

**CALIFORNIA COASTAL COMMISSION**

SAN DIEGO AREA  
7575 METROPOLITAN DRIVE, SUITE 103  
SAN DIEGO, CA 92108-4421  
(619) 767-2370



# Th20d

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## STAFF REPORT: REGULAR CALENDAR

**Application No.:** 6-19-0925

**Applicant:** SeaWorld San Diego

**Agent:** Darlene Walter

**Location:** 500 SeaWorld Drive, Mission Bay Park, San Diego, San Diego County (APN: 760-037-01-01)

**Project Description:** Conduct a new nightly, approx. 5-minute aerial drone light show with up to 500 illuminated drones above the SeaWorld leasehold for approx. 15 nights from February 4 to February 18, 2020.

**Staff Recommendation:** Approval with Conditions

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## SUMMARY OF STAFF RECOMMENDATION

For many years, SeaWorld San Diego has traditionally ended many of its park days with a nighttime fireworks show. However, in response to changes in patron tastes as well as drone technology, SeaWorld is proposing a limited duration test-run of a nightly aerial drone show during the month of February 2020. The drone shows would involve up to 500 illuminated aerial drones that would be programmed to autonomously take off, perform an approximately 5-minute show up to 400 feet above the SeaWorld leasehold, and then return to land. The shows would involve the drones following pre-programmed routes that depict various shapes formed by their onboard colored lights, accompanied by music played at ground level for patrons within SeaWorld.

The use of drones for such a visible purpose and at this scale has not been proposed before to the Commission, and its novelty and location, within a major municipal marine park that also contains sensitive habitat in the form of California least tern nesting sites, raises the potential of adverse impacts to sensitive habitat resources, water quality, and visual resources.

At this time, very little is known about potential impacts associated with aerial drone shows. However, the Commission's staff ecologist has reviewed the project in consultation with both the US Fish and Wildlife Service and CA Fish and Wildlife, and concluded that given the five-minute duration of the nightly show, the limited fifteen-day show schedule, and the occurrence of the performances in February, outside the bird breeding and bird migratory seasons, substantial adverse impacts to migratory birds or other species are unlikely. However, to allow the Commission to better anticipate potential impacts should SeaWorld proposed greater show frequency or duration in the future, the project has been conditioned to develop a plan that monitors the noise, light, and bird strike impacts generated by performances. If the parameters included in the conditions regarding noise, light, and bird strike are exceeded, the performances must stop until modifications are implemented to the satisfaction of the Executive Director.

**Special Condition No. 1** to establish the parameters of the aerial drone show to limit the location, height, and duration of each performance to limit its potential impact to coastal resources to the greatest extent feasible. Because such a show has not been proposed before, and represents a relatively new use for drone technology, **Special Condition No. 2** requires SeaWorld to implement a light, noise, and bird strike monitoring plan to better understand the impacts such a large number of drones may have as well as to determine if specific impact thresholds have been exceeded that necessitate suspension of the performances. **Special Condition No. 3** formalizes the exploratory nature of the proposed development by limiting its authorization to a single period in the month of February, outside the bird breeding and migratory season, as well as prohibits fireworks performances during any night an aerial drone show is held so as to not compound their impacts. Finally, as this is a new attraction at SeaWorld, which has recently obtained several permits from the Commission for other new attractions, **Special Condition No. 4** places SeaWorld on formal notice that should its attendance exceed four million annual visitors, then new public access enhancement measures in addition to those already contained in the SeaWorld Master Plan may be necessary.

Commission staff recommends **approval** of coastal development permit application 6-19-0925 as conditioned.

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## I. MOTION AND RESOLUTION

### Motion:

*I move that the Commission **approve** Coastal Development Permit Application No. 6-19-0925 subject to the conditions set forth in the staff recommendation.*

Staff recommends a **YES** vote on the foregoing motion. Passage of this motion will result in conditional approval of the permit and adoption of the following resolution and findings. The motion passes only by affirmative vote of a majority of the Commissioners present.

### Resolution:

*The Commission hereby approves coastal development permit 6-19-0925 and adopts the findings set forth below on grounds that the development as conditioned will be in conformity with the policies of Chapter 3 of the Coastal Act and will not prejudice the ability of the local government having jurisdiction over the area to prepare a Local Coastal Program conforming to the provisions of Chapter 3. Approval of the permit complies with the California Environmental Quality Act because either 1) feasible mitigation measures and/or alternatives have been incorporated to substantially lessen any significant adverse effects of the development on the environment, or 2) there are no further feasible mitigation measures or alternatives that would substantially lessen any significant adverse impacts of the development on the environment.*

## II. STANDARD CONDITIONS

This permit is granted subject to the following standard conditions:

1. **Notice of Receipt and Acknowledgment.** The permit is not valid and development shall not commence until a copy of the permit, signed by the permittee or authorized agent, acknowledging receipt of the permit and acceptance of the terms and conditions, is returned to the Commission office.
2. **Expiration.** If development has not commenced, the permit will expire two years from the date on which the Commission voted on the application. Development shall be pursued in a diligent manner and completed in a reasonable period of time. Application for extension of the permit must be made prior to the expiration date.
3. **Interpretation.** Any questions of intent or interpretation of any condition will be resolved by the Executive Director or the Commission.
4. **Assignment.** The permit may be assigned to any qualified person, provided assignee files with the Commission an affidavit accepting all terms and conditions of the permit.

5. **Terms and Conditions Run with the Land.** These terms and conditions shall be perpetual, and it is the intention of the Commission and the permittee to bind all future owners and possessors of the subject property to the terms and conditions.

### **III. SPECIAL CONDITIONS**

This permit is granted subject to the following special conditions:

1. **Submittal of Final Plans.**

- (a) **PRIOR TO THE ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT**, the applicant shall submit a final plan for the aerial drone show that shall incorporate the following:
  - i. The boundaries of the aerial drone show shall be over the terrestrial leasehold of SeaWorld San Diego as shown in [Exhibit 3](#). Aerial drone performances over the open waters of the leasehold or Mission Bay Park are prohibited;
  - ii. All aerial drones involved in the approved performance shall be programmed to return to the performance area or deactivate if they drift outside of the approved performance area;
  - iii. The aerial drone show shall be approximately five (5) minutes in duration and occur only once per night during the approved performance schedule;
  - iv. The aerial drone show shall not ascend more than four hundred (400) feet above mean sea level (MSL);
  - v. The aerial drone show may utilize up to five hundred (500) “Intel Shooting Star” illuminated drones for each approved performance;
  - vi. Any music accompanying the aerial drone performances shall be emitted through the existing SeaWorld acoustic system within the leasehold. No speakers, temporary or permanent, related to the performance may be erected outside of the main theme park area.
- (b) The permittee shall undertake development in conformance with the approved final plans unless the Commission amends this permit or the Executive Director provides a written determination that no amendment is legally required for any proposed minor deviations.

2. **Revised Final Monitoring Plan.**

- (a) **PRIOR TO THE ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT**, the applicant shall submit for review and written approval of the

Executive Director, a final detailed monitoring plan for the aerial drone show that shall monitor the noise, light, and bird strike impacts generated by the performances. The monitoring plan shall be designed by a qualified ecologist and lighting specialist and substantially conform to the monitoring plans submitted to the Commission titled “Draft Noise Monitoring Plan – Proposed Nighttime “Drone” Display” by Dudek, dated April 17, 2019, and “Cost Proposal for Biological Monitoring Services for the Winter 2019 Drone Show” by Merkel and Associates, Inc., dated August 1, 2019, except that the monitoring plan shall be revised to incorporate that following:

- i. If monitored noise levels at the California least tern nesting site at Stony Point on Fiesta Island or the heron rookery west of Perez Cove exceeds 75 decibels during the aerial drone show, then future performances shall be suspended to determine what modifications are required to lower the noise emissions.
  - ii. If monitored light levels at the California least tern nesting site at Stony Point or the heron colony ([Exhibit 2](#)) increase by more than 0.1 footcandle (fc) during the aerial drone show, then future performances shall be suspended to determine what modifications are required to lower the light emissions.
  - iii. Human or camera monitors shall observe for collisions between birds and aerial drone during aerial drone performances, and subsequent to each performance, human observers shall search the immediate area below and near the performance area for deceased or injured birds or pieces of the aerial drones that have broken off. If collisions occur or deceased/injured birds are subsequently located, then future performances shall be suspended to determine what modifications are required to reduce the incidence of collisions.
  - iv. If any of the above thresholds are exceeded, performances shall not resume without written concurrence of the Executive Director.
- (b) The permittee shall undertake the monitoring and other activities listed in the Monitoring Plan in conformance with the approved final plan. Any substantial changes to the plan require a permit amendment from the Commission. More minor changes to restoration plans may be approved in writing by the Executive Director, if it is determined by the Executive Director that no amendment is legally required.

**3. Term of Permit.**

- (a) This permit authorizes the approximately five-minute nighttime aerial drone show from February 4 to February 18, 2020 subject to the following parameters:

- i. No firework performances may occur on any night an aerial drone show is held.
  - ii. Each performance of the aerial drone show shall count as an equivalent performance of a firework show for purposes of tracking SeaWorld San Diego's annual firework quota, thus reducing the allowable fireworks shows for 2019 from 150 to 135.
- (b) The permittee shall undertake development in conformance with the approved parameters unless the Commission amends this permit or the Executive Director provides a written determination that no amendment is legally required for any proposed minor deviations.
4. **Future Development.** When documented annual attendance at SeaWorld San Diego reaches 4 million visitors, the applicant shall notify the Executive Director in order to review potential impacts to public access. Additional traffic and parking mitigation measures may be required for subsequent identified Tier 2 project and Special project sites, pursuant to the SeaWorld Master Plan Update EIR.

## **IV. FINDINGS AND DECLARATIONS**

### **A. PROJECT DESCRIPTION**

SeaWorld San Diego proposes to introduce a new nighttime aerial display as a potential alternative to their existing fireworks performances. The proposal involves the operation of an approximately 5-minute nighttime show utilizing up to 500 illuminated aerial drones to perform pre-programmed routines accompanied by music played through SeaWorld's existing park speaker system. The drones would move according to programmed paths over the SeaWorld leasehold, composing various shapes over the course of the performance. Upon completion of the show, the drones would automatically return to their launch area in the northeast corner of the SeaWorld parking lot. The proposed project is a pilot project that would take place over fifteen days from February 4 to February 18, 2020 to allow SeaWorld to monitor and evaluate the project including any impacts to birds.

SeaWorld is located within Mission Bay Park in the City of San Diego. It is situated adjacent to Mission Bay on the north and SeaWorld Drive to the south, and is surrounded largely by City parklands consisting of grassy, open areas. Mission Bay Park is an area of deferred certification, where the Commission retains jurisdiction and Chapter 3 policies of the Coastal Act are the standard of review, with the certified master plans for SeaWorld and Mission Bay Park LUP segments used as guidance.

### **B. PROJECT HISTORY**

SeaWorld began construction in 1961 and opened to the public in 1964. Since then, the park has operated under a number of different master plans. The SeaWorld Master Plan is a separate, stand-alone segment of the certified Mission Bay Park Master Plan LUP. The most current plan, the SeaWorld Master Plan Update, was certified by the Commission on February 7, 2002, and addressed future development within the SeaWorld leasehold over the subsequent 15-20 years (LCPA No. 2-2001C). The SeaWorld Master Plan Update sets forth the long-range conceptual development program, development parameters, and project review procedures for the future renovation of the SeaWorld Adventure Park. One of the stated goals of the SeaWorld Master Plan Update is "to define development criteria for future conceptual development areas," and the "purpose is to "create a framework for continued improvements and renovations to the park into the new century." The SeaWorld Master Plan update recognized that:

The SeaWorld site is unique in both the type and frequency of development projects within the leasehold. Each year, SeaWorld processes numerous projects to upgrade park facilities and keep attractions in top working order. Additionally, in response to consumer demands and competition in the theme park industry, SeaWorld regularly undertakes renovations of its larger attractions, rides, shows, or exhibits.

Sections III and IV of the SeaWorld Master Plan establish "Development Criteria" and "Design Guidelines," respectively, to govern subsequent development. Section III sets

“the development parameters applicable to the entire leasehold or specific leasehold areas in this plan. The intent is to ensure that all future development will be distributed and constructed in a manner that, to the extent feasible, harmonizes with the established visual quality of Mission Bay Park.” Section IV states that the “guidelines are intended as standards to be used by SeaWorld designers of buildings, landscaping, signage, and lighting as well as by maintenance personnel. The City of San Diego Real Estate Assets, Park and Recreation and Planning Departments, parks advisory committee, and City Council will utilize the design guidelines as a standard for evaluation of proposed new projects or for modifications to existing development.”

With regard to nighttime aerial displays, as explained in the SeaWorld Master Plan, firework displays have been a significant part of SeaWorld’s “end of the evening experience” since 1968, before passage of the Coastal Act. Under the current Master Plan, SeaWorld operates up to 150 fireworks shows a year, divided between 6-minute shows (up to 129 per year), 12-minute shows (up to 15 per year) and 20-minute shows (up to 6 per year). For the past few decades, fireworks have been used nightly during the summer high season from Memorial Day to Labor Day, with additional fireworks performances during significant non-summer holidays (such as the New Year’s Eve) and special private events. Typical performances start around 9:50 PM, near the closing of the park, and use approximately 250 shells for the shortest shows up to 1750 shells for the longest.

In recent years, due in part to changing tastes and technologies, as well as recognizing the impacts fireworks may have on birds and water quality in the surrounding area, SeaWorld has begun to research and implement alternative entertainment displays for its “end of evening experience.” In CDP No. 6-16-0989, SeaWorld introduced a summer nighttime acrobatic laser show in its Waterfront Stadium. Those performances were conditioned by the Coastal Commission such that, during any summer the nighttime acrobatic laser show was performed, SeaWorld would be limited to only fourteen nights of firework displays between Memorial Day and Labor Day.

With the expansion of autonomous drone technology, decreases in unit pricing, and improvements in programming and construction, theme parks around the world have begun to introduce nighttime aerial drone performances, and SeaWorld wishes to conduct the proposed limited trial in February to see if such a performance could be a viable replacement for some or all of its usual firework performances.

## **C. HABITAT IMPACTS**

Chapter 3 policy, Section 30230 of the Coastal Act states:

*Marine resources shall be maintained, enhanced, and where feasible, restored. Special protection shall be given to areas and species of special biological significance. Uses of the marine environment shall be carried out in a manner that will sustain biological productivity of coastal waters and that will maintain healthy populations of all species of marine organisms adequate for long-term commercial, recreational, scientific, and educational purposes.*

Section 30240 of the Coastal Act states:

- (a) *Environmentally sensitive habitat areas shall be protected against any significant disruption of habitat values, and only uses dependent on those resources shall be allowed within those areas.*
- (b) *Development in areas adjacent to environmentally sensitive habitat areas and parks and recreation areas shall be sited and designed to prevent impacts which would significantly degrade those areas, and shall be compatible with the continuance of those habitat and recreation areas.*

SeaWorld San Diego is within the footprint of the Pacific Flyway, and potentially within the pathway of many of the more than 60 species of waterfowl, raptors, shorebirds, and songbirds known to regularly migrate through San Diego County; they may travel at night and stop for a time by inland and coastal creeks, wetlands, woods, and neighborhoods on their northward spring and southward fall migrations. Spring migration occurs during the months of late March through May and fall migration occurs during September, October, and the first part of November. Birds migrating along this route are heading to the Canadian Arctic, Canadian plains, and Canadian boreal forest in the spring, and Mexico, South America, and the Pacific Islands in the fall. It is important to note that “Pacific Flyway” is a descriptor for a phenomenon that encompasses the entire state of California and beyond, but some areas of the state are more important than others for bird migration. Depending on the types of migrating birds, certain pathways (e.g. bordering the ocean, along valleys, etc.) will be more frequented, and certain habitats (woodlands, riparian areas, wetlands) will be more important stopovers. Mission Bay Park and surroundings may be used by migratory birds as a stopover site because the habitat would be attractive to migrating birds that need to rest.

With regards to sensitive species in the vicinity of SeaWorld, the City of San Diego maintains multiple nesting sites for the California least tern, a federal and state endangered species, throughout Mission Bay Park. The nearest nesting site to the aerial drone show is approximately 2,500 feet to the northwest, directly across the Pacific Passage – the water channel separating SeaWorld from Fiesta Island to the north – on the southwest corner of Fiesta Island, known as Stony Point. This nesting site is utilized by the California least terns during their breeding season, which runs from February 15 to September 15. Additionally, the waters of Mission Bay have been known to host sea lions and dolphins. SeaWorld’s original proposal for the drone show was to have the performances occur over the waters of the Pacific Passage, but because this would have been in closer proximity to the undeveloped and habitat areas of Mission Bay Park, after discussions with Commission staff, SeaWorld modified their proposal to place the aerial performances over their parking lot area. Nevertheless, the aerial drone show will consist of up to 500 quickly moving illuminated drones accompanied by amplified music, which could impact biological resources in the vicinity of the project site.

### Properties of Light and Light Measurements

Light or electromagnetic radiation that is visible to the human eye is called “visible light” and has a wavelength range from approximately 380 nanometers (nm) to about 740 nm and occurs along the electromagnetic radiation spectrum between “invisible” infrared radiation, with longer wavelengths, and “invisible” ultraviolet radiation, with shorter wavelengths. All electromagnetic radiation is emitted and absorbed in tiny units called photons, and exhibits properties of both waves and particles, which are referred to as the wave–particle duality. Two key characteristics of light are brightness (intensity), and color (wavelength and frequency). Light varies in its intensity (the number of photons per unit area) and in its spectral content (expressed by wavelength). The most common measure of light intensity (the amount of light falling on a specific area) is called illuminance; the standard measure of illuminance is footcandles which express the intensity of light incident on a surface weighted for the spectral sensitivity of the human eye. Footcandle (fc) measurements place more emphasis on wavelengths of light that human eyes detect best and less on wavelengths that humans do not see as well. In other words, footcandles are correlated to human brightness perception. This inherent property of footcandles limits our ability to assess the impacts of light on wildlife which are known to exhibit a wide range of light intensity and wavelength sensitivities.

Adverse impacts from artificial night light can take several forms including light trespass or spill, sky glow, and glare. Light trespass occurs when unwanted artificial light spills onto an adjacent property lighting an area that would otherwise be dark. Illuminance or illumination is the measure used to detect light trespass. Sky glow and glare are measured as luminance or physical brightness (measured in footlamberts). Sky glow is the bright halo that appears over urban areas at night, a product of light being scattered by water droplets or particles in the air and from reflectance of lights on objects on the ground. Sky glow is intensified when there is a low cloud ceiling or foggy conditions because light refracts off water particles in the air. Sky glow may be perceived as the presence of brightness within a field of view and can include directly viewing a light source. Glare is created by light that shines horizontally.

Sky glow is created when light is reflected and scattered by dust and gas particles in the atmosphere. Nighttime sky glow is caused primarily by light that is emitted upward, but can also be caused by light that is reflected from the ground, or by natural sources such as the moon and stars. Sky glow is inherently inconsistent, and can vary widely depending on weather conditions, the amount of dust and gas in the atmosphere and even the viewing angle. Sky glow creates increased background luminance (or brightness) and therefore results in decreased contrast.

Glare is defined as visual discomfort resulting from high contrast in brightness levels. Each visible luminaire source or surface relative to the surrounding background (sky, hills, and foreground) has the potential to result in “glare”. There are two types of glare: 1) Disability Glare, which is glare that reduces the ability to see or identify objects, and 2) Discomfort Glare, which is glare that produces ocular discomfort, but does not reduce the ability to see. Substantial glare impacts can adversely affect day or nighttime views. The magnitude of the sensation of glare depends on such factors as the size, position, and

luminance of a source; the number of sources; and the luminance to which the eyes are adapted.

### Animals and Light (Electromagnetic Radiation)

The pivotal role of light (electromagnetic radiation) in organismal biology raises the potential that there will be significant impacts on plants and animals from artificial nightlights. The source of natural light is the sun, moon, and stars. Light is used by plants and animals to infer a wide range of information from their environment. One of the most important roles of light for both plants and animals is regulation of their biological clocks or circadian rhythms on a daily, weekly, seasonal, and annual basis. Light information that contributes to the establishment of circadian rhythms includes day length, light intensity, and light wavelength. In animals, eyes ranging from very simple to complex are the organ that collects light (electromagnetic radiation) from the environment.

Introducing artificial night lights to an area will change the ambient setting and may adversely impact animals. Likely effects of artificial night lighting on mammals include avoidance, disorientation, and disruption of foraging patterns, increased predation risk, disruption of biological clocks, increased mortality on roads, and disruption of dispersal movements through artificially lighted landscapes. Areas that are avoided by medium to large sized carnivores can increase the number of smaller predators, which can have a negative effect on avian species. Similarly, many amphibians as well as insects become attracted to artificial light because it simulates a full moon. This can cause them to be preyed upon more easily.

Day length, light intensity, and light wavelength also play a significant role in regulating patterns of seasonal life-cycle activity, such as flowering in plants and migration, dispersal, hibernation, and reproduction in animals. Artificial night lights may also interfere with the accurate discernment of seasonal periods of weather conditions, food availability and/or predator activity, all of which are crucial for survival of many species.

A primary concern with artificial night lighting from illuminated aerial drone performances are their location at the outer edge of the leasehold near the coast and the potential for night-migrating birds to become confused and attracted to the lights during inclement/foggy weather. Most migratory movement occurs early in the evening so any impacts to migrating birds due to the intramural field night lighting are likely to occur during the first two to three hours after sunset. Birds that migrate at night rely on the moon and stars for navigation. During clear weather the birds appear to be able to distinguish artificial lighting from light emanating from planets and stars. However, during inclement weather, birds can become confused and drawn to artificial lights. This phenomenon has been observed on numerous occasions at lighted buildings, oil platforms, and athletic fields. Once drawn into an artificial light source a number of negative outcomes including mortality can occur; birds may crash into something, circle the light source and become exhausted, or become confused and drawn off course.

At this time, very little is known about potential impacts to wildlife associated with drone shows. While aerial illuminated drone shows, both larger and smaller than currently

proposed, have been conducted around the world as the technology matures, those have been short duration shows conducted for special occasions such as national holidays or limited engagements at other theme parks. As such, while no reports of harm to biological resources have been reported, no specific monitoring appears to have been conducted for other similar aerial drone shows.

The Commission's staff ecologist has reviewed the project in consultation with both USFW and CDFW, and concluded that given the short duration of the nightly show (approximately five minutes), the limited period during which the show will occur (fifteen days), and that fact that the proposed February night shows would occur during the late winter, outside of both the spring and fall migration seasons, substantial adverse impacts to migratory birds or other bird species appear to be unlikely from the aerial drone show as currently proposed. In addition, in order to accommodate the proposed aerial drone shows, **Special Condition No. 3** prohibits fireworks shows on any night a drone show is held, removing the firework's noise and light, which are likely currently resulting in some level of disruption to birds. The condition effectively reduces by fifteen the number of fireworks shows that can be held this year at SeaWorld from 150 to 135. The reduction in fireworks shows is expected to decrease potential adverse impacts on sensitive coastal resources.

#### Potential Impacts and Recommended Actions

However, while no substantial adverse impacts are expected, impacts are not always easy to predict. While as noted, the proposed aerial drone show is expected to represent an improvement over fireworks with regards to adverse impacts to sensitive species, it is nevertheless important to ensure first that the proposed aerial drone show itself is the least impactful design feasible, and second, if the show does result in some level of bird disturbance that could not have been predicted, that these are identified and avoided in the future. With regard to light impacts, the Commission's ecologist has consulted with both USFW and CDFW to develop a monitoring plan condition that will allow the Commission to better anticipate potential impacts should SeaWorld propose greater show frequency or duration in the future. **Special Condition No. 2** requires SeaWorld to submit for review and approval a final monitoring plan that will measure the light and noise emissions from the aerial drone show and observe for bird strikes that may occur due to birds being attracted to or unable to avoid the drones. The monitoring will pay particular attention to the known nesting least tern nesting site at Stony Point, as well as a known heron rookery west of Perez Cove.

To allow the Commission to properly assess the monitoring data before future summer shows, **Special Condition No. 3** limits the proposed nighttime show to just the fifteen days in February 2019, with future shows requiring an amendment to this permit or a new permit that will be evaluated in light of the collected monitoring data.

#### Noise Impacts

Regarding noise, SeaWorld conducted a noise survey of the general surrounding area as part of its Environmental Impact Report in 2001. By installing 22 acoustic receptors

through Mission Bay Park and the Point Loma and Ocean Beach communities to the south, the noise survey determined that, during the day, Mission Bay Park receives a substantial amount of ambient noise due to its location adjacent to Interstate-5 and Interstate-8, as well as being approximately two miles from San Diego International Airport. With regard to the contribution that SeaWorld makes to the ambient noise level, the noise survey found that the highest sound levels emanating from the park occur during the Shamu orca show, as it is held in the largest venue at the park and involves large speakers playing music, cheering crowds, and substantial splashing. However, due to the ambient noise and large size of Mission Bay Park, only the receptor at Fiesta Island picked up any noise originating from SeaWorld during daytime operations. During show times, the average noise level recorded at the edge of the SeaWorld leasehold was 45 decibels. For reference, that is equivalent to the noise heard standing by an operating refrigerator or computer. Conversing with someone three feet away is equivalent to sixty decibels.

The acoustic situation is different during the nights when SeaWorld conducts firework shows. Currently, SeaWorld conducts nighttime fireworks shows at various times throughout the year (though most frequently during the summer, when attendance is highest and shows occur nightly). These firework shows range from 6 – 20 minutes in length and occur shortly before 10:00 PM or 11:00 PM, depending on how late SeaWorld is staying open. The firework shows can reach up to 92 decibels during the performance, which is equivalent to being near an operating lawnmower, or a jackhammer at 50 feet. Accordingly, the noise impacts of these fireworks shows not only impact all of Mission Bay Park, but can be heard in parts of San Diego miles from the coastal zone. With the proposed aerial drone show, while each individual drone is expected to create less noise than an individual firework canister, having up to 500 drones flying in unison in close formation has the potential to cumulatively generate substantial noise, especially in conjunction with the accompanying music that will be played through SeaWorld's speakers. This cumulative noise generation may cause sound waves to propagate outside SeaWorld's leasehold boundaries and into the surrounding park area, including the aforementioned least tern nesting site on Fiesta Island. Thus, **Special Condition No. 2** places a threshold of 75 decibels at the Stony Point nesting site and the heron rookery west of Perez Cove, requiring that if the drone show causes sound levels to exceed that level, future shows will be suspended until necessary modifications are made. In addition, **Special Condition No. 3** prohibits any fireworks show on the same night that an aerial drone show is held. With this limitation, the overall noise impacts from SeaWorld's nighttime operations are expected to diminish.

In conclusion, with the timing of proposed aerial drone show and monitoring requirements as contained in this permit, the likelihood of substantial adverse impact on nearby park and nesting areas can be reduced, and thus the proposed development, as conditioned, can be found in conformance with the habitat protection policies of Chapter 3 of the Coastal Act.

**D. PUBLIC ACCESS**

Section 30210 of the Coastal Act states:

*In carrying out the requirements of Section 4 of Article X of the California Constitution, maximum access, which shall be conspicuously posted, and recreational opportunities shall be provided for all the people consistent with public safety needs and the need to protect public rights, rights of private property owners, and natural resource areas from overuse.*

Section 30211 of the Coastal Act states:

*Development shall not interfere with the public's right of access to the sea where acquired through use or legislative authorization, including, but not limited to, the use of dry sand and rocky coastal beaches to the first terrestrial vegetation.*

Section 30212 of the Coastal Act states, in part

a) *Public access from the nearest public roadway to the shoreline and along the coast shall be provided in new development projects except where: (1) it is inconsistent with public safety, military security needs, or the protection of fragile coastal resources, (2) adequate access exists nearby, or, (3) agriculture would be adversely affected. Dedicated accessway shall not be required to be opened to public use until a public agency or private association agrees to accept responsibility for maintenance and liability of the accessway.*

[...]

c) *Nothing in this division shall restrict public access nor shall it excuse the performance of duties and responsibilities of public agencies which are required by Sections 66478.1 to 66478.14, inclusive, of the Government Code and by Section 4 of Article X of the California Constitution.*

Section 30213 of the Coastal Act states, in part:

*Lower cost visitor serving and recreational facilities shall be protected, encouraged, and, where feasible, provided. Developments providing public recreational opportunities are preferred.*

Section 30604 of the Coastal Act states, in part:

[...]

c) *Every coastal development permit issued for any development between the nearest public road and the sea of the shoreline of any body of water located within the coastal zone shall include a specific finding that the development is in conformity*

*with the public access and public recreation policies of Chapter 3 (commencing with Section 30200).*

SeaWorld is a private commercial leasehold within Mission Bay Park, a public park owned by the City of San Diego. The site is located between the first coastal roadway and the bay. There are only a few remaining areas of Mission Bay Park where public access is routed inland around existing commercial leaseholds rather than along the shoreline; SeaWorld is one of those leaseholds. Although public lateral access is available along most of the Mission Bay shoreline, there is no access through the SeaWorld leasehold, which extends to or beyond the waterline in places. Pedestrian and bicycle traffic can cross through the parking areas and rejoin the bayside pathway on either side of the leasehold. Vertical access is available at those same two locations on either side of the leasehold and informally elsewhere along the shore, depending upon parking and transit availability. The proposed development will be located entirely within the eastern area of the private leasehold and will not encroach into any existing or proposed public accessways.

Sea World Drive and Ingraham Street serve as major coastal access routes for all areas of Mission Bay Park and the beaches at Pacific Beach, Mission Beach, and Ocean Beach, as well as serving as a popular commuter route. These are the only roadways serving SeaWorld. The lease between SeaWorld and the City of San Diego, as well as the SeaWorld Master Plan Update, calls for phased traffic improvements based on the expected increase in attendance at the park. SeaWorld submits its annual attendance figures to the Commission so that staff will be aware when the next critical level of attendance occurs that triggers traffic mitigation measures. Over the preceding years, SeaWorld attendance has triggered, and SeaWorld has implemented, various traffic mitigation measures. Numerous Commission-approved traffic and parking mitigation projects have been completed by SeaWorld since the certification of the SeaWorld Master Plan Update, including the addition of a public pedestrian promenade (CDP No. 6-06-022), road improvements along Sea World Drive and the southbound Interstate 5 interchange (CDP No. 6-08-016), and resurfacing, restriping, and landscaping to extend and widen bicycle and pedestrian paths across the southern and western edges of SeaWorld's main parking lot (CDP No. 6-05-075). Those improvements as well as the previously established traffic, roadway, and parking systems have been designed and constructed to support up to four million visitors annually. The next improvements are not required until attendance reaches four million, which is anticipated as the maximum anticipated attendance at full buildout under the current master plan. To date, SeaWorld's attendance has not exceeded four million, with 2018's reported attendance being approximately 3.8 million.

Regarding traffic, SeaWorld submits annual traffic monitoring reports to the Commission for review of the impact of park operations on the surrounding transportation infrastructure. Because facilities such as SeaWorld serve the public and are subject to changing preferences and market forces, attendance levels and their traffic impacts can fluctuate over the years. Thus, in analyzing the current proposal, Commission staff reviewed the most recently available traffic report, for the year 2017. Regarding Average Daily Traffic (ADT) generated by SeaWorld, the studies focus mainly on AM peak

periods and PM peak periods, as that is when SeaWorld traffic combines with local rush hour traffic to create the greatest impact. The traffic analysis determined that compared to the baseline volume of 15,000 Average Daily Trips (ADT) for the year 2000 – when SeaWorld began working on gaining approval of the current SeaWorld Master Plan – the ADT generated by SeaWorld for the year 2017 was 14,122, which represents a slight decrease. The traffic study then analyzed the traffic increase that SeaWorld’s ADT contributed during AM and PM peak hours compared to the baseline year 2000, finding that there was no net increase on AM traffic but a net increase on PM traffic.

Because the traffic study found a net increase in PM peak hour SeaWorld traffic compared to the baseline, an analysis to identify the presence of any significant impacts on the five nearby major intersections was conducted. A significant impact is defined as project traffic increasing delay by two seconds or more at any intersection operating at Level of Service (LOS) E or F, or reducing the LOS from a D to an E. LOS is a qualitative measure used to relate the quality of traffic service. LOS is used to analyze roadways by categorizing traffic flow and assigning quality levels of traffic based on performance measures such as speed, density, etc. Grades are assigned ranging from “A” (free flow at speed limit) to “F” (flow breakdown; cars move lockstep). The traffic analysis found that all of the major intersections around SeaWorld operate at a Level of Service (LOS) of D when not including SeaWorld traffic, and that with the addition of SeaWorld traffic the LOS remained at D. Thus, the significance thresholds were not exceeded.

With respect to the adequacy of on-site parking, SeaWorld currently provides approximately 8,664 parking spaces for visitors, staff, and employees. SeaWorld’s employment base includes full-time, part-time, and seasonal employees, with employee numbers varying during the year from approximately 2,600 non-peak employees to approximately 4,200 peak time employees in 2017. Parking spaces have not been specifically allocated to individual uses, but most employee parking occurs in the lots nearest the administrative facilities and, during times of heaviest park use, in the parking lot in the northwest portion of SeaWorld’s leasehold. In addition to serving SeaWorld, the existing parking facilities have also served the needs of Hubbs Research Institute personnel. The Hubbs facilities, which include laboratories, aquaculture tanks, and associated research and administrative functions, are currently housed in the western area of SeaWorld, along with many of SeaWorld’s administrative, storage, and employee facilities. Under CDP No. 6-93-086, Hubbs converted the former Atlantis Restaurant building to research facilities, with retention of 77 spaces in the former Atlantis lot designated for use by Hubbs’ researchers and the remainder of that lot, and all other on-site parking facilities continuing to be used by SeaWorld patrons and employees.

Because SeaWorld is an entertainment venue, its parking demand fluctuates in response to economic, social, and weather conditions. In 2010, total peak parking demand was 5,466 spaces. In 2011, peak parking demand was 6,382 spaces. In 2012 peak demand was 7,028 spaces. In 2013 peak demand was 7,103 spaces. In 2014, the peak demand was 6,357 spaces (July 19, 2014). In 2015, peak parking demand was 5,347 spaces (May 23, 2015). In 2016, peak parking demand was 4,059 spaces (May 29, 2016). In 2017, peak parking demand was 3,240 spaces (December 30, 2017). Thus, SeaWorld’s parking

demand is not currently exceeding its on-site supply of 8,664 parking spaces, and the use of a portion of the northeastern corner of the parking lot for the launch and landing of a short-duration nighttime aerial show, when many of the park's visitors have already exited for the day and few if any are likely entering the park, should not cause parking impacts on or off-site.

The proposed nighttime aerial drone show represents a new type of aerial display in SeaWorld San Diego's history. However, the potential that it will lead to a substantial increase in annual visitor attendance to the park is low. While some visitors – such as season pass holders – may make annual or semi-annual visits to the existing theme park regardless, it can be reasonably assumed that some visitors will also make a special trip to view the new offerings in and of themselves. However, because the aerial drone show will only be five minutes in duration, occur at the end of the night, and only for an approximately fifteen-day period, it is unlikely that large numbers of visitors will drive to the park at night just for the show. Furthermore, because the annual traffic monitoring to date demonstrates that the neighboring streets and intersections are operating at acceptable levels, that SeaWorld currently has a substantial excess parking capacity compared to current attendance levels, and the SeaWorld's current attendance figures are below four million visitors (and thus still within the attendance levels anticipated by the traffic mitigation measures of the SeaWorld Master Plan Update), any increases in attendance due to the aerial drone show are not expected to cause significant impacts to traffic or parking in the immediate area.

**Special Condition No. 4** reaffirms the Master Plan requirement and puts SeaWorld on notice that when the annual SeaWorld Park attendance levels reach 4 million visitors, future development proposals may be required to complete certain traffic and parking mitigation measures as conditions of approval, such as enhancing surrounding public right-of-ways and road improvements, in conformance with mitigation criteria established in the SeaWorld Master Plan Update EIR. Furthermore, **Special Condition No. 1** requires SeaWorld to adhere to approved show parameters so that the aerial drones are properly contained within the leasehold and will not spill out into public areas or displace on-site parking to an extent that will cause patron parking to spill out into public areas.

In summary, the Commission finds that the proposed project will not adversely impact the existing vertical and lateral accessways around the Sea World leasehold, or result in significant increases in traffic or parking demand. Therefore, the Coastal Commission finds the proposal consistent with all of the public access policies of the Coastal Act.

## **E. WATER QUALITY**

Section 30230 of the Coastal Act states:

*Marine resources shall be maintained, enhanced, and where feasible, restored. Special protection shall be given to areas and species of special biological significance. Uses of the marine environment shall be carried out in a manner that*

*will sustain biological productivity of coastal waters and that will maintain healthy populations of all species of marine organisms adequate for long-term commercial, recreational, scientific, and educational purposes.*

Section 30231 of the Coastal Act states:

*The biological productivity and the quality of coastal waters, streams, wetlands, estuaries, and lakes appropriate to maintain optimum populations of marine organisms and for the protection of human health shall be maintained and, where feasible, restored through, among other means, minimizing adverse effects of waste water discharges and entrainment, controlling runoff, preventing depletion of ground water supplies and substantial interference with surface water flow, encouraging waste water reclamation, maintaining natural vegetation buffer areas that protect riparian habitats, and minimizing alteration of natural streams.*

#### Storm water Runoff, Discharge, and Intake

The federal Clean Water Act (CWA) requires states to identify and make a list of surface water bodies that are polluted. These water bodies, referred to in law as “water quality limited segments,” do not meet water quality standards even after discharges of wastes from point sources have been treated by the minimum required levels of pollution control technology. States are required to compile these water bodies into a list, referred to as the “Clean Water Act Section 303(d) list of Water Quality Limited Segments.” States must also prioritize the water bodies on the list and develop Total Maximum Daily Loads (TMDLs) to improve water quality. At the time of the adoption of SeaWorld’s National Pollutant Discharge Elimination System (NPDES) permit in June 2011, Mission Bay was listed on the 303(d) list of impaired water bodies as impaired because of bacteria, lead, and eutrophication (excess nutrients).

Currently, SeaWorld’s primary end-of-night performance consists of fireworks shows utilizing 1000 to 1750 canisters, each containing combustible compounds that, if not fully combusted, scatter and fall into the Mission Bay Park area along with non-incinerated portions of the canister. The replacement of fireworks shows with reusable aerial drones will remove the water quality impacts associated with the fireworks shows and their chemicals. Nevertheless, the “Intel Shooting Star” drones proposed to be utilized for the nighttime aerial drone show are quadcopters composed of plastics and foam, with a light emitting diode and powered by an onboard battery. Because of the relative fragility of the drones and the chance for technical failures or collisions, there is the possibility that a drone or drones may fail during an aerial performance and plummet to the ground. Should such a failure cause the drone or pieces of one to land in the waters of Mission Bay Park, it would adversely impact water quality through the introduction of plastics and chemicals from the battery.

To lessen the likelihood that the aerial drone performances will introduce pollutants into the already impacted waters of Mission Bay Park, **Special Condition No. 1** requires that the final project plans program into the aerial drones a bounded performance area wholly located above the terrestrial SeaWorld leasehold, and prohibit the drones from venturing

over the marine portions of the leasehold (Perez Cove marina) or the open waters of Mission Bay Park. With such limitations, should a drone fail, it will fall to solid ground, preventing pollution of coastal waters and making its retrieval by event staff much easier.

While the crash of a drone onto solid ground may still pose a risk of subsequent runoff impacting water quality should the battery be breached or plastic components break off, **Special Condition No. 2** requires the applicant to inspect below the performance area after each performance to locate any aerial drone pieces that may have broken off. Additionally, the combined storm water and waste water discharge from SeaWorld San Diego's treatment plants are overseen by the San Diego Regional Water Quality Control Board (RWQCB) under Order No. R9-2011-0032, NPDES No. CA107336. The NPDES permit includes specified discharge limits along with a required monitoring and reporting program. As part of the monitoring program, SeaWorld collects treatment plant discharge samples on a daily, weekly, quarterly, and annual basis for a variety of constituents, toxicity, and in-situ observations that may impact water quality. This data is summarized in an annual report submitted to the RWQCB along with supporting data via the California Integrated Water Quality System database.

On April 14, 2005, the RWQCB approved an NPDES permit for SeaWorld, setting forth the water treatment criteria for the subsequent five years. This permit was renewed by the RWQCB in June, 2011, and SeaWorld was issued a new NPDES permit that became effective August 1, 2018 (R9-2018-0004). Sampling locations for monitoring are the intake and effluent outfalls of both the east and west treatment facilities, enabling the determination of the quality of Mission Bay water prior to any filtering, as well as the final quality of any discharge prior to entering Mission Bay. Additionally, the status of the receiving water is analyzed with samples taken 3,000 feet from the discharge points.

The launch and performance site of the proposed aerial drone show is located within a developed portion of the theme park area, in the northeastern corner of the parking lot. **Special Condition No. 1** requires SeaWorld to launch, operate, and land its aerial drones over their terrestrial leasehold, and not over the open waters of Mission Bay Park. In conclusion, the limits on performance location and the existing water treatment systems means the proposed development will not adversely impact the water quality of coastal waters or increase geologic hazards, and is found in conformance with Chapter 3 of the Coastal Act.

## F. VISUAL RESOURCES

Section 30251 of the Coastal Act states, in part:

*The scenic and visual qualities of coastal areas shall be considered and protected as a resource of public importance. Permitted development shall be sited and designed to protect views to and along the ocean and scenic coastal areas, to minimize the alteration of natural land forms, to be visually compatible with the character of surrounding areas, and, where feasible, to restore and enhance visual quality in visually degraded areas.*

Mission Bay Park is recognized nationally as a public resource providing a wide variety of passive and active recreational opportunities in a unique, visually-pleasing setting. The park is generally horizontal in character, consisting primarily of rolling grassy areas, sandy beach, and open water. There are a number of commercial leaseholds scattered throughout the park, which have been developed to various intensities. For the most part, the structural improvements in Mission Bay Park are low in scale and do not detract from the wide open feeling of the park. Limited exceptions exist in four hotel towers (Hyatt Islandia, Bahia, Catamaran, and Hilton) and five attractions at SeaWorld (the 320-ft. observation tower, the 100-ft. gondola ride, the 95-ft. Journey to Atlantis splashdown ride, the 150-ft. Electric Eel roller coaster, and the under-construction 160-ft. Mako rollercoaster). All but the splashdown ride and two rollercoasters predate the Coastal Act and the City's 30-ft. height limit in the coastal overlay zone, passed by City voters in the 1970's.

In 1998, SeaWorld sponsored, and City voters approved, an initiative exempting its leasehold from the City's 30-foot coastal height limit overlay zone. This initiative allowed future development within the leasehold to go as high as 160 feet – half the height of the existing observation tower. However, the majority of the facilities at Sea World are completely or largely screened from the surrounding park and bay. The currently developed portions of SeaWorld are heavily landscaped with a variety of mature trees, shrubs, and groundcovers. Many existing trees are 60-80 feet tall and effectively screen the interior of the park from views outside SeaWorld. In addition, the existing landforms and development in this area obscure any view of Mission Bay across the historic leasehold itself.

All of Mission Bay Park is a highly scenic public recreational resource, such that protection and enhancement of visual amenities is a critical concern for any proposed development in the park. The appropriate height of any proposed development must be thoroughly analyzed, taking into consideration the specific details, siting, scale, and bulk of the proposed development, the nature of surrounding development, and the potential for cumulative impacts from additional future development. The proposed aerial drone show is located within, and along the northeastern corner of, the SeaWorld leasehold, and given the illuminated nature of the aerial drones, their operation as high as 400 feet off the ground, and their use during the night means that much like the SeaWorld's firework shows, the aerial drone performances will be visible by the public well outside the leasehold.

SeaWorld itself is a developed amusement park with lighting throughout, but most of the structures and lighting are limited in height. Because the majority of Mission Bay Park is open water and the surrounding park open spaces are minimally illuminated, at night it has a dark, calm visual quality that stands in contrast to the adjacent residential communities to the north and east. The potential for bright illumination from 500 aerial drones could adversely affect the visual quality enjoyed by park goers at night by being intrusive. To ensure that the proposed development will not impact visual quality, **Special Condition Nos. 1 and 3** requires SeaWorld to adhere limits on the location, height, and duration of the aerial drone shows so that their impact to the visual aesthetic

and quality of Mission Bay Park will be minimized. Additionally, the number of fireworks shows is reduced because none are allowed on the same night as the drone show. Thus, the Coastal Commission finds the proposed development visually compatible with the surrounding existing development, with minimal adverse impact on the existing scenic coastal area.

#### **G. LOCAL COASTAL PROGRAM**

Section 30604(a) also requires that a coastal development permit shall be issued only if the Commission finds that the permitted development will not prejudice the ability of the local government to prepare a Local Coastal Program (LCP) in conformity with the provisions of Chapter 3 of the Coastal Act. In this case, such a finding can be made.

Mission Bay Park is primarily unzoned. As a whole, Mission Bay Park is a dedicated public park, and SeaWorld is designated as “Lease Area” in the certified Mission Bay Park Master Plan. The subject site is located within the City of San Diego in an area of deferred certification, where the Commission retains permit authority and Chapter 3 of the Coastal Act remains the legal standard of review. As conditioned, the proposed development is consistent with Chapter 3 of the Coastal Act, and thus, approval of the development, as conditioned, will not prejudice the ability of the City of San Diego to implement its certified LCP for the Mission Bay Park segment.

#### **H. CALIFORNIA ENVIRONMENTAL QUALITY ACT**

Section 13096 of the Commission's Code of Regulations requires Commission approval of Coastal Development Permits to be supported by a finding showing the permit, as conditioned, to be consistent with any applicable requirements of the California Environmental Quality Act (CEQA). Section 21080.5(d)(2)(A) of CEQA prohibits a proposed development from being approved if there are feasible alternatives or feasible mitigation measures available which would substantially lessen any significant adverse effect which the activity may have on the environment. A certified Environmental Impact Report (EIR 99-0618) was produced in 1999 in conjunction with the current SeaWorld Master Plan Update. Although the EIR for the Master Plan does not directly include this specific project, the EIR addresses the relevant impacts created by the project, such as visual impacts, traffic impacts, noise impacts, and water quality. The City of San Diego is the lead agency for the purposes of CEQA, and the City determined that because the 1999 EIR contemplated the type of impacts that the proposed project could produce and that the EIR recognized that SeaWorld would periodically update its attractions, then per CEQA guidelines Section 15162 the project was consistent with EIR No. 99-0618 and a new, project-specific EIR was not required.

The proposed project has been conditioned in order to be found consistent with the Chapter 3 policies of the Coastal Act. Mitigation measures, including conditions addressing location, duration, and monitoring will minimize all adverse environmental impacts. As conditioned, there are no feasible alternatives or feasible mitigation measures available which would substantially lessen any significant adverse impact which the activity may have on the environment. Therefore, the Commission finds that the proposed

project is the least environmentally-damaging feasible alternative and can be found consistent with the requirements of the Coastal Act to conform to CEQA.

6-19-0925 (**SeaWorld San Diego** )

APPENDIX A – SUBSTANTIVE FILE DOCUMENTS