

**ORANGE COUNTY GREAT PARK CORPORATION**  
**COMPREHENSIVE PARK DESIGN SUBMITTAL**

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**Introduction**

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The Great Park Design Studio is pleased to present the recently completed Comprehensive Park Design for the entire Great Park project. We have also completed several other more specific designs and plans for Park features and districts as directed by the Corporation. This effort has met the purpose of the work; the “given” goals and objectives; and addresses the Park design as a whole to ensure any part of it can advance within a reference framework. As noted by Ken Smith, our Master Designer, this phase of work was to:

“Characterize and define the features; identify location, form, scale, and function; integrate and establish relationships; and correlate it all to the Master Plan”

This work forms a reliable basis for further planning, design, phasing, and costing while still leaving room for betterment and alteration as policies and priorities change. Our submittal has met and generally exceeded the contracted schematic design parameters.

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District Site Plan



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District/Systems Matrix

PARK SYSTEMS	PARK GEOGRAPHIES											
	Habitat Park		Canyon Park		Fields and Meadows Park							
	Wildlife Corridor	Agua Chino	Upper Canyon	Lower Canyon	Bosque	Trabuco Entrance	Fields and Meadows	Promenade	Timeline and Linear Rambles	Orchard Parking	Sports Park	Primary Maintenance Yard
Sustainability												
Circulation												
Lighting												
Signage and Wayfinding												
Architecture												
Water Features												
Site Furnishings												
Color Palette and Material Finishes												
Art												
Health												
Engineering												
Ecology												
Planting												
Irrigation												
Safety and Security												
Media and Technology												
Operations and Maintenance												

**Orange County Great Park District Narrative**

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**THE HABITAT PARK**

**Wildlife Corridor**

The Wildlife Corridor is a native habitat restoration and wildlife travel corridor that will be off limits to Park visitors. This long landmass is one of three major areas of the Park that will be ecologically restored. This sensitive parcel is dedicated to enhancing the movement of animals across Park land by linking the mountain reserves from the north to the coastal preserves near Laguna Beach to the south. The Limestone Wilderness Park and the Laguna Coast Wilderness Park are both national landmarks, to be joined by the Great Park and its surrounding communities. Natural water from the Borrego Channel will be diverted through the Wildlife Corridor then returned to the Borrego once it leaves the site. A golf course borders a significant portion of the district acting as a transitory landscape enhancing the Wildlife Corridor. Native plant communities and living barriers compose the landscape concept for this area providing appropriate cover for wildlife as well as habitat and food. This is the core of the Park's ecological backbone which increases biodiversity value and helps maintain a healthy, natural environment in the region.

**Agua Chinon**

Agua Chinon is a restored stream environment containing native habitats and allowing visitor access via nature trails and pedestrian bridges. It will support habitats necessary for wildlife movement and provide an active corridor for local wildlife in the Park. This corridor will attract dozens of native bird species, and will incorporate recreation trails and educational programs for the public. This man-made stream corridor, long buried at the El Toro MCAS site, will be uncovered and reconstructed to harbor native habitats while supporting human activities. The stream will change through the seasons as water flow surges and ebbs, re-introducing the public to the patterns of seasonal creeks. Trails will enable the public to experience a mosaic of habitats for relaxation, environmental understanding and appreciation. This is the second of three major areas of the Park that will be ecologically restored. A 25-acre mitigation zone containing intermittent waterways, planted wetland and riparian habitats is also featured. Ecologically, Agua Chinon makes critical connections that link together ecological systems and water reserves in this part of the County. Additional trails allow equestrian and bicycle access connecting adjacent developments to the Park.

**THE CANYON PARK**

**Upper Canyon**

The new 60-foot deep Upper Canyon district is the Park's largest feature, replacing the current flat landscape of the former air base. This is the third of three major areas of the Park that will be ecologically restored. It is the Park's centerpiece including a sinuous stream water feature with a string of small pools distributed along approximately two miles of the Upper Canyon district and Lower Canyon district. At the upper reaches of the canyon a wetland has been created that will cleanse the recycled water of additional nitrates. The topography of

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the Canyon creates a cool microclimate indicative of the region. Adjacent to the Upper Canyon parking lot, a palm oasis, found in California deserts have been recreated. The Canyon slopes will be varied to create multiple slope aspects, sun exposures and soil moisture levels, supporting predominately native plantings of Cottonwoods, California Sycamores, White Alders and Oaks with an overlay of cultural species including significant Palms. Distinctive, architecturally significant bridges, such as the Bridge of Seven Turns across the Canyon, allow access to and from surrounding neighborhoods. Bridges crossing the Canyon will provide pedestrian and vehicle access. There will be multiple trails for hiking and bicycling through rocky outcrops of El Toro stone and woodlands. The rocky outcrops will also be home to native flora and fauna. Youth campground nestled in a beautiful sycamore grove along the stream's edge provides opportunity for organized youth group activities. The Canyon stream will be supplied with recycled water from the Irvine Ranch Water District. A series of bioswales and several natural treatment wetlands will provide biological cleansing of runoff water. A Berm Garden with distinctive black and white plantings and pavers will provide visitors with an intimate landscape for gathering and socializing. The Memorial Site and Secondary Maintenance Facility are also located within the Upper Canyon.

#### **Lower Canyon**

##### ***Cultural Terrace***

The Lower Canyon district features the Cultural Terrace as the social and cultural center of the Great Park with cultural facilities nestled within a series of sculpted earthen landforms. The Cultural Terrace will be anchored by the Botanical Garden with the Sports Park, Linear Ramble, Promenade and Orchard Parking within close proximity. Park visitors will have the opportunity to stroll along the Cultural Terrace underneath high canopy flowering shade trees. Cultural institutions such as a museum, library, and performance spaces are planned for the Terrace. These buildings are oriented for sweeping views of the Canyon, local foothills and nearby Santa Ana Mountains. Planted landscape berms will separate the Orchard Parking from the Cultural Terrace promenade displaying sustainable integration of land and structure, with intensive and extensive green roofs capping the structures embedded in the berms.

##### ***Botanical Garden***

The Great Park Botanical Garden is a living classroom and theater connecting people to nature in a world-class botanical garden. The Botanical Garden boasts a variety of special programs and plant collections that will support a diverse landscape. Views of the south facing sloped terraces, as seen from the Cultural Terrace across the lake, will allow for some of the first glimpses guests experience of the Botanical Garden. The entrance to the gardens will be through the Conservatory Bridge, which will house seasonal horticultural displays and interpretive exhibits. Within the Botanical Garden, there will be many programmed spaces such as the Southern California Flora Biome, Nature Discovery Zone, Home Garden Zone, Food and Health Zone, Plant Nursery Zone, Transformation Zone and Events Zone. These garden spaces will illuminate the seasonal changes and hydrological cycles of Southern California, and explore how the people, plants, wildlife, and landscapes can interact in a healthy way to create more sustainable and economical lifestyles and enterprises in the future.

##### ***Lake***

The Canyon stream flows into the Lake where there is boating and picnicking at the Lake's edge. A palm collection of classic California species will fringe the Lake as a contemporary landscape. Wetlands and rockeries are located

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at the edges with breaks for sandy beaches and a boardwalk marina. Recycled water is to be supplied from the Irvine Ranch Water District and serves as a reservoir for the Park's irrigation. The Lake will serve as a major attraction for Park visitors and contribute to the synergy of the Cultural Terrace. The terrace slopes down toward the upper Lake, which will allow for an immersive landscape as the elevation drops over 20 feet to the water's edge. The Lower Lake features a teahouse, the Botanical Garden and a 350+ foot long bridge. Water from the lower Lake is recirculated at varying flow rates to a waterfall that will be viewable only from the Botanical Garden and Botanical Garden Bridge.

## **THE FIELDS AND MEMORIAL PARK**

### **Bosque**

The Bosque is an arboretum with a series of pocket parks including community gardens, meditative gardens, a young adult area and expansive Children’s Learning Center. The Esplanade features a double row of Evergreen Ash trees along with El Toro stone (recycled runway), creating a border which defines the western edge of the Park and invites neighboring communities to experience benefits of living adjacent to a park of this scale. The eastern edge has another passageway with a vegetative drainage swale planted with Fremont Cottonwoods; the passageway also serves as an exercise circuit par course. The flowering tree Bosque will be a blend of native and non-invasive California friendly flowering trees which add color and fragrance, and provide shade and beauty in all seasons. Inside the woodland are a series of pocket parks offering opportunities for wildlife viewing, active play areas, interactive water features, quiet outdoor reflection rooms, picnic areas, and paths for casual strolling. Specifically, the available pocket parks are the Children’s Learning Environment, which will include net play, lost world of orange, slide hill, gathering meadow, shifting sands, rock climb, fields of swings, water farm, tree walk, secret forest, water canyon, Highway 1 Trike course, and group picnic areas; a Community Garden with garden plots and orchard trees; a neighborhood park with a tot lot and picnicking; and a Meditation Garden with Tai Chi, meditative lotus pond, and reflexology path. The central region of the Bosque is planted with a green panel of turf providing open vistas from Trabuco into the Park. The Bosque as also the start of the Trabuco allee, a space lined with crape myrtle trees and solar arbor covered walkways, which incorporate photovoltaic arrays on top.

### **Trabuco Entry**

The Trabuco Entry is the primary entrance to the Great Park featuring a celebratory entry gate, water fountain and reflecting pools. The Great Gate is a 270-foot wide by 90-foot high monument framing views into the Park. This major Park entrance landscape will introduce visitors to the Great Park and demonstrates the sustainability goals of the Park. The formal landscape frames the entry as Park visitors arrive from Trabuco Road. The expansive plaza is a flexible open area for farmer’s markets, music concerts and community events. The entry fountain and fogging gate receive energy produced by the photovoltaic arrays located at the covered parking structures. High canopy shade trees and large hedges will surround the central plaza. Flanking the fountain are gardens to the north and south containing a bicycle rental hub and café incorporating a farm-to-fork “program”. A large turf panel is featured behind the fountain provides overflow space for programmed events. Each of the five major entrances to the Great Park is a celebratory space featuring water as a focal point.

### **Fields and Meadows**

The Fields and Meadows is where groves of trees, agricultural fields, and a Great Lawn will accommodate active and passive recreation. The Great Lawn will allow for full utilization and access of the public for picnicking, impromptu games of tag football, and festivals or other gatherings. An expansive wildflower meadow dotted with lupines and poppies in spring, and golden sunflowers in fall, is crisscrossed by paths planted with allees of Crape Myrtles for close-up views of butterflies and songbirds. The fields are landscaped with heritage plantings including a showcase of heritage groves of citrus, nut and avocado trees with row crops to celebrate Orange County’s agricultural past. The agricultural groves and fields have the potential to support the farmers market and farm to

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fork programs. Adjacent to these edges, a path will be incorporated for access to the Bosque, Trabuco Entry, Timeline, Linear Ramble, and Promenade. Flowering trees from the Bosque border the area, providing a shady connection. Shade is further introduced by a solar arbor, which incorporates photovoltaic arrays that aid in energy production. The Fields and Meadows is also home to the Solar Farm, a place in the Great Park that will showcase solar energy innovation for a green future.

#### **Promenade**

The Promenade is a formal parade of shade trees aligned on the two-mile long north and south concrete runways of the former El Toro Marine Corps Air Station which span the entire Park site. It will provide a formal connection from the northern most end of the Park at the top of the Canyon, Fields and Meadows and Bosque to the most southern end of the Agua Chinon, Lower Canyon and Cultural Terrace. An entry monument at the southern end of the Promenade welcomes guests to the Park. This southern end also allows for a potential connection between the Transit Oriented Development and the Great Park Station at the Irvine Transit Center to the Great Park. The preservation of this open space with a programmed corridor provides vistas of the Santa Ana Mountains to the north and the San Joaquin Hills to the south. A large expanse – a half mile of the former runway is preserved to memorialize the history of the base. The southern end features the Promenade of the Senses with a plant palette designed to support the formality of the space and enhance the senses through smell, sight, sound, taste and touch. An overlook within the Promenade of the Senses allows for visitors to ascend up for a better view. There are a series of features along the Promenade, including an oculus that allows shafts of light into the Land Bridge underpass, with a moss garden planned for below. A labyrinth is located just north of the Oculus. The Bowling Green at the northern end is a formal sunken drought tolerant lawn supporting lawn bowling, impromptu football, soccer, model plane flying, Frisbee, and other recreational activities. A green expanse of a low landscape extends views down the Promenade, supporting an open space corridor spine within the Great Park.

#### **Timeline and Linear Rambles**

The Timeline and Linear Rambles is a landscape art feature that commemorates key epochs and events that have affected the site along one of the original El Toro taxiways. The Great Park site has a long, natural and cultural history. Running east to west, the Timeline, composed of the preserved taxiway forms a central spine connecting the west and east ends of the Great Park. Beginning at the east with the Lower Canyon, it runs between the Linear Ramble and Fields and Meadows, and extends west into the Sports Park. Native California Sycamores create an allee along the Sports Park and changes into Italian Stone pines forming a strong Pine allee framework culminating at the Pinetum. The Pinetum is a major plant collection within the Linear Rambles adjacent to the Timeline. It showcases the Park's collections of conifers that have been significant in shaping the landscape of Southern California. It also includes quiet pathways, restrooms, seating, and a picnic area. The Timeline incorporates geologic events that shaped this land, the Native Americans who were its first inhabitants, it passes through the Spanish colonial period, statehood, agricultural heritages, through the military era, and lastly into contemporary cultural events and the construction of the Great Park. This art feature will honor the people who have lived and worked at El Toro and allows for art and cultural installation opportunities. Along the distance of the Timeline are areas seating and shade to create comfort for the Park visitors.

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#### Orchard Parking

The Orchard Parking lot is accessible from Marine Way celebrating the importance of Citrus/Agriculture in Orange County. The navel orange established Orange County internationally for many decades, although through time county land has transitioned towards real estate, and strawberry and avocado farms. This will be the main parking lot for the Park adjacent to the Cultural Terrace with over 3,000 parking spaces, supporting the Park theme of “park once and spend the day”. It is the central arrival location for the Park, incorporating the major vehicular entry point to the Park, and public transportation provided from the Irvine Transit Center to the Great Park Boulevard, along with Park shuttle systems, and a major bike rental facility. A portion of the Orchard will be planted as a historical agricultural landscape and provide the opportunity for agricultural orchard production to support “farm to fork” programs. Park visitors can view the orchard grove production, which allows for educational opportunities that create awareness of new sustainable agricultural practices and the pastoral qualities of the County’s agricultural heritage. Green Street design principles are demonstrated through tree-planted medians, slotted curbs to separate paving from vegetative swales, and water collection swales employed adjacent to pervious pavement parking stalls along Great Park Boulevard and the parking lot.

#### Sports Park

The Sports Park accommodates individual and team sports fields and athletic facilities. It is located in the southwest section of the Park adjacent to the Life-Long Learning District. Other features include: Aircraft Museum, Balloon Park, Palm Parade, Visitors Center, Timelines, and parking. The landscape for the Sports Park will support this most active and intensively used area of the Park. Playing fields will be planted with natural and synthetic turf. Aligned California Sycamore trees will recreate the windrows that occur in the agricultural fields around the county and region. These will also form planted walls that will frame outdoor rooms for the various sporting events. The Sports Park will support world class sports facilities for soccer, baseball/softball, basketball, tennis, frontenis, and extreme sports such as skateboarding and rock climbing. It will also support children play areas, multi-generational recreation areas, and multi-use festival grounds. Square footage for a field house has been identified. Interstitial areas between sports fields will be developed for family gathering, such as picnic areas. Natural treatment systems are incorporated at the south and western district areas to treat storm water. The Sports Park is an important social and urban extension of the adjacent communities.

#### Primary Maintenance Facility

The Primary Maintenance Facility will be a hub of centralized maintenance services and shops, equipment storage and repair, and facilities management for the Park. The department will consist of Facility Maintenance, Landscape Maintenance, Park Operations and Park Programs. A Maintenance Facility is also planned within the Botanical Garden. Paved and unpaved maintenance roads will allow Park maintenance access throughout the park. The integration of emerging technology provides an opportunity to utilize contemporary methods for systems monitoring techniques for basic operations and information delivery methods at the Great Park. **Indicator flow meters** located throughout the Park will obtain data on the Park’s sustainable operations to monitor and report on the usage of energy, materials, nature, people and water. This metering system will assist in the optimization of Park operations as a means for measuring park-wide sustainability performance as well as a credible communication of quantitative sustainability performance data to Park visitors. A **Biological Dryer** (BD or

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Biodryer) is proposed at the Maintenance Facility to manage organic wastes and convert this waste into biomass fuel and/or compost.

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### Orange County Great Park Systems Narrative

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The design of the Orange County Great Park is supported by many carefully planned systems. Each system, from sustainability to site furnishings to planting, impacts the Park as a whole; systematic design ensures that elements within each system are unified across the Park.

This narrative provides an overview of each of the following systems:

- Sustainability
- Circulation
- Lighting
- Signage and Wayfinding
- Architecture
- Water Features
- Site Furnishings
- Color Palette and Material Finishes
- Art Development and Integration
- Health
- Engineering
- Ecology
- Planting
- Irrigation
- Safety and Security
- Media and Technology
- Operations and Maintenance

### SUSTAINABILITY

The schematic design of the Orange County Great Park incorporates sustainability in five broad categories: the 'flows' of energy, water, nature, materials, and people. In addition to the integration of sustainability throughout the Park through these flows, 10 'special features' have been coordinated by the design team. These special features highlight exemplary sustainable design strategies and will provide education about sustainable design principles.

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Sustainability has been tracked through the use of the Sustainability Management System (SMS), which records the project goals and tracks performance against these goals using key indicators. The SMS has been used by the design team to track sustainable strategies, including those under consideration and those rejected for each geography, providing a record of the design process.

The five flows and 10 special features are described below.

#### **The Five Flows**

##### ***Energy***

The Great Park, planned as a major civic institution, is in a position to become a model for the future of energy management in Orange County, serving as an example of how design in the 21<sup>st</sup> century can respond to global context in a responsive and responsible manner. The Great Park will implement numerous strategies that reduce the demand for fossil fuels by site, building, and transportation energy uses. Strategies to achieve these goals include renewable energy generation, implementation of energy efficient technologies, and demand reduction.

The Park will reduce its energy demands by operating a fleet of hybrid, electric, and biodiesel fuelled vehicles for internal transportation, maintenance, and operations needs. In addition, a high efficiency light rail will promote mass-transit to and through the site. Finally, Park visitors will be given access to orange rental bikes, and biking in general will be promoted as a transportation alternative to automobiles. Next, the Park will maximize the efficiency of all of its energy consuming elements. Buildings will be designed to minimize energy demand and take full advantage of passive strategies such as natural shading, daylighting, and ventilation of indoor spaces. Efficient site lighting will light the Park at night and advanced metering will allow Park staff to keep a close eye on the energy being consumed by Park facilities. The Park will also provide clean, renewable on-site energy generation through photovoltaic arrays, providing a significant portion of the Park's energy needs. By the end of phased construction in 2020, the Great Park will aim for 100% of its site energy demands (for lighting and pumping) from renewable energy resources. Finally, the Park will use its energy efforts as a tool to teach the public about energy and the need to reduce consumption. Interpretive elements with energy systems on display will be spread through the site, and major energy elements such as photovoltaic arrays and the Solar Farm will become focal points for education.

##### ***Water***

The Great Park seeks to serve as an example in the region of responsible water consumption and management. The Park's water systems will eliminate potable water consumption for all uses other than drinking. Landscape features will incorporate smart irrigation systems that carefully monitor rainfall, ambient temperature and humidity to intelligently spend water resources for irrigation. Buildings and facilities will be equipped with high-efficiency, low-flow fixtures. Dual flush toilets and waterless urinals will be utilized to further reduce water demand. Finally, rainwater will be captured from rooftops and graywater collected from sinks for re-use as non-potable water, an alternative water supply for uses other than drinking.

The naturalized water systems at Great Park will ensure the highest water quality possible prior to leaving the site. Water falling on or flowing through the Park will be treated naturally and chemical free. Permeable pavement will allow water to percolate into the groundwater. The Park will also avoid the use of toxic chemicals and fertilizers for

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landscape maintenance. The design of the Great Park will restore natural hydrologic systems by daylighting the Agua Chinon creek, and reintroducing native aquatic vegetation throughout the site, thereby restoring the ecological integrity of all water systems. Finally, these sustainable water features will be illustrated in the many interpretive features and programs planned for the Park. Demonstrations will illuminate the importance of sustainable water management and encourage visitors to incorporate Great Park measures at their own homes and businesses, encouraging water management reform throughout the region.

#### ***Nature***

Natural systems provide a tremendous service to humans. While these beneficial functions often go unnoticed, their integrity is absolutely critical to human health and well-being. These systems purify the air we breathe, the water we drink, and create the soils we use to grow food. These processes are difficult to recreate by human hand, therefore, it is of supreme importance that their complexity is understood and mimicked at the Great Park. As is the case in many developed areas, natural systems have often been impacted by past development and are in need of restoration and repair. Native plants have been impacted by invasive species, animals are unable to migrate to feeding grounds because of roads and obstructions, and birds have lost their nesting areas.

With hundreds of acres of habitat restored, and thousands of native plants planted, nature will thrive at the Great Park. What was at first wild, then farm, and then military base, will once again be returned to a near wild state. Proposed Park development will put the integrity of natural systems ahead of the need for infrastructure. Park systems will rest gently on the restored ecosystem. The Park will incorporate an aggressive regime of ecological restoration to return native plants and native species to the site. Agua Chinon will be daylighted from its previous underground state, and native habitat will be returned to its streambeds. A large wildlife corridor connecting adjacent patches of wild space will be restored, allowing animals to migrate from the hills to the ocean without obstruction. This corridor will be off limits to humans and will function undisturbed. Throughout the Park, scientists and landscape architects will work to improve soil quality and fertility for the benefit of natural systems and agriculture through composting and sustainable soil management. The Great Park will greatly enhance regional biodiversity by providing a variety of carefully planned micro-habitats and a thorough program for the removal of non-native invasive species.

Visitors to the Great Park will have many opportunities to interact with nature in many forms. The Park will include living laboratories teaching about the natural world, and accessible trails connecting walkers and bike riders to the Canyon and Agua Chinon landscapes. Finally, the Park will develop close connections with research institutions employing robust monitoring programs, both to measure the success of the natural systems in the Park and to contribute to scientific studies of local ecology.

#### ***Materials***

The Great Park will serve as an example of appropriate and responsible material management, both in what it takes in and in what it passes on, by aiming to be waste neutral. The volume of recycled and rapidly renewable content of materials brought into the Park will eventually equal or exceed waste materials leaving the site for recycling and disposal. In addition, there will be zero divertible inert waste sent to landfill, with all organic waste being processed on-site.

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To achieve this goal, sustainable construction practices will include balancing cut and fill to conserve energy and reduce waste removal from the site; preservation of on-site structures; salvaging, reuse or recycling of existing materials such as timber, concrete, and asphalt; and specifying local materials to reduce the distance that materials must be trucked. Materials used for construction will include rapidly renewable resources and contain the lowest possible levels of harmful chemicals. Wood purchased will be from sustainably harvested forests. The Great Park will incorporate a thorough on-site composting program. Organic waste from food service vendors and landscape maintenance will be processed on-site and converted into valuable and rich compost to be used for landscape and soil amendments. Finally, Great Park visitors will be made aware of the importance of controlling waste through visible recycling and composting programs on-site. They will actively participate in the sorting and management of waste and contribute to making the Great Park waste neutral.

#### ***People***

The Great Park will be a healthy place where all people feel free to discover and learn about the environment, the history, and the culture of Southern California. The Great Park will bring together many types of people to interact, exercise, relax, learn, and play. It will be a healthy place that improves the quality of life for millions of people in Southern California. The air will be fresh, the water will be clear, and the soil will be clean. The Park will also contribute to the social health of the region by encouraging people to interact and share cultural experiences, which make life rich and interesting. Learning about the special history of Orange County will be a major part of a typical visitor experience.

The Park's people program will include multiple educational programs, citizen scientist programs, and interpretation programs that reveal the richness of the site, its history, its natural systems, and the region as a whole. Living laboratories will provide visitors with a hands-on opportunity to learn, while museums will provide a rich overview of the Park's land and military history. The Park will be a cultural place, where people will come to see art, dance, and music and to celebrate with their fellow community members through festivals and fairs. The Park will offer a variety of spaces and venues so that cultural events can organically take shape as the community's connection to the Park deepens over time. Farmers markets will draw even more visitors, enriching the local economy and promoting local agriculture.

The Great Park will promote human health through exercise, nutrition, and outdoor recreation. Orange bikes will be provided to Park visitors for alternative transportation around the Park. Numerous sports fields will provide visitors access to active recreation and exercise opportunities. Agricultural programs and healthy food vendors will teach about and serve quality local foods. The multitude of accessible trails, roads, and pathways through the site will give visitors the opportunity to connect with nature and the outdoors. Starting on opening day, the Great Park will have a diverse and robust program of activities to engage people and instill culture. As these programs take shape, local people will be given the opportunity to contribute their energy, ideas, and entrepreneurial ventures to the nascent culture of the Park. From there, Park culture and programs will have the capacity to evolve to fit the needs of changing demographics and new cultural trends so that Great Park can thrive well into the future.

## **Special Features**

### ***Sustainability Information Pod & Distributed Metering Network: Energy - Water - materials - nature – people***

This pod contains a central facility to display to visitors sustainability data collected from a distributed metering network throughout the Park for the five flows: energy, materials, nature, people, and water. A variety of real-time and other remote meters will serve as educational and dynamic environmental tracking systems that highlight the Great Park's sustainability indicators, and educate people on resource conservation and measure actual performance against design targets. Meters will also allow for demand side management of utilities to reduce peak electrical and water loads while facilitating monitoring and evaluation activities.

### ***Solar Farm: Energy***

At the Solar Farm, solar tracking photovoltaic, solar tracking concentrating photovoltaic, and linear fresnel concentrated solar power technologies will generate up to 205 kW of renewable energy. By concentrating solar energy up to 10,000 times, linear fresnel collectors produce high-temperature thermal energy which is then used to produce electricity. A variety of tracking solar technologies are proposed which maximize the system efficiency and output of conventional photovoltaic technology. The demonstration will be a focal point that will generate not only energy but much curiosity as well.

### ***Solar Photovoltaic Installations: Energy***

Several photovoltaic arrays totaling over 173,000 square feet in area are proposed for the Park. The arrays will be incorporated as shading structures or be roof mounted and will generate over 1.6 MW of renewable energy. The photovoltaic arrays are large and visible and will not only contribute to the Park's clean energy goals, but also communicate them to the public.

### ***Sustainable Waste Management Facility: Energy - Materials***

A comprehensive waste management plan will help divert an estimated 78% of the Park's waste from the landfill. Organic waste, an estimated 63% of the total, will be processed on-site in a biodryer. Nearly 750 solar-powered compacting Big Belly trash receptacles throughout the Park will greatly reduce the frequency of waste removal and associated energy requirements. Compacted recyclables will be stored in the waste facility and taken to local facilities for recycling. The waste facility will serve as a center where visitors can learn about the process and waste plan for the site. Detailed information about diversion rates on-site, the recycling process, and the impact the Great Park has on local landfills will be displayed at the Sustainable Waste Management Facility.

### ***Biodryer: Energy - Materials***

The biodryer utilizes the "biological oxidation" process that occurs during aerobic digestion, to dry organic materials and create a high energy value biomass fuel and/or compost. The biomass fuel can be used for direct combustion, gasification, co-firing, or calcination (cement kilns). Up to 2,500 tons of compost can be generated and used for landscaping operations and soil amendment. The biodryer will process over 60% of all waste from Park operations.

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#### ***Biodiesel Production Center: Energy - Materials***

Biodiesel will be produced on-site utilizing cooking fats, oils, and grease from Park restaurants, concessions, and local eating establishments. The Great Park shuttle buses and maintenance vehicles will be partially fuelled with this cleaner-burning alternative to petroleum diesel. It is estimated that converted biodiesel from the Park's restaurants can fuel approximately 60% of the Park's shuttle and maintenance vehicle fleet while contributing to a significant reduction in emissions and particulate matter.

#### ***Farm to Fork: Nature - People***

Locally produced food will be available to Park visitors at a California Certified farmers market at Trabuco Entry; a farm to fork café with take-out window and community supported agriculture drop-off location at Trabuco Entry; and a farm to fork upscale restaurant at the Botanical Garden. These opportunities will establish a farm to fork nexus for Orange County and the Great Park. Visitors will engage with organic foods in herb gardens, production fields, and cooking classes, while learning about the health, environmental, and social advantages of sustainable food production.

#### ***Green Street Highlights: Energy - Water - Materials - Nature - People***

This special feature highlights the Great Park's Green Streets, a concept integrated across the Park. Through dynamic interpretive displays, functional aspects of sustainable features throughout the Park are featured in a sculptural and educational trail that traverses vegetated swales and porous paving. Visitors can access the trail, demarcated by LED surface lighting, signage, and mini bridges, between Orchard Parking and the Cultural Terrace.

#### ***Water Discovery Trail: Water- Nature - People***

Visitors will tour the reclaimed water wetland Discovery Trail in the Canyon to learn about the biological treatment system, hydrology, and micro-habitats in this area of the Park. Monitoring stations will provide real-time information on treated reclaimed water and wetland ecology.

#### ***Wildlife Kiosks: Nature - People***

One wildlife kiosk on the edge of the Wildlife Corridor and two in Agua Chinon will give visitors to the Orange County Great Park the opportunity to observe nature without disrupting it. One kiosk will give visitors an aerial, regional view of the Wildlife Corridor. A second will give visitors a subterranean view, coupled with streaming video of important habitat areas, sound recordings of important species (coyotes, vireos), and a live map of tagged animals' locations. The third kiosk will be a larger space, with wildlife kiosks presentations and an exhibit center for the Park's ecology.

## CIRCULATION

Among mounting concerns regarding traffic, air quality, quality of life, and personal, regional, and global health focuses, it is critical that the Orange County Great Park circulation system addresses public transportation, vehicular and non-vehicular circulation, and sustainability. The Great Park circulation system answers these concerns through multimodal public transportation, simple vehicular circulation, and sustainable practices.

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Public transportation is very visible at the Great Park, with multiple interconnecting transit systems available for use by visitors. The Great Park has the ability to connect to the Irvine Transportation Center and its 650,000 annual users by way of the proposed public transportation. The Great Park has incorporated a designated shuttle system with 18 stops that distribute Park visitors throughout the Park on two independent routes, which from stations #1 through #5 overlap. The Park shuttle system travels in both directions. Stops are provided at key entry points, parking lots, and major amenities increasing ridership, efficiency, and success of the system. Bicycle rental for safe and sustainable transportation is proposed at these primary entry points.

Vehicular and non-vehicular transportation to and within the Great Park is integrated into the regional circulation system. Simple vehicular circulation and parking at Park edges allow visitors to “park once, spend the day,” reduce cold start and vehicular operation hours, and limit vehicular/pedestrian conflict. Once at the Park, visitors have access to over 40 miles of trails that range from cultural strolls to exercise circuits to nature trails. The Great Park connects to three regional Class 1 off-street trails, the Walnut, Venta Spur, and proposed Modjeska trail, allowing for non-motorized regional access. The Park’s extensive trails connect communities, individuals, and nature.

This circulation approach supports the sustainability goals of the Great Park. By reducing motorized trips and trip mileage, and encouraging the use of mass transit and non-motorized transportation, the Park’s circulation systems results in the reduction of carbon emissions, hardscape dedicated to vehicular transit, and vehicular/pedestrian conflict. Integration of “green street” initiatives reduces storm water runoff, water consumption, and heat island effect. Biking and hiking trails and bicycle rentals provide a healthy and safe transportation alternative for Park visitors. These and many other sustainable aspects of the circulation system support personal health, strengthen regional health, and ultimately build global health.

### LIGHTING

The large size and unique nature, along with Sustainability goals of the Orange County Great Park indicate that a distinct approach, separate from the current City of Irvine design standards, could be used to develop lighting standards.

#### Great Park Lighting Concept

The amount of light provided by a full moon is 0.10 (one tenth) of a footcandle, and only then at the equator on a clear night. Light levels reduce from that point, depending on the distance from the equator and sky conditions.

Using "the light of the full moon" as the baseline, starting from the lowest light levels and working to higher light levels would assist in assessing the impact on wildlife in certain areas of the Park, and provide a real appreciation of the actual effect of providing higher levels of illumination in other areas of the Park.

#### Model Park Lighting Concept (MOLO)

The perception of light levels is contextual and proposed light levels for each Park district take into consideration the light in the area surrounding the district. For example, what makes sense adjacent to the Sports Park would not make sense immediately adjacent to the Wildlife Corridor. This supports the application of the Model Outdoor Lighting Ordinance (MOLO) zoning method to the Great Park to establish lighting design requirements based on

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both activity and context which maintain the safety and security standards for which the City of Irvine is recognized.

In establishing target light levels for Orange County Great Park strong consideration was given to the relationship between existing standards for nighttime lighting in the City of Irvine and the amount of light provided by a full moon on a clear night at the equator. These two quantities of light represent opposite ends of the Model Outdoor Lighting Ordinance (MOLO), a guideline that is currently being prepared for distribution by the Illuminating Engineering Society of North America (IESNA) and the International Dark-Sky Association (IDA).

MOLO is the standard proposed for the lighting of the Great Park. In the performance method outlined by MOLO, there are five distinct lighting categories, or zones, as shown in the above diagram of the park, which are:

- LZ 0 - no ambient light
- LZ 1 - low ambient lighting - minimal lighting, small lumen packages, full shielding, carefully applied
- LZ 2 - moderate ambient lighting - necessary lighting, carefully controlled, modest amounts
- LZ 3 - moderately high ambient lighting - permit controlled brightness, tolerates some uplight, encourage some "fun" lighting and low lumen package uncontrolled sources
- LZ 4 - high ambient lighting - urban cores, places of public assembly and high levels of night activity

#### Lighting Zones and Light Levels

Lighting for the OCGP is divided into zones ranging from bright to dark. The lighting design approach recognizes that light typically comes from the south/southwest in a manner similar to a winter day when the sun is low in the sky. Daylight patterns and sun movement are emulated in the Park lighting concept. Moving through the Park districts from south to north, lighting levels decrease with the intensity of uses in the Park.

The brightest areas are the sports fields at the southern tip of the Park. Moving north, lighting levels in the Park are reduced in each Park district, culminating at the north part of the Canyon with the lowest proposed lighting levels. The concept for the Canyon is to establish light levels on paths similar to that provided by the full moon on a clear night.

#### Park Areas without Luminaires

Agua Chionon includes trails that can be used by people, but will be closed to the public in the evening. Therefore, lighting in Aqua Chionon is proposed for pedestrian crossover points only and will provide light at levels similar to the light levels established for the Canyon paths.

Other than trails for maintenance and emergency vehicles, the Wildlife Corridor will not include trails open to the public during the day or night. Therefore, no lighting is planned for the Wildlife Corridor.

#### Path Based Lighting and Wayfinding

Careful orchestration of lighting levels provides a sense of order and orientation. A path-based lighting approach enhances the sense of orientation for nighttime Park visitors and reduces energy consumption. The luminaire family was selected and is being developed to complement the path-based approach by emphasizing movement

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on paths, activity in major areas, and providing lighting that creates a more relaxed environment in gathering or strolling areas.

For example, the Timeline, Promenade, and Trabuco Allee are prominent historic routes through the Park with path-based lighting that provides a sense of orientation for Park visitors. The luminaires proposed for the Timeline are distinct in appearance to help Park visitors recognize the east/west runway axis of the former Marine Corps Air Station at El Toro.

In summary, the path-based design approach at the Great Park:

- Helps to minimize energy consumption
- Provides sense of orientation and direction for visitors
- Emphasizes the form of the Park layout
- Supports ecology and health
- Enhances feature lighting of architectural elements, and
- Fulfills ultimate goals of energy conservation, environmental sustainability and safety.

#### **Lighting, Ecology and Health**

The luminaire family is developed to address the concerns of the International Dark-Sky Association. Full cut-off luminaires only address a segment of ecological concerns that includes the sky, stars and birds. However, cut-off fixtures do little to enhance the habitat of ground dwelling creatures and, in fact, may be somewhat detrimental since these fixtures concentrate light in a downward direction. Excess nighttime illumination affects not only plants and animals, but also the human population. A "less is more" lighting design approach for selected parts of the Park creates a nighttime environment that is friendly to the plant and animals that will inhabit the Park and the humans who will live nearby. Such a lighting approach supports ecological goals while also reducing energy consumption and maintenance.

#### **Energy Guidelines and Light Levels**

Due to the large scale and extended construction schedule for the Great Park, it is prudent to not only review current energy guidelines, but also to look forward to upcoming changes to support lighting related sustainability goals for the Great Park, which are:

- Design lighting to meet and, possibly, exceed American Society of Heating, Refrigeration & Air-Conditioning Engineers (ASHRAE) and Title 24 standards.
- Set lighting levels to comply with IESNA guidelines and stay focused on lighting quality, not quantity.
- Design lighting with a high level of uniformity to reduce contrast ratios while maximizing minimum light levels.
- Safety and security is of utmost importance for people to feel comfortable while visiting the Park.

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### International Dark Sky Association

In coordination with MOLO, the goal is to apply the standards set forth by the International Dark-Sky Association (IDA) as much as possible. There is interest to establish and comply with IDA guidelines in areas utilizing recreation lighting for sports parks in particular. Dark sky standards:

- Minimize light pollution
- Minimize light trespass
- Minimize impact of nighttime illumination on wildlife
- Can meet minimum footcandle levels, and
- Direct illumination downward toward paved surfaces

### SIGNAGE AND WAYFINDING

The signage and wayfinding system at the Great Park consists of forms and colors inspired by the native flora and fauna, as well as the new architecture. The signage system has been developed specifying material and scale based on usage requirements. Signs vary in scale throughout the park, with large monumental signs, like the Jumbotron, placed on the very outskirts of the Park. Within the Park, the scales shift and signs become smaller.

The font used throughout the Park was selected because it is user-friendly, scalable and contemporary. It is very complementary to the overall aesthetic of the landscape and architecture components. The type of font is well-known for its legibility and memorable factors. The unique 'g' becomes the most recognizable icon, representing the Park's identity in a variety of applications and materials throughout the Park.

Each of the distinct districts in the Park is assigned its own unique color and signage materials. The color palette is organized to indicate location and to provide direction to destinations such as the Sports Park, Cultural Terrace, Bosque and so forth. Many materials used in signage are sustainable, such as the use of recycled aluminum, El Toro stone (recycled runway) and reclaimed wood from the site. For example, El Toro stone is used in the ceremonial sign. Sign forms relate to specific destinations, such as the signs related to aerospace around the runway, trails signs embedded directly into the trail, and bubble shaped signs used to direct visitors to the Pods, and to identify services and amenities. Larger scale iconic graphics will be used to identify each Pod and its use.

### ARCHITECTURE

The architectural typology at the Great Park includes the following architectural elements:

#### Historic Buildings

Many existing buildings celebrate the history of the Marine Corps Air Station at El Toro. Examples include water tanks and Hangar 244, built in 1944, which will be preserved and understudy for use as an information/visitor center and/or as part of a military museum.

### **Embedded Buildings**

Structures located along the Cultural Terrace, the social and cultural center of the Great Park, are proposed within earth Berms and will house cultural institutions. The buildings are oriented to take advantage of views of the Canyon, runway remnants, local foothills, and nearby Santa Ana Mountains.

### **Object Buildings**

The Great Park iconic designed Pods are proposed throughout the Park. Pods will come in three sizes and be used for a wide range of functions throughout the Park including cafes, bicycle rental facilities, information centers, and restrooms.

### **Utilitarian Buildings**

New utilitarian buildings designed for the administration, maintenance and operations of the Great Park are proposed with a modular structural scheme and will focus on sustainable systems, including solar energy.

### **Bridges**

A series of bridges cross the Canyon and are critical for circulation in the park. The Botanical Bridge serves as a gateway from the Orchard Parking and Cultural Terrace to the Botanical Garden. This bridge is a porous structure reminiscent of the Lath House at Balboa Park in San Diego. The Land Bridge crosses the promenade where the canyon stream flows into the lake. The Bridge of Seven Turns connects the Promenade to hiking trails within the Canyon.

### **Shade Structures**

Shade structures will function as outposts and transit stops for Park visitors along meandering trails and the linear accesses on the Promenade, Timeline and Taxiway (Crape Myrtle Allee). The shade canopies will be porous in a similar architectural language as the Botanical Garden Bridge.

### **Solar Panel Carports**

The design vocabulary of the Shade Structures is the basis for the Solar Panel Carports that collect solar energy to power the Trabuco Entry Fountain. While collecting solar energy, the structures shade the parked cars below.

Specifically, the Architectural features are described as:

### **Botanical Bridge**

The architecture of the Botanical Bridge itself is part of a family of buildings in the Park including the Trabuco gate and the shade structures. These elements are formally simple and feature white functionally porous skins which provide sun shading and support irrigation and planting along the bridge.

The Botanical Bridge has always been considered both an icon of the Great Park as well as a formal entrance to the Botanical Gardens. The 350-foot span of the bridge provides a unique and exciting transition into the Botanical Gardens high above the lower Lake. This experience is intended to create a threshold between the world full with cars and parking lots and allow visitors to enter a completely new world of the Southern California landscape. The

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porous skin of the Botanical Bridge builds on the tradition of the Lath House at Balboa Park in San Diego to create a 21<sup>st</sup> century standard. The structure is naturally ventilated and provides necessary shade for collections and installations.

The interior of the Bridge is planted with rotating and temporary exhibitions. A pedestrian walkway rises above the installations to provide different vantage points as well as views toward the waterfall and lower Lake. Circulation can be limited to the walkway through the use of natural planted barriers, or Park visitors can walk through the installations, depending on the nature of the exhibit.

#### **Bridge of Seven Turns**

The Bridge of Seven Turns is similar to the other Canyon bridges in that it focuses as much on the experience of the Great Park as it does on the utility of its purpose. Its path connects the Promenade and Bosque to hiking and biking trails on the opposite side of the Canyon. Rather than expediting the journey, the Bridge of Seven Turns creates opportunities for Park visitors to take in the immediate landscape and views. While bridges are typically very directive in their circulation, the Bridge of Seven Turns allows Park visitors to meander across the Canyon as well as enjoy moments of rest and reflection. Each of the turns in the Bridge are derived from various axis and nodes located in the Park which makes its seemingly random conditions in actuality very much a part of the overall Park design.

The structure of the Bridge is intended to look varied and to compliment the surrounding trees. Similar to a bamboo or rope bridge, visitors walk through the canopy of the palm tree forest that grows in the Canyon and stream below. The Bridge's turns and changing widths provide areas of rest where visitors can sit and enjoy the setting.

The Cultural Terrace is the social and cultural center of the Great Park. A 100-foot wide tree lined promenade serves as the key pedestrian and social space linking major cultural facilities. Various cultural programs are located inside a series of sculpted earthen landforms that meander along the southern edge of the canyon. These buildings are oriented along newly created cultural "plazas" which present sweeping views of the Canyon, local foothills and the nearby Santa Ana Mountains.

#### **Cultural Terrace**

The land forms are intended to represent a natural land berm along the edge of the Terrace. The architecture of the land forms includes sustainable green roofs. These "buried" structures are intended to highlight the new land forms along the Lake and not create a series of Architectural statements which compete with the natural surroundings. The MEP systems for the Cultural Terrace are dependent on the institutions that occupy the spaces. As a concept the land forms have recessed mechanical wells that house cooling towers and will be hidden from Park visitors. All mechanical vents and fans are hidden by plants within the green roof system.

The Terrace cuts are high pedestrian traffic zones where people move from the Orchard Parking to the Cultural Terrace. These spaces offer unique opportunities for articulated architectural expression as desired by the institutions that move into the spaces.

### **Land Bridge**

The Land Bridge connects the Upper Canyon with the Lake, and cuts below the preserved runways. The rotating elliptical vaulted profile of the interior creates a contemporary cathedral-like space. The oculus in the center of the Land Bridge opens the space below to natural light. The walls of the Land Bridge are up lit on either side to create a dramatic and inviting experience. The raised wooden walkway follows the stream below and guides Park visitors from one end to the other. Still fountains on either side of the walkway give the sense that the bridge is floating over the stream below. A central trough contains the actual flowing stream water.

### **Hangar 244**

This historic building and associated structures are an important part of the history of the El Toro Marine Corp Air Station. This historic building not only represents a celebration of the historic structure, but also the people who served at this base. Careful evaluation in how this building will be integrated within the Park is understudy. It is an integral part of the Military Museum complex and integral in its relationship to the Great Park.

### **Maintenance Facility**

The Maintenance Facility site scheme divides the maintenance site into zones to separate loud, industrial and messy activities from administrative activities. The four zones include an urban administrative zone, a large vehicle and machinery storage zone, a recycling zone, and a composting zone.

The Maintenance Facility buildings are modular and designed to accommodate phasing and growth. Passive cooling and solar power will highlight the MEP systems of the Maintenance Facility Buildings. All buildings will feature photovoltaic panels on the roof as well as louvered windows and panels to allow for natural ventilation.

While the Maintenance facility is physically separated from the Park by Marine Way, it acts as the heart of the Park and its many operations. This facility will grow as the Park grows to meet its needs and provide a key role in the Park's sustainability mission.

### **Parkitecture**

The *Pods* at the Great Park best represent the pure "object" building typology by introducing iconic yet functional structures into the Great Park Landscape. While their primary objective is to provide necessary services for visitors, the Pods also add to the unique character and identity of Park for future generations.

In the spirit of a 21<sup>st</sup> Century Park, the form of the Pod is the product of digital design technology and construction methods that would not have been possible in 19<sup>th</sup> or most 20<sup>th</sup> Century Parks. The goal is to create an efficient form, capable of supporting a variety of services and easily identifiable to Park-goers wherever they are encountered in the park. The specific Pod locations are determined by a 200' x 200' grid, aligned with the historic runway axis. This organization provides a larger cadence to services; the locations and frequency of Pods is informed by the intensity of programs and the capacities of paths and networks throughout the Park.

## **WATER FEATURES**

A large waterfall visually connects the Park's Upper and Lower Lakes. Waters flow from a pool cantilevered outward from the Upper Lake's earthen dam 16 feet above the level of the lower pool. The pool does not touch the dam, allowing daylight to fall between the cantilevered pool and the dam to the space below, where people walk along a path behind the waterfall. The water falls to the Lower Lake at a rate that varies visually and acoustically, ranging from a flow similar to light rains to a flow that mimics heavy torrents of water. The water is sourced from the lower lake, and recycled in a hidden loop closed from the waters of the Upper Lake. The waterfall is a lighted display at night, illuminated by a new-generation, linear LED source embedded in the weir above and behind the water to create a softly sparkling and evenly glowing effect.

### **'The Water Cycle' Children's Immersive Experiences**

The Earth's water cycle is represented in a sequence of immersive experiences for children in the recessed territories of the northeast quadrant of the Children's Learning Environment. The water cycle consists of evaporation, condensation, precipitation, pooling and infiltration. These elements of the cycle are represented at the Children's Learning Environment as follows: Geyser Pools, Mineral Terraces, Evaporative Mists, Squirting Tidal Pools, Walking Rain, The Lake, The Braided River, and The Steep.

#### ***Geyser Pools***

Three fractured, primordial-looking shallow pools contain wide, low domes that just peak above the water's surface. Vertical jets of water periodically launch into the air from small, round openings in the crown of the domes. The pools are brilliantly colored in the rich color of mineralization. The water jets are internally illuminated from hidden light sources.

#### ***Mineral Terraces***

Delicately overflowing stepped pools encrust one sloped side of a canyon wall. The pools are reminiscent of the remarkable natural hot springs of Pamukkale, Turkey. The waters of the Mineral Terraces, too, are warm.

#### ***Evaporative Mists***

Narrow, loosely curving lines are cut into the paving, crisscrossing each other occasionally. Dense white mists are periodically released upwards from the curved cuts.

#### ***Squirting Tidal Pools***

Membrane-deep waters cover a complex, stretched honeycomb of three-dimensional paving, with regularly spaced elements extending above the water's surface. Small geysers of water leap upward in patterned sequences. Occasionally, a broad wave rolls over the area from one side to the other, 'refreshing' the space for renewed play.

#### ***Walking Rain***

The Native Americans called it 'Walking Rain' when dark, moving clouds were visibly raining from far away with attenuated streamers pointing downward. In this installation those streamers are represented as hardscape sculptures, with embedded rain nozzles that shower the space that demonstrates the precipitation phase of the water cycle.

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#### ***The Lake***

The Walking Rain feeds a large, shallow pool (a 'Great Lake'), which is dammed at one end, where it overflows in a single, slender stream.

#### ***The Braided River***

The slender stream from the dam at the Lake leaps into physical three-dimensional braiding, offering a rich, airborne water presentation, great fun for leaping through, and symbolic of all the interconnected rivers of the world.

#### ***The Seep***

The braided river plays out, and fatigued, it drains back into the earth through a poetic percolation area.

#### **The Great Gate**

The invitation of the monumental rectangular archway is enhanced by flowing water in coordinated, moving patterns, and all mirrored in the broad reflection pools. The configuration of four pools organizes the space immediately around the base of the stainless steel flat arch. The arch is positioned in the two smaller back pools. The larger front pools are for reflections, and for the activities of an "undulant pair," a type of fountain display with rows of arches that change size sequentially in the creation of a coordinated, undulating, shared contour. At Trabuco Entry, two undulant issues from rows of nozzles located close to passersby and stream outward and upward, away from the roadway entrance. The actions of the undulant are open to artistic exploration, but the key activity regards rolling flows migrating forward, into the Park all day. Presumably, then, at night, the undulant reverses its patterns and the contours migrate outward, conducting the fulfilled visitors back to their homes. The gate above illuminated, misting, and impressive remains the chief focus of the space.

#### **Sustainability Goals: Orange County Great Park Water Features**

The design of water features will strive to incorporate sustainability practices wherever feasible. Feasibility and details of these sustainability issues are to be explored in the engineering phase of the project.

Where applicable, the water features will:

- Use minimal water depths to achieve the desired design intent. Shallow water depths will enable low energy costs and maintenance costs due to lower volumes of water required to be re-circulated and filtered.
- Minimize excessive spray and wastage by incorporating wind sensors.
- Utilize temperature sensors and moisture sensors to minimize wastage of water from fog nozzles on days when evaporative cooling is not required at the Great Gate feature.
- Utilize locally available materials over non-local materials in particular finishes (stone, raw materials, etc).
- Utilize locally-sourced equipment, lighting, and systems where feasible.
- Incorporate educational design within the features, particularly in the Children's Learning Environment where the water cycle story is told.

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- Incorporate sustainability by providing comfortable environments for people.
- Utilize low or zero VOC materials wherever possible, in particular, waterproofing membranes.
- Utilize reclaimed water wherever feasible. Exception to this is the Children's Learning Environment features where health and safety is paramount and County Code dictates a higher level of purification.
- Encourage the use of shade trees to minimize evaporative loss from water surfaces on hot days. Leaf debris will be filtered out in basket strainers in the equipment rooms.
- Utilize energy efficient mechanical and electrical systems and components.
- Utilize low energy consumption and long-life light fixtures wherever feasible.

### SITE FURNISHINGS

Site furnishings for the Great Park are being developed as a Park-wide family using a system of standardized components with designed variations for a range of applications and uses. The intention is to provide operational efficiency through the standardized use of materials and components while providing a diversity of applications with a "kit of parts" approach that allows customization within the standardized family.

The Great Park site furnishings family will showcase sustainability using recycled and renewable materials. Furnishings will be designed and sited with sensitivity to both the scale of the site and the scale of social gathering places to support the idea of community.

The site furnishings family is designed to address the following practical concerns:

- Provide a system of furnishings that gives Park visitors places to sit, picnic, recycle trash, park bicycles, quench thirst and barbeque.
- Simplify maintenance with the use of standardized units, such as benches, made of a 'kit of parts' that are interchangeable.
- Promote sustainability through the use of renewable and recycled materials.
- Locate site furnishings to meet City of Irvine requirements.
- Facilitate family and community connections by grouping site furnishings and providing banquet tables.

Dominant materials of the site furnishings family are durable, commonly available, and can be produced by industry manufacturers using standard processes. The goal is to produce distinctive and beautifully designed furnishings that are cost efficient to manufacture and effective to maintain and operate on a life cycle basis. Dominant materials include: wood, pre-cast concrete, metals, and synthetic materials.

### Great Park Site Furnishings Family

The site furnishings family consists of five groups, each with a distinct character and set of applications. The five groups of site furnishings include:

- Straight and tapered linear benches

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- “U” shaped furnishings
- Catalog furnishings
- Customized furnishings
- Furnishings with shade ramadas

#### ***Straight and Tapered Linear Benches***

Linear benches enhance the seating experience for Park visitors through the combination of elements that are the appropriate scale for the expansive spaces of the Great Park. A variety of modular wood seat inserts placed on pre-cast concrete straight sided or tapered bases satisfy a range of applications within the Park and offer visual interest through the placement of individual or multiple benches.

#### ***“U” Shaped Furnishings***

The “U” shaped furnishings include individual seating benches, multiple person seating benches, picnic tables, banquet tables and chaise lounges. “U” shaped benches are proposed in two lengths, some with a side table. Benches with side tables are typically grouped to encourage social interaction in gathering spaces. Designated places in the Bosque, such as the Community Garden, Children's Learning Environment, and Meditation Garden will have “U” shaped benches. These benches are also placed on the Canyon paths.

“U” shaped chaise lounges give Park visitors the opportunity to enjoy the sun while lingering on the great lawn, relax around the Upper Lake, in the Meditation Garden of the Bosque, and around the Fly Casting Pond.

Six-foot long picnic tables are planned for several locations throughout the Park such as at the group campground, Linear Ramble, and Sports Park, and will include models to accommodate ADA requirements. A 24’ long “U” shaped banquet table with ADA seating is designed to encourage community and family reunions at the Great Park.

#### ***Catalog Furnishings***

Site furnishings in this group include manufactured products selected from catalogs. Catalog furniture is used in specialized spaces such within the Sports Park, Preview Park, Palm Parade and cafes. Frequently, catalog furniture is located near Pods that house food service.

#### ***Customized Catalog Furnishings***

Several catalog furnishings will be customized with added pre-cast concrete panels standing on end and embellished with universal signage. Similar to the Pods, the pre-cast concrete panels give identity to elements that house amenities provided for use by Park visitors. The customized furnishings made for the Great Park include bicycle racks, trash receptacles, trash compactors and recyclers, drinking fountains, and dog stations.

#### ***Furnishings with Shade Ramada***

Shade ramadas supporting porch swings shelter Park visitors from the sun. Shade ramadas are also placed over select benches, picnic tables, and banquet tables to increase visitor comfort. Furnishings with shade structures help reinforce the Promenade and Timeline as the primary axial framework of the Great Park. Shade structures supporting porch swings occur in areas such as the Children's Learning Environment located in the Bosque, and the

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Palm Parade located in the Sports Park. Additional shade elements will include umbrellas that shade clusters of tables and chairs.

### **COLOR PALETTE AND MATERIAL FINISHES**

The color palette chosen to reflect the unique nature of each district of the Park is inspired by the native flora, fauna, historical uses and local architecture. Nine dominant colors and a selection of grays have been chosen for the Great Park districts. White will be used for architectural elements. These chosen colors will influence signage, buildings and other elements throughout each district to create visual unity educating and guiding visitors throughout the Park.

In addition to color selection, several material finishes have been selected. These finish materials were chosen based on their sustainability rating in order to ensure minimal environmental impact, in accordance with the vision of the Great Park. The sustainability rating considers factors such as the toxicity, local availability, recyclability, maintenance requirements, and the embodied energy. In addition to sustainable benefits, the selected finish materials provide texture, form, and function and complement the color palettes to create a complete system. Within this document, the finish systems are broken into four main categories. These categories include fences, paving, site furnishings, and shade structure finishes. These four main categories correspond with material selections in each district's drawing package and will direct future selections during subsequent design phases.

### **ART DEVELOPMENT AND INTEGRATION**

The features and facilities of the Orange County Great Park will immerse art into the life of the Park visitor. The close integration of art by artists and designers will arouse the interest and curiosity of visitors and invite their participation. Art will symbiotically merge with the Park's programming exciting visitors about vital issues significant to the Park's vision of body, mind and spirit. These notions of art will take many roles, forms, and approaches as integral facets of the Park.

While art may serve a variety of functions, it will always be central to the vision of the Great Park. Thus visitors, equipped with new art-experiences, may consider anew the subjective question: "what is art?"

Opportunities for arts and culture projects will be woven throughout the Great Park design fabric, ultimately creating a seamless series of experiences. The themes of revelation and self-discovery through art at the site, the region, and the world are key to establish the vision for art at the Great Park. Embedding art into the Park design will foster dialogue among visitors; a dialogue that will extend beyond their initial visit into their daily lives. Educational programs and activities will further engage visitors to form more direct relationships to the place. The spectacular nature of the site, as it stands today and as it develops, will encourage the creation of intriguing and progressive work.

An arts and culture vision statement and guiding principles were established to evaluate and select arts and culture proposals for the Orange County Great Park. The process enables a selection panel to rank proposals and prioritize projects for implementation. These steps serve as a filter supporting the vision of art and culture in the Great Park.

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### Proposed Guiding Principles

The guiding principles for the selection of art and culture sited at the Orange County Great Park are:

- Advances the concept of a public place and social interaction
- Advances the unique character of the Great Park
- Promotes personal, regional and global health
- Ensures financial sustainability
- Concept and implementation is innovative and path-breaking

### Proposed Vision Statement

The Orange County Great Park will be the first great metropolitan park of the 21<sup>st</sup> Century, whose features and facilities will integrate innovative public art and cultural projects of extraordinary creativity and character.

The Great Park will demonstrate its commitment to the Orange County and Southern California community by providing recreational, artistic, and cultural opportunities designed to enhance the quality of life by encouraging social interaction; promoting diversity; and improving public mental health by inculcating guests with a sense of wholeness and well-being.

The arts and culture programs of the Great Park will serve as a living laboratory honoring the spirit of the place and its history with an underlying commitment to sustainability that encourages reverence for the natural world.

The Great Park arts and culture programs will encourage bonds between and among diverse cultures bringing people together through shared experiences in public spaces thereby providing an artful and art filled oasis in the heart of Orange County.

### Living Park

The Great Park will be a place for experimentation and change as aspects of social and environmental sustainability are implemented. The Living Park concept, as developed in the master plan phase, is based on arts and culture collaborations through program, sustainability, infrastructure, natural systems and social interventions. Collaborative projects involving individuals of varying expertise will create innovative programs; focus on sustainability; give visual expression to infrastructure; reveal natural systems; and connect people to their environment, culture, and history.

A Research and Residency Center is planned as a place where artists and designers can collaborate with ecologists, botanists, social scientists, and involved citizenry. This collaborative process will engage artists to investigate and research issues (such as major structures, hydrological systems, alternative energy uses and archaeology) with scientists. The work they produce might take the form of international art, site-specific art, temporary installations, and inside art.

### Cultural and Social Programs

A program evaluation process for the arts in the Park will guide the selection and determine program feasibility. This rigorous approach will ensure a level of quality and compatibility with the Park's overarching vision and goals,

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the arts and culture vision, and the guiding principles. More than 100 program concepts have gone through this evaluation process.

#### **Integrating Arts and Culture**

The art and culture vision for the Great Park will integrate innovative public arts and cultural projects of extraordinary creativity and character. Integrating arts and culture into the Orange County Great Park is an essential element of the plans for a successful metropolitan park, and is key to achieving the goal of exciting visitors about vital issues significant to the Park's vision of body, mind and spirit. A process to bring these projects to reality will need the full support of the Orange County Great Park Corporation, City of Irvine, and leaders in the arts and culture community. Many of these art interventions can be implemented throughout all phases of Park construction and can continue after Park completion.

#### **HEALTH**

A major goal of The Great Park is to address critical issues of our time and support our future by promoting personal, regional and global health. Many attributes of the Park provide opportunities for improving well-being; six major categories and key contributing elements have been identified. These elements will allow visitors to invest in their health, build on their knowledge and unwind from the demands of day-to-day life.

#### **Physical Health**

Countless opportunities for improving and maintaining health are available in the Park. Considering the heightened concern for the obesity epidemic, opportunities for physical activity will prove to be of great value to those who visit. Aside from the assortment of athletic and extreme sports facilities, visitors can rent orange bikes from several stations in the Park, explore the 40+ miles of trails, paths and exercise circuits, enjoy free play in the open fields and children's play areas, and paddle boats at the Lake. The variety of options increases the chance that visitors will find something physically engaging that they enjoy, or introduce them to something entirely new.

#### **Food and Health**

Similar to physical health, healthy eating is another critical strategy to prevent obesity and other chronic diseases. Strategies to encourage healthy eating have been incorporated, such as serving fresh, unprocessed organic food at cafes throughout the Park, grown locally on-site. An important educational feature of the Park - 'From Farm to Fork' - will be displayed through agricultural fields, orchards and programmed events such as a farmer's market. A community garden will support visitors in experiencing organic farming and establishing a healthy diet. Involvement in non-profit food bank programs will make fresh fruits and vegetables from the Park available to those in need. Together, all of these elements promote education about healthy food, how it is grown, harvested, distributed and the nutritional benefits. Making this knowledge easily accessible provides clarity and enrichment, enabling visitors to make healthy choices at home.

#### **Historic and Cultural Health**

A fully realized public space embraces history and culture, recognizing the value and contribution to the present, which promotes future awareness and understanding. The history of the Park site has been honored through the

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careful placement of commemorative memorials and preservation of original runways, buildings and artifacts. Elements from regional history have been restored or recreated, such as agricultural fields, citrus orchards and ecological communities. Various cultures will be exhibited and celebrated through programmed events at the Library, museums, performances and events at the Cultural Terrace and other spaces.

#### **Educational and Mental Health**

Many people today live busy, stressful lives and take little time to slow down, relax, meditate or connect with nature. Over time this can begin to affect mental health and quality of life. Being the largest public space in Orange County, many opportunities exist for improving mental health and promoting intellectual stimulation. The Lake, Casting Pond and 40+ miles of trails allow a connection to nature, offering a means of exploration and escape. The Tai Chi Garden and Berm Garden are spaces for relaxation, meditation and reflection. The Botanical Garden, Agricultural Fields, Library and museums provide notable opportunities for mental stimulus. Programmed events such as school field trips, guest speakers and tours allow visitors to benefit from the 'outdoor classroom' aspect of the Park.

#### **Environmental Health**

There is growing concern for the environment and the effect on personal, regional and global health. With the vision to create a sustainable landscape, the Park will function as a fully-integrated demonstration of sustainable practices and as an experimental playground for new technology. Progress will be measured and monitored to ensure goals are met and enable success. From restoring ecological habitats, to using renewable energy, to composting/recycling waste, to using biodegradable or reusable utensils and plates; all contributions are significant and provide visitors with take-home knowledge. Refer to the 'Sustainability Features' and 'Ecological Guidelines' documents for additional information.

#### **Social Health**

Social health is fostered in many ways, contributing to the overall synergy of the Park. Paths and trails through the Park connect with regional trails, completing an extensive multi-use trail system. Entries into the Park are linked to adjacent neighborhoods and regions, encouraging community involvement. Spaces such as the Cultural Terrace, Timeline, museums and Trabuco Entry promote civic engagement and allow for performances and interactive events. Sports fields and courts allow for team play, interaction and relationships. Many of the Park features are designed to be inclusive for all ages, economic means, cultures and abilities to be a fully inviting space for everyone.

### **ENGINEERING**

Engineering includes preparation of a complete site-based evaluation of the Park design and attendant engineering plans, details, and analyses. Engineering work respects underlying site opportunities and constraints. Engineering is integrated into the Comprehensive Park Design submittal and includes:

- Clean-up site remediation coordination and groundwater analysis.
- Site demolition, preparation, and recycling plans with quantities.

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- Rough and precise grading design with quantities.
- Master Plan of Drainage, including basis of design reports and analyses addressing each of four major drainageways, as well as the Park storm drain system.
- Specialized designs for water conservation and aquifer recharge.
- A Water Quality Management Plan utilizing “natural treatment system” features.
- Roadways, trail, and accessway plans establishing ingress/egress.
- Utility plans for sanitary sewer, potable water, recycled water, and “dry” power-gas-telecommunications conduit.
- Horizontal geometry and subdivision control based on field set survey markers.
- Specialized engineering for created habitats in the Wildlife Corridor and Agua Chinon.

Of special note, is the inclusion of an eco-adaptive® approach to the Park engineering, featuring:

- Green Street Guideline designs and alternative standards.
- Rainwater harvesting systems.
- Recycling of runways, debris, topsoil, and building materials.
- Natural hydration of created habitat (no irrigation).
- Sustainable energy coordination.

With this Comprehensive Park Design submittal, the site engineering meets the intent and goals for this phase of Park design. Engineering work on the project beyond this phase will continue, with a focus on off-site “backbone” infrastructure plans and reports to include:

- OCGP Water Course Debris Yield Analysis.
- Bee Channel Basis of Design Report.
- Agua Chinon Basis of Design Report.
- Serrano Channel Basis of Design Report - Phase 1/Phase II.
- Borrego Channel Basis of Design Report.

The engineering provides the team with the best creativity and design solutions for what will become a great metropolitan park for the 21<sup>st</sup> century.

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#### ECOLOGY

The Ecology System is integrated across the many districts of the Orange County Great Park and is inseparable from other systems operating in the Park, including Engineering, Grading, Planting, Sustainability, and Management. Ecological restoration and environmental education form the main tenets of the Ecology System.

Successful implementation will result in:

- Ecological restoration of hundreds of acres of the former military base into a complex Southern California biome
- Establishment of the Park as a critical link for the movement of plants and animals within the region
- Development of an educational program that promotes science literacy and environmental awareness among Park visitors.

The foundation of the Great Park is an expression of sustainable living for the 21st-century. To implement this, the Ecology System stresses the natural heritage of Southern California which has evolved to live for thousands of years in this unique climate.

A great portion of the Park with its many functions is set into a largely native landscape that is beautiful but also relatively easy to maintain. The outcome of a deep level of integration and collaboration between the different Park systems is a coherent Park whose character and plant palette change from place to place but always retains key elements of the region's natural heritage. The shaping of the earthworks in the natural areas of the Park mimics natural landforms and provides different microenvironments that plants and animals require. The trails throughout the Park were routed to show Park visitors the vast majority of landscape types and allow them to take home a message about the ecology of the natural systems operating in the Park. The streams and lakes were designed to maximize natural resources and to support interesting and unusual native animal species. Water use in the Park is minimized by the use of the plants adapted to long summer drought. Lighting has been integrated into the Park in a way so as to not interfere with the life histories of thousands of animals that are active at night. The Ecology System is expressed in the Botanic Garden through its mission and educational programs, and is most visible in the Canyon, Agua Chinon, and Wildlife Corridor districts of the Park.

One of the ideals of the master plan was to have the Great Park be more than just a lovely space. It also must be an example of sustainable living; a teaching resource that demonstrates a more environmentally-conscious style of living for the new century. Ecology as a system within the Great Park has focused on environmental health and teaching Park visitors lessons that can be brought back to where they live and work. Ecology as a system does not just define natural spaces, but integrates them with all the other aspects of Park life so that the Park functions at the highest level for many decades and become a model for the region as a whole.

#### PLANTING

The 1,347 acres of the Orange County Great Park have the potential to create a green oasis within rapidly developing central Orange County. Situated at the site of the former El Toro Marine Corps Air Station Base, the minimally developed tract of land that will become the Great Park connects the Cleveland National Forest and the

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Laguna Coast Wilderness Park. The Orange County Great Park will be home to many Park features, programs, and uses, creating a diverse landscape that will support a multitude of purposes and visitors.

Over 70% of the Great Park's 1,347 acres will be planted landscapes. These planted landscapes can be classified into three distinct categories, which are collectively referred to as "three-Parks-in-one." These three Parks are classified as follows:

- The Habitat Park
- The Canyon Park
- The Fields and Memorial Park

Within each of these three Parks there are subset landscape types.

#### **Habitat Park**

The Habitat Park is located at the eastern edge of the Great Park and contains the Wildlife Corridor and Agua Chinon districts. The primary function of plantings within the Habitat Park will be to provide wildlife habitat.

The planted landscape within the Wildlife Corridor is designed to support the movement of wildlife between the inland and coastal open space preserves. Plantings are tailored to specifically support four targeted species: coyote, bobcat, California gnatcatcher, and least Bell's vireo. The planted landscape must provide enough cover and clearance to ensure that these species are comfortable using the corridor to travel from one open space to another. The planting in these reaches must also respond to soil conditions and seasonal moisture levels. Based on these criteria, the plantings selected for this area will reflect plant communities indigenous to Orange County and will provide appropriate cover, habitat and food to support movement through the Corridor by the targeted species.

The type of planting planned for the Wildlife Corridor is classified as restoration, with the ultimate goal of bringing the land back to a more natural state than the current condition.

Located to the west of the Wildlife Corridor, Agua Chinon will provide wildlife habitat for local species while also serving as a corridor for wildlife movement. Agua Chinon will encourage less sensitive wildlife species to move into and out of the Park. Within this district, the historical Agua Chinon stream will be daylighted and native plant communities will be restored. This landscape restoration will include species native to local plant communities and nearly 25 acres of landscape mitigation. The mitigation area will consist of intermittent waterways planted with wetland/riparian vegetation along the length of the daylighted Agua Chinon stream. These wetland/riparian plant communities include emergent marsh, southern mixed riparian scrub, and southern mixed riparian forest and will be planned by Heritage Fields.

Plantings outside the mitigation area will be less moisture-dependent than the wetland/riparian communities, with those furthest uphill from the mitigation area requiring the least moisture. The plantings are to be 100% indigenous to California and each planned plant community will support subtle variations in species composition dependent upon slope, aspect, and soil moisture.

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#### Canyon Park

The Canyon Park is located to the west of Agua Chinon and consists of two districts: the Upper Canyon and the Lower Canyon. Plantings within the Canyon Park will be a mix of culturally important California-friendly species and California native species that support local wildlife.

Many specialized California native plant communities are planned for planting within the Upper Canyon district, such as the Palm Oasis at the northernmost end of the Upper Canyon, adjacent to the Upper Canyon parking lot. This landscape is a re-creation of a typical palm oasis found in the California desert. Layers of El Toro Stone placed into the landscape will create habitat for lizards and other wildlife that also take refuge in the cactus scrub growing on adjacent slopes.

South of the Palm Oasis, an expansive wetland will polish the reclaimed water used in the stream that runs the length of the Upper Canyon. Cattails, reeds, and other aquatic vegetation will be planted in the wetland, removing nitrates and improving water quality as they grow. The polished water will exit the wetland and flow into the Upper Canyon stream, eventually arriving at the lake in the Lower Canyon. Lake water will then be utilized for irrigation throughout the entire Great Park.

Rising slopes will flank both sides of the Upper Canyon stream. The lower reaches of these slopes are planned as a riparian landscape filled with California sycamores, California cottonwoods, and white alders.

As the landscape transitions from the canyon floor to the sides and the tops of the Upper Canyon, the drier slopes will support a variety of hardy plant communities such as oak walnut woodland, chamise, and grasslands. The composition of oak plant communities is designed to vary along the length of the Upper Canyon, as these communities are dependent on slope aspect and soil moisture levels.

Oak grasslands occur in dry sunny locations; in the Upper Canyon this community will be located in the areas facing the Fields and Meadows district to the west of the Upper Canyon. Here the oak grasslands will transition into grassland savannahs.

In addition to the specialized California native plant communities of the Upper Canyon, there are many special collections and cultural overlays planned for this district's planted landscape. The majority of the Park's palm collection, for example, will be located within the Upper Canyon. Palms within the collection will grow in four distinct locations within the Upper Canyon. The Palm Oasis, located at the northernmost end of the Upper Canyon, will be planted with the California native fan palms (*Washingtonia filifera*). The "T" Street Bridge will be a grouping of Guadalupe Island palms (*Brahea edulis*). The Bridge of Seven Turns will be a grouping of "Palms of the Aspect." These palms will include species from around the world that are suited to grow in Orange County. The palm species will be planted according to sun-shade, wet-dry and cultural requirements, highlighting the great diversity of palms and their various adaptations to different physical environments. The fourth grouping of palms will grow in the southernmost end of the Upper Canyon. The palms in this location will be palm classics and varieties that have historical connection and longevity in Southern California.

Another specialized area of landscape planting is planned adjacent to the Timeline before it dives into the floor of the Upper Canyon. This artistic landscape will focus on contrasts of light and dark foliage, and is called the "Black and White Garden." The large circular black and white pavers of the Garden will reinforce this artistic contrast.

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The Lower Canyon is a highly populated haven of the Orange County Great Park and has a landscape that exemplifies the nature of cultural diversity. The planted landscape of the Lower Canyon will showcase species from the five Mediterranean regions of the world, including Southern California's native flora, emphasizing the cultural importance of these plants to Southern California. Mediterranean species are characterized by their ability to survive extended lack of rain in the summer months, growing and blooming primarily during the short winter rainy season. Since these plants have a long established connection to Southern California's low water requirements and cultural significance to the region, they are an important part of the landscape within the Lower Canyon. The Lower Canyon has three subset landscapes: Cultural Terrace, Lake, and Botanical Garden.

The planted landscape of the Cultural Terrace will be anchored by a backbone of California natives, and supplemented with Mediterranean biome plantings. The northernmost end of the Cultural Terrace will be planted with heavily wooded forest surrounding a green bowl. As the forest approaches the museum berm areas of the cultural terrace, it will thin to grassland and meadows. Grasslands and meadows will be planted on the green roofs of museum buildings within the berms, utilizing a combination of intensive and extensive planting technology. The green roofs will help insulate the buildings, thus not only providing green biomass to the Park, but also reducing heat loads and energy requirements for the facilities beneath. The mid-terrace adjacent to the planned museums and cultural institutions will support a loose allee of jacaranda (*Jacaranda mimosifolia*) trees that will produce a dense lavender flower display during the early summer months. The terraces below the mid-terrace will be planted with Mediterranean biome collections, some of which will support hummingbird and butterflies populations, and will lead down to the Lake. The lake edges will be planted with emergent vegetation. The diverse plantings along the edge of the lake will create a variety of habitats for amphibians, water birds, and other wildlife.

The Botanical Garden terraces are architecturally distinct from the rest of the cultural terrace, embedded in the south-facing slopes climbing up from the lake edges.

Behind the waterfall between the two lakes a green fern grotto will provide a cool respite on hot summer days. The cascading water will settle in the long shallow pool below and move its way into the sinuous lower lake. The lake configuration will support more wetland areas and create specialized landscape collections. Adjacent to the planned tea house will be a collection of lotus plants. As the lake extends southward, a collection of edible palms that have world cultural significance, such as date palms, sago palms, and the Chilean wine palm (*Jubaea chilensis*), will become integral to the landscape. Other collections within the Botanical Garden will highlight California native plants, plants of the Mediterranean biome, and culturally significant plants.

#### Fields and Memorial Park

The Fields and Memorial Park encompasses most of the western reach of the Great Park and includes six districts: the Promenade, the Timeline, Fields and Meadows, Orchards Parking, Sports Park, Bosque, and Trabuco Entry. Plantings within the Fields and Memorial Park will emphasize cultural landscapes, supported by a foundation of California native and California-friendly species.

Behind the terraced slopes of the Botanical Garden, transecting the Upper and Lower Canyons, is the Promenade, an open space corridor memorializing the El Toro runway. Portions of the runway will remain in places along the Promenade to remind Park visitors of the history of the landscape prior to its transformation into the Orange

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County Great Park. There are many subset landscapes within the Promenade: the Promenade of Senses, the Military Memorial, the Preserved Runway, and the Bowling Green.

The Promenade of the Senses is planned as a very formal parade of trees that will provide shade along its length. At the beginning of the Promenade of the Senses a Great Park monument sign on a raised berm will announce this location of the Park. One of the rooms will include an oculus that send shafts of sunlight onto the land bridge underpass below. Within the light shaft area a solstice moss garden is planned. Other rooms are created by formal groupings of trees. The understory planting here will be a mosaic of simple panels of monotypic plantings. Specialized collections of plants are planned for each panel. The southernmost series of panels will utilize California indigenous plant materials. From here, the collections will transition into South African succulents, which are very similar to North American succulents. The northernmost panels of monotypic plantings will spotlight Australian plant materials. From the Promenade of the Senses, a stretch of preserved runway leads to the Bowling Green a very simple landscape of drought tolerant turf. This will allow flexible uses within this space, as a variety of activities are anticipated for this location. The simple green landscape will allow for open space visibility and extend to the borrowed landscape of the Cleveland National Forest beyond.

Bisecting the Park into northern and southern portions, the Timeline transects several Park districts, including the Sports Park, Fields and Meadows, and Upper Canyon. The main planting along the Sports Park portion of the Timeline will consist of native California sycamores (*Platanus racemosa*), creating a strong linear allee. Where the Timeline separates the Fields and Meadows district from the Lower Canyon, Italian stone pines (*Pinus pinea*), a staple tree in the California landscape, will introduce the Pinetum. The Pinetum will contain a regionally significant collection of conifers organized along a spatial backbone comprised of predominantly three California-friendly and culturally significant pines: Italian stone pine (*Pinus pinea*), Aleppo pine (*Pinus halepensis*), and Canary Island pine (*Pinus canariensis*).

To the north of the Timeline and west of the Promenade is the Fields and Meadows, an important cultural landscape of the Great Park. The Fields and Meadows district contains the Great Lawn, fruit and nut orchards, and row crops. The Great Lawn will allow for a multitude of uses, such as family picnics and larger planned events. A pathway that crosses the Fields and Meadows will be planted with an allee of crape myrtles (*Lagerstroemia spp.*). The agricultural fields within the Fields and Meadows will grow heritage plantings that will celebrate agriculture. Citrus will be on display, as well as row crops and fruit and nut trees that thrive within the region. Agriculture was once a vital part of Orange County and, although its economic importance has diminished over the years, these heritage plantings will ensure that agriculture retains its cultural importance into the future. The Fields and Meadows agriculture areas may also serve a sustainable purpose, supplying fruits, nuts, and vegetables to farmer's markets and food banks throughout the community.

Another district of the Park that will support Orange County's agricultural heritage is Orchard Parking. This landscape was developed to emulate the citrus groves that were once a significant landscape in Orange County. The Orchard Parking lot will contain approximately 46 acres of agricultural based grove trees.

The Orchard Parking landscape will have a Green Street design emphasis, as seen in the planned tree-planted medians of Great Park Boulevard, the parking bay areas, and the collection swales adjacent to the parking lot. Great Park Boulevard will have no curbs, allowing for storm runoff to collect in the adjacent planting areas. This same concept will be employed in the parking stalls, creating rain garden planters designed to catch rainfall that

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will aid in watering the planting while also decreasing the amount of storm water runoff from the site. Slotted curbs designed to separate the parking lot paving from the vegetative swale will funnel runoff into the vegetative swales, establishing a more sustainable landscape.

The Sports Park landscape has public functional responsibilities. It is required to service a multitude of sporting activities from soccer, baseball, softball, tennis and basketball to skateboarding, rock climbing, chess, and more. The planting in the Sports Park will be an active landscape to support these activities. One of the goals of the landscape is to encourage family use with trees that provide shade. In keeping with the overall planting design direction of the Park, the Sports Park will have an indigenous plant palette backbone, with California sycamore (*Platanus racemosa*) trees planted along the Timeline. Limited areas of turf will allow for picnic gathering areas within the Sports Park. The planting design will be contemporary while also incorporating planting styles reminiscent of the 1940's to remind Park visitors of the El Toro Marine Corps Air Station's heyday.

The Bosque is a 67 acre arboretum north of the Sports Park containing a varied collection of plantings. Similar to other planting themes throughout the Park, California indigenous plant material is an integral part of the Bosque landscape. This landscape is designed to carefully highlight changing seasons through an orchestration of fall color, seasonal blooms, trunk color tones and texture. Within the Bosque are a series of Pocket Parks, such as, Community Garden with agricultural based plantings and the Meditation Garden which will include plantings from Asia and that support chi.

Trabuco Entry is the formal ceremonial entrance to the Park. The planting will be more minimal in this district than elsewhere in the Park. The emphasis will be on the Great Gate, a 270-foot wide by 89 feet high monumental gateway, and its surrounding fountains and lawn area. The Great Gate will frame vistas into the Park and will be flanked on both sides by Aleppo pines (*Pinus halepensis*) and flowering gold medallion (*Cassia leptophylla*) trees. Parking at Trabuco Entry is to be screened by hedge trees.

#### Common Themes

One of the sustainability goals of the Great Park is to highlight and restore Southern California's unique and diverse native vegetation. Large portions of the Park will contain only native plants, including Agua Chinon and the Wildlife Corridor. The Upper Canyon will also be planted predominantly with native vegetation. Some areas of the Park, such as the sport recreation areas, public lawns, agriculture heritage plantings and potential cultural gardens will contain fewer native species. Overall the Great Park will include approximately 75% native and California-friendly non-native plants. California-friendly plants have modest water needs and do not appear on any of the state's current invasive plant lists. This type of landscape design clearly demonstrates the beauty and value—visual, ecological, and economical—of using native species or others which are appropriate for the region's semi-arid climate. The Park will be a model of wise land use for the 21<sup>st</sup> century, demonstrating how people and nature can live together in a mutually beneficial way.

Within these native and California-friendly plant communities, the planting design of the Great Park is both rich and diverse, supported by key plants that will create a backbone and framework to the Park.

Healthy plant establishment and growth within these landscapes is dependent on healthy soil. Healthy soil is a living, biologically active medium that provides plants with nutrition, minerals, aeration, and water. Agronomic soil testing can measure the health of soils and provide recommendations for amendments or other actions necessary

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to ensure that the soil supports healthy plant growth. Agronomic soil testing is especially important in areas of contaminated soil, disturbed soil, or compacted soil, as these conditions can result in soil that may not sustain healthy plant growth. Soil testing prior to grading can identify healthy soils that can be stockpiled for use once grading is complete and planting begins.

In order to have a healthy growing park, diversity of plant material will be important. The Park landscape will be a living entity with outside influences yet to be determined. This landscape will also have to be adaptable to change. The potential of global warming to change the climate of the Great Park cannot be ignored, and the ability of the Park's landscape to adapt to these changes is important to the success of the growing Park. Thus, successive plantings should be supported. Creating this sustainable green oasis will serve Park visitors and wildlife through the ages. Proper planning is important, and stewardship is required.

### IRRIGATION

Planting design and irrigation system design are the two areas where the greatest impact on water conservation and other sustainability goals can be achieved. Both plant selection and irrigation design, are based on the given environmental conditions for the site along with the added objective to create aesthetic beauty. The landscape irrigation for the Park will serve to provide supplemental water when rainfall is not sufficient.

#### Landscape Irrigation Zones and Sustainability

The goal of the irrigation system design is to provide a quality irrigation system that can be properly managed to distribute supplemental water in a way that adequately maintains plant health while conserving and protecting water resources and the environment.

The design of the landscape of the Great Park is focused on sustainability. To be successful in our goal landscape was designed primarily to require low water needs. Management and conservation of water used for irrigations of landscaped areas will be realized through the division of all landscaped areas into distinct irrigation zones. The purpose is to maximize the efficient use of irrigation water by allocating more water to areas where it will have the greatest impact - i.e., in the immediate vicinity of high and medium high water use landscape areas such as the Great Lawn - and less water to areas with very low water use landscapes such as shrub areas and low water use landscapes with drought tolerant plant materials as found in the Wildlife Corridor and Agua Chinon.

The water requirement of each zone is determined to a large extent by the selection of plant species used in each zone. Plants having similar water requirements will be grouped together in the same zone-i.e., low water users in one zone, moderate water users in another, etc. Each zone will be irrigated separately and with the most appropriate type of irrigation system (low precipitation spray, standard spray, rotors, sub-surface drip, etc.). In this way, the frequency and amount of water being applied through irrigation can be carefully controlled so as to avoid needless over-watering that result when plants that have both high and low water requirements are mixed together.

The landscape is broken down into several water usage categories: Very Low, Low, Moderate, and High. The irrigation system for the Great Park shall be designed to be efficient and to uniformly distribute the water. Specific criteria that shall be considered in the design will include: soil type, slope, root depth, plant materials, microclimates, weather conditions and water source (quantity, quality, and pressure). To conserve and protect the

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Great Park's water resources, the irrigation system will be designed to include appropriate equipment components that meet state, local code requirements, and site requirements.

Careful planning of the irrigation system for the Great Park will ensure success for the landscape while meeting the sustainability goals for the Great Park.

Agricultural areas will be maintained by the agricultural operators who will be encouraged to use water efficiently to be consistent with the sustainability goals of the Great Park. The amount of irrigation water required to sustain the various agricultural crop types will be determined by the agricultural operator and shall be consistent with the condition E.46 of PC Resolution 07-2855 as approved by the City. A point of connections will be provided for each agricultural area based on an estimated water use and flow demand for crop types found in the area. From this assigned point of connection the agricultural operator will design and construct an agricultural irrigation system based on a specific crop type. Similarly, Community Gardens will be provided with a point of connection and quick couplers for the crops that will be grown in the gardens.

State-of-the-art, weather based automatically controlled irrigation systems will be utilized and designed into the entire Great Park landscaped areas. Connection to internet management services including daily ET updates will be utilized and designed into the entire Great Park landscaped areas utilizing "Smart" controller technology. Flow sensors and master valves shall also be provided to ensure water is applied only when needed.

### SECURITY DESIGN CRITERIA

Safe design strategies were carefully integrated into the overall site design of the Orange County Great Park to meet the safety needs for all Park visitors in both the natural and built environments. Finding the balance between aesthetic design and security protection is the basis for The Great Park's design solution. The Great Park trail network and social spaces have limited or no vehicular conflict, use increased visual site lines, develop open planting layouts, and clearly defined spaces and access points. Great Park spaces also integrate controlled entry and exit points, comprehensive wayfinding system, and numerous fire and emergency access points and routes. In coordination with the Irvine Police Department, Park patrolling is under evaluation, such as, deployment of foot patrols, bicycle patrols, personal electric transport, and equestrian patrols, The Great Park additionally incorporates modern safety and security devices. The Park will utilize Smart Lighting control devices to remotely control and monitor outdoor lighting for increased visibility. Smart Cameras will allow real-time monitoring and signaling. Multi-Functional Kiosks will be information hubs for assistance requests, interactive directions, Park information, and sign-in capabilities. As The Park moves forward technological components such as security cameras will have to be evaluated in order to be current with the latest technological advancements. Other devices include Mobile, Video, and Audio Technology to increase information to Park users. With a new Irvine Police Headquarters and Fire Department Station in close proximity to The Great Park along with numerous entry points and circulation routes within the park, safety and security alert response time is reduced which can be all the difference. These measures and the infrastructure to support them together enable The Great Park to be a safe and relaxing place for visitors to unwind and connect with nature, their community, and themselves.

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#### **MEDIA AND TECHNOLOGY**

The Orange County Great Park plans to integrate technology into the overall experience and to create a learning-ready environment. The internet has created a digital revolution for the 21<sup>st</sup> century and personal technology devices are continuing to evolve and change how we communicate.

The Orange County Great Park plans to implement an IP-based (Internet Protocol) media and technology plan that will include elements for communications, energy, and security built upon a sound foundation of infrastructure and operating systems. This approach will provide the technology and infrastructure necessary for immediate Park services, future technologies as they become available, and to facilitate collaboration, outreach, and research. The network will be highly scalable to ensure the ability to increase network capacity (bandwidth) dynamically to meet the needs of new or improved services and applications in a cost effective and timely manner.

The Great Park has opportunities for technological partnerships. Not only are AT&T and Cox the incumbent telecommunication service providers, but California is home to Cenci (The Corporation for Education Network Initiatives in California) and more than twenty institutions of higher learning and Internet2.

Utility provisioning for the Great Park includes telecommunications, power, light, water/waste processing, and energy reclamation. In all components, the environmental footprint of the Park will be considered.

The following technologies as of 2008 are integral to the development of the Media / Technology system:

- Energy/Power
- Lighting
- Telecommunications
- Systems and Security Monitoring
- Interactive Technology

Technology will not only be used in basic Park operations, but also to physically and emotionally engage individuals and groups in Park resources and programs. Technology will be used to provide real-time information to the community regarding the benefits of the Park and current events, to enable collaborative research and learning, and to assist in fundraising and engaging the public in park-sponsored activities.

#### **OPERATIONS AND MAINTENANCE**

The maintenance and management of the facilities and landscape requires a commitment to the vision of the Great Park and goal of achieving excellence. A total commitment to strive for quality in performance and workmanship will greatly influence the successful outcome of any task or project.

To achieve this goal it is essential to bring forward a full understanding of the overall approach for each Park district and park-wide functioning system, in order to preserve and maintain design integrity, sustainable practices, infrastructure requirements, operational aspects, public engagement factors, and the future planning of the Great Park. This integrated process will enable the successful management of this 21<sup>st</sup> century metropolitan park of Orange County.

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#### **Park Organization**

The Great Park is organized according to a web of major park-wide systems, and subdivided into distinct geographic districts. The Park systems occur throughout most of the Park and are considered the functioning component to make the Park work as a whole. Understanding of these systems ensures the longevity of the Park vision. The systems include sustainability, utilities, landscape, signage, architecture, lighting, water features, media & technology, art, and others. The park-wide systems support a holistic framework creating overarching layers that contribute to the Park aesthetically, environmentally, sustainably, and operationally. The Park districts are distinct geographic areas that represent a special theme. Park systems intersect many of these districts. Examples of Park districts are the Wildlife Corridor, Agua Chinon, the Upper Canyon, Lower Canyon, Orchard Parking, Sports Park, Bosque, Trabuco Entry, Fields and Meadows, Promenade, and Timeline. These are areas that based on their features and programs have distinct operation and maintenance requirements. Understanding of Park districts is also essential for the longevity of the Park vision.

#### **Maintenance Facility and Maintenance Access Road Plan**

Three maintenance facility locations are planned for the Great Park. The Primary Maintenance Facility is located at the western edge of the site across Marine Way. A Secondary Maintenance Facility is located in the Upper Canyon district near Agua Chinon and the Promenade. A Maintenance Facility is also planned within the Botanical Garden. Paved and unpaved maintenance roads will ease Park maintenance access throughout the park. Gated access is located at the restricted Wildlife Corridor district.

The Primary Maintenance Facility will be the central hub of Facility Maintenance, Landscape Maintenance, Park Operations and Park Programs.

**Advancements, Enhancements, Changes and Deletions**

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**A.1 PARK PLANNING & DESIGN**

**A.1.1 Park Features and Programming**

***A.1.1.1 Analysis & Evaluation of Proposed Programs***

- Previously completed

***A.1.1.2 Ranking & Prioritization of Proposed Programs***

- Previously Completed

**A.1.2 Develop/Create Overall Park Systems**

***A.1.2.1 Circulation Systems***

- Finalized plans, sections, elevations, perspective imagery for each system individually as well as a composite of all systems. Plan lay-outs and design support documents indicates the relationship of circulation components, with one another
- 3 Great Park Shuttle stops have been added to the Cultural Terrace, Sports Park / LV Street and the Children's Learning Environment within the Bosque
- Fixed Guideway length of route has been revised consistent with Irvine City Public Works proposed alignment
- Parking space counts have been redistributed between Sports Park, and Orchard Parking. More ADA stalls were added to Trabuco Entry. The redistribution meets the minimum parking counts required in the approved Master Plan and current Traffic Access Study for the Great Park.
- Parking lot locations have been modified at Sports Park
- Vehicular Circulation including Fire/Emergency access has been adjusted and coordinated with OCFA
- Monitoring trail within the Wildlife Corridor has been removed to be in compliance with the approved Master Plan

***A.1.2.2 Lighting Systems***

- Further development of Lighting System Design Plan – Layout of a typical array of luminaires and spacing, sections – Indicating luminaire mounting height and orientation, description of design lighting criteria - intensity, brightness, uniformity, illumination levels and wayfinding, including photometric calculations as approved in concept by the City's Public Safety and Community Services Departments. Descriptoin of Luminair type, distribution pattern, and general form.

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- 5' Column removed from Lighting Systems Family as coordinated with the City of Irvine Community Services Department
- 10' Column changed to 12' Column as coordinated with the City of Irvine Community Services Department
- Double Arm Extended Field Pole (50') removed from Lighting Systems Family, not applicable to current design
- Double and Quad Luminaire Field Pole (60') added to support ball fields
- Double Luminaire Field Pole with Strung Pedestrian Lamp (60') added to provide pedestrian lighting at ball field locations
- Catenary Light with system added to Cultural Terrace, Palm Parade, and Promenade
- Low Concrete Wall proposal added to base of 30' Luminaire Parking Pole at Orchard and Sports Park parking to act as a buffer from vehicular traffic

#### ***A.1.2.3 Signage and Wayfinding***

- Finalized Signage family and hierarchy, signage location plan and elevations; monument and park entrance identity signage, design, locations, placement, scale, form, appearance, and materials,
- Finalized color palette

#### ***A.1.2.4 Site Furnishing***

- Finalized precedent research document for site furnishing research
- Finalized site furnishing system plan, including type of site furnishings for each Park District, including schedule and schematic level detailing for all furnishings
- Finalized imagery and supportive drawings to define proposed site furnishing appearance, function, and materials for the Great Park
- Finalized prototype template plan for site furnishings for each district

#### ***A.1.2.5 Interactive Water Features***

- Finalized Trabuco Entry fountain design including water action, pool design and materials, pump house, maintenance access, and infrastructure
- Finalized Children's Learning Environment Water Canyon design
- Finalized Waterfall design at the Lake including design, pump house locations and sections, maintenance access, and infrastructure
- Schematic Level Sections and Details of each water feature have been developed

#### ***A.1.2.6 Planting System***

- Planting developed for all district areas
- Planting schedules prepared

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- Preparation of Planting Basis of Design

#### ***A.1.2.7 Irrigation System***

- Irrigation updated flow demand, irrigation water use consumption and irrigation water cost calculations.
- Irrigation Design Standards completed reviewed and approved by the City Standard Committee
- Review of Irrigation with City Sustainability – Environmental Programs Administrator

#### ***A.1.2.8 Color and Material Finishes System***

- Finalized color palette selection and material finish selection document

#### ***A.1.2.9 Media /Technology System***

- Finalized Media and Technology including identify media/ technology components for the park, identify energy technologies and potential
- Meet with City Staff to identify and review media/technology alternatives
- Developed Media / Technology system plan

#### ***A.1.2.10 Safety and Security Systems***

- Meet with City Staff and City of Irvine Police department to review Park operations and security.
- Refined Safety and Security concepts for the Park
- Finalized Park Safety and Security Plan and Report

#### ***A.1.2.11 Fire Plan***

- Fire Master Plan has been developed
- Fire / Emergency access has been coordinated with OCFA
- Fire hydrant locations and ingress and egress have been developed
- Fire lane signage and curbs have been developed

### **A.1.3 Develop Drawings for Park Districts**

#### ***A.1.3.1 Upper Canyon***

- Addition of recycled El Toro stone landforms at Upper Canyon parking lot
- Addition of seeps and springs at Upper Canyon above wetland
- Relocation of Pods
- Refinement of pools and riffles near south end of the Canyon
- Refinement of Land Bridge at Promenade of Senses
- Addition of Trabuco Allee bridge to be in compliance with the approved Master Plan

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- Inclusion of Ecological Features such as resource islands to Canyon drawings, sections, and details

#### ***A.1.3.2 Cultural Terrace***

- See Lower Canyon

#### ***A.1.3.3 Botanical Garden***

- See Lower Canyon

#### ***A.1.3.4 Lower Canyon / Lake***

- Boat marina / boat dock location and design refinement
- Addition of Pod at Boat Marina
- Refinement of grading at Cultural Terrace
- Addition of courtyard within bermed Cultural Terrace facilities
- Refinement of Botanical Garden program
- Refinement of Botanical Garden bridge program
- Refinement of paving at Terraces at the Botanical Garden
- Definition of design detailing of Foot Bridges
- Waterfall and lake system has been developed

#### ***A.1.3.5 Orchard Parking***

- Delivery truck access developed adjacent to Cultural Terrace berm
- Added 11' class 1 trails which replaced the 8' and 5' trails along Great Park Boulevard
- Curbs changed from segmented to slotted
- Curbs in Great Park Boulevard median changed to flush curbs
- Refined design of Fixed guideway alignment and stations
- Added RV and bus parking alternatives
- Pathway along Orchard Parking access roads changed from 8' to 15' wide
- Vehicular access drive along Cultural Terrace changed from 20' to 24' wide
- Intersections paving revised to delineate pedestrian crossings
- 2 Pods removed from Parking lot and 1 Pod added along Great Park Boulevard

#### ***A.1.3.6 Fields and Meadows***

- Solar Farm has been added
- Solar Arbor has been added

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- VOR access has been added
- Pod at Fields and Meadows, at Timeline has been relocated.

#### ***A.1.3.6 Bosque***

- Grading of Esplanade at Irvine Boulevard has been revised
- Recycled El Toro stone wall replaced ornamental wood fence at Esplanade
- Great Park Shuttle stop location revised at “T” street, and a stop was added at the Childrens Learning Environment
- More design definition given to the Lotus Pool.
- Pod in neighborhood park is resized and relocated
- Neighborhood Park - Tot Lot is relocated closer to Esplanade
- Solar Arbor added to and leading from Community Garden to support Great Park sustainability goals
- Pod at Childrens Learning Environment has been relocated and resized
- Drainage at south end of Childrens Learning Environment has been added
- Pedestrian access added from “LV” street to Bosque edge
- Pod at Bosque at Timeline has been relocated.

#### ***A.1.3.7 Promenade***

- Preserved runway limits are refined
- Pod locations have been revised
- Planting design for the Promenade of Senses has been developed and refined
- Oculus has been developed to be a more designed art piece
- Railing at Land bridge edge has been incorporated into the design
- Seating at land bridge has been provided
- At grade Labyrinth has been added on paving surface
- Access across Promenade of Senses to Botanical Garden parking has been added
- Overlook has been added
- Great Park monument has been revised

#### ***A.1.3.7 Timeline***

- Linear Ramble Pathways design and lay-out refined
- Fixed guideway alignment adjusted as it integrates with Timeline

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- Pinetum collection planting plan developed

#### ***A.1.3.8 Sports Park***

- Tennis Center moved
- Pod at LV Street removed
- Parking lay-out and location revised
- 20' and 11' path along LV street added
- Curb changed for segmented to slotted
- Track area moved
- Air museum area design developed and updated
- Parking lot adjacent to air museum has been consolidated into the Sports Park parking
- Shuttle stops added along LV street
- Water and pool area removed from plans to be in compliance with the Approved Master Plan
- Parking and circulation entry point along O street moved
- Basketball courts moved
- Volleyball area removed to be in compliance with the approved Master Plan
- The layout and design of the Natural Treatment System basin supporting The Great Park was refined to work with the sports fields
- Parking lot off of Great Park Boulevard revised to allow for closer parking to sports fields
- Parking along soccer fields has been replaced by load and unload area

#### ***A.1.3.9 Trabuco Entrance***

- Two pods have been combined into one pod
- Great park Monument design refined
- Great Park Shuttle stop moved from public street to South Garden
- North and South Gardens have been refined
- Fountain Pump house has been located and sections to indicate access for operations and maintenance and fountain equipment have been added
- Additional Handicap parking has been added to meet parking requirements
- Trabuco Gate configuration and shape has been developed

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#### ***A.1.3.10 Agua Chinon***

- Relocation of Pods
- Addition of Wildlife Kiosk
- Addition of 8' bike and pedestrian trail along eastern edge to be in compliance with the Approved Master Plan
- Site furnishing locations have been established
- Planting has been refined

#### ***A.1.3.11 Agua Chinon DD/CD***

- Request to stop work on this scope by Great Park Corporation

#### ***A.1.3.12 Wildlife Corridor***

- Planting plan refinement
- Barriers design and lay-out refined
- Monitoring trail has been removed to be in compliance with the Approved Master Plan

#### ***A.1.3.13 Wildlife Corridor DD/CD***

- Request to stop work on this scope by Great Park Corporation

#### ***A.1.3.14 Art Development and Integration***

- Art Development and Integration document prepared to capture the inclusion of art within the Great Park

### **A.1.4 Prepare SD Drawing Package**

#### ***A.1.4.1 Schematic Design Package***

- Fully developed with park features, lighting, hardscape, planting, architecture , parkitecture, circulation, primary signage, walls and fencing, water features grading, utilities coordination
- Finalized grading
- Finalized hardscape plans, indicating paving types and locations, curbs, headers, walls and fencing.
- Further development of plant massing and types and planting details, and plant material legends.
- Included Irrigation Schematic Design Plan
- Developed specialized features siting, sections, and elevations
- Finalized site sections incorporating design elements

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#### **A.1.5 Develop Architectural Design**

##### ***A.1.5.1 Develop and Prepare Building Project***

- Architecture of Pod, Cultural Terrace Facility, Maintenance Facility, Land Bridge, Botanical Garden Bridge, Bridge of Seven Turns, additional bridges, Hangar and Trabuco Gate developed schematic level packages

#### **A.1.6 Develop Master Design Standards**

##### ***A.1.6.1 Develop and Create MP Design Standards***

- To be completed under separate schedule

#### **A.1.7 Presentation, Coordination & Outreach**

##### ***A.1.7.1 Prepare Presentation Material***

- Prepared Presentation – Art Work Compendium listing all presentations and stake holder meetings to date

##### ***A.1.7.2 Meetings: City, Client, Stakeholder, Board***

- Completed

##### ***A.1.7.3 Lennar Coordination***

- Completed

#### **A.1.9 Technical Support**

##### ***A.1.9.1 Review cost estimates & phasing***

##### ***A.1.9.2 Planting strategy/procurement/phasing***

- Finalized plant procurement document

##### ***A.1.9.3 Soils testing & assessment***

- Prepared compilation of Soil testing performed to date, along with soil maps of soil types to support planting planned for the Great Park

##### ***A.1.9.4 Outline specifications***

- Completed Outline specifications

##### ***A.1.9.5 Maintenance and operation practices***

- Prepared Maintenance and Operations document covering the following
  - Park Framework – purpose, park organization, and how it applies
  - Park System Development

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- Park Districts Development
- Maintenance Facility

**A.2 Park Ecology and Habitat**

**A.2.1 Ecological guidelines**

- Advancements captured on design sheets:
  - Ecological Features as outlines in the Ecological Guidelines has been incorporated into the Schematic Design Drawing package, example, Wildlife Resource Islands, stream development
  - Wildlife Corridor planting details added to Wildlife Corridor
- Advancements captured within Ecological Guidelines Book:
  - Incorporated final edits into Ecological Guidelines document, including expansion of the habitat restoration section.
  - Added section on ecological effects of artificial night lighting
  - Added descriptions of key microhabitats, plant community characteristics, salvaging and stockpiling natural materials, and environmental permitting
  - Expanded section on special ecological features (added river rock, special plantings-hummingbirds, wetlands and ecology, wildlife kiosk, night circus, canyon stream viewing area, environmental monitoring station, green roofs, lizard rocks, and animal tracks

**A.2.3 Park ecology & natural habitats**

- Advancements captured on design sheets:
  - Ecological Features as outlines in the Ecological Guidelines has been incorporated into the Schematic Design Drawing package, example, Wildlife Resource Islands, stream development
  - Wildlife Corridor planting details added to Wildlife Corridor
- Advancements captured within Ecological Guidelines Book:
  - Incorporated final edits into Ecological Guidelines document, including expansion of the habitat restoration section.
  - Added section on ecological effects of artificial night lighting
  - Added descriptions of key microhabitats, plant community characteristics, salvaging and stockpiling natural materials, and environmental permitting
  - Expanded section on special ecological features (added river rock, special plantings-hummingbirds, wetlands and ecology, wildlife kiosk, night circus, canyon stream viewing area, environmental monitoring station, green roofs, lizard rocks, and animal tracks

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### A.3 Engineering Support

#### A.3.1 *Coordinate with civil engineering*

- Completed

### A.4 Sustainability

#### A.4.1 *Sustainability management system*

- Sustainability Management System – Final Document and Executive Summary prepared

#### A.4.2 *Energy master plan*

- PV array panels have been added throughout The Park to meet the energy demands
- Power source and metering system has been developed and updated
- Solar Farm has been added as a location to evaluate energy production technologies
- Park power demand increased with the detailed development of pumps and lighting and an increase in on site power generation was developed.
- LED is indicated as a possible lamp source for fixtures listed on the lighting cut sheets that are to be submitted as part of the Design Standards.

#### A.4.3 *Sustainable park features*

- Sustainability Information Pod has been added to display the sustainability meters of The Park
- Water discovery trail has been added at the Upper Canyon
- Location of composting toilets have been identified at remote restroom locations
- Waste facility has been developed
- Wildlife kiosks have been added
- Weather monitoring station has been developed

#### A.4.4 *Sustainable products research/doc*

- Prepared Sustainability products research documentation to review and provide a metrics in reviewing materials for sustainability as they apply to the Park.

#### A.4.5 *Preservation plan*

- Previously completed.

### A.5 Structural Engineering

#### A.5.1 *Structural engineering – bridges*

- Developed Structural Engineering and MEP for Bridges in coordination with Architectural Features

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***A.5.2 Structural engineering – buildings***

- Developed Structural Engineering and MEP for Buildings in coordination with Architectural Features