value (benefit to society). In addition, the District draws nearly \$200 million annually in Economic Impact (gross new spending in the local and regional economies). In addition, there are a number of others benefits provided, in the form of land use, agricultural production, educational, and public safety, that all have value, but are harder to quantify. As such, the District is not only a major driver of economic vitality in the East Bay, but it enhances, in no small way, the quality of life for all East Bay residents and those doing business throughout the region.

Key findings from this analysis of the economic significance of the East Bay Regional Park District include the following:

- District lands play a critical role in the environmental sustainability of the East Bay by providing a range of ecosystem services that enhance air quality, water quality, and support species habitat among other benefits. This study estimates that District lands provide ecosystem services with an economic value of over \$500 million annually.
- District lands offer unparalleled opportunities for outdoor recreation. This study finds District park users place an annual value of about \$200 million on their park visits.
- The value of the District is expressed in the home price premiums in areas proximate to District lands. This study finds nearby property sales include about \$65 million per year in value attributable to the presence of the District.
- Rigorous physical activity on District parklands keeps East Bay residents fit and healthy, thereby reducing the medical cost burden attributable to insufficient exercise. This study finds recreational activities on District lands provide healthcare cost savings of \$20 million annually.
- The District provides direct funding to all 33 cities within its jurisdiction to help each city and town address the unmet park and recreation needs within their respective community.
- Visitors to the East Bay Regional Park District come for programs and activities on District parklands and generate spending in the regional economy that would not occur in the absence of the District. This study finds the economic impact of the District in the East Bay economy to be nearly \$200 million.



Photo: Bob Walker, collection of the Oakland Museum of California



Photo: Greg Brian

**Diablo Foothills Regional Park,  
Walnut Creek**

**Las Trampas Regional Wilderness,  
San Ramon**



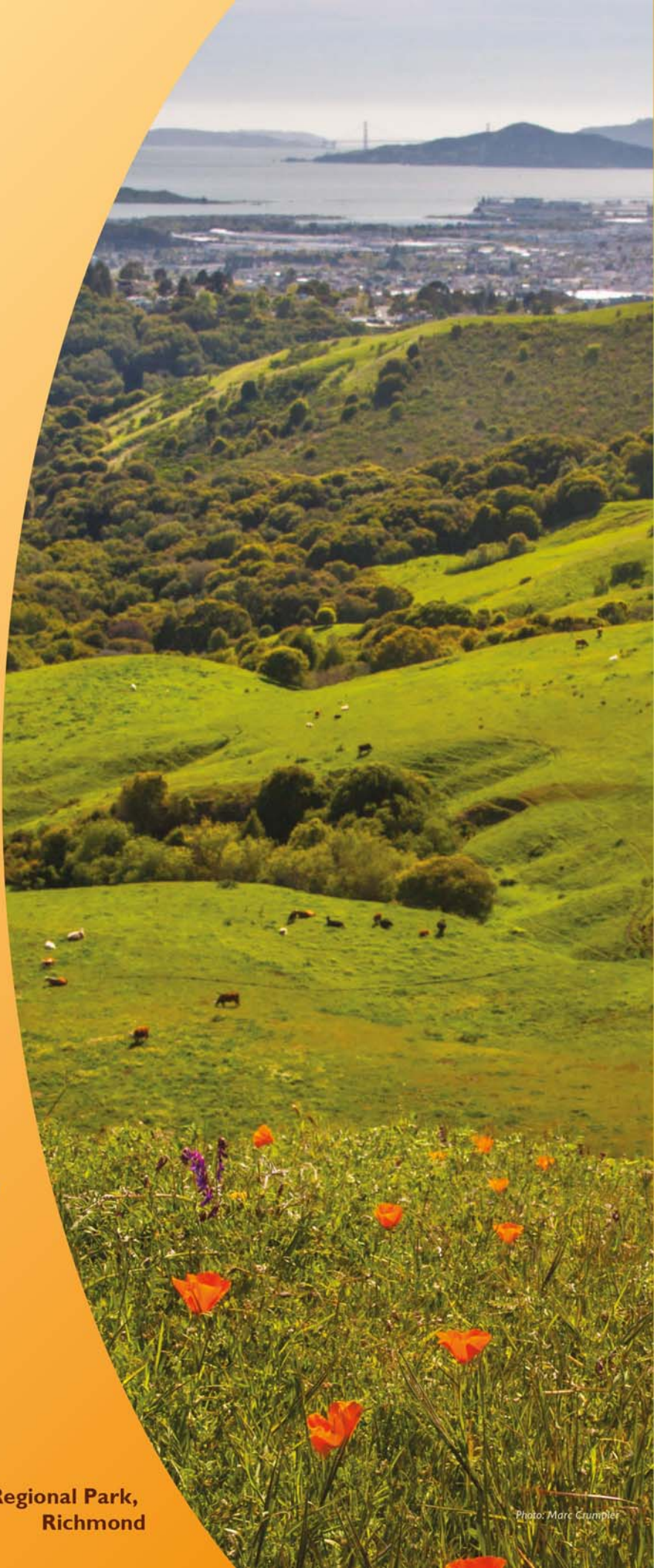
## ACKNOWLEDGMENTS

**T**he first economic impact study of the East Bay Regional Park District was released in 2000 completed by Economic & Planning Systems of Oakland, California with assistance from Strategy Research Institute, Los Angeles, California. Now seventeen years later, the same team of economists and researchers have delivered this sequel document. Much appreciation and thanks goes to Teifion Rice-Evans, Walter Kieser and Ben C. Sigman of EPS as well as Dr. George Manross, principal of SRI. Additional support was provided by Dave Collins, Assistant General Manager, Finance and Management Services (retired), East Bay Regional Park District; Erich Pfuehler, Government Affairs Manager, East Bay Regional Park District and Annie Burke, editorial consultant.

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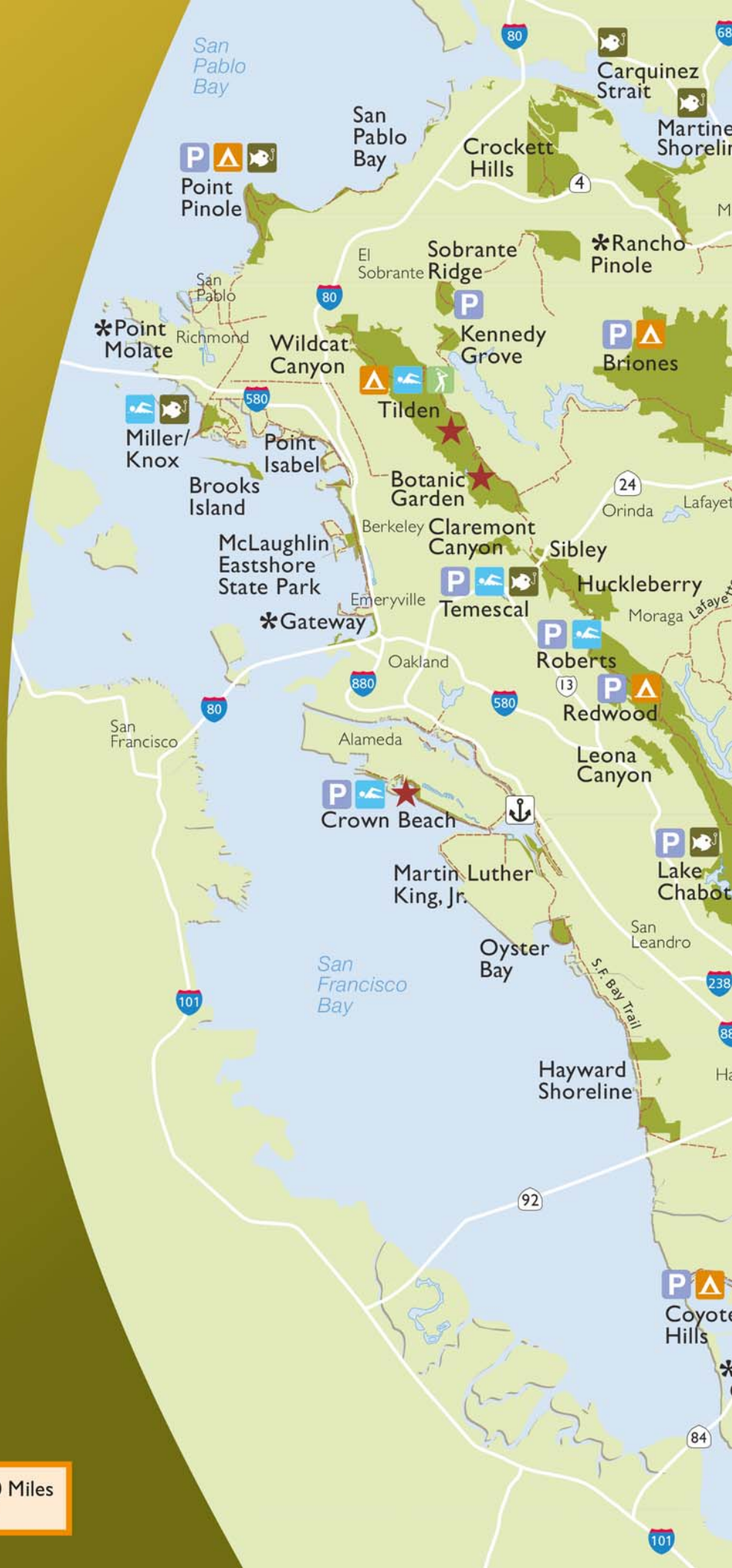


# East Bay Regional Park District

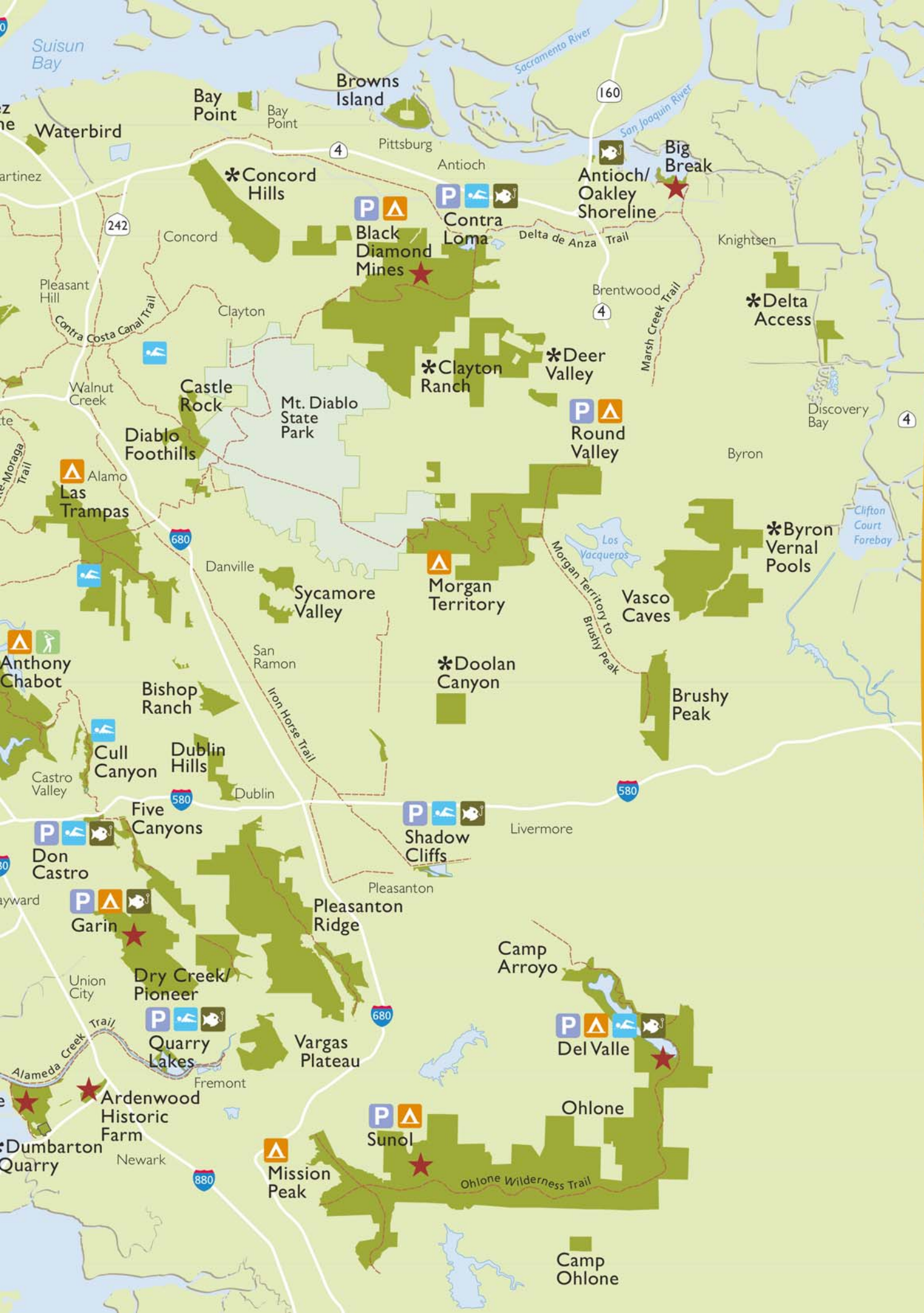


## REGIONAL PARKLANDS, FACILITIES, AND ACTIVITIES

-  Regional Parklands
-  Parklands Not Currently Open
-  Park Visitor Centers
-  Tidewater Boating Center
-  Regional Trails
-  Parking Fee Locations
-  Camping Locations
-  Swimming Locations
-  Fishing Locations
-  Golf Locations











East Bay  
Regional Park District

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