Proposed
West Coyote Hills
Interpretive Master Plan

Current edition

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Executive Summary

Once accessible to the public, the natural open space of West Coyote Hills will offer miles of hiking, cycling, and horseback riding trails, remarkable experiences at the nature center, and sweeping views of Southern California from its highest elevations. In order to plan effectively for these experiences, meet the needs of diverse, multi-age audiences, and protect the rare biological resources found here, a multidisciplinary team of planners, architects, landscape architects, and interpretive designers have joined together to create a comprehensive master plan.

This master plan is presented in two parts. The first part, the trail master plan, focuses on the physical development of the trail system; the second part, the interpretive master plan, focuses on the visitor's experiences on those trails as well as in and around the proposed nature center. The specific purpose of this interpretive master plan is to identify opportunities that enhance visitor experiences and address the resource management directives of both the City of Fullerton and U.S. Fish and Wildlife Service.

Development of the interpretive master plan took place in 2009. Guiding documents relevant to the interpretive master plan include the Draft Environmental Impact Report, Draft Specific Plan, Biological Opinion, project mission statement, and City of Fullerton General Plan. Additional background resources used in the preparation of this plan include books on the history of the region, technical reports, and the knowledge and expertise of staff of Pacific Coast Homes, Laer Pearce & Associates, RNM Design, Bellfree Contractors, Inc., and Dudek; planning consultant Ron Baers and trails consultant Roger Bell; and members of the Trails and Open Space Advisory Committee.

From the beginning, community involvement was sought for development of the plan. Key individuals, serving as members of the Trails and Open Space Advisory Committee, participated in three planning meetings that focused specifically on interpretive planning (see Interpretive Planning Process). Following each meeting, summary notes were distributed to the entire committee membership, as well as to the City's Parks and Recreation Department, to ensure that all representatives and the City had an opportunity to review and comment on them.

It is important to note that all recommendations put forth in the interpretive master plan are preliminary and subject to review and approval by Pacific Coast Homes, the City, and other agencies, such as U.S. Fish and Wildlife Service.

Interpretive Planning Timetable

December—The advisory committee participated in a visioning workshop to define a vision for the site, goals, and target audiences.

January—The advisory committee met to review preliminary plans for the West Coyote Hills trail system.

February—The Acorn Group began development of the interpretive master plan.

March—The Acorn Group toured the project site and interviewed stakeholders. Advisory committee members participated in an interpretive planning workshop. Visitor survey work began.

April—Survey work continued through April 23. Data were tabulated, analyzed, and compiled into a report. The Acorn Group established an interpretive framework based on an overarching theme, sub-themes, and key messages. This material was reviewed by the project team and advisory committee.

May—Interpretive planning work continued. Conceptual interpretive design began. The advisory committee met on site to review plans for trails.

June—Interpretive planning work continued; preliminary conceptual drawings of exhibits were created.

July—Exhibit media for the trails, nature center, courtyard, and nature discovery garden were presented to the project team and advisory committee. The project team gave presentations to City Commissions. The Acorn Group began working on final conceptual drawings.

September—The advisory committee met. The Acorn Group finalized and delivered the draft West Coyote Hills Interpretive Master Plan.
Part I
Interpretive Planning
**Interpretive Planning**

The purpose of an interpretive master plan is to analyze a site's interpretive needs and determine those services, facilities, media, and programs that efficiently and effectively communicate the site's purpose, significance, and themes. Because an interpretive plan simultaneously addresses the needs of visitors and the directives of the institution, it requires a thoughtful analysis of multiple components, including management, markets, mechanics of the site, messages, and media.

Management—the management component requires careful study of those documents that define the project and project site. West Coyote Hills' mission statement (reflecting the purpose, the reason for existence, the service area, and the target audience) and vision statement (where the organization is headed), draft Environmental Impact Report, West Coyote Hills Specific Plan, Biological Opinion, and other documents have all informed the interpretive planning process.

Market—effective planning moves beyond promotion to include the factors that define demand and West Coyote Hill's response to that demand. Background research through such means as the visitor survey, stakeholder interviews, outreach sessions, and advisory committee meetings have yielded important information that has grounded our assumptions and made us aware of the needs and interests of sectors of the target audience.

Message—the framing of content is based on three factors: 1. West Coyote Hills’ most significant natural and cultural heritage stories, 2. the things visitors are most interested in, and 3. the information management needs to communicate. Finding the right mix of appropriate techniques is key to interpretive planning.

Mechanics—effective planning results in a design balance between the site, the trails and nature center, and interpretation. By considering interpretation from the start, architecture, trail design, and landscape architecture consistently advance the interpretive messages, enhancing rather than detracting from the remarkable landscape and viewscapes of West Coyote Hills. The visitor's experience is considered in its entirety, from arrival at a gateway through departure. Such variables as ingrained traffic flow patterns, special needs, and multiple use on trails are carefully analyzed to ensure high quality, safe experiences for everyone.

Media—the media include anything that helps communicate the message. As the last component of the planning process, it is the mix of methods and technologies (techniques) to deliver the messages to the markets within the constraints of management and mechanics. It is comprised of wayside exhibits, amenities in the nature discovery garden, wayfinding tools, and interior exhibits.

An interpretive plan identifies what the visitor knows, wants to know, and needs to know. While it takes into account other plans, such as the companion trail master plan, and considers the site and the resources in their entirety, the focus remains on the visitor—the cultivation of an informed public. The aim of an interpretive plan is to identify those strategies that will help the visitor become aware of, understand, and embrace the unifying message conveyed through the media. Ultimately, it brings new understanding of the remarkable natural and human history of West Coyote Hills.
Guiding Principles

Interpretation is a form of communication that strives to provoke, relate, and reveal. It moves beyond factual information to offer new insights into what makes a place, person, or object special. In order to be effective, interpretation demands triangulation on three sphere of influence: the visitor’s personal (social) context, the physical site and features, and the overall mission of the institution(s).

We recognize that visitors have choices—they can attend to interpretive media or not. And whatever is attended to is filtered through the personal (social) context, influenced by the physical site, and embedded within the interpretive mission. Throughout the interpretive planning process, these three spheres are kept in focus. The ultimate aim is to effectively attend to visitor needs and interests while addressing the resource considerations and needs of management. This is accomplished by creating experiences that reveal new insights, provoke new thought, and relate to concepts easily grasped by the audience.

Effective interpretation enables the audience to feel an immediate connection to the subject. It strives to inform, entertain, and enlighten. It strives to be meaningful and personal by finding linkages to concepts the visitor already understands and cares about. At the same time, it is organized, enabling the visitor to follow the material easily and build upon it intellectually. Last, it links tangible objects, such as coastal sage scrub, animal tracks, and even oil wells, with intangible meanings in order to create emotional and intellectual connections. In this way, West Coyote Hills’ stories are revealed in ways that are personally and universally meaningful.

Freeman Tilden, an early champion of interpretation, described six core principles of interpretation. While they have been modified and expanded over the years, they remain a seminal work in the field.

**Principle of Interpretation (1)**
Any interpretation that does not somehow relate what is being displayed or described to something within the personality or experience of the visitor will be sterile.

**Principle of Interpretation (2)**
Information, as such, is not interpretation. Interpretation is revelation based upon information. But they are entirely different things. However, all interpretation includes information.

**Principle of Interpretation (3)**
Interpretation is an art, which combines many arts whether the materials presented are scientific, historical, or architectural. Any art is in some degree teachable.

**Principle of Interpretation (4)**
The chief aim of interpretation is not instruction, but provocation.

**Principle of Interpretation (5)**
Interpretation should aim to present a whole rather than a part, and must address itself to the whole person rather than any phase.

**Principle of Interpretation (6)**
Interpretation addressed to children should not a dilution of the presentation to adults, but should follow a fundamentally different approach. To be at its best, it will require a separate program.
Mission-based interpretation

Done effectively, interpretation should work in service of West Coyote Hill’s mission and long-term vision. Planning and design need to be purposeful and routinely cross-checked to ensure that decisions are made in accordance with the following tenets.

Vision Statement:
West Coyote Hills is a high-quality living environment that connects people to nature.

Mission Statement:
West Coyote Hills fosters a connection between people and nature. Its balanced plan preserves natural open space, creates remarkable living environments, and beckons residents and visitors alike to be inspired by the land, the habitats, and the far-reaching views.

Design Principles
Design principles are design responses that integrate solutions in a holistic manner—ecological, economic, and social. Design principles 2 and 5 are particularly relevant to the interpretive planning effort at West Coyote Hills, and are noted with an asterisk.

Setting
Utilize an infill location by transforming an abandoned oil field into a balanced community.

Goal: Carefully remediate, reclaim, and develop a brownfield site.

Goal: Establish an infill development project that is connected to existing infrastructure.

Goal: Establish an infill development project that is closely connected to existing job centers.

Goal: Respect the needs and concerns of neighbors in the planning process.

Nature Preserve*
Create a healthy nature preserve by minimizing the development footprint and restoring the natural habitat.

Goal: Create clustered development areas (residential, community services, recreation, retail) to minimize the development footprint and optimize natural open space.

Goal: Restore the natural habitat according to the guidelines of U.S. Fish and Wildlife Service and California Department of Fish and Game.

Goal: Monitor habitat health and population trends of protected species.

Goal: Provide a financial endowment designed to support long-term wildlife monitoring and habitat restoration efforts.
**Community**

*Provide a diverse range of housing opportunities and amenities that respect Fullerton’s unique character and heritage.*

Goal: Provide a wide range of housing choices that are responsive to differing needs.

Goal: Design distinctive neighborhoods defined by their unique topography, memorable streetscapes, scale, and relationships to natural open space and community destinations.

Goal: Provide for the social and physical needs and interests of future homeowners.

Goal: Create a vision for West Coyote Hills that reflects the character of Fullerton’s distinctive and time-honored neighborhoods and pays respect to Fullerton’s visionary leaders, past and present.

Goal: Create architectural designs that embrace Fullerton’s heritage.

**Conservation**

*Conserve resources in the built environment by applying sustainability concepts.*

Goal: Consider environmental factors in the homebuilding design process.

Goal: Partner with homebuilders to consider adherence to sustainable design standards during design and construction.

Goal: Partner with homebuilders to offer homeowners choices in the selection of energy-efficient appliances and other home amenities.

Goal: Encourage use of multiple modes of transportation to connect to places for work, retail, education, and play within West Coyote Hills and the surrounding areas.

Goal: Design and construct a “green” nature center.

Goal: Protect water quality by developing a master drainage plan that minimizes runoff volumes and improves water quality discharges.

Goal: Conserve water through use of native and drought-tolerant plants in common area landscaping.

Goal: Incorporate environmentally responsible amenities in the community design process.

Goal: Create trails that are compatible with restoring and preserving natural open space.
**Education and Recreation***

*Create powerful learning experiences for children as well as adults, and meet the recreational needs of residents and visitors.*

Goal: Promote connectivity by creating trails that connect neighborhoods to public trails, and public trails to the regional trail network.

Goal: Provide recreational experiences and opportunities for individuals to recreate in and interact with nature.

Goal: Provide outdoor educational experiences and opportunities for individuals to appreciate, understand, and value this natural open space.

Goal: Create a nature center that serves as a focal point of the Preserve.

Goal: Provide a financial endowment designed to cover the costs of maintaining the recreational amenities long-term.
Interpretive Planning Process

Staff of The Acorn Group consisted of Jennifer Rigby, interpretive planner; James Freed, designer and illustrator; and Brian Burton, art director. They were aided by the Trails and Open Space Advisory Committee (advisory committee), as well as the project team consisting of staff of Pacific Coast Homes, Laer Pearce & Associates, RNM Design, Bellfree Contractors, Inc., and Dudek; planning consultant Ron Baers and trails consultant Roger Bell; and members of the Trails and Open Space Advisory Committee.

The Trails and Open Space Advisory Committee consisted of community members who served on a voluntary basis. This committee met seven times between November 2008 and August 2009. Four of those meetings focused specifically on interpretive design aspects of the project. Summary notes from these meetings are provided in Appendix D-G. The advisory committee helped define the vision for the project, establish the overarching theme and messages for a wide range of interpretive media, and identify those physical factors that influenced trail placement and key access points. The participation of committee members was critical throughout the planning process.

The Acorn Group conducted phone and/or in-person interviews with staff of the City of Fullerton, Fullerton Elementary School District, Chino Hills State Park, Carbon Canyon Regional Park, Ralph B. Clark Regional Park, and Fullerton Arboretum.

The Acorn Group also conducted a visitor survey in March and April 2009 to help understand the needs and interests of diverse potential trail users. Individuals were surveyed at the West Coyote Hills Open House, Westridge Shopping Center, Laguna Lake Park, Fullerton Courthouse parking lot, Fullerton Bike Shop, Banning's Bikes, and the Equestrian Center at Laguna Lake Park. In addition, advisory committee members completed the survey at the March planning session. The survey report, tool and data are summarized in Appendices A-C.

The Acorn Group worked closely with the project team to ensure that all aspects of planning—architecture, landscape architecture, trail work, and interpretation—came together seamlessly and reflected an agreed upon set of design principles.
Interpretive Theme, Sub-themes, and Key Topics

Several topics were identified as baseline subject matter for interpretation. They include elements of natural history, such as the site’s flora and fauna, specific habitat types, secluded canyons and topography, and seasons and life cycles, as well as elements of human history, including American Indian heritage, Spanish and Mexican land grants, sheep and cattle ranching, and oil exploration.

From topics, the West Coyote Hills story is built “up,” rather than just “across.” In order to help visitors connect to meanings emotionally as well as intellectually (meaning, care enough about West Coyote Hills to help care for West Coyote Hills) tangible resources, such as its secluded canyons, sages, and gnatcatchers, become linked with intangible meanings. Intangible meanings go beyond topics to embrace universally recognized values such as human heritage, the conservation of nature and wild places, and the value of preservation to the human spirit and the human community. Ultimately, we strive to have visitors experience the hills’ “spirit of place” in a very personal, relevant, and emotional way.

A theme is the principle message, or story, about the subject matter which serves to connect topics and concepts together as a unifying whole. A theme allows for a linkage of important ideas concerning the topic(s) listed above. It is well documented that theme-based interpretation is easier to comprehend and recall at a later point. It serves as an “advance organizer,” giving the visitor a sense of where the exhibit media are going and making it easier to connect their content to other information.

Although the central theme may or may not be articulated verbatim in media or programs, it is the conclusion that we hope visitors will reach on their own after experiencing the exhibits and the impression that will linger long after the details of the visit have been forgotten.

Subthemes further develop the central theme, allowing for a logical progression into storylines. Typically a well-planned experience conveys three to five sub-themes, all of which are subordinate, but directly related, to the central theme.

The following represents a synthesis of ideas proposed by the advisory committee and subsequently refined. The theme and subthemes will not appear in print. Rather, they focus the media during the course of development and offer a thread that weaves the stories together.

Proposed overarching theme

Once the gathering grounds of the Tongva, the grazing lands of ranchers, and the oil fields of wildcatters, West Coyote Hills open space now returns to a more pristine, natural state. Its restored habitats support wildlife, enriching our spirit and our natural heritage.
Subthemes

The human history of West Coyote Hills spans thousands of years. Footprints from the past have etched the land.

A mosaic of habitats is found in West Coyote Hills. Diverse plant communities support wildlife, some of which is threatened.

West Coyote Hills is the focus of habitat restoration, monitoring, and protection. Active stewardship of the land is a responsibility we all share.

The interpretive matrix on the next page displays this information hierarchically. The theme is supported by the subthemes. The subthemes in turn are supported by key topics. The key topics keep the information “in check,” ensuring that we cover important material, remain focused on the interpretive goals, and avoid straying from the theme and subthemes. Not all key messages are equally weighted.
Once the gathering grounds of the Tongva, the grazing lands of ranchers, and the oil fields of wildcatters, West Coyote Hill's open space now returns to a more pristine, natural state. Its restored habitats support wildlife, enriching our spirit and our natural heritage.

**Subtheme 1**

The human history of West Coyote Hills spans thousands of years. Footprints from the past have etched the land.

**Subtheme 2**

A mosaic of habitats is found in West Coyote Hills. Diverse plant communities support wildlife, some of which is threatened.

**Subtheme 3**

West Coyote Hills is the focus of habitat restoration, monitoring, and protection. Active stewardship of the land is a responsibility we all share.

### Messages:

The Tongva likely harvested plants and hunted game in West Coyote Hills. Encampment and village sites have been found in the vicinity.

Juan Pacifico Ontiveros received a 35,970-acre Mexican land grant, Rancho San Juan Cajon de Santa Ana. With his cattle came nonnative grasses, an introduction that marked the transformation of West Coyote Hills' grasslands.

In 1863 Ontiveros sold most of his rancho to Abel Stearns who continued to graze cattle. After drought decimated the herds, Stearns entered into a contract with Domingo Bastanchury, a Basque shepherd, in 1870.

Bastanchury Ranch became the region's largest sheep operation. Sheep grazed in West Coyote Hills and further altered the landscape.

The first oil wells in the region were tapped in the 1890s. Domingo Bastanchury leased 3,000 acres to Union Oil Co. and 2,400 acres to Murphy Oil Co. Chevron continued its oil operations at West Coyote Hills until 1994.

Over half of the acreage of West Coyote Hills is set aside as permanently protected natural open space.

Several habitats comprise West Coyote Hills, including coastal sage scrub, southern cactus scrub, and southern willow scrub. Coastal sage scrub is now one of California's most endangered habitats and home to the federally listed California gnatcatcher.

West Coyote Hills is also home to the coastal cactus wren, horned lark, loggerhead shrike, and other State “species of special concern.”

Geological processes—erosion, sedimentation, thrust faults, and folding—have shaped the land and the landscape.

Vista points provide opportunities to reflect on the transformation of the Los Angeles Basin and coastal plain of Orange County over the course of two centuries. Open space like West Coyote Hills is a rare and valuable asset.

The resources of West Coyote Hills—the fruits, shoots, bulbs, and leaves that yielded food, fiber, and other items of the Tongva material culture; the grasses that fed the ranchers' cattle and sheep; and the oil that fueled dreams and profits—supported several human settlements.

Past human activities have left their mark on the landscape.

Most recently, West Coyote Hills was an active oil field, classified as a brownfield site after oil operations were ceased in 1994.

A large portion of West Coyote Hills has been permanently set aside as natural open space. Brownfield remediation, habitat restoration, and long-term monitoring will ensure that degraded lands become protected wildlife habitat.

Visitors are welcome on this land. Their respect for rules and regulations will ensure trail safety, as well as protection of critical wildlife habitat.
Interpretive Goals and Objectives

The following goals and objectives reflect the outcome of both the December 6 planning session in which visitor experiences at West Coyote Hills were identified and the March 26 planning session in which the interpretive foundation was established. Committee members stressed that “importance of access” is salient feature of West Coyote Hills, defined by the following opportunities: offer recreation and education, connect with nature, become aware of native plants and wildlife, savor experiences in the outdoors, build a lifelong sense of stewardship, celebrate nearby natural habitats, study a “living laboratory,” learn about the region’s cultural history, improve the communities’ quality of life, and increase “connectivity” with other trails.

Moving forward, based on these opportunities, the committee began to think about goals. Goals are statements of desired outcomes that guide programs and management or operations functions. They articulate what interpretation is meant to do for West Coyote Hills, its visitors, and its management. They guide the formation of interpretive media and services during the planning process and permit accurate and meaningful evaluation of interpretive programming before, during, and after development.

Educational directives related to West Coyote Hills focus on a desire to impart knowledge and cultivate an appreciative audience. To do this, interpretation must address both the cognitive and affective realms—the logical as well as the emotional aspects of the mind. People will not make behavioral changes if they only understand an issue; they must also feel that the topic has some relevance to their lives and that a behavioral change will bring one or more valued benefits.

Every interpretive experience should be designed, therefore, to have an emotional or affective component as well as an intellectual or cognitive component, leading ultimately to a desired behavioral change. However, unlike visitor knowledge and visitor behavior, visitor feelings and attitudes are difficult to measure with accuracy and certainty that a specified variable is having an effect. Even so, progress toward attainment of affective goals often can be measured indirectly—inferred from measurement of visitor behavior, since behavioral changes are typically preceded by changes in attitude or affect.

The following goals and objectives ensure that interpretation is aimed at helping visitors feel connected to both the rich human heritage and natural history of West Coyote Hills, while understanding and valuing it. A set of specific and measurable objectives correspond to each goal statement. These objectives would serve as the basis for summative evaluation, as described on p. 57, Evaluation Methods.
Affective Goals

Visitors of all ages and abilities will feel safe and comfortable\(^1\) on the trails.
90% of visitors will indicate they feel safe and comfortable on the trails

Visitors will have a satisfying and enjoyable time at West Coyote Hills\(^2\) on the trails and in the nature center.
90% of visitors will indicate a high degree of satisfaction and enjoyment with their experiences.
90% of visitors will express appreciation for the experiences offered here.

Visitors will value the efforts to reclaim West Coyote Hill’s oil fields and restore wildlife habitat.
90% of visitors will indicate awareness that West Coyote Hills’ natural open space is situated on a former oil field that was reclaimed and restored as wildlife habitat.
90% of visitors will express appreciation for this effort.

Visitors will appreciate the rich human heritage of West Coyote Hills.
90% of visitors will express appreciation for West Coyote Hills’ human history, including the heritage of indigenous cultures, Mexican land grant era, and agrarian and industrial activity of the 19th and 20th centuries.

Visitors will appreciate the rich natural heritage of West Coyote Hills.
90% of visitors will express appreciation for West Coyote Hills’ natural heritage, including its wildlife, vegetation, and geographical and geological features.

Visitors will recognize that the landscape has changed over time.
90% of visitors will acknowledge that West Coyote Hills’ landscape has changed over the course of two centuries due to human activity.

Visitors will feel they have an important role to play as land stewards of West Coyote Hills.
70% of visitors will acknowledge their personal responsibility to care for the land and resources of West Coyote Hills.

Visitors will recognize that appropriate behaviors are expected of them.
90% of visitors will acknowledge the rules and regulations at West Coyote Hills.
70% of visitors will acknowledge the reasons for their enforcement.

Cognitive Goals

Visitors will gain an understanding of the human settlements and activities that occurred historically on this land.
70% of visitors will be able to describe at least two distinct human settlements or activities that occurred in the past at West Coyote Hills.

\(^1\)Maslow’s Hierarchy of Needs states that people need to have certain basic needs (physiology, safety, and security) fulfilled before they can move on to pursue higher levels of need, such as self-fulfillment. Since interpretation occurs at a higher level, first meeting basic visitor needs is essential to its effectiveness.

\(^2\) The term, West Coyote Hills, refers to the natural open space of West Coyote Hills, including the Robert E. Ward Nature Preserve.
Visitors will recognize plants and animals associated with West Coyote Hills’ habitats, including coastal sage scrub, southern cactus scrub, and southern willow scrub.

70% of visitors will be able to list two plant species and two animal species associated with coastal sage scrub or other habitat occurring at West Coyote Hills.

Visitors will gain an understanding of the geography of the Los Angeles Basin and the coastal plain of Orange County, and how it has changed over time.

70% of “key vista” visitors will be able to describe the geographical features seen.
90% of “key vista” visitors will be able to describe in general terms how the basin and coastal plain have changed over time.

Visitors will gain an understanding of the geological forces at work at West Coyote Hills.

70% of visitors will be able to describe how one force evident at West Coyote Hills works.
70% of visitors will be able to list at least two features or resources that are result of West Coyote Hills’ geological forces (e.g., oil, canyons, sand, sandstone).

Visitors will gain an understanding of how to act as land stewards of West Coyote Hills.

80% of visitors will be able to describe two actions taken on the trails that contribute positively to land stewardship.
80% of visitors will be able describe two actions taken at homes nearby that contribute positively to land stewardship (e.g., keeping cats indoors, not landscaping with “thirsty” and invasive nonnative species).

Visitors will know the rules and regulations that help protect and manage the resources of West Coyote Hills and the reasons they are in place.
90% of visitors will be able to describe the difference between multi-use and single-use trails.
90% of visitors will be able to explain why dogs need to be kept on leash on the trails.

**Behavioral Goals:**

Visitors will spend time on the trails and will view the interpretive media.

80% of hikers and equestrians will spend at least one hour on the trails and will read at least some of the interpretive panels.

Visitors will visit the nature center.

80% of visitors will spend at least 45 minutes engaged in the exhibits and displays.
80% of visitors will express a desire to return and participate in a program.

Families will visit the nature discovery garden and courtyard.

80% of families who visited the nature center will spend at least 45 minutes engaged in the garden amenities and courtyard interpretive stations.
80% of visitors will express a desire to return and participate in a program.

Visitors will demonstrate heightened awareness of, understanding of, and support for West Coyote Hills through their adherence to rules and regulations.
90% of visitors will adhere to the rules and regulations posted at West Coyote Hills.
Part II
Recommended Media
**Interpretation on the Trails**

One of the challenging aspects of this project is planning for the multiple and diverse audiences that likely will visit West Coyote Hills. Multi-use trails are designed to accommodate hikers, cyclists, and equestrians, while single-use hiking trails are designed for those on foot. It is anticipated that hikers will reflect a wide range of ages and abilities—families with young children and older hikers may appear at one end of the continuum and “speed walkers” may appear at the other end. Multi-generational families, wildlife watchers, and others may fall in the middle. As such, it is important to provide a wide range of interpretive media to pique the interest of multiple audiences through numerous means.

Trail media consist of two different sets of wayside exhibits: low-profile interpretive panels that focus on natural history and “history stations” that focus on the human history and consist of low-profile interpretive panels with corresponding replicated artifacts, such as a bedrock mortar, branding iron, and small-scale oil derrick.

An overlook panel situated at each key vista identifies specific points of interest, such as topographical features and landmark buildings. An inscription in a boulder offers an inspirational quote that sets the mood at a particular key vista.

To aid in wayfinding and planning for exercise regimes, orientation/directional signs will be positioned throughout the trails at access points and intersections. These signs feature a “you are here” symbol, trail map, trail mileage, level of difficulty, and permissible use (e.g., hiking-only). They also provide trail tips to ensure safe, enjoyable experiences, and GPS receiver positions should an emergency need to be reported to local authorities.

Regulatory signs will also be posted throughout the trails. This sign displays rules and regulations to guide visitor behavior. At each trail gateway, the regulatory sign, together with a “welcome” sign (orientation sign without map) and map of the entire West Coyote Hills trail system (including links to regional trails) will be mounted to the structure.

While it is unlikely cyclists will stop and read the interpretive panels, it is likely hikers and equestrians will. Thus, sign placement will need to accommodate readers mounted on horseback at the same time it reflects universal access standards. Dimensions and readability should be checked during formative evaluation to ensure optimal placement and wording.

Adjacent to the nature center, courtyard “interpretive stations” and nature discovery garden amenities offer experiences designed for young children and their families. The text should be written at the third or fourth grade reading level, although it is expected that adults will still be the ones reading the material out loud to their children. The panels that accompany exhibits and displays in the nature center should be designed at a ninth grade reading level, with a callout specifically designed to reach younger readers.

Last, it is important that all the signs reflect a cohesive and clear identity for the West Coyote Hills’ trail system. The templates provided in this report define the graphic standards for signage and establish a unified “look and feel” along West Coyote Hills’ trails and trail facilities, including the nature center and key vistas. The medium selected for this project is natural stone (protected by an graffiti-resistant coating) with an overlay of phenolic resin images, supported by a base of corten steel.
Wayside Exhibits

Wayside exhibits are interpretive panels placed in the outdoors. Their ultimate purpose is to enhance visitor understanding on any number of topics—places, people, flora and fauna, ecosystems, historic figures, objects and artifacts. The use of wayside exhibits offers several advantages: 1. They are visitor-friendly; visitors have “free choice” in deciding which panels to read, 2. They are always accessible to the visitor; as long as the trails are open, they are available; and 3. They are cost-effective over the long-term.

As with all forms of interpretation, wayside exhibits should adhere to certain principles that guide design as well as development of text.

**Interpretive media must make a personal connection with, or by relevant to, the intended audience.** Visitors more readily integrate new learning by relating it to what they already know. There are several ways this is accomplished, including the use of humor, metaphors, stories, and analogies in the development of text. Testing readability during formative evaluation (before going to the expense of fabricating panels) is an important step in this process.

**Interpretive media should provide or encourage novel and varied experiences.** Posing thought-provoking questions, creating several different styles of wayside media, and encouraging diverse activity (e.g., quiet meditation at the vista points versus active dialogue at the historical stations) will help capture and maintain the visitors’ interests.

**Interpretive media should be organized with clear, easy-to-follow structures.** Visitors tend to read panel titles first; therefore, it is important to create interesting and eye-catching headlines. Subtitles and callouts create a layered approach for the text and enable the reader to build their own “mental scaffold” of the interpretive material.

**Interpretive media should be based on a theme.** To some degree, all of the interpretive media identified for West Coyote Hills reflects the overarching theme and select subthemes. Focusing on the “take-home messages” helps visitors see the big picture and organize new information into an intellectual framework they personally understand.

**Interpretive media should engage visitors in the learning experience and encourage them to take control of their own learning.** Arranging material hierarchically on a panel enables visitors to decide on their own level of reading commitment. It is well documented that visitors generally spend three seconds, 30 seconds, or three minutes reading a panel, and that the attracting power of a panel is related to brevity of text, design appeal, and liberal use of images.

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3*Designing Interpretive Signs*, Moscardo, Ballantyne, Hughes, 2007.
When activities and challenging questions are added to the mix, panels become springboards for discussion and useful teaching aids for parents interested in fostering learning with their children.

**Interpretive media should demonstrate an understanding of, and respect for, the audience.** Based on direct observation, stakeholder interviews, and visitor survey data, we know the West Coyote Hills audience is a recreationally diverse group of people who are likely to visit the site on foot, horseback, or mountain bike. While cyclists are less likely to stop and read panels during a ride, hikers and equestrians will. We also know it is highly likely that those who hike and those who are seeking an outdoor outing with their family will be bringing their children.

Interpretive media need to encourage conversations and discussions. Vista points, “historical overlooks,” and other key sites on the trails and in the nature center engage multiple audiences using easily accessible text.
Interpretive panels—human history “stations”

**Gifts from the Land**—The Tongva gathered foodstuffs, fiber, medicine, and other resources from the land now known as West Coyote Hills.

Artifact: replica bedrock mortar

**Ontiveros’ Trail**—Juan Pacifico Ontiveros, former soldier and overseer of Mission San Juan Capistrano, became the owner of a 35,970 acre Mexican land grant, Rancho San Juan Cajon de Santa Ana. West Coyote Hills was once part of this rancho; the hills served as grazing lands for Ontiveros’ cattle.

Artifact: reproduction of map of the rancho (from the Bancroft Library) with overlay of modern boundaries and replica of Ontiveros’ branding iron

**Stearns’ Story**—Touted as one of the most successful foreigners to settle on Mexican California’s south coast, Massachusetts merchant, Abel Stearns, purchased most of the Ontiveros’ land in 1863 for $6,000.00. He continued to raise cattle until drought in the 1860s decimated his herds and brought an end to the cattle era in California.

Artifact: replica of counter branding iron of Abel Stearns

**The Arrival of the Basque**—European immigrants, including the Basque of Spain and France, settled in the region. Stearns entered into a contract with Domingo Bastanchury. Cotton shortages during the Civil War prompted Bastanchury to lease vast tracts of land and raise 20,000 head of sheep. Other Basque soon followed, and the hoof marks of cattle were replaced with those of sheep.

Artifact: corten-steel outline of shepherder and dog

**The Lure of Oil**—Petroleum became a booming industry in the Fullerton, Brea, and La Habra area. Oil was discovered in shallow lands in the Fullerton hills around 1890. Domingo Bastanchury leased 3,000 acres to Union Oil Co. and 2,400 to Murphy Oil Company. Standard Oil of California purchased Murphy’s oil fields in West Coyote Hills in 1911 and Emery Oil’s oil fields in 1912. The short-lived oil boom town of Emory Ranch consisted of workers’ homes, a school and hotel, company store, and pumping station. Wells extended for 12 miles, mainly in the northern boundaries of Fullerton, now Brea. Standard Oil found oil on the Toler, Williams, Yriarte, and Leffingwell Ranches of La Habra and the Coyote Hills. Wooden oil derricks were prominent fixtures on the landscape.

Artifact: small-scale 4-6’ “wood” derrick built with fiber cement board

**There Will Be Oil**—In 1903 Murphy Oil Company drilled at the north base of West Coyote Hills and met with only “mild success.” The company bought 2,200 acres nearby and hit gushers in 1906. The Hollywood movie, “There Will be Blood” is based loosely on Upton Sinclair’s book, *Oil*, which was set in California, and on early oil exploration at West Coyote Hills.

Artifact: Murphy Coyote (MC) cap on oil well; oil equipment
Interpretive panels—natural history

When Species Specialize—The relationship established between coastal cactus wren and prickly pear cactus illustrates the paradox of specialized species. The wren is highly selective when it comes to nesting space and will not nest if conditions don’t suit it. Fortunately, West Coyote Hills offers plentiful cactus resources and plentiful nesting sites for picky parents. The coastal cactus wren is listed in California as a “species of special concern.”

Ode to the Gnatcatcher—Small, but politically mighty, the California gnatcatcher is a federally listed threatened species (and California Species of Special Concern). This ground- and shrub-foraging insectivore lives exclusively in coastal sage scrub. It sings its mew-like call from taller shrubs and remains in its territory year-round. West Coyote Hills’ natural open space supports a core population of gnatcatchers, including many breeding pairs.

Canyon Symphony—The language of birds can be heard and interpreted at West Coyote Hills. Their calls, songs, chirps, and scoldings reveal both their presence and their moods. While a “song” is the musical singing usually produced by the male to establish breeding territory or attract a mate, a “call” is a much simpler sound produced by either a male or female that communicates alarm or aggression. West Coyote Hills resonate with the calls and songs of wrentits, cactus wrens, gnatcatchers, quail, and other feathered residents.

A Mosaic of Habitats—Where boundaries of plant communities (willow scrub, southern cactus scrub, and coastal sage scrub) overlap, “ecotones” are created. Ecotones typically have greater biological diversity than individual plant communities alone. Wildlife can occupy many different “niches” and take advantage of varied food sources without having to travel very far.

Scents of Sage—The pungent aroma of California sagebrush and white sage fills the air of West Coyote Hills. Coastal sage scrub is named for these plants, the “soft chaparral” of California. The source of their aroma is the oil in their leaves and stems which serves to prevent water loss. The oils also discourage browsing.

California’s Coastal Sage Scrub—West Coyote Hill’s predominant plant community is coastal sage scrub. Though it thrives in this sun-baked arid zone, coastal sage scrub is more markedly affected by summer drought on south-facing slopes. Some plants, like sagebrush, are “drought-deciduous,” dropping their leaves in the summer to reduce moisture loss. Others, like white sage, produce smaller leaves in the summer to retain what little water they have.

Four Seasons in Coastal Scrub—Sages, coast brittlebush, flat-top buckwheat, bush monkeyflower, elderberry, and even poison oak create a palette of changing colors over the course of a year. The sages’ gray-green foliage appears lush after winter rains. In the spring, plants burst into bloom, adding shades of yellow, orange, purple, and red to the hillsides. In the summer as heat and drought become intense, some plants shed their leaves to conserve water. The pastel colors of spring change to hues of brown and dark red as seeds ripen and plants await the winter rains.
Seeds of Change—The seeds of nonnative grasses arrived in the 18th century on the hooves of cattle and foodstuffs of Franciscan missionaries. California’s native landscape was soon transformed as tough invasives took hold. By 2000, over 1,000 nonnative species were documented in the state. West Coyote Hills has had its share of nonnative plants, including black mustard, castor bean, and eucalyptus. During restoration, they were removed, and native plants were able to “stake their claim” once again.

Keeping Track—Tracking is the art and science of interpreting “signs” animal left behind, such as tracks and scat. Animal tracks are usually seen on soft surfaces, like mud or sand. Unlike the tracks of most members of the cat family, the tracks of members of the dog family (coyote and fox, for example) show claw marks. With large hind feet, rabbits move in a “leapfrog” fashion. Raccoons, like opossums, leave “finger” tracks that resemble handprints, but opossums show an opposable thumb-like toe.

Geology Underfoot—West Coyote Hills topography is formed by the erosion of an east-west trending anticline (a formation that is folded due to geologic activity to form a dome). Underfoot, the San Pedro Formation consists of layers of sand, silty sand, and silt providing a record of depositional environments. Early Pleistocene marine strata (a different depositional environment) are exposed at the northerly portions of the property. The Coyote Hills Formation sits on the San Pedro Foundation and consists of nonmarine sandstone, siltstone, and conglomerate. The La Habra Formation is found in the lower elevations and is comprised of floodplain deposits of gravel, sand, and silt.

Why the Oil?—Millions of years ago during the Miocene Epoch, West Coyote Hills was a deep marine basin. As phytoplankton and other marine organisms died and sank, they accumulated on the ocean floor, eventually forming a black mud rich in decaying organic matter. This matter was transformed over millions of year into oil. Later, as the hills were built up, plate tectonics created a convex-shaped fold in the land (anticline), and since oil is lighter (or less dense) than water, it rose until it hit a barrier and became trapped, creating an accumulation of oil. Oil that isn’t trapped continues to rise until it reaches the surface, creating oil seeps.

Caring for this Land—The landscape of West Coyote Hills has borne the impact of hoof prints and oil production for over a century, and is now recovering. Stewardship comes in the form of oil field remediation, removal of nonnative species, and restoration of habitat. Yet restoration is a process, not a product. Ongoing stewardship to protect the nature of West Coyote Hills requires everyone’s help.

Coming Home—As time goes on, with restoration, greater diversity of plants likely ensures that the diversity and abundance of wildlife is maintained or improved. Uninterrupted internal wildlife corridors and enhanced nesting and resting places attract and support resident and migratory species.

The Healing Landscape—What was once a brownfield is now the natural open space of West Coyote Hills, remediated and restored to a fully functioning native landscape. Design of trails and trail amenities reflects sensitivity and respect for the land and biological resources found here.

Key Vistas—Overlook panels positioned near the shade structures identify skylines and other points of interest: Key Vista 1 (San Gabriel and San Bernardino Mountains to the north and city skyline to the south); 2 (a southern view down Gilbert Canyon), 3 (San Gabriel Mountains, Puente and Chino Hills, and downtown Los Angeles to the north and the coastal plain and ocean to the south); 4 (mountain views and downtown Los Angeles to the east); and 5 (downtown Los Angeles to the west, mountains to the north, open space to the south). Text also makes reference to how the basins and plains have been transformed from natural to urban landscapes in a remarkably short period of time.
Sample Interpretive Panel
Sample Interpretive Panel Installation
Sample History "Station"
Sample Past and Present Images for History Station Panel

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Sample Overlook Panel at a Key Vista

The Northern Skyline

The views from West Coyote Hills are stunning. The Chino Hills rise in the foreground, while the San Gabriel Mountains stand like sentinels in the background. Snow dusted in winter, Mt. San Antonio, or Old Baldy, takes the highest honor, reaching a height of 10,064 ft.
“We simply need that wild country available to us, even if we never do more than drive to its edge and look in. For it can be a means of reassuring ourselves of our sanity as creatures, a part of the geography of hope.”

Wallace Stegner
West Coyote Hills

Hours:
7:00 – dusk every day.

Please enjoy West Coyote Hills:

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Sample Orientation Panel
Located within the Robert E. Ward Nature Preserve, the West Coyote Hills Nature Center is proposed to consist of a nature center building, community meeting room, parking area, nature center courtyard with small amphitheater, and .22 acre nature discovery garden. The entire footprint is 1.1 acres, located on currently degraded land comprised primarily of black mustard, castor bean, nonnative grasses, and some elderberry. Existing elderberry is integrated into the landscape architectural plan; additional landscaping is based on the native plant palette prepared by Clark & Green Associates. Plants have been selected based on drought tolerance, capacity to attract and support wildlife, and relevance to features within the nature discovery garden. Buildings and hardscape amenities such as the parking lot, pathways, and courtyard reflect “best practices” related to green design.

It is important to note that all recommendations put forth in this interpretive master plan are preliminary and subject to review and approval by Pacific Coast Homes, the City, and other agencies, such as U.S. Fish and Wildlife Service.
Nature Center Site Map
The courtyard of the nature center serves as an informal place of learning, a gathering spot, and entrance to both the nature discovery garden and Robert E. Ward Nature Preserve. It features an amphitheater that accommodates people who are attending an outdoor program and serves as a lunch area for students who are participating in a field trip.

Over time, coast live oaks and western sycamores, selected from the approved plant palette, will provide shade in this area.
Nature Center Courtyard Interpretive Stations

The courtyard features four interpretive “stations.” Designed for children and their parents, these exterior displays offer age-appropriate text and activities designed to refine observational skills and raise awareness of the world outdoors.

Can you Spot the Difference in Spots?—At the first kiosk, young naturalists are challenged to study large photographs displaying the color patterns of wings of paired species of California butterflies: anise swallowtail and tiger swallowtail, and California ringlet and cabbage white. The differences are subtle and require careful study in order to find the field marks that distinguish each pair.

How Do You Measure Up?—Young naturalists line up against an interpretive panel and fully extend their arms. They compare their arm spans to the life-size silhouettes of wingspans of four birds common to West Coyote Hills: turkey vulture (6’), red-tailed hawk (4’), western scrub jay (16”), and Anna's hummingbird (4¾”).

Colors of Nature—A spinning color wheel helps young botanists identify common wildflowers according to color: white: Mexican elderberry; pink: buckwheat; red: California fuchsia; orange: bush monkeyflower; yellow: California bush sunflower; blue: blue-eyed grass; violet: wild hyacinth.

What Is It?—The top of each of four flip lids displays an image of an intriguing plant or animal likely encountered on the trail. When the lid is lifted, the reader finds the name and a brief description of the organism. They include parasitic dodder, or “witch’s hair,” the fruit of Opuntia, a darkling beetle, or “stink bug,” and the burrow of a trapdoor spider.
Sample Courtyard Interpretive Station Concept: Colors of Nature
**Nature Discovery Garden**

Positioned between the nature center and Robert E. Ward Nature Preserve, the .22-acre nature discovery garden offers a magical outdoor space in which children can celebrate the natural world. Modeled after the natural playscape movement and inspired by such authors as Richard Louv (*Last Child in the Woods*), Gary Paul Nabhan (*The Geography of Childhood*), and Robin Moore (*Natural Learning*), West Coyote Hill’s nature discovery garden offers new experiences for younger visitors through which they can explore their world, become familiar with local plant and animal life, and gently interact with nature in ways that are play-oriented and rich in experiential learning. The garden also empowers parents to become comfortable with their (likely new) role as their child’s “nature guide,” while introducing visitors to the subtle beauty and secrets of coastal sage scrub.

Visitors enter the garden through a *torii*, a Japanese garden gate. As one passes through it, it is said that one must leave “worldly concerns behind and enter with a mind open to poetic inspiration.” Once inside the garden, visitors have multiple options for launching their explorations. Native plant installations, nature-inspired play features, and art-inspired natural features offer numerous multi-sensory options. Water is a key element in the garden; its ability to attract children (and after-hours wildlife) cannot be overestimated.

Parents or other accompanying adults are welcome in this garden. In fact, they are needed. The playscape offers such features as a tree house, willow tunnel, and shallow brook—places that encourage climbing, running, and getting wet. This is the antithesis of the traditional schoolyard and playground and for good reason: research continually shows that free play in nature increases a child’s cognitive flexibility, emotional capacity, critical thinking, problem-solving skills, creativity, and self-esteem.

A simple sign system helps with wayfinding by identifying each feature, as well as suggesting specific ways to interact with it. As families leave the garden, they can visit the nature center or head off on trails through the preserve with their curiosity piqued for further discovery in nature.

“Biologist Edward O. Wilson argues that humans are hardwired for *biophilia*, or a love of wild plants and animals, and that putting them back in touch with the environment could resurrect that feeling. ‘We undervalue the *playing in the mud* kind of experience,’ [Patricia] Zaradic says, ‘which, it turns out, provides a lot of education.’”

“Are Americans Afraid of the Outdoors?”

David Biello, *Scientific American*

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3The natural playscape movement arose out of concern for the lack of time children currently spend in natural settings. Recognizing the intellectual and emotional benefits of having children immersed in nature, landscape architects, planners, and educators are now working to create environments that foster play with natural objects in non-traditional playground settings.
Garden Features

**Torii**
Young explorers and their families enter through this garden gate. It marks the transition from formal learning in the nature center to nonformal play and exploration in the garden.

**Willow Tunnel**
Bent and tied, native willows form a mysterious tunnel for young explorers and nimble adults to pass through.

**Wind Forest**
Hollowed branches of elderberry serve as wind chimes that dance and resonate in the “elderberry forest.”

**Butterfly Garden**
A puddling pond and native plants such as California fuschia, deerweed, lilac, and milkweed attract swallowtails, monarchs, skippers, and others.

**Tree House**
Built several feet off the ground and anchored to a fiberglass-reinforced concrete trunk of an “oak,” a multilevel tree house offers views of the discovery garden and natural lands beyond. A living coast live oak grows adjacent to this element, ultimately offering shade and realism.

**Boulders & Brook**
With parents watching, children engage in “wet science” along this recirculating shallow brook. Shiny pebbles and cattail down await discovery. Getting wet is a welcomed activity.

**Sculpture Garden**
Larger-than-life cement sculptures of a raccoon, hawk, and kingsnake invite play and learning about West Coyote Hills’ wildlife.

**Deergrass Maze**
One of California’s larger grasses forms a spiral maze too tall to see over. As in a corn maze, patience and memory go hand in hand.

**Scents of Sage**
The foliage of California sage brush and various sages tickle the senses and challenge children to distinguish plants by scent alone.

**Gathering Circle**
A comfortable, soft substrate surrounded by benches provides a venue for storytelling or group orientation.
Plan View of Nature Discovery Garden
Sample Butterfly Garden and Puddling Pond Concept
**Nature Center Interior**

The nature center offers both educational and recreational opportunities. Designed according to the highest standards of “green design,” this building demonstrates responsible forward-thinking planning and design.

The nature center serves as the base of operations, in terms of education, interpretation, and maintenance, for West Coyote Hills, as well as the official “welcome site” for visitors who seek information related to trail experiences and programs. Staff and docents serve as “ambassadors” and nature guides; the nature center is closed when they are not present.

Exhibits and displays in the nature center “gallery” provide an overview of the West Coyote Hills’ story, the key players (both human and other animals) that have so richly contributed to this story, and the events that have transformed the land over the millennia. The following is a description of the proposed exhibits and displays for this space. Once design development is underway, we recommend that audio media wherever feasible should be presented in Spanish and Korean, in addition to English.

**Becoming a Nature Detective**

Anchored by a diorama of coastal sage scrub, numerous sensory clues await discovery in the northwest section of the gallery. Attention is called to hidden insects such as spittlebugs, cicadas, and butterfly larvae, nesting songbirds, fruits of various shrubs such as toyon and elderberry, seed pods and galls, and other specimens, all realistically presented in this scrub matrix. Visitors are directed to peek, peer, smell, and listen to discover the secret lives of the animals and plants that call coastal sage scrub home.

A free-standing flipbook “album” serves as a visual field guide, presenting images of blooming plants arranged according to color and season, and serves as a visual field guide. A kiosk presents push button-activated calls and songs of some of West Coyote Hill’s charismatic wildlife, including the California gnatcatcher, coastal cactus wren, scrub jay, mockingbird, and coyote. A hand-held listening device controls the volume and frequency of each recording. In addition to the call, a brief narration reminds the visitors of the important role each of these animals plays at West Coyote Hills.

The entire west-facing wall becomes a photo essay of images that document the changing landscape and restoration effort. Beginning with a current full-color photograph of coastal sage scrub at the peak of early spring and moving to sepia-toned images of post-oil development land dominated by non-native species, and concluding with black and white images from the peak oil production years, the images tell the restoration story visually. A reading rail further develops the story for those visitors who prefer reading the content.

**Reading the Landscape**

The hills, canyons, and cliffs of West Coyote Hills reveal many geologic processes and events, including folding and uplifting. Along the east-facing wall, visitors operate the cranks and levers of individual mechanical devices to learn how specific geological processes shape the land. An animated video illustrates the formation of an anticline and migration of oil to its highest point.

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4 Because interpretive master plans address both non-personal interpretation such as interpretive panels and personal interpretation such as live programs developed by staff, this report makes recommendations that are not part of this scope of work. Such reference is not meant to imply these recommendations are the responsibility of Pacific Coast Homes.

The Acorn Group, Inc.

West Coyote Hills Interpretive Master Plan
The Black Gold of the Coyote Hills
Historic photographs (positioned along the north-facing wall) document the extensive oil operations of West Coyote Hills. An audio clip of an “oral history” with a former oil operator brings life and authenticity to the photomural. An excerpt from the trailer of There Will be Blood piques interest by calling attention of one of Hollywood's more intriguing characters and stories.

Shades of “Green”
Close to the reception desk, a series of panels calls out specific features of West Coyote Hills’ “green” nature center. Pervious paving and vegetated swales control runoff; window orientation helps moderate temperatures and reduce energy consumption; drought-tolerant landscaping with natives reduces water consumption and is wildlife-friendly; and “green design” of the walls, roof, and interior fixtures reflects environmentally responsible choices that are FSC5-certified.

Reading area
Comfortable armchairs, low tables, field guides, and other “review copies” of reference material are available to visitors. The chairs are positioned near the south-facing windows, affording a view of the courtyard, amphitheater, and Robert E. Ward Nature Preserve.

Reception and retail space
A staff member or docent is stationed at the reception desk when the nature center is open. A curvilinear counter displays information, such as recent sightings and upcoming programs, as well as appropriate merchandise for sale. Additional merchandise is displayed on backlit glass shelving beneath the counter top as well as one-two free-standing spinner racks.

Classroom:
The classroom is equipped with the following features that maximum storage and display capacity, as well flexibility with regard to program seating arrangement.

Overhead cabinets and countertops that display equipment, learning stations, and terraria. Utility sink is incorporated.

Terraria with live animals (brought out for informal interactions with students in the classroom and visitors in the exhibit gallery).

Tables and chairs to accommodate a class of 30 students.

Ceiling-mounted retractable screen for films and PowerPoint presentations.

Maintenance:
The building also provides for a small facility to store equipment, supplies, and tools necessary for operations and maintenance.

5The Forest Stewardship Council (FSC) sets forth principles, criteria, and standards for guiding forest management toward sustainable outcomes.
Sample Exhibit Gallery Plan View
Sample Exhibit Concept: Reading the Landscape and Black Gold
Survey respondents and advisory committee members expressed interest in seeing brochures and guidebooks developed to enhance visitor experiences at West Coyote Hills. These could range from no-cost brochures, such as tri-fold trail maps distributed at the nature center, to natural history pamphlets that are specific to West Coyote Hills, e.g., *Birds of West Coyote Hills* and *Wildflowers of West Coyote Hills* available for purchase at the nature center, to curriculum materials that supplement class field trips to West Coyote Hills.

Regionally specific natural history pamphlets have done well in other parks. Wagon Wheel Natural History Association produced a full-color, 12-panel pamphlet, “Orange County Native Plants for Butterflies and Hummingbirds” which is sold in various outlets in Orange County ($3.95), including Riley Wilderness Park. Laguna Canyon Foundation produced the full-color “South Coast Wilderness Plant Identification Guide” which is also sold in various outlets ($5.00).

Program announcements and monthly calendars of events taking place at West Coyote Hills could be distributed and displayed at various facilities, including City Hall and other City recreational centers, as well as the venues of other nonformal program providers in both Orange and Los Angeles Counties. In Orange County, for example, OC Wild (www.orangecountywild.com) is a consortium of organizations and agencies that work together to coordinate program offerings, share information, and distribute program announcements. Should programs get underway at West Coyote Hills, calendar events could be submitted electronically on a regular basis.

Teacher guides for school-based programs offered at West Coyote Hills also could be developed. Designed in close consultation with Fullerton Elementary School District, these guides could include information related to field trip logistics, background information on the nature and history of West Coyote Hills, expectations during the field trip, strategies to prepare students and link activities to relevant content standards and the principles and concepts defined by the Environment & Education Initiative (see Recommended Programs) and post-trip activities to reinforce what was learned during the field trip.
Emerging Technology

While there will never be a substitute for live interpreters, portable audio media players such as MP3 players and mobile phones offer a variety of benefits. They can be available at any time for any visitor (if using their own equipment), can be programmed in multiple languages, and do not interfere with the quality of the experience for others who happen to be nearby. Since the audio content can be changed easily and the content selected by the visitor, these media offer flexibility and opportunities for customization.

Mobile (cell) phones and personal MP3 players such as the iPod or Blackberry are gaining momentum as audio delivery devices. In fact, Irvine Ranch Conservancy recently installed a cell phone tour program at Quail Hill in the City of Irvine’s Open Space Preserve. Phone stops are noted with “cell phone tour” signs positioned along the trail. The visitor simply calls a number, enters the phone stop number, and pushes the pound key. A stop-specific recorded message, such as a narration about the biology of a particular site, is played. Visitors can choose to remain connected throughout their visit or call back as desired and listen to descriptions in any order. Podcasts from the recorded tour can be automatically created as well.

The host has the option of offering the audio guide for free, selling the audio guide to visitors, or offering visitors the opportunity to purchase the tour over their personal phone. (If the latter, visitors could call the audio guide number, enter their credit card number, and begin the tour). The host typically is charged on a per user basis or flat monthly fee.

Downloadable audio tours and podcasts allow visitors to listen to tours on their personal MP3 player or computer at home or in the classroom. Visitors have the option of downloading the tour as a MP3 file onto their computer, and transferring this directly onto a MP3 player, PDA, or iPhone. If Wi-Fi Internet access reaches all of the natural open space of West Coyote Hills, visitors can also download the tours and podcasts wirelessly while on the trails. Podcasts could also be broadened as mixed media presentations. Use of Global Positioning System (GPS) programs such as the GPS Ranger can include audio, video, and image interpretation.

With the appropriate infrastructure, podcasts could be delivered on a regular basis to users who wish to subscribe, opening up new revenue streams, increasing visitor awareness, and giving visitors greater control regarding where and when they listen to West Coyote Hills’ audio program.

While these communication technologies pose numerous opportunities, they also pose challenges. Despite their advances and their ubiquity, cell phones still deliver only marginal sound. They also lack visual support. Smart phones come with computer-like capabilities, but their market penetration remains below 20%, although that figure is likely to grow (The Kelsey Group, 2009). Moreover, if new media such as digital or web-based technology is used at West Coyote Hills, its success still will rely on timeless, proven interpretive strategies—rich imagery, provocative narration, multi-sensory presentations, and effective questioning that draw the visitor into the tour in ways that are personal and meaningful.
Recommended programs

Programs

Program development at West Coyote Hills falls into two categories: formal and nonformal audiences. Formal audiences are comprised of teachers and students, generally grade-specific. Nonformal audiences are visitors who voluntarily attend a program either as an individual or member of a social group—family or friends. In both cases, program success is determined largely by matching the needs, interests, and constraints of the target audiences with the content and presentation of the program.

Formal Audiences

In terms of formal audiences, California classroom teachers face numerous constraints that limit participation in programs that are considered “extraneous” or “supplemental” to the classroom curriculum. The Federal No Child Left Behind Law and California State Board of Education established stringent guidelines for academic performance, as demonstrated by the Academic Performance Index. The consequences of failure are significant, and may include loss of federal funding and even termination of employment for some. Teachers can not afford to spend time (and money) on any program that is not academically relevant to their particular grade level.

Before any program is developed, it is highly recommended that the State's academic content standards for both science and history-social science, the State's environmental principles and concepts (EP&Cs) created by the Education and the Environment Initiative, and the curriculum scope and sequences of target school districts are reviewed. Cursory review of the content standards and EP&Cs reveals many opportunities for elementary level program development for the trails and nature center, particularly guided tours of the Preserve, and “lab” and “field” experiences that focus on life and earth sciences (grades K-5), earth sciences and resources (grade 6), historical and community resources (grade 3), California Indian nations and California's historical periods (grade 4), and to some extent, United States history (grade 5). These opportunities could be explored, tailored to specific content standards and EP&Cs, and validated by classroom educators through such venues as needs assessments and focus group sessions, and later, by pilot-testing actual programs.

No Child Left Inside Act of 2009

No Child Left Inside Act of 2009 is currently being considered as part of the reauthorization of the federal No Child Left Behind Act. If adopted, it will include:

- Federal funding to states to train teachers in environmental education and to operate model environmental education programs, which include outdoor learning.
- Federal funding to states that create environmental literacy plans to ensure that high school graduates are environmentally literate.
- Federal funding through an environmental education grant program to build state and national capacity.
- Reestablishment of the Office of Environmental Education within the U.S. Department of Education.
The Acorn Group, Inc.
West Coyote Hills Interpretive Master Plan

Education and the Environment Initiative

In addition to California state content standards, recent legislation has also called for new approaches to environment-based education at the state level. The Education and the Environment Initiative (EEI) specifically calls for the development of environmental principles and concepts as essential learning for students; the incorporation of these principles and concepts into California’s curriculum frameworks and textbook adoption criteria for science, English/language arts, and history/social science, and their alignment to California’s academic content standards; and the development of a Model Curriculum designed to teach to mastery both the academic content standards and the principles and concepts.

The environmental principles and concepts examine the interactions and interdependence of human societies and natural systems. The nature of these interactions is summarized in the environmental principles presented in the margin.

The principles and concepts are aligned to California content standards in science and history/social science. While the primary purpose of this alignment is to ensure that teaching these principles and concepts will help students achieve mastery of the content standards, a secondary purpose is to provide a meaningful context in which students perceive the significance of the standards to their daily lives. Program development at West Coyote Hills should align to and reflect the EP&Cs, if not the actual content presented in the state’s new EEI curriculum units. Further, each unit refers to a state website that lists opportunities and resources for additional learning. Once West Coyote Hills’ programs are underway, effort could be made to be included on this website where appropriate.

The faculty of Fullerton College and CSU Fullerton should be contacted to ensure they are aware of the resources and opportunities available at West Coyote Hills. These opportunities include field-based instruction in life, earth, and environmental sciences, as well as internship possibilities in the nature center for students in education and credential programs.

Education and the Environment Initiative: Principles and Concepts

Principle I: The continuation and health of individual human lives and of human communities and societies depend on the health of the natural systems that provide essential goods and ecosystem services.

Principle II: The long-term functioning and health of terrestrial, freshwater, coastal and marine ecosystems are influenced by their relationships with human societies.

Principle III: Natural systems proceed through cycles that humans depend upon, benefit from and can alter.

Principle IV: The exchange of matter between natural systems and human societies affects the long-term functioning of both.

Principle V: Decisions affecting resources and natural systems are based on a wide range of considerations and decision-making processes.
Nonformal Audience

According to formal definitions, a nature center is a facility that serves the local community by restoring and conserving a sample of the native landscape. Nature centers help nearby residents develop a “sense of place.” Here at West Coyote Hills, a variety of programs could be offered both on the trails and in the nature center that cater to the needs and interests of those audiences who participate “nonformally” on a voluntary basis and seek recreational and interpretive experiences to share with their families and friends. While results of the visitor survey indicate guided hikes in the preserve will be very popular, other programs will attract people as well. These include weekday after-school classes for children, weekend classes for children, evening lectures for adults, evening programs for families, such as guided night hikes, and skill-based programs for adults such as trail-running, cycling, and cardio programs.

Programs at West Coyote Hills could be advertised in Fullerton Connect, a publication of the Fullerton Parks and Recreation Department, as well as in a calendar of events produced by West Coyote Hills. Two excellent examples of this type of calendar are the REI Outdoor School schedule produced by Recreational Equipment, Inc. (REI) and the Irvine Ranch Wildlands and Parks quarterly calendar produced by the Irvine Ranch Conservancy. Both publications are available in print and on the Internet.
**Universal Design Guidelines**

The realization that one in five Americans has one or more impairments has given rise to the concept of universal design and accompanying legal mandates for its use. Universal design takes into account the needs of a diverse general public through the development of accessible, barrier-free facilities and programs.

Three federal laws mandate the design of accessible environments. The Architectural Barriers Act regulates the construction of federal buildings by requiring physical access to facilities built or altered after 1968 or leased after 1977. The Rehabilitation Act of 1973 requires barrier-free federal programming for physically disabled persons for the purpose of preventing discrimination of “qualified individuals with handicaps.” The Americans with Disabilities Act (ADA) of 1990 provides civil rights protection to individuals with disabilities. ADA sets forth equal opportunities for programs, services, and activities offered by public entities:

Equal opportunities must be provided through reasonable modifications in policies, practices, or procedures; effective communication must be ensured through the provision of auxiliary aids and services; programs must be made accessible through nonstructural (programmatic) or architectural modifications; and nondiscriminatory employment practices are required, as presented in Title I of the ADA.

Discrimination is prohibited on the basis of disability by private entities in places of public accommodation, and all new places of public accommodation and commercial facilities are required to be designed and constructed so as to be readily accessible to and usable by persons with disabilities.

It is important to note that compliance benefits the entire visiting public and not just those with disabilities. Since West Coyote Hill's audience will consist of people of varying ages, physical stature, and preferred learning modality, incorporating universal design results in accessible, enjoyable experiences for the greatest number of people. In the context of interpretive planning, universal design suggests the use of multi-sensory exhibits, carefully positioned panels with text placed on high-contrast (but not white), non-glare background, orientation panels with pictographs, verbal (and tactile) presentations by docents and staff, and multilingual media, when feasible, to reach visitors whose primary language is not English.

### Sign Placement

It is recommended that signs be placed within 19” of the trail’s edge at a height of 30-34” from panel bottom to the trail surface. Standard, low profile interpretive panels should be mounted at a 30 to 45-degree angle for maximum viewing by all visitors including those in wheelchairs. Vertical signs should be mounted at a height of 24-28” from panel bottom to the trail surface. Point size should range from 60-72 point for titles to 18 point for captions. For readability, the body text is typically flush left and ragged right. Visual images should be used consistently and frequently.

In the nature center and courtyard, tactile exhibits need to be mounted at a maximum height of 36 inches to accommodate children and visitors in wheelchairs. Visual, auditory, and tactile media should be integrated throughout these exhibits.
Phased Approach to Implementation

Exhibit development is organized according to three phases. With the submittal of this report, the first phase—conceptual planning and preliminary design—has been completed for West Coyote Hills. The goals, objectives, and themes have been established; exhibit concepts have been explored; and conceptual drawings of exhibit areas and trail media define the “look and feel” for interpretation.

During schematic design and design development, secondary, detailed drawings refine the exhibit concepts. From these, finished detailed renderings and models, elevations, and section drawings are created. Preliminary specifications and written documents explicitly define the media in order to secure accurate cost estimates from various contractors. At this time, text development and graphic design of sign media for the trails and nature center also are undertaken.

The third exhibit development phase encompasses final design and construction drawings. Following the bid process, contractors and fabricators are selected, and shop drawings are created. These serve as the “blueprints” for exhibit fabrication. The project then moves forward to construction and ultimately, installation. Throughout all phases, either the client, or the client and a consultant retain responsibility to approve all drawings and schedule ongoing inspection of fabrication and installation. This involvement and supervision is essential in order to protect the integrity of the planning work.

Implementation of this interpretive master plan assumes staff and a core of docents and volunteers eventually will be available to manage the nature center facilities and develop programs. If this assumption is not correct, development of the exhibit gallery, classroom, courtyard, and nature discovery garden should wait until personnel are secured. These amenities require supervision at all times when the facilities are open to the public.

*The term, docent, refers to a volunteer trained to give tours and programs to visitors.
Evaluation methods

Evaluation needs to be addressed during all phases of developing media and programs. Conducted internally by staff or externally by consultants, evaluation informs the interpretive planning process and generates specific information that helps improve the outcome of a final product or experience. Evaluation typically occurs at three stages: front-end, formative, and summative. Front-end evaluation, such as the visitor survey conducted by The Acorn Group in March and April 2009, allows for greater and substantiated knowledge about a target population. This information in turn is used to identify and design appropriate media and nonformal programs. A second front-end evaluation for the West Coyote Hills project is highly recommended. An educator needs assessment would solicit input from faculty of neighboring school districts (Fullerton Elementary School District, Fullerton Joint Union High School District, Brea-Olinda Unified School District, and La Habra City Elementary School District) as well as instructors and professors in the science departments at CSU Fullerton and Fullerton College. This information would be helpful in the development of education programs that are grounded in content standards and district scopes and sequences.

Formative evaluation occurs as programs and media are developed so that “mid course” corrections can be made easily. It allows for an assessment of readability (e.g., Flesch Readability Test) and legibility of print media; attraction and holding power of interpretive panels and exhibits; and optimal placement of media. It relies on the use of draft materials and models that are inexpensively produced, allowing for the media to be adjusted prior to fabrication or permanent installation.

Summative evaluation occurs after a program is conducted or the media are in place. Summative evaluation measures attainment of goals and objectives. It is based on qualitative methods such as field observations and interviews or quantitative methods such as pre- and post-tests. Its purpose is to yield information about how a program or interpretive element is producing results.
Appendices
Appendix A: West Coyote Hills Visitor Survey Report

Introduction

In 2009, The Acorn Group conducted a visitor survey as part of their work developing an interpretive plan for the trails and open space of West Coyote Hills. Specific tasks related to the interpretive plan include background research, including conducting interviews with stakeholders, holding an interpretive planning workshop with the Trails and Open Space Advisory Committee, developing an interpretive matrix, conducting a visitor survey, developing preliminary concepts for interpretive media and services, and refining these concepts into a final plan.

Effective interpretive planning requires a depth of understanding of the resource as well as the visitor. For the latter, it is vital to understand the needs and visitation patterns of prospective visitors, as well as their interests relative to select media on the trails and in the proposed nature center. Understanding potential audiences for interpretation is critical to the development of relevant and effective products and programming. Making assumptions about who will come (and by what means) or what they might find interesting can lead to costly mistakes—unread signage, ignored exhibits, poorly attended programs, or underutilized trail amenities. We want to ensure that what is planned is what visitors will find worthwhile visiting.

To this end, The Acorn Group conducted a visitor survey among target audiences—community residents, hikers, equestrians, and cyclists in the Fullerton area, and members of the Trails and Open Space Advisory Committee. The surveys’ purpose was to inform the planning process with information about audience demographics, visitation patterns, areas of interest, and preferred interpretive media and trail amenities.

Problem Statement and Research Purpose

Planning for the open space areas of West Coyote Hills, including the Robert E. Ward Nature Preserve, has been guided by the West Coyote Hills Specific Plan and draft Environmental Impact Report. Because of the presence of listed and sensitive species on the site, careful attention has been paid toward protecting species through responsible trail design and extensive habitat restoration. While these documents contribute significantly to the knowledge base regarding biological resources, they do not contribute to understanding the site’s audience base. Further, because the site affords opportunities for visitors on foot, bicycle, and horseback, it is important to understand how these modes of travel correlate with visitors’ preferences for interpretive media and trail amenities.

Three of the seven guiding principles of West Coyote Hills are particularly salient to the interpretive planning process:

Minimize the development footprint in order to maximize the natural habitat.

   Goal: Create clustered development areas (residential, community services, recreation, retail) to minimize the development footprint and optimize natural open space.

   Goal: Restore the natural habitat according to the guidelines of United States Fish & Wildlife Service and California Department of Fish and Game.
Goal: Monitor habitat health and population trends of protected species.
Goal: Provide a financial endowment designed to support long-term wildlife monitoring and habitat restoration efforts.

**Preserve and protect the surrounding natural environment.**

Goal: Protect water quality by developing a master drainage plan that minimizes runoff volumes and improves water quality discharges.

Goal: Conserve water through use of native and drought-tolerant plants in common area landscaping.

Goal: Incorporate environmentally responsible amenities in the community design process.

Goal: Create trails that are compatible with restoring and preserving natural open space.

**Serve the public’s educational and recreational needs by opening the property to the public.**

Goal: Promote connectivity by creating trails that connect neighborhoods to public trails, and public trails to the regional trail network.

Goal: Provide recreational experiences and opportunities for individuals to recreate in and interact with nature.

Goal: Provide outdoor educational experiences and opportunities for individuals to appreciate, understand, and value this natural open space.

Goal: Create a nature center that serves as a focal point of the Preserve.

Goal: Provide a financial endowment designed to cover the costs of maintaining the recreational amenities in perpetuity.

In order to help advance these goals, an interpretive plan needs to be in place. Among other things, this plan needs to define existing and potential markets and audiences; identify audience interests, significant open space resources, and management needs that can be addressed through interpretive services; and identify appropriate sites and recommend services and media for delivering messages. To this end, the visitor survey reveals this information, “grounds” certain assumptions, and allows for the development of respondent profiles.

**Methods**

In March and April 2009 the visitor survey was conducted in the Fullerton area through several venues. Guests of the West Coyote Hills Open House held March 19, 2009 were asked to complete the survey when they stopped by the “natural open space” booth. The tool was designed to allow for either oral interviews or self-completed responses—either only required a five-minute commitment. Packets of surveys were also distributed at two Fullerton bicycle shops; customers were informed their input was being sought and were directed to the material. Surveys were also distributed to members of the
equestrian community. Members of the Trails and Open Space Advisory Committee completed the survey March 26, 2009 before a planning workshop. In addition, The Acorn Group surveyed shoppers at Westridge Shopping Center and Laguna Lake Park on April 4, 2009. On April 23, 2009, The Acorn Group surveyed cyclists who meet weekly at the Fullerton Courthouse parking lot before heading out on evening workouts. A total of 110 individuals were surveyed for this study. Most of those surveyed completed the tool on their own rather than having it administered as an interview.

The survey tools appear in Appendix A; tabulated data appear in Appendix B. Data for each survey venue were tabulated separately to reveal any specific user group trends.

Limitations

While this study generated some interesting information, it remains, due to its small sample size and non-random sampling techniques, statistically invalid. The results can be used for discussion and theorizing, but they should not be used to predict responses, needs, or interests of the entire community or entire West Coyote Hills visitor population. They may, however, be used to draw conclusions and create profiles among the individuals sampled specifically during this study.

Survey Results and Findings

Because data are tabulated separately by user type or survey location, some survey results are reported as six different percentages representing the trail committee, equestrians, cyclists, open house guests, shoppers, and lake visitors, respectively. Representation is well distributed across age brackets, as noted in the second appendix. Most respondents are local, as indicated by zip codes (identified in the second appendix). Forty-three percent of respondents indicated they have children currently living at home. Age ranges of those children appear in the second appendix.

The majority of respondents across all subgroups had been on the trails adjacent to West Coyote Hills, such as Nora Kuttner Trail, (83%, 72%, 45%, 60%, 75%, and 75%). Not surprisingly, the primary reason for visiting those trails was correlated to subgroup interest: 77% of equestrians reported horseback riding as their primary reason and 91% of cyclists reported mountain biking as their primary reason. Trail hiking was the primary reason for trail committee members (55%), open house guests (60%), shoppers (55%), and lake visitors (66%).

One hundred percent of those surveyed at Laguna Lake Park were unaware of plans to open up the West Coyote Hills trails, followed by shoppers (91%) and cyclists (71%). Eighty-eight percent of the cyclists were not aware of Robert E Ward Nature Preserve, followed by shoppers (64%), lake visitors (50%), and equestrians (50%).

The probability of using West Coyote Hills for specific purposes revealed some interested trends. Aside from the obvious—equestrians indicating a very high probability of equestrian trail use (and conversely, very low probability of cycling trail use) and cyclists indicating an equally high probability of cycling trail use (and conversely, very low probability of equestrian trail use)—equestrians indicated high interest in being with their family and observing nature compared to cyclists. Trail committee members
and open house guests indicated such high interest as well (along with a high probability of trail use for hiking).

While at least half of the equestrians (50%) and open house guests (66%)—and all members of the trail advisory committee (100%)—were aware of plans to design a nature center, few cyclists (12%) and lake visitors (12%) and fewer shoppers (9%) were aware of such plans. Still, each group's probability of visiting the nature center was relatively high (level 4—80%, 56%, 39%, 50%, 50%, and 63%, respectively). Even cyclists who indicated the little awareness of the plans indicated high interest in visiting: 78% when rankings of likelihood level 3 and 4 were combined.

Respondents indicated the region's natural history and region's wildlife were topics of greatest interest. It is important, however, to note that all four topics were found to be of interest to some degree across all of the subgroups.

Table 1
Topics of greatest appeal

<table>
<thead>
<tr>
<th>Topic</th>
<th>Percentage of all respondents who selected each topic based on greatest appeal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Natural history</td>
<td>42.5%</td>
</tr>
<tr>
<td>Region's wildlife</td>
<td>38.5%</td>
</tr>
<tr>
<td>Restoration story</td>
<td>20.8%</td>
</tr>
<tr>
<td>Human history</td>
<td>9.5%</td>
</tr>
</tbody>
</table>

When asked about programming venues at the nature center, responses varied across the subgroups. While all of the proposed programs resonated to some degree with the respondents, there are a few interesting trends. While it is not surprising that cyclists had the greatest interest in cardio programs (36%), it is surprising that they are followed by shoppers (30%) and open house guests (18%). Most respondents indicated interest in programs for children and less interest in programs for adults, particularly those offered on the weekend. In addition, most expressed interest in guided hikes (38%, 35%, 23%, 24%, 20%, and 31%, respectively).

When asked about specific features of a nature center's interior, responses varied somewhat across the subgroups. Data in the second appendix reveal specific preferences. Generally speaking, respondents appreciate hands-on exhibits and live animals the most, and audiovisual media and access to a library/store less so.

Table 2
Interior features of greatest appeal

<table>
<thead>
<tr>
<th>Interior feature</th>
<th>Percentage of all respondents who selected each feature based on greatest appeal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hands-on exhibits</td>
<td>34.16%</td>
</tr>
<tr>
<td>Live animals</td>
<td>28.16%</td>
</tr>
</tbody>
</table>
Knowledgeable staff 17.5%
Access to library 12%
Audiovisual media 8%

When asked about specific exterior features, respondents are most interested in seeing development of a small amphitheater and loop trail. What is interesting is that the ranking for “programs such as guided walks” in this question (combined 20%) was smaller than that yielded in Question 9 (combined 29%). This is probably due to the differing lists of options appearing in the two questions.

Table 3
Exterior features of greatest appeal

<table>
<thead>
<tr>
<th>Exterior feature</th>
<th>Percentage of all respondents who selected each feature based on greatest appeal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Loop trail</td>
<td>38%</td>
</tr>
<tr>
<td>Small amphitheater</td>
<td>31%</td>
</tr>
<tr>
<td>Programs/guided walks</td>
<td>20%</td>
</tr>
<tr>
<td>Outdoor displays</td>
<td>19%</td>
</tr>
</tbody>
</table>

Preferred interpretive amenities on the trails, in order of preference across all subgroups, include trail maps and markers (combined 30%), viewing platforms or “key vistas” (combined 22%), and interpretive panels (combined 18%). Preferred “comfort features,” in order of preference across all subgroups include restrooms, benches, shade structures, and drinking fountains.

What is interesting is that restrooms were perceived as having greater value than staging areas for both equestrians and cyclists. However, the question was designed to force the respondent to pick only two features. Had respondents not been limited in choice, it is likely staging areas would have been selected more frequently.

Table 4
Trail amenities of greatest appeal

<table>
<thead>
<tr>
<th>Amenity</th>
<th>Percentage of all respondents who selected each feature based on greatest appeal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Restrooms</td>
<td>30%</td>
</tr>
<tr>
<td>Benches</td>
<td>20%</td>
</tr>
<tr>
<td>Shade structures</td>
<td>16%</td>
</tr>
<tr>
<td>Drinking fountains</td>
<td>14%</td>
</tr>
<tr>
<td>Staging areas</td>
<td>8%</td>
</tr>
<tr>
<td>Emergency call boxes</td>
<td>3%</td>
</tr>
</tbody>
</table>

Regarding interpretive panels, extremely high numbers of respondents indicated they read interpretive panels on trails (94%, 83%, 79%, 90%, 92%, and 75%, respectively). On average, most respondents who do read panels spend on average 60 seconds doing so. Variables that increase likelihood of reading...
a panel include, in order of influence, use of photographs and illustrations (combined 38%), personal interest in the subject matter (combined 20%), ease of reading (combined 18%), and appropriate length of text (combined 16%).

Conclusions

Understanding visitors is key to the success of any interpretive programming. Although the sample size of this survey is relatively small, the data reveal interesting and useful information about topics of interest, preferred activities, interpretive media for learning new information, and recommended trail amenities.

These individuals indicate they do visit nature centers; gravitate toward exhibits that offer hands-on experiences; enjoy such amenities as small amphitheaters and loop trails adjacent to nature centers; participate in programs; and diligently read interpretive panels. Certain variables increase the likelihood these individuals will read a panel; liberal use of photographs and imagery, readability, and text length will need to be considered as West Coyote Hills’ panels are created.

These individuals represent hikers, equestrians, cyclists, and community members who are interested in getting exercise, being outdoors with their family, and observing nature. Careful trail planning, coupled with the integration of certain amenities—trail maps and markers, viewing platforms (key vistas), panels, benches, and restrooms—will ensure that their trail experiences at West Coyote Hills are comfortable at the same time they are inspiring.
West Coyote Hills Survey

Pacific Coast Homes is embarking on a master plan for the trails and natural open space areas within the West Coyote Hills (WCH) community and Robert E. Ward Nature Preserve. Please help us address your needs by taking a few moments to answer these questions.

1. Have you ever been on the trails adjacent to WCH, such as the Nora Kuttner Trail or Castlewood Trail?
   [] yes [ ] no (go to Question 3)

2. What is the **primary** reason you use those trails?
   [ ] trail hiking [ ] mountain biking
   [ ] be with family [ ] horseback riding
   [ ] other ________________________________

3. Are you aware of plans to open up WCH to the public for trail recreation?
   [ ] yes [ ] no

4. Are you aware of the City-owned Robert E. Ward Nature Preserve?
   [ ] yes [ ] no

5. Using a scale from 1-4 with 1 indicating "low probability" and 4 indicating "high probability," circle the **number** that represents your probable use of WCH in the future for each activity.

   Trail hiking
   1 2 3 4

   Mountain cycling
   1 2 3 4

   Horseback riding
   1 2 3 4

   Being with my family in an outdoor natural setting
   1 2 3 4

   Observing nature, such as wildlife and wildflowers
   1 2 3 4

   Other use:
   1 2 3 4

6. Are you aware of plans to design a nature center associated with the Robert E. Ward Nature Preserve?
   [ ] yes [ ] no

   This nature center will likely feature exhibits that showcase the nature of WCH and the Preserve, and serve as a "portal" to an outdoor trail experience.

7. Using the same scale from 1-4 with 1 indicating "low probability" and 4 indicating "high probability," circle the **number** that represents the likelihood you will visit the nature center in the future.
   1 2 3 4

8. Which **two** broad topics would appeal to you the most for this nature center:
   [ ] the region's natural history, such as its unique geology and plant communities
   [ ] the region's human history
   [ ] the region's wildlife, including rare species
   [ ] the restoration story (from oil field to preserve)

9. Which **two** of the following venues interest you the most for this nature center:
   [ ] weekday after-school program for children
   [ ] weekend evening lecture for adults
   [ ] weekend program for children
   [ ] weekend evening lecture for adults
   [ ] guided hike of the preserve
   [ ] cardio/trail running program

10. Which **two** features appeal to you the most in any nature center:
    [ ] hands-on exhibits
    [ ] live animals
    [ ] audiovisual media
    [ ] access to a nature library and/or bookstore
    [ ] staff who can answer questions

11. Which **two** features appeal to you the most for areas immediately outside any nature center:
    [ ] small amphitheater for outdoor programs
    [ ] self-guided nature trail loop
    [ ] outdoor displays
    [ ] programs such as guided walks and family classes

12. Which **two** features best improve your experiences on a trail:
    [ ] interpretive panels that explain what you see
    [ ] trail map and markers
    [ ] spotting scopes and other "tools"
    [ ] podcasts on personal MP3 players
    [ ] plant identification signs
    [ ] wildlife viewing platforms and vista overlooks
   [ ] other ________________________________

13. Which **two** features make for a more comfortable trail experience for you:
   [ ] benches [ ] restrooms
   [ ] drinking fountains [ ] emergency call boxes
   [ ] shade structures [ ] staging areas for groups

14. In general, do you read interpretive panels on trails?
    [ ] yes [ ] no (go to Question 17)

15. On average, how long do you spend reading a panel?
    [ ] 30 seconds [ ] 60 seconds
    [ ] 3 minutes [ ] more than 3 minutes

16. What **two** features increase the likelihood that you read a panel:
    [ ] appropriate text length
    [ ] use of photographs and illustrations
    [ ] ease of reading
    [ ] attractiveness of design
    [ ] personal interest in the subject matter

17. What is your zip code: ________________________________

18. What is your age: ________________________________

19. Do you have children living at home?
    [ ] yes [ ] no (go to Question 21)

20. What are their ages? ________________________________

21. If you would like to be placed on our electronic mailing list to receive updates on our trail and natural open space planning efforts and notices about community meetings, please print your email address:
### Appendix C: Survey Data

#### West Coyote Hills Survey: Trail Committee

**Question 1**

<table>
<thead>
<tr>
<th>Response</th>
<th>Count</th>
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<tbody>
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<td>No</td>
<td>3</td>
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**Total Responses** 18

**Question 2**

<table>
<thead>
<tr>
<th>Activity</th>
<th>Count</th>
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<tbody>
<tr>
<td>Trail Hiking</td>
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<tr>
<td>Be With Family</td>
<td>1</td>
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<tr>
<td>Mountain Biking</td>
<td>1</td>
</tr>
<tr>
<td>Horseback Riding</td>
<td>2</td>
</tr>
<tr>
<td>Other: running; view;</td>
<td>4</td>
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**Total Responses** 18

**Question 3**

<table>
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<th>Response</th>
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**Total Responses** 18

**Question 4**

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<td>Yes</td>
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**Total Responses** 18

**Question 5**

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<th>2</th>
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<tbody>
<tr>
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<td>1</td>
<td>2</td>
<td>2</td>
<td>12</td>
</tr>
<tr>
<td>Mountain Cycling</td>
<td>10</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Horseback Riding</td>
<td>12</td>
<td>3</td>
<td>3</td>
<td>9</td>
</tr>
<tr>
<td>Being with Family</td>
<td>1</td>
<td>3</td>
<td>3</td>
<td>9</td>
</tr>
<tr>
<td>Observing Nature</td>
<td>1</td>
<td>2</td>
<td>2</td>
<td>12</td>
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**Total Responses** 25 10 9 43

**Question 6**

<table>
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<th>Response</th>
<th>Count</th>
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<td>Yes</td>
<td>18</td>
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**Total Responses** 18

**Question 7**

<table>
<thead>
<tr>
<th>Probability</th>
<th>Count</th>
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<tr>
<td>2</td>
<td>2</td>
</tr>
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**Total Responses** 18
Question 8 (Choose 2)
Region’s Natural History 15
Region’s Human History 5
Region’s Wildlife 9
Restoration Story 6
Total Responses 35

Question 9 (Choose 2)
Weekday After-School for Children 10
Weekday Evening for Adults 4
Weekend for Children 3
Weekend for Adults 1
Guided Hike 12
Cardio/Trail Running 2
Total Responses 32

Question 10 (Choose 2)
Hands-On Exhibits 13
Live Animals 3
Audiovisual Media 4
Access to Library/Bookstore 2
Knowledgeable Staff 11
Total Responses 33

Question 11 (Choose 2)
Small Amphitheater 8
Self-Guided Nature Trail Loop 12
Outdoor Displays 6
Programs/Guided Walks/Classes 9
Total Responses 35

Question 12
Interpretive Panels 7
Trail Maps & Markers 8
Spotting Scopes/Tools 2
Podcasts 1
Panels Identifying Features 3
Plant ID Signs 7
Wildlife Viewing Platforms 7
Other: horse water
Total Responses 35

Question 13 (Choose 2)
Benches 7
Drinking Fountains 5
Shade Structures 9
Restrooms 9
Emergency Call Boxes 1
Staging Areas 2
Other 1
Total Responses 34
Question 14
Yes 17
No 1
Total Responses 18

Question 15
30 Seconds 3
60 Seconds 7
3 Minutes 6
Total Responses 16

Question 16 (Choose 2)
Appropriate Text Length 6
Use of Photos/Illustrations 11
Ease of Reading 5
Attractiveness of Design 6
Personal Interest in Subject 6
Total Responses 34

Question 17
Zip Code: 1 90621
Zip Code: 5 92835
Zip Code: 1 90723
Zip Code: 4 92833
Zip Code: 1 92832
Zip Code: 5 92831
Zip Code: 1 92373
Total Responses 18

Question 18
Age Range: 20-30 1
Age Range: 31-40
Age Range: 41-50 2
Age Range: 51-60 6
Age Range: 61-70 3
Age Range: 71-80 4
Total Responses 16

Question 19
Yes 5
No 12
Total Responses 17

Question 20
Age Range: 0-3 1
Age Range: 4-9
Age Range: 10-15 1
Age Range: 16-20 1
Age Range: 21 or older 3
Total Responses 5
Survey: Equestrians

**Question 1**
- Yes: 13
- No: 5
- Total Responses: 18

**Question 2**
- Trail Hiking: 3
- Be With Family
- Mountain Biking: 10
- Horseback Riding: 10
- Other:
- Total Responses: 13

**Question 3**
- Yes: 15
- No: 3
- Total Responses: 18

**Question 4**
- Yes: 9
- No: 9
- Total Responses: 18

**Question 5**

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**Question 6**
- Yes: 9
- No: 9
- Total Responses: 18

**Question 7**
- Probability 1
- Probability 2: 3
- Probability 3: 4
- Probability 4: 9
- Total Responses: 16
### Question 8 (Choose 2)
- Region’s Natural History: 14
- Region’s Human History: 1
- Region’s Wildlife: 11
- Restoration Story: 6
- Total Responses: 32

### Question 9 (Choose 2)
- Weekday After-School for Children: 6
- Weekday Evening for Adults: 3
- Weekend for Children: 8
- Weekend for Adults: 2
- Guided Hike: 12
- Cardio/Trail Running: 3
- Total Responses: 34

### Question 10 (Choose 2)
- Hands-On Exhibits: 13
- Live Animals: 11
- Audiovisual Media: 2
- Access to Library/Bookstore: 4
- Knowledgeable Staff: 4
- Total Responses: 34

### Question 11 (Choose 2)
- Small Amphitheater: 7
- Self-Guided Nature Trail Loop: 13
- Outdoor Displays: 6
- Programs/Guided Walks/Classes: 8
- Total Responses: 34

### Question 12
- Interpretive Panels: 5
- Trail Maps & Markers: 11
- Spotting Scopes/Tools: 1
- Podcasts: 2
- Panels Identifying Features: 3
- Plant ID Signs: 3
- Wildlife Viewing Platforms: 9
- Other:
- Total Responses: 34

### Question 13 (Choose 2)
- Benches: 7
- Drinking Fountains: 6
- Shade Structures: 2
- Restrooms: 14
- Emergency Call Boxes: 1
- Staging Areas: 4
- Other:
- Total Responses: 34
Question 14
Yes 15
No 3
Total Responses 18

Question 15
30 Seconds 5
60 Seconds 8
3 Minutes 1
More than 3 minutes 3
Total Responses 17

Question 16 (Choose 2)
Appropriate Text Length 5
Use of Photos/Illustrations 13
Ease of Reading 6
Attractiveness of Design
Personal Interest in Subject 6
Total Responses 30

Question 17
Zip Code: 3 90631
Zip Code: 1 91768
Zip Code: 5 92835
Zip Code: 2 92646
Zip Code: 3 92833
Zip Code: 1 92870
Zip Code: 92831
Zip Code: 1 92841
Zip Code: 2 92886
Total Responses 16
West Coyote Hills Survey: Cyclists

Question 1
Yes 11
No 13
Total Responses 24

Question 2
Trail Hiking
Be With Family
Mountain Biking 11
Horseback Riding
Other: commuting
Total Responses 12

Question 3
Yes 7
No 17
Total Responses 24

Question 4
Yes 3
No 21
Total Responses 24

Question 5
Scale 1 2 3 4
Trail Hiking 10 5 4 5
Mountain Cycling 3 21
Horseback Riding 19 3 1
Being with Family 5 9 5 4
Observing Nature 7 6 8 2
Other: Commute to work.
Total Responses 41 23 20 34

Question 6
Yes 3
No 21
Total Responses 24

Question 7
Probability 1 3
Probability 2 2
Probability 3 9
Probability 4 9
Total Responses 23

Question 8 (Choose 2)
Region's Natural History 17
Region's Human History 4
Region's Wildlife 16
Restoration Story 6
Total Responses 43
Question 9 (Choose 2)
Weekday After-School for Children 6
Weekday Evening for Adults 2
Weekend for Children 4
Weekend for Adults 4
Guided Hike 9
Cardio/Trail Running 14
Total Responses 39

Question 10 (Choose 2)
Hands-On Exhibits 15
Live Animals 13
Audiovisual Media 3
Access to Library/Bookstore 7
Knowledgeable Staff 5
Total Responses 43

Question 11 (Choose 2)
Small Amphitheater 10
Self-Guided Nature Trail Loop 21
Outdoor Displays 7
Programs/Guided Walks/Classes 4
Total Responses 42

Question 12
Interpretive Panels 7
Trail Maps & Markers 21
Spotting Scopes/Tools 1
Panels Identifying Features 2
Plant ID Signs 7
Wildlife Viewing Platforms 9
Total Responses 47

Question 13 (Choose 2)
Benches 7
Drinking Fountains 10
Shade Structures 10
Restrooms 12
Emergency Call Boxes 1
Staging Areas 5
Total Responses 45

Question 14
Yes 19
No 5
Total Responses 24
Question 15
30 Seconds 4
60 Seconds 14
3 Minutes 2
More than 3 minutes
Total Responses 20

Question 16 (Choose 2)
Appropriate Text Length 6
Use of Photos/Illustrations 14
Ease of Reading 7
Attractiveness of Design 1
Personal Interest in Subject 6
Total Responses 34

Question 17
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Zip Code: 1 92832
Zip Code: 1 92807
Zip Code: 1 92336
Zip Code: 1 92614
Zip Code: 1 93012
Zip Code: 1 91708
Zip Code: 1 90740
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Zip Code: 1 92870
Zip Code: 1 92704
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Zip Code: 1 92805
Zip Code: 1 92806
Zip Code: 2 92807
Zip Code: 1 92869
Total Responses 24

Question 18
Age Range: Under 20
Age Range: 20-30 9
Age Range: 31-40 4
Age Range: 41-50 10
Age Range: 51-60 1
### Question 19

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### Question 20

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West Coyote Hills Survey: Open House

**Question 1**

Yes 18  
No 12  
Total Responses 30

**Question 2**

Trail Hiking 12  
Be With Family 3  
Mountain Biking 1  
Horseback Riding  
Other: 4 running (2); birdwatching; dog walking  
Total Responses 20

**Question 3**

Yes 23  
No 7  
Total Responses 30

**Question 4**

Yes 19  
No 11  
Total Responses 30

**Question 5**

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**Question 6**

Yes 20  
No 10  
Total Responses 30

**Question 7**

Probability 1 3  
Probability 2 3  
Probability 3 9  
Probability 4 15  
Total Responses 30
Question 8 (Choose 2)
Region's Natural History  26  
Region's Human History   3   
Region's Wildlife        23  
Restoration Story       5    
Total Responses         57  

Question 9 (Choose 2)
Weekday After-School for Children  12   
Weekday Evening for Adults         6    
Weekend for Children               11   
Weekend for Adults                  7    
Guided Hike                          15    
Cardio/Trail Running                11    
Total Responses                     62   

Question 10 (Choose 2)
Hands-On Exhibits                19   
Live Animals                      12    
Audiovisual Media                 10    
Access to Library/Bookstore       14    
Knowledgeable Staff               6     
Total Responses                   61   

Question 11 (Choose 2)
Small Amphitheater                20   
Self-Guided Nature Trail Loop    18    
Outdoor Displays                  5     
Programs/Guided Walks/Classes     15    
Total Responses                   58   

Question 12
Interpretive Panels              13   
Trail Maps & Markers             13    
Spotting Scopes/Tools             1     
Podcasts                          
Panels Identifying Features      5     
Plant ID Signs                    8     
Wildlife Viewing Platforms       17    
Other:                             
Total Responses                   57   

Question 13 (Choose 2)
Benches                           21   
Drinking Fountains                8     
Shade Structures                  14    
Restrooms                         10    
Emergency Call Boxes              4     
Staging Areas                     2     
Other:                             
Total Responses                   59   

Restrooms are useless unless constantly patrolled. Safety (drinking, etc.) is also a problem.
Question 14
Yes 27
No 3
Total Responses 30

Question 15
30 Seconds 8
60 Seconds 10
3 Minutes 9
Total Responses 27

Question 16 (Choose 2)
Appropriate Text Length 7
Use of Photos/Illustrations 21
Ease of Reading 7
Attractiveness of Design 3
Personal Interest in Subject 9
Total Responses 47

Question 17
Zip Code: 1 90703
Zip Code: 1 90638
Zip Code: 1 90241
Zip Code: 1 92603
Zip Code: 1 92831
Zip Code: 2 92832
Zip Code: 2 92835
Zip Code: 3 92821
Zip Code: 13 92833
Zip Code: 5 90631
Total Responses 30

Question 18
Age Range: 20-30 2
Age Range: 31-40 12
Age Range: 41-50 7
Age Range: 51-60 3
Age Range: 61-70 5
Age Range: 71-80 0
Total Responses 29

Question 19
Yes 13
No 16
Total Responses 29

Question 20
Age Range: 0-3 4
Age Range: 4-9 7
Age Range: 10-15 6
Age Range: 16-20 2
Age Range: 21 or older 4
Total Responses 23
West Coyote Hills Survey: Sunrise Shopping Village

Question 1
Yes 9
No 3
Total Responses 12

Question 2
Trail Hiking 5
Be With Family 1
Mountain Biking 1
Horseback Riding
Other: 2  boy scout hiking; exercise
Total Responses 9

Question 3
Yes 1
No 10
Total Responses 11

Question 4
Yes 4
No 7
Total Responses 11

Question 5
Scale 1 2 3 4
Trail Hiking 3 1 2 6
Mountain Cycling 7 3 2
Horseback Riding 9 3
Being with Family 4 1 6
Observing Nature 4 1 4 3
Total Responses 27 5 12 15

Question 6
Yes 1
No 10
Total Responses 11

Question 7
Probability 1 2
Probability 2
Probability 3 4
Probability 4 6
Total Responses 12

Question 8 (Choose 2)
Region's Natural History 6
Region's Human History 4
Region's Wildlife 6
Restoration Story 11
Total Responses 27
Question 9 (Choose 2)
Weekday After-School for Children 6
Weekday Evening for Adults
Weekend for Children 3
Weekend for Adults 1
Guided Hike 4
Cardio/Trail Running 6
Total Responses 20

Question 10 (Choose 2)
Hands-On Exhibits 6
Live Animals 8
Audiovisual Media 2
Access to Library/Bookstore 3
Knowledgeable Staff 4
Total Responses 23

Question 11 (Choose 2)
Small Amphitheater 7
Self-Guided Nature Trail Loop 7
Outdoor Displays 5
Programs/Guided Walks/Classes 4
Total Responses 23

Question 12
Interpretive Panels 6
Trail Maps & Markers 6
Spotting Scopes/Tools 1
Podcasts 1
Panels Identifying Features 2
Plant ID Signs 2
Wildlife Viewing Platforms 4
Total Responses 22

Question 13 (Choose 2)
Benches 6
Drinking Fountains 3
Shade Structures 3
Restrooms 8
Emergency Call Boxes 1
Staging Areas 2
Total Responses 23

Question 14
Yes 11
No 1
Total Responses 12
Question 15
30 Seconds 2
60 Seconds 7
3 Minutes 2
Total Responses 11

Question 16 (Choose 2)
Appropriate Text Length 4
Use of Photos/Illustrations 7
Ease of Reading 4
Attractiveness of Design 4
Personal Interest in Subject 3
Total Responses 22

Question 17
Zip Code: 5 92835
Zip Code: 2 92821
Zip Code: 4 92833
Zip Code: 1 90631
Total Responses 12

Question 18
Age Range: 20-30 1
Age Range: 31-40 3
Age Range: 41-50 4
Age Range: 51-60 3
Age Range: 61-70
Age Range: 71-80 1
Total Responses 12

Question 19
Yes 9
No 3
Total Responses 12

Question 20
Age Range: 0-3 1
Age Range: 4-9 5
Age Range: 10-15
Age Range: 16-20 6
Age Range: 21 or older
Total Responses 12
West Coyote Hills Survey: Laguna Lake

**Question 1**
Yes 6
No 2
Total Responses 8

**Question 2**
Trail Hiking 4
Be With Family 2
Mountain Biking 2
Horseback Riding 6
Total Responses 6

**Question 3**
Yes
No 8
Total Responses 8

**Question 4**
Yes 4
No 4
Total Responses 8

**Question 5**

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**Question 6**
Yes 1
No 7
Total Responses 8

**Question 7**
Probability 1 1
Probability 2 2
Probability 3 1
Probability 4 5
Total Responses 8

**Question 8 (Choose 2)**
Region's Natural History 4
Region's Human History 1
Region's Wildlife 6
Restoration Story 3
Total Responses 14
Question 9 (Choose 2)
Weekday After-School for Children 5
Weekday Evening for Adults
Weekend for Children 3
Weekend for Adults 1
Guided Hike 4
Cardio/Trail Running
Total Responses 13

Question 10 (Choose 2)
Hands-On Exhibits 5
Live Animals 6
Audiovisual Media
Access to Library/Bookstore
Knowledgeable Staff 3
Total Responses 14

Question 11 (Choose 2)
Small Amphitheater 1
Self-Guided Nature Trail Loop 6
Outdoor Displays 4
Programs/Guided Walks/Classes 2
Total Responses 13

Question 12
Interpretive Panels 1
Trail Maps & Markers 4
Spotting Scopes/Tools 1
Podcasts 1
Panels Identifying Features 2
Plant ID Signs 1
Wildlife Viewing Platforms 4
Other:
Total Responses 14

Question 13 (Choose 2)
Benches 3
Drinking Fountains 4
Shade Structures 3
Restrooms 5
Emergency Call Boxes
Staging Areas
Other
Total Responses 15

Question 14
Yes 6
No 2
Total Responses 8
Question 15
30 Seconds 3
60 Seconds 4
3 Minutes 7
Total Responses 7

Question 16 (Choose 2)
Appropriate Text Length 1
Use of Photos/Illustrations 4
Ease of Reading 2
Attractiveness of Design 1
Personal Interest in Subject 4
Total Responses 12

Question 17
Zip Code: 92866 1
Zip Code: 90621 2
Zip Code: 90723 1
Zip Code: 92831 2
Zip Code: 92832 2
Zip Code: 92821 1
Zip Code: 92833 1
Zip Code: 90631 1
Total Responses 8

Question 18
Age Range: 16-19 3
Age Range: 20-30 1
Age Range: 31-40 3
Age Range: 41-50 1
Age Range: 51-60 1
Age Range: 61-70 1
Age Range: 71-80 1
Total Responses 8

Question 19
Yes 2
No 6
Total Responses 8

Question 20
Age Range: 0-3 1
Age Range: 4-9 3
Age Range: 10-15 1
Age Range: 16-20 1
Age Range: 21 or older 1
Total Responses 5
Appendix D: Visioning Workshop

Robert E. Ward Nature Preserve/West Coyote Hills
Trails and Open Space Advisory Committee
Meeting notes from December 6, 2008 visioning session

Introduction

Twenty-three members of the West Coyote Hills Trails and Open Space Advisory Committee met on December 6, 2008 at the Fullerton Arboretum. The purpose of this session was to define visitor experiences at the Robert E. Ward Nature Preserve and West Coyote Hills open space—likely user groups, benefits of access, and significance of the site itself. The group’s input will be carefully considered as the planning and design process moves forward.

The session was based on a process designed to encourage open communication. By using a “nominal group technique,” we took everyone’s opinions into account and went through multiple tallying steps. Rather than rely on traditional voting, we asked committee members to rank, critique, and combine statements to best capture group consensus. We feel comfortable that our process ensured fair and equal participation of all group members and we are pleased with the thoughtful, creative input you provided. A summary of each group’s statements and rankings is provided in appendices I and II (attached).

Participants

Jim Pugliese, Scott Starkey, Steve McCormick, and Kavita Rodrigues served as group facilitators; Jennifer Rigby facilitated the workshop process. Participants included:

Steve’s group: Jim Meyers, Jim Donovan, Carlos Ixmay, Allan Marr, Leon Gray, Aaruni Thakur

Jim’s group: Jerry Young, Janet McNeill, Rose Marie Fisher, Chuck Greening, Walter Fisher

Scott’s group: Ginger Britt, Chris Heusser, Frank Fuetterer, Roger Bell, Bud Welch, Jacob Staggs

Kavita’s group: Bob Hayden, Monika Broome, Diane Glick, Larry Lara, Molly McClanahan

Process

Once participants were evenly distributed according to interest and background (e.g., outdoor recreation enthusiasts were evenly dispersed among all four groups, rather than clustered in one group) the session began. Jim Pugliese introduced the meeting and provided an overview of the project status, the role of the Trails and Open Space Advisory Committee, and the purpose of the planning session. Brook Ortega of DUDEK then provided an overview of biological issues that pose certain constraints on the project, most notably, the presence of the federally listed California gnatcatcher on the site.
Jennifer Rigby introduced the workshop process and the essence of the three driving questions:

1. **Why** is it important to allow access to the site?
   This question gets to the essential purpose of the Robert E. Ward Nature Preserve and adjacent open space areas within the West Coyote Hills planned community. We asked participants to think about how the trails, key vistas, and nature center will serve the mission of the preserves. We also asked them to keep in mind there are certain constraints related to the site's biological resources.

2. **Who** are the target audiences?
   We asked participants to think about the likely visitor(s), profiles of typical visitor(s) the site should attract, the experiences those visitors may seek, and how we can best meet their needs without compromising the integrity of the resources.

3. **What** is significant about this site?
   This question required that participants moved beyond thinking about the inventory of biological resources. The purpose of this question was to capture the “spirit of place”—the significant stories, history, and ecology of the site that are not necessarily tangible, but still important qualities that need to be captured and respected during the design process.

Each question was answered one at a time—the initial goal was to generate and capture everyone’s ideas on chart paper. Responses were “shared in the round.” Once one statement was offered by each participant, “one round” was completed. The “round” was repeated until all statements were recorded.

The next step was to clarify, but not critique, any of the statements. The facilitators asked the authors to further explain any statements, if requested by a group member. Following clarification, we moved onto a step called “Focused Pro.” This was the first of two steps that allowed for fair and efficient critiquing. Each participant was asked to think about which three statements they felt best answered the driving question. These statements were shared “in the round” and participants were encouraged to state their reasoning as they voted. The process was repeated until each participant identified their three top picks for statements. This launched the consensus-building aspect of the process.

The second step, “Focused Con,” provided an opportunity for constructive criticism. Each participant was asked to think about which three statements (only from those circled as “the best”) they felt were weak. Participants continued working “in the round,” one at a time stating their reasoning.

Finally, participants were asked to combine any of the circled statements to create stronger and clearer statements. Items could only be combined if every participant within a group agreed.

After the third question was answered, the groups studied the trail map and recorded ideas for amenities, etc. that complement the group’s “visions.” Mark-ups included suggested treatment for primary and secondary trails, suitable gathering spots, and specific amenities that reflect the group’s collective thoughts. This information is summarized in appendix II.

Last, a spokesperson for each group presented the group’s statements and ideas regarding the trail map. Each group’s chart paper was clustered according to the driving question and displayed for viewing. After all groups presented their ideas, members circulated and voted (using a 10/4 rule) on those
circled or combined statements that they felt best addressed each question. They were also allowed to vote on the trail recommendations noted on the maps.

Findings

**Importance of access:** The groups consistently identified recreation and education as important pursuits at the site. The opportunity to connect with nature, become aware of Southern California's native plants and wildlife, savor experiences in the outdoors, and build a lifelong sense of stewardship appeared in each group's individual and combined statements. The presence of “intact nature” would allow visitors to witness and even celebrate natural, functioning habitats that are close to home and of a reasonable size (meaning, not overwhelming).

Once opened, the site also will be of benefit to formal and nonformal education groups, including visiting classes of K-college students, as well as nonformal groups such as Boy Scouts and Girl Scouts. The group suggested the site is a “living laboratory” for naturalists, including students, interested in the study of nature and natural processes.

What is equally noteworthy is the interest the groups expressed in interpreting the site's cultural history—the influence of oil exploration and extraction, and the region's human history dating back thousands of years to settlement by American Indians.

Recreation was not seen as incompatible with education. The groups expressed interest in offering recreational opportunities that “improve the communities’ quality of life” in an open space (versus formal park) setting. This was viewed as particularly relevant to those interested in exercise. The possibility of trails that increase “connectivity” with other sites and trails, including the Fullerton Loop, was seen as a very valuable aspect. Given the limited reaches of open space in North Orange County, access to West Coyote Hills is seen as a significant and welcomed pursuit.

**Target audiences:** The list of target audiences included children, family groups, naturalists including birdwatchers, recreational users—dog walkers, equestrians, runners, cyclists—as well as organized groups and current and prospective homeowners. What is notable is that two of the groups expressed a desire to ensure accessibility for all people including seniors and those with special needs. Other audiences of note include radio-controlled gliders, Fullerton College Police Academy, and the homeless. While these groups were not identified as likely target audiences, their presence nevertheless may have implications for trail access and control, as well as visitor safety. It also should be noted, however, that the purpose of Saturday’s session was not to discuss the ramifications of multiple-use trails and open space.

**Spirit of the site:** As far as capturing the “spirit of the site,” three trends emerged. The groups consistently made reference to the process and success of establishing the preserve and surrounding open space. West Coyote Hills is not only valued as an excellent backdrop for interpreting the interplay between natural and human communities, but also as a powerful case study and model for other cities. The concepts of “green design,” balance of development and preservation, and protection of endangered (threatened) species came up more than once as important messages.
Second, the groups called out the site’s topography, including its vista points, as significant features. While the site is important coastal sage scrub habitat—and home to rare wildlife—it is also visual and experiential relief from Fullerton’s “flat lands.” The groups noted the spectacular views from its higher reaches.

Third, the groups came back to the opportunities they voiced when answering the first question. West Coyote Hills is seen as an opportune place to raise awareness, impart knowledge, and strengthen individual stewardship values among the visiting public. The groups clearly value the stories the land will tell.

**Action steps:**

Please review these meeting notes and appendices I and II. Feel free to electronically track any changes and/or add comments, and send them to Jennifer Rigby (emailacorn@aol.com) and copy Jim Pugliese (jim@westcoyotehills.com) and Scott Starkey (scott@westcoyotehills.com). If you do not have access to email, please feel free to fax your comments to Jenny’s attention at (714) 838-5309. We would appreciate hearing from you by December 29, 2008. At that time, we will finalize this report and begin preparing for development of a trail master plan.

We would like to schedule the next planning session with the West Coyote Hills Trails and Open Space Advisory Committee in late January to hear your thoughts on specific aspects of the trail system. In the spring, we plan on launching an interpretive master plan that addresses ways to enhance visitor experiences on the trails as well as in nature center. We will also conduct a large-scale educator needs assessment to fully understand the needs, interests, and constraints of educators from nearby school districts, as well as Fullerton Community College and CSU Fullerton. Once the trail master plan and interpretive master plan are completed, we will move into the design development stage, and ultimately onto development of construction documents.

**Appendix Ia: Summary of group response to three questions**

Please note green statements are those identified by each group as the best answers. Any blue numbers that appear in parentheses after them represent the tally of votes of support received by members of the group at large. Those numbers also appear in association with each group’s “combined” summary statements, as well as recommendations for the trail system (Appendix II).

**1. Why is it important to provide access to the site?**

**Steve’s group**

1. Provides recreation and education opportunities
2. Opportunity to interact with nature and be outside
3. Understand the wealth of knowledge and resources
4. Time for family interaction
5. Limited opportunity in North Orange County
6. It will connect with other surrounding trails
7. Provides a fitness opportunity
8. Maintains and formalizes the Fullerton Loop
9. Will help tell the story about Fullerton
Statements with weaknesses: 1, 4, 5, 6, 8, 9 (primarily 1, 4, 6)

Combined:

a. Because there is limited opportunity in North Orange County and the site provides recreation, education, and access to nature
b. Provides a connection to the surrounding area including the Fullerton loop

Kavita’s group

1. Share the love of the natural environment
2. Understanding what is native to California
3. Enhance the communities’ recreational experience and improve their quality of life
4. Build a lifelong sense of stewardship
5. Opportunity to learn about the surroundings and help people appreciate local ecology
6. Educational experience
7. To differentiate between open space preserve versus park.
8. “In the end we will conserve only what we love. We love only what we understand. We will understand only what we are taught.” (Baba Dioum)

Statements with weaknesses: 3, 4, 7 (primarily 4 and 7)

Combined:

a. The opportunity to learn about the native environment to help people appreciate local ecology to build a lifelong sense of stewardship
b. To educate the community, and respect, value, and treasure this open space preserve

Scott’s group

1. People need a place to enjoy nature
2. Encourage young people to preserve nature
3. Focal point should be education (all levels) so students study and appreciate nature
4. Make five vista points accessible—highest points in Fullerton
5. Arrange responsible trails and interpretive opportunities to celebrate nature
6. Loss of open space due to development of homes and businesses
7. This should be a model nature preserve
8. Complements the Fullerton Arboretum and Laguna Lake—provides connectivity and transformity
9. Historical perspective of the past (appreciation)
10. Provides connectivity with existing trails and parks.
11. Engages the community—makes it theirs. They are drawn to it.

Statements with weaknesses: 3, 4, 5, 10
Combined:

a. This model nature preserve will provide connectivity with existing trails and the local community that feature vista points and quality trails (7)

b. The focal point will be educational in nature, providing a historical perspective and a deep appreciation for the preservation and conservation of the natural environment [among] all ages (12)

c. Get people outdoors (1)

Jim's group

1. There is a community-wide need to interact with open space and nature (1)
2. How best to keep habitat that is there in its “natural state”
3. Most people need an opportunity to see the relationship between the natural and built worlds
4. Opportunity to experience an intact nature, a diverse environment of a reasonable size
5. Opportunity to teach environmental stewardship for the next generation
6. A means of broadening understanding of man’s relation to natural habitats (flora, fauna) (2)
7. Senegalese parable (Baba Dioum) (2)
8. For enjoyment of the natural world
9. To provide a living laboratory for naturalists to study relationships between existing habitat in an urban environment
10. Because it’s healthy for the individual to fully experience nature
11. Because it is vital to understand our impact on the natural world
12. Access to the natural world for all ages.
13. It would increase North Orange County’s opportunity to experience nature.

Statements with weaknesses: 4, 5, 9, 11, 13

Combined: Not applicable

2. Who are the target audiences?

Steve’s group

1. Recreational users
2. Interpretive naturalists
3. Fitness
4. Dog walkers (4)
5. Hardcore runners
6. Fullerton College Police Academy
7. Singles groups
8. Walkers
9. Bikes (mountain)
10. People looking for a social place
11. **Equestrians**  
12. One time visitors  
13. **Prospective home buyers**  
14. Organized groups: girl/boy scouts and school children  
15. **Migrating birds and other species**  
16. Homeless  
17. Radio-controlled gliders

Statements with weaknesses: 1, 2, 4, 9, 11, 15 (primarily 4, 9, 11)

Combined:

a. People who are looking for recreational, naturalist, and fitness uses (5)

**Kavita’s group**

1. **Children including children with special needs (2)**  
2. All ages and stages  
3. Equestrians  
4. Bikers  
5. **Birdwatchers**  
6. **Naturalists**  
7. Wilderness organizations  
8. **Visually impaired**  
9. Physically challenged  
10. Families  
11. Organized groups

Statements with weaknesses: not applicable

Combined:

a. All ages and stages (3)  
b. Physically and developmentally challenged (2)  
c. Special use such as equestrians, cyclists, hikers, and groups (3)

**Scott’s group**

1. Families would enjoy a nearby recreational opportunity in these tough economic times  
2. Hiking, running, horse, mountain bike clubs  
3. Educational community (classes could be held, etc.)  
4. Person [who] wants to get away (1)  
5. **Health-conscious** people looking to stay fit (1)  
6. Seniors
7. Out of towners (inner city) who do not get to enjoy nature
8. Tourism
9. Future and current residents

Statements with weaknesses: 1, 2, 3, 4, 5, 7, 9 (primarily 3, 4, 5)

Combined:

a. Variety of backgrounds (educators and students, families, hikers, equestrians, bikers, birders, naturalists, out of towners, and people with disabilities) (11)
b. People looking to stay healthy (1)

Jim’s group

1. Runners (2)
2. Hikers
3. Cyclists (Fullerton Loop)
4. Families (1)
5. School groups
6. Pets
7. Nearby residents (3)
8. Meditators
9. Birdwatchers
10. Horsemen
11. Homeless

Statements with weaknesses: 5, 7, 10

Combined: not applicable

3. What is the significance of the site?

Steve’s group

1. Tells the story of the history of oil exploration in California
2. Represents how other cities can strike a balance between development and preservation
3. Spiritual jewel, a release
4. How the site, relative to oil, helped in World War II due to proximity to ports
5. Freedom and opportunity it provides all users
6. Opportunity to preserve the undeveloped/natural characteristics
7. Provides opportunities for spectacular views
8. Fullerton’s acceptance of the green movement
9. Tells the story of ecology and natural history
10. Ending the debate to save Coyote Hills
11. Property rights versus public use
Statements with weaknesses: 1-6

Combined:

a. Tells the story of the oil, ecology and natural history (7)
b. West Coyote Hills will serve as a model for other cities to: be green; debate [issues regarding] public land; balance development and preservation (7)

Kavita’s group

1. Interdependence of flora and fauna (1)
2. A balance between nature and human kind
3. Proximity to urban and suburban communities
4. Appreciation of the historic backdrop
5. Multiple stages of historic significance
6. The containment of natural habitat and the protection of endangered species

Statements with weaknesses: 1-6

Combined:

a. Serenity of the natural habitat within the urban environment (6)
b. Appreciation of the “spirit of place” within its historic context (4)
c. A unique learning experience in an outdoor classroom (4)

Scott’s group

1. Human and nature—interdependence
2. Preserve and appreciate the history of the land and see how [the] landscape is changing toward sustainability
3. Respect property’s history—how and why it was used dating back to the time of Native American Indians
4. Last opportunity to preserve protected birds and plants in North OC
5. The topography will set Fullerton apart—give the City a sense of place and define Fullerton as its backdrop.
6. Provide a place to appreciate nature and open space areas.
7. Teach respect of nature for current and future generations.

Statements with weaknesses: 2 – 7 (primarily 2, 6, 7)

Combined:

a. The property illustrates the significance of the landscape and [the] developer’s respect for current and future generations for the history of the land and interdependence between humans and [the] natural environment. (15)
Jim's group

1. Oil history (1)
2. Topography
3. Natural oasis with [an] urban environment (undeveloped) (5)
4. World class biome (2)
5. Artifacts
6. One of the highest points in Fullerton

Statements with weaknesses: 1

Combined: Not applicable
Appendix IIa: Summary of group input on trail map

Kavita’s group:

Definition of trail use (active and passive)
Add water element for habitat (3), restrooms, potable water sensitive to the site, benches, natural shade along the trails; educational (positive) and directional signage [that is] multilingual, staging area for cyclists and equestrians (3)
Create a green building (interpretive center) “off the grid” such as Debs Park (4)
[Consider] sensitivity of materials used on the site for permanent fixtures (2)
[Consider] low impact to the site at all times
[Integrate] the Baba Dioum quote at the entrance to the preserve (5)
[Ensure] better access to cross Euclid at both Laguna Road and Lakeview Drive

Steve’s group:

[Consider use of] bluffs near Fire Station No. 6 for gliders
[Add] signs, wayfinders, interpretive kiosks
Preserve an oil pump or derrick (6)
Add benches, recycle cans, dog waste bags
Add three emergency call boxes (locations noted on map)
Add two restrooms (locations noted on map)
Remove trail that bisects the Preserve (the one that lines up with Laguna Road) and restore the habitat
Place the nature center in the southeastern corner of the Preserve

Scott’s group:

[Address issues related to] security, maintenance, park ranger staff (will taxpayer money cover this?)
Vista points are the highest points in the hills. [We need]: accessibility for all, restoration of the area, seating and shade, viewing areas with telescopes (1)
Design aspects: sustainability (e.g., trails that are safe for users and not overly steep). Aesthetic dimensions: attractive environmental appreciation (e.g., trails that are not overly wide and that emphasize trail-like, rather than road-like aspects) (3)
Add available water fountains, auditorium space for group activities, interpretive panels and wayside signs, restrooms through trails, benches and shade, different trails for different uses, tables where lunches can be eaten, a well-funded ranger system, an architectural style (theme) that is as natural as possible.
No motorized vehicles

Jim’s group:

Viewpoints: need open shelters with shade for the view. Need to think ahead to reduce (collect) litter and trash
Need multiple access points; water and toilet access
Hike only in Ward area
Parking area: Environmentally sensitive (no asphalt)
Members of the West Coyote Hills Trails and Open Space Committee, together with the West Coyote Hills planning team, participated in an interpretive planning session facilitated by Jennifer Rigby on March 26, 2009. Committee members included: Ginger Britt, Teri Brodowski, Doug Brodowski, Monika Broome, Tom Dalton, Katie Dalton, Steve Eldridge, Walter Fisher, Rose Marie Fisher, Chuck Greening, Bob Hayden, Chris Heusser, Molly McClanahan Kay Miller, Jim Meyer, Bill Naylor, Jacob Staggs, and Jerry Young.

West Coyote Hills planning team members included Jim Pugliese, Scott Starkey, Janet McNeill, Roger Bell, and Jennifer Rigby.

This session launched the development of the interpretive master plan—the document that identifies and defines opportunities for visitors on West Coyote Hills’ trails, vista points, and nature center. The specific purpose of the session was to start thinking about topics for interpretation, the organization of messages, goals for interpretation, and possible themes. A copy of the agenda is provided in the first appendix; group input is summarized in subsequent appendices.

**Interpretive principles**

To recap, an interpretive master plan identifies strategies to create the optimal visitor experience in order to cultivate an informed public. While it takes into account all other plans—resource management plans, trail master plans, and architectural plan packages—and considers the site, the architecture, and the resources in their entirety, the focus remains on the visitor. The aim of an interpretive plan is to identify those strategies that will help the visitor become aware of, understand, and embrace a unifying message (theme) conveyed through the media. In the greater context of planning for West Coyote Hills, it is the interpretive planning effort that addresses resource management issues while remaining responsive to the needs and interests of visitors. Specifically, it aims to accomplish the following:

- Help people connect with the resource
- Accomplish the mission of West Coyote Hills
- Inspire and enlighten in order to open minds and promote stewardship

It is important to note that interpretation is not the presentation of facts, but rather the presentation of material that piques curiosity and relates to the audience’s experiences. Freeman Tilden, an early champion of interpretation, suggested that the primary interests of visitors to sites of natural beauty and cultural significance are in whatever touches their personalities, experiences, or ideals. However it is defined, it’s all about communication and the effectiveness of provoking thought and feelings.

Interpretation has five essential qualities. It is **purposeful**—it serves the visitor as well as the institution’s mission. It is **enjoyable**—it is entertaining, stimulating, interactive, and multi-sensory. It is **relevant** in ways that are meaningful and personal. Meaningful content links to something the audience already knows; it becomes personal when linked to something the audience already cares about. Interpretation
is also organized. The media are well planned, sequential, and easy to follow. Last, it is thematic. It focuses on a central message about the subject matter that serves to connect facts and concepts together as a unifying whole. A theme organizes the media, allowing the visitor to know where the presentation is going, making it easier to connect it to other information.

**Topics, Tangibles, and Intangibles**

The committee came up with a number of suggested topics for interpretation. These are summarized in the third appendix. Topics serve as the potential subject matter for the interpretive media. For West Coyote Hills, they range from elements of natural history, including the site’s flora and fauna, specific habitat types, secluded canyons and topography, and seasons and life cycles, to elements of human history, including American Indian heritage, Spanish and Mexican land grants, sheep and cattle ranching, and oil exploration. They also point to layers of relationships between humans and nature—the history of interactions, our dependence on natural systems to sustain our lives and livelihoods, and the value of preservation to the human spirit and the human community.

The committee clustered (and re-clustered) the topics into categories which would later help inform development of the theme.

In interpretation, it is important to build the story “up,” rather than just “across.” In order to help visitors connect to meanings emotionally as well as intellectually (meaning, care enough about West Coyote Hills to help care for West Coyote Hills) it is important to link those tangible resources, such as its secluded canyons, sages, and gnatcatchers, with intangible meanings.

These intangible meanings go beyond topics to embrace universally recognized values such as human heritage and the conservation of nature and wild places. When this is accomplished, visitors experience “the spirit of place” in a very personal, relevant, and emotional way.

**Interpretive goals**

Before delving into goals, it is important to revert back to the December 6 summary notes in which visitor experiences at West Coyote Hills were identified. “Importance of access” is defined by the following opportunities: offer recreation and education, connect with nature, become aware of native plants and wildlife, savor experiences in the outdoors, build a lifelong sense of stewardship, celebrate nearby natural habitats, study a “living laboratory,” learn about the region’s cultural history, improve the communities’ quality of life, and increase “connectivity” with other trails.

Moving forward, based on these opportunities, the committee began to think about goals. Goals are statements of desired outcomes that guide programs and management or operations functions. They articulate what interpretation is meant to do for West Coyote Hills, its visitors, and its management. They guide the formation of interpretive media and services during the planning process and permit accurate and meaningful evaluation of interpretive programming before, during, and after development. Later, we will develop a series of specific and measurable objectives that correspond to each goal. They provide the actual basis for such evaluation.

Educational directives related to West Coyote Hills focus on a desire to impart knowledge and cultivate an appreciative audience. To do this, interpretation must address both the cognitive and affective realms—the logical as well as the emotional aspects of the mind. People will not make behavioral
changes if they only *understand* an issue; they must also feel that the topic has some relevance to their lives and that a behavioral change will bring one or more valued benefits.

Every interpretive experience should be designed, therefore, to have an emotional or affective component as well as an intellectual or cognitive component, leading ultimately to a desired behavioral change. However, unlike visitor knowledge and visitor behavior, visitor feelings and attitudes are difficult to measure with accuracy and certainty that a specified variable is having an effect. Even so, progress toward attainment of affective goals often can be measured indirectly—inferrered from measurement of visitor behavior, since behavioral changes are typically preceded by changes in attitude or affect.

The following goals represent a blending of input received during the March 26 planning session and subsequent work by The Acorn Group. Goal statements received during the meeting are recorded in the second appendix.

Combined, these affective, cognitive, and behavioral goals will ensure interpretation is aimed at helping visitors feel connected to both the rich human heritage and natural history of West Coyote Hills, while understanding and valuing it. Once the goals are approved, corresponding objectives will be developed.

**Emotional Goals**

Visitors of all ages and abilities will feel safe and comfortable on the trails.

Visitors will have a satisfying and enjoyable time at West Coyote Hills on the trails and in the nature center.

Visitors will value the efforts of reclaiming West Coyote Hill’s oil fields and restoring the wildlife habitat.

Visitors will appreciate the rich human heritage of West Coyote Hills.

Visitors will appreciate the rich natural heritage of West Coyote Hills, including its wildlife, vegetation, and geographical and geological features.

Visitors will recognize that the landscape has changed over time, most recently during the past two centuries.

Visitors will feel they have an important role to play as land stewards of West Coyote Hills.

Visitors will recognize that appropriate behaviors are expected of them.

**Cognitive Goals**

Visitors will gain an understanding of the human settlements and activities that occurred historically on this land.

Visitors will become familiar with the plants and animals associated with West Coyote Hills’ habitats, including coastal sage scrub, southern cactus scrub, and southern willow scrub.
Visitors will gain an understanding of the geography of the Los Angeles Basin and the coastal plain of Orange County, and how it has changed over time.

Visitors will gain an understanding of the geological forces at work at West Coyote Hills.

Visitors will gain an understanding of how to act as land stewards of West Coyote Hills.

Visitors will know the rules and regulations that help protect and manage the resources of West Coyote Hills and the reasons they are in place.

**Behavioral Goals**

Visitors, primarily those on foot and horseback, will spend at least one hour on the trails, actively engaged with the interpretive media.

Visitors will visit the nature center and spend at least one hour involved in the interior exhibits and displays, as well as loop trail and exterior exhibits.

Visitors will demonstrate heightened awareness of, understanding of, and support for West Coyote Hills through their adherence to rules and regulations.

Visitors will engage in activities that are appropriate on specific trails.

**Interpretive themes and sub-themes**

The committee then was asked to think about and develop draft themes for West Coyote Hills. They worked in subgroups and reported back to the larger committee. Their ideas are summarized in the fourth appendix.

A theme is the principle message, or story, about the subject matter which serves to connect topics and concepts together as a unifying whole. A theme allows for a linkage of important ideas concerning the topic(s) the committee identified. It is well documented that theme-based interpretation is easier to comprehend and recall at a later point. It serves as an “advance organizer,” giving the visitor a sense of where the exhibit media are going and making it easier to connect their content to other information.

Although the central theme may or may not be articulated verbatim in media or programs, it is the conclusion that we hope visitors will reach on their own after experiencing the exhibits and the impression that will linger long after the details of the visit have been forgotten. Subthemes further develop the central theme, allowing for a logical progression into storylines. Typically a well-planned experience conveys three to five subthemes, all of which are subordinate, but directly related, to the central theme.

The following represents a synthesis of ideas proposed by the committee during the interpretive planning session. It is important to keep in mind the theme and sub-themes do not appear in print. Rather, these statements focus the media and offer a thread that weaves the stories together.
Proposed overarching theme

Once the gathering grounds of the Tongva, the grazing lands of ranchers, and the oil fields of wildcatters, West Coyote Hill’s open space now returns to a more pristine, natural state. Its restored habitats support wildlife, enriching our spirit and our natural heritage.

Subthemes

The human history of West Coyote Hills spans thousands of years. Footprints from the past have etched the land.

A mosaic of habitats is found in West Coyote Hills. Diverse plant communities support wildlife, some of which is threatened.

West Coyote Hills is the focus of habitat restoration, monitoring, and protection. Active stewardship of the land is a responsibility we all share.

The interpretive matrix, attached as a PDF document, displays this information hierarchically. The theme is supported by the sub-themes. The sub-themes in turn are supported by key messages. Key messages keep information “in check,” ensuring that we cover important material, keep the interpretive goals in mind, and avoid straying from the theme and sub-themes. Not all key messages are equally weighted.

Action steps:

Please review this meeting report and the interpretive matrix. Feel free to electronically track any changes and/or add comments, and send them to Jennifer Rigby (emailacorn@aol.com) and copy Jim Pugliese (jim@westcoyotehills.com) and Scott Starkey (scott@westcoyotehills.com). If you do not have access to email, please feel free to fax your comments to Jenny’s attention at (714) 838-5309. We would appreciate hearing from you by April 24, 2009. At that time, we will finalize the interpretive summary and matrix, and continue our working developing the interpretive master plan.

We would like to schedule the next planning session with the Trails and Open Space Advisory Committee in May. This session will likely take place at West Coyote Hills and will focus on trail types and the trail routing plan.
Appendix 1a: meeting agenda

West Coyote Hills Interpretive Planning Workshop
March 26, 2009
Agenda

Introductions

Introduction to the interpretive master plan—what it will accomplish and how it differs from facility master plans, resource management plans, and strategic plans.

Overview of the 5M approach to interpretive planning—understanding how the mission statement, target markets, mechanics of the site, messages, and selected media work together.

All-group work

Identifying topics for interpretation

Clustering topics into a coherent structure

Sub-group work

Developing draft interpretive goals, theme, and sub-themes.

All-group reporting

Next steps
Appendix 2a: suggested visitor goals

Committee member 1
- Visitors will [have a] lifelong sense of WCH’s unique beauty and sense of place that creates a sense of stewardship.
- “In the end we will conserve only what we love. We love only what we understand. We will understand only what we are taught.” Senegalese ecologist, Baba Dioum.
- [Visitors will] understand, respect, value, treasure, and support this native habitat.

Committee member 2
- A small piece of nature can impact you every day.
- Open space is worth [the] effort to preserve.

Committee member 3
- Visitors should be enlightened; should open their awareness.
- Appreciation for [the] intelligent effort to preserve open space and transform a degraded environment to something that impacts people and nature positively.
- A laboratory for kids to learn and for healthy life styles to be encouraged via recreation and fresh awareness.

Committee member 4
- Consideration of land use is one of the most important responsibilities of the citizenry.
- Enjoyment of natural beauty is made possible by man’s stewardship of resources available to him.
- A personal relationship with nature is important to the soul.

Committee member 5
- Appreciation of our unique nature[al] environment—open space and nature.
- Awareness of the value of the environment and stewardship
- Joy of psychological renewal, exercise, relaxation, and recreation.

Committee member 6
- Obtain a respect for nature, an appreciation for the ecology and majesty of the habitat.
- Gain understanding of nature/human relationship, i.e., how we can save the natural environment and still do for ourselves.
- Learn something new about the environment/history.

Committee member 7
- Emotional: Preserving the highest points will result in visitors experiencing awe/wonder at the beauty and vastness of the Earth.
- Awareness of the value of the environment and stewardship
- Joy of psychological renewal, exercise, relaxation, and recreation.
Committee member 8
- Develop an understanding and appreciation for the natural beauty of the area and encourage its use.
- Explain the geology of the area.
- Explain the flora and fauna of the area.

Committee member 9
- To remember the trails as a landmark and a place to return to soon.
- To understand the importance of the natural wildlife and undisturbed state of fauna, etc. and to value it.
- To take pride in the City of Fullerton and to want to protect and preserve trail resources and open space.

Committee member 10
- In touch with the value of nature.
- Understand the value of natural system of life (cycle of life).
- Value of being in harmony with nature.

Committee member 11
- Visitors should feel a physical connection and an ownership with the land.
- Visitors should come away with an appreciation of the interconnectedness and interdependence of life.
- Visitors should understand that man is part of the natural ecology.

Committee member 12
- Get reconnected with nature (local story).
- Sense of place regarding historical phases: Native Americans/Ranchos/Oil operations/Development
- How to capture recreational users and bring them aboard.

Committee member 13
- To leave with a sense of the delicate balance between man and the natural world.
- Understand nature's reaction to: a. Man's presence and 2. Ability to compensate for climatic conditions.
- An appreciation for man's historic activities on site.

Committee member 14
- Visitors would feel refreshed and energized.
- Visitors would be able to connect with nature.
- Property would provide venue to allow families and friends to connect with each other.

Committee member 15
- To foster appreciation for the natural ecosystem, of Coyote Hills as a valuable community asset.
- To encourage visitors to share their experience in the Hills with family and neighbors.
- To promote personal and community stewardship of the natural [and] built environment of Coyote Hills.

Committee member 16
- Appreciate that long-term sustainability of the land requires that each of us becomes a good steward.
- To foster appreciation of the natural ecosystem of Coyote Hills as a valuable community asset.
- To provide people a place to exercise and recreate in a healthy outdoor environment.

Committee member 17
- Create an appreciation of open space and nature.
- To provide people a place to exercise in an outdoor, healthy environment.

Committee member 18
- Island of nature (flora, fauna) in suburbia.
- Awareness of history.

Committee member 19
- Appreciate that coastal sage scrub is an essential feature of the ecosystem of WCH.
- Appreciate that long-term sustainability of the land requires that each of us becomes a good steward.
- Appreciate that humans are part of an ecosystem of living and non-living things without which we cannot survive.
Appendix 3a: suggested topics

Broad opportunities: foundation opportunities, partnership with other similar organizations, grant opportunities, volunteer opportunities, why Fullerton cares, park versus preserve, homeless people, endowed, shared use

Issues: litter, litter control, animal control [proximity to neighborhoods]

Engaging youth: children’s activities, multi-age interest, educational opportunities, laughter of children, passive and active learning, exercise, educational, a place for learning, discovery, trails to get youth away from computers and video games, fun—creatively engaging, hands-on, senses (sight, touch, smell, hear, taste)

Other elements: trail guides, self-guided or docent-led tours, gathering spot for events or education [programs], staff

Trail experiences: recreation, trailer users, trail running, horses, mountain bikes, trails

Trail planning: erosion control (keep the surfaces permeable), accessibility, access to nature center trails, accessibility of center to the physically challenged, use of trails, protection of species [through design], protection of resources [through design], preserve the rustic nature, hours of availability, security, safe trails, sustainable funding, quality trails, interconnection of trails [to each other and to regional and local trails],

Trail amenities: parking, water for people and pets, availability of restrooms and water stations, mileage markers, benches

Trail types: trail diversity (easy, moderate, difficult), trail surface, active and positive versus reactive and negative, trails for health/wellness and fitness, dirt trails,

Human history: oil wells, history of site, native inhabitants, historical uses [of site] and inhabitants, history of the land and people, oil field history, historical oil operations, history of Coyote Hills, human history

Sense of place: island, retreat, rejuvenation, sounds of nature, solitude, renewal, harmony, healthy living, quality of life, nature in an urban area, highest and best use of the land, sense of place; peace, quiet, tranquility

Flora: trees, plants, cactus, trees and shade, seeds, seed pods and propagation, weeds, chaparral, “flora and fauna,” coastal sage, unique vegetation, habitat of species, life cycles “natural,” uniqueness of coastal sage scrub system, scents, smells after rain

Geology: secluded canyons, topography, vistas, views of mountains and oceans, scenic views,
General ecology: unique natural beauty, seasons, drought tolerant beauty

Wildlife: wildlife, small, hard-to-find insects, spiders, lizards, snakes, food web ecology, birds, bird calls, gnatcatchers, critters, coyotes, protection of species, sensitive species, endangered species, fauna; coyotes, wildlife and horses

Humans and nature: man and nature in harmony, nexus of man and nature, a pathway for nature, history of man and interaction, interdependence of people and the environment, community and home, ecological appreciation of the natural environment, interact with nature

Stewardship: stewardship, stewards of the land, community support and stewardship
Appendix 4a: suggested interpretive themes

An outdoor laboratory/classroom to observe, discover, and connect
  Hunters and gatherers—living off the land
  The interconnectedness and interdependence or web between flora and fauna

By saving Coyote Hills, we are actually saving a view and connection with all of Southern California. From downtown LA, out to Palos Verdes and Catalina Island and all the way to Laguna Beach. It goes well beyond Fullerton and the Coyote Hills.

West Coyote Hills as a place that enables environmental and historical awareness, and that encourages responsible use.

The ecology of the environment is key to restoring the habitat and introducing a human presence.

Visitors will be renewed, restored, and rejuvenated by the infinite beauty of the vista (landscape). A sense of peace will permeate the soul.

The Ward Preserve center is intended to educate the public about the geology, flora, and fauna of North Fullerton, so that everyone can benefit from the natural beauty of the area.
  Explain the geology of the area.
  Explain the flora and fauna of the area.
  Develop an understanding and appreciation for the natural beauty of the area, and encourage its use.

The use of these valued trails will enlighten your spirit and bring peace to your heart.

Visitors would gain a sense of value and respect for the nature that supports them.

Fossils to fuel—how things are affected by change.

History of place: what was there, what is left, what can be restored and reintroduced.

Coastal sage scrub is an example of natural habitat’s adaptation to local conditions as seen through its yearly growth and blooming cycle.

Respect and celebrate the land’s human and natural history.

North Orange County needs a place where people can experience the joys of nature and teach young people how to enjoy it without damaging it.
Appendix F: Interpretive Media Review

West Coyote Hills Trails and Open Space Advisory Committee
Interpretive Media Review Session Report
Prepared by The Acorn Group, July 17, 2009

Members of the West Coyote Hills Trails and Open Space Advisory Committee, together with the West Coyote Hills planning team, met at CSU Fullerton on July 11, 2009. Committee members included: Ginger Britt, Monika Broome, Sue Bulger, Chris Heusser, Mike Laybourn, Bill Naylor, and Jacob Staggs.

West Coyote Hills planning team members included Ron Baers, Roger Bell, Janet McNeil, Jim Pugliese, Jennifer Rigby, and Scott Starkey.

The purpose of this session was two-fold: 1. To present additional information on the trails master plan and 2. Share the draft conceptual drawings of interpretive media for the trails, exhibit area within the nature center, and adjacent grounds.

Introduction: Jim Pugliese welcomed everyone and explained the context for the day’s presentation. The planning effort thus far has been targeted at “getting our arms around the open space idea.” The planning team is aiming for approval of an early trail opening program and preparing for commission presentations later this month. Jim reminded committee members that the materials shared at this meeting are not part of the entitlement package, but rather, part of The Acorn Group’s conceptual design work. This work represents the planning team’s understanding of the vision of the West Coyote Hills Trails and Open Space Advisory Committee. As such, this work is necessarily conceptual in nature and subject to review, approval and change/modification by Pacific Coast Homes, the City of Fullerton, and other agencies.

Part I: Ron Baers shared the trails master plan and clarified resolution of various issues. (Please refer to the summary notes from the May 30 meeting for additional information.) Ron reiterated that the trail system is a series of loops—small loops within larger trails, larger loops, such as the perimeter loop, within West Coyote Hills, and even larger loops within the regional context, once connections to other trails such as the Fullerton Loop are made. Ron also reviewed the designation of trail types: walking-only, multi-use, accessible, abandoned (such as the “roller coaster” in the preserve), and the promenade. There are three accessible trails: two are located at two different key vistas and one is located at the nature center.

Ron pointed out the nature center connector trail is now routed to the signalized intersection at Laguna Road. He also reviewed the goals of rerouting the Castlewood and Nora Kuttner Trails: to abandon current “attractive nuisances,” make better use of existing oil roads, and provide more privacy to nearby homes and the potential for additional native habitat.

For example, the existing trail at the end of Castlewood Trail above Coyote Hills Drive shows a promising trail rerouting opportunity. This trail segment has a history of unacceptable behavior that may be remedied with trail redesign. Plans may call for relocation of this trail closer to the street and the addition of shade trees (since the eucalyptus will be removed as part of the fuel modification program required by the Fire Department) to allow for more visible usage to dissuade unacceptable behavior. Additional native habitat may be gained as a result.
Where multi-use trails are near neighborhoods along the public collector road, the right-of-way narrows. Ron suggests creating sidewalks on both sides of the street and combining multi-use with one of them. Where multi-use trails intersect walking-only trails, such as along the northern ridge of the preserve, control gates are being considered.

Ron also pointed out the safety feature of an underpass at Gilbert and use of one side of the bridge for the trail. He also identified some of the amenities at trailheads. Feedback from the Parks and Recreation Department and others suggests specific parking for horse trailers is not necessary since facilities are provided nearby. The number of parking spaces shown on the trails master plan is preliminary—no final determination has been made yet.

Key vistas are treated as low-key, passive access points to lookout points. Their footprint is minimal, even with the placement of 12x12’ shade structures. There are also rest areas along the trails. These are treated as “bump-outs” on the trail with shade and boulder seating.

**Part II:** Jennifer Rigby shared preliminary conceptual drawings that establish a “look and feel” for the interpretive panels, orientation/directional signs, regulatory signs, courtyard interpretive stations, interior exhibits in the nature center’s “exhibit gallery,” and plans for a nature discovery garden. Jim reminded the committee that all drawings and recommendations are preliminary; as such, they are subject to review and approval by Pacific Coast Homes, the City, and other agencies, such as US Fish and Wildlife Service.

Jenny distributed the following materials: descriptions and lists of amenities for the nature discovery garden and courtyard interpretive stations; description of content for the interpretive panels, including the “history stations,” and description of exhibits in the nature center’s “exhibit gallery.” The interpretive matrix was also shared again. These are attached as appendices to this report.

**Action steps:**

Please review these meeting notes and five attachments. Please check the content of the attachments for accuracy, age-appropriateness, and relevance to the theme and sub-themes defined in the interpretive matrix. Feel free to electronically track any changes and/or add comments, and send them to Jennifer Rigby (emailacorn@aol.com) and copy Jim Pugliese (jim@westcoyotehills.com) and Scott Starkey (scott@westcoyotehills.com). If you do not have access to email, please feel free to fax your comments to Jenny’s attention at (714) 838-5309. We would appreciate hearing from you by August 3, 2009.

We would like to schedule our final Trails and Open Space Advisory Committee meeting in August. Draft copies of the Trails Master Plan and Interpretive Master Plan will be shared!
Appendix G: Master Plan Review

West Coyote Hills Trails and Open Space Advisory Committee
Master Plan Review Session Report
Prepared by The Acorn Group, September X, 2009