AGENDA REPORT
SAN CLEMENTE CITY COUNCIL MEETING
Meeting Date: February 5, 2013

Department: Beaches, Parks and Recreation
Prepared By: Sharon Heider, Beaches Parks & Rec Director; Marine Safety Chief Bill Humphreys; Beaches and Parks Maintenance Manager Dennis Roger Reed; Intern Lucian Toma

Subject: ADOPTION OF POLICY NO. 702-6 - BEACH ECOLOGY AND MAINTENANCE.

Summary: San Clemente’s beaches are well loved, well used, and vital to the City’s quality of life and economic wellbeing. The beach and ocean make up a natural ecosystem in which we live and recreate. The care and maintenance of the beach is critical to its long-term health and viability. Currently, the City has a policy for Maintenance of Beach Facilities, which addresses permanent built elements, and a policy for Sand Nourishment, but the maintenance practices and protocols for the natural areas have been developed over the years based on best practices and current research. No policy exists for the treatment of these natural systems. This proposed policy is based on a review of current research and survey of other beach communities. It recommends slight changes to existing practices of sand grooming and kelp removal by recommending that kelp be allowed to remain on the beach during the winter and spring due to the nutrient and habitat value it provides, and that the City provide education on beach health, ecosystem, and value.

The Beaches, Parks and Recreation Commission was provided an extensive overview of the proposed policy at its June 12, 2012 meeting and referred the topic to the Coastal Advisory Committee (CAC) for comments before making a recommendation. The CAC reviewed the policy at its July 12, 2012 meeting and sent its comments to the Commission that indicated they were comfortable with the direction of the policy and suggested adding a section on drift wood along with referencing fire rings.

At the Commission’s August 14th meeting, the Commission was in favor of incorporating the CAC suggestions and also agreed on incorporating in the policy palapas as non-permanent structures under the Recreation category. The Commission recommended the policy to Council.

STAFF RECOMMENDS THAT City Council adopt the Beach Ecology and Maintenance Policy No. 702-6.

Background
San Clemente’s Beach and Ocean are distinct and valuable natural and economic resources. They are of vital importance to the continued quality of life for present and future generations of citizens and visitors of San Clemente. This important environmental resource or ecosystem provides coastal protection from erosion and extreme weather events, natural habitat for a myriad of marine species, a resource base for human recreational activities, and is an economic generator. The interaction and interconnection between the natural phenomena that drive the
physical, seasonal and long-term changes, the distinct biotic and abiotic processes, and the recreational activities that serve the human physical, psychological and spiritual needs make the beach a dynamic and challenging environment to be managed. Currently, the City has a policy for the Maintenance of Beach Facilities Policy (Policy #702-2), which addresses the permanent built facilities on the beach, and Beach Sand Nourishment (Policy #702-3), and Municipal Codes that address fire ring, litter, hours of operation, etc.; however, no policy exists to deal with the natural elements and the balance between beach health and recreation.

The subject of kelp and kelp management has often provided discussion in San Clemente, and also in most other Southern California coastal communities. Complaints are often generated regarding kelp flies, the smell of kelp on the beach or the impact of kelp on usable “towel space.” Other beach users would like to see kelp remain on the sand to decompose and be consumed by a variety of invertebrates, thus adding to the ecosystem balance of the beach. Staff began to draft a kelp management policy based on both maintenance practices and education, and to try to find a common ground between these disparate views. As work progressed, it became apparent that kelp is but one aspect of beach ecology. The management of kelp is interrelated with rock cobble on City beaches; grunion spawning areas; sand erosion and sand pushing; beach facilities; and beach amenities such as fire rings, playgrounds, etc.

**San Clemente’s Beach and Ocean Ecosystem**

San Clemente’s beach is a coastal zone where the ocean meets the land. It is a constantly changing depositional landform, consisting of sandy materials and sediments. Its physical size (width), is characterized by the seasonal processes of submersion and accretion, and is driven by erosion, transportation, deposition, and retention of sediments, sand and other materials, on and off the beach. These processes depend on several interrelated factors:

- The seasonal size and energy characteristics of the waves;
- The seasonal and daily characteristics of the tides;
- The seasonal characteristics of the long-shore and fore-shore currents;
- The seasonal characteristic of the coastal slope and position;
- The characteristics of the sand and other permanent geological materials on the beach;
- The characteristics of the natural ecosystems on the beach;
- The characteristic of the artificial structures on the beach and other development, and
- The characteristic of human activities.

In winter and spring, the San Clemente coast experiences destructive waves, which erode more materials from the beach than they deposit. The tides are high, the coastal slope is steep, the long-shore currents are strong, and the beach is narrow. There are considerable amounts of cobble, minimal natural elements such as kelp wrack, and less people on the beach. The strong forces of the waves threaten the built structures on the beach such as the restrooms, marine safety headquarters, mobile lifeguard towers, fire rings and the benches and table areas. Artificial sand berms are created by sand pushing activities to protect the built structures on the beach and to retain sand.
In summer and fall, the San Clemente coast experiences constructive waves, which typically deposit more materials on the beach than they erode. Compared to winter, the tides are lower, the coastal slope is gentler, the long-shore currents are weaker, and the beach is wider. There is typically more sand, although a significant amount of cobbles has been observed to remain exposed on the beach in the last few years. There is more kelp wrack and the organisms that feed on it, and considerably more people on the beach. The built structures are not as threatened by the waves as in the winter, and sand-pushing is done to remove protective berms, retain sand, and provide level space for the recreational needs of the people using the beach.

The seasonal width of our San Clemente beach has been recently noted to have changed from what was previously observed. Research on California’s sandy beach erosion, done by the National Oceanic and Atmospheric Agency (NOAA), attribute changes to both natural and human impacts on the submerison/accretion cycle. The submerison is the natural cyclic portion of the coastal seasonal change process when coastal sediments move from the visible portion of the beach to the submerged near-shore region. Accretion is the balancing portion of the natural cyclic coastal seasonal change process when coastal sediments return to the visible portion of the beach following a submerison event. A sustainable beach often goes through a cycle of submerison during rough weather and storms and then accretion during calmer periods naturally.

Both slight and severe changes in ocean currents and storms, as well as the continental drift, disrupt the submerison/accretion cycle. Sand is being transported away from where the cyclical process has occurred continuously and undisturbed for long periods of time. The amount of submerged sand near the shore is typically greater and more important than the amount on the beach in this change. The less the submerged amount, the easier it is transported and eroded away into the ocean. Human activities, with short and long-term impacts on this process, include weakening of sand retention natural structures and changes in the amount of sand that travels on and off the beach. A reduced amount of sand in these coastal processes deems the beach unprepared to respond naturally to storms. However, in some cases, enough sand might be available on the beach to replenish this process following a severe storm.

The beach is an ecosystem with a tremendous amount of coastal marine life. The permanent and transient animals and plants that use our beach as a habitat have both an intrinsic value and an important role in the processes that define the beach physically. The following is an overview of the major elements that comprise the beach and their role:

**Cobble** - On sandy beaches, cobbles are a geomorphological feature that exists naturally, both under and above the sand. Coastal erosional processes have created it over millions of years. Insignificant amounts of cobbles are brought on the beach by waves. Most of the cobbles is native to the beach and coast where it is found. Under the sand, it functions as a stabilizing mid-geological layer between the coastal bedrock and sand. It surfaces above the sand, mostly during and immediately after the winter, due to seasonal and long-term sand transportation and erosion produced by waves, currents, storms, and even sand-pushing activities. Above the sand, it is considered to contribute both to sand retention and erosion. Also, in the long run, the friction between the cobbles creates by the action of the waves is considered to
produce sand. On the San Clemente beach, cobble above the sand is more prevalent and has been noticed to be more permanent from north of the Pier to the end of the North Beach. Literature on this topic suggests that the change from the seasonal occurrence to an increased prevalence and permanence of cobble on sandy beaches is considered to be due to a decrease in the natural feeding sources of sand (such as natural rivers) and a change in the characteristics of waves, currents and storms, and implicitly coastal slopes. Moreover, it is suggested that cobble should not be removed off the beach, as it could contribute to further sand erosion.

Kelp - Giant kelp is the largest seaweed species, growing as an underwater forest supporting significant amounts of marine life, just off the coast of San Clemente. Large sections of the kelp forest break off and wash ashore between the low and high tide, forming piles of kelp wrack, usually along the berm crest. On San Clemente's beach, it is mostly abundant during the summer and fall. The size of kelp wrack varies from small piles to piles that can amount to several feet. The amount of kelp wrack on the beach can also vary from a few piles here and there to piles that cover the beach completely. The kelp wrack has different functions that play important roles in the structural, ecological, and aesthetical condition of our beach:

- Habitat for coastal marine life
- Source of food and prey in the coastal marine life food web
- Source of nutrients for beach vegetation
- Direct and indirect source of sand retention

Kelp and kelp wrack have other roles on the San Clemente beach also. One can find kelp both wet piles form, which continuously wash ashore and support coastal marine life species, and dry piles and pieces which are the remnants of the decomposed and consumed wet kelp wrack, finding their way on and in the dry sand and beach vegetation. The wet kelp wrack provides moisture to sand around it and keeps it in place from being eroded by wind and waves. It also retains sand behind it. The dry kelp pieces attach to beach vegetation — grasses and bushes — where they decompose further and provide nutrients. Research suggests that leaving the kelp wrack helps maintain foraging opportunities for shorebirds and benefits native coastal plants that trap sand and create dunes. Biologists advise that more than 40% of all intertidal animal species living on the sandy beach depend on kelp wrack.

Kelp Flies — The kelp fly lives only on kelp and consumes kelp. It is not the same as the common house fly, and does not pose a hazard for human health. They consume kelp only and cannot survive away from the kelp wrack. They have an 11 to 12 day life span. Predators include other occupants in the kelp wrack, such as the flightless Rove Beetle, as well as shore birds.

Beach Hoppers — A nocturnal species which hide under the kelp wrack during the day. They feed rapidly on fresh kelp wrack and when consumed, hop to the next pile. They do not linger on people and are preferred by the San Clemente shore birds, such as Sanderlings, Marbled Godwits, Whimbrels, and Long-Billed Curlew. Having food for these birds and others help them with their survival, migration and nesting. Beach Hoppers are the major consumers of kelp in Southern California. They consume freshly deposited kelp and can influence kelp fly population by eating the kelp before the flies can develop. Beach hoppers are very sensitive to kelp
removal by grooming and their abundance is very low on regularly groomed beaches. The absence of beach hoppers reduces the natural control of kelp flies on the beach.

*Intertidal Pill-bugs* – These nocturnal species hide in and consume kelp wracks. They do not linger on people and are preferred by the San Clemente shore birds.

Most people do not know of these species’ existence and the role they play on the beach. Together, these invertebrates can consume a kelp wrack and help it decompose in less than a week, and, sometimes, in just a few days. They can be considered a part of San Clemente’s beach grooming crew. In the absence of kelp wrack, their reproductive capacities are severely reduced, and it takes them a long time to get re-established. In the absence and low numbers of these invertebrates, kelp wrack takes three to four times longer to decompose. Besides the above-mentioned species, there are several other species of crustaceans and polychaete worms as well as some bivalves living within the sand, all of which are consumed by the shorebirds. Besides their value as prey, they help to filter and clean the water on the beach and to recycle nutrients.

Southern California Edison constructed a kelp reef offshore of San Clemente as part of a California Coastal Commission permit. The Phase 1 reef was constructed in 1999, and the Phase 2 reef in 2008. The reef patches are about ½ mile off the beach in about 50 feet of water, between San Mateo Point to the south and the City Pier to the north. The total size of the reefs covers 174.4 acres of sea floor, and are now known as the Wheeler North Reef. As part of the project, Edison must monitor the San Clemente beaches for kelp wrack and possible reef construction material, through September of 2013. Edison does biannual reports, and will contribute mechanical, manpower and/or monetary assistance should the City of San Clemente request help removing excess kelp wrack, if documented to be beyond background quantities in monitoring results. As of this time, no quarry rocks or broken concrete that could be associated with Wheeler North Reef has been observed, and project surveys for kelp wrack have shown that average kelp wrack on San Clemente beaches has not exceeded historical amounts.

*Beach Vegetation* - Different species of vegetation are adapted to the habitat conditions of San Clemente. They are resistant to and use the salty mist blowing in from the ocean, and the low nutrients and water in the sand. They draw most of their nutrients from the decomposed kelp wrack and the creatures that live in it. They retain sand and debris blown by wind or carried by waves and form natural sand fore-dunes and hummocks. Naturally formed fore-dunes can be observed at the south end of the San Clemente beach and continuing on the California State Beach. Natural sand hummocks can be observed in various but limited places on the San Clemente beach, such as some of the palm trees located around the T-street beach access, and planters among the San Clemente beach trail and restrooms.

The beach vegetation and the hummocks and the fore-dunes they form are considered natural bio-engineers and an important part of soft engineering techniques that retain sand on the beach. They function as coastal buffers and protection from strong seasonal storms and long-term sea-level rise. Some of the species that exist on the San Clemente beach are: the common *Ice Plant*, *Low Saltbushes*, *Rye Grass*, *Coastal Sageworth*, and *Ambrosia*. Other species of plants
known to survive, adapt, and flourish on the Southern California beaches are: Bush Lupine, Sand Verbena, Mock Heather, beach morning glory and beach poppies.

**Grunion** - Grunion are a species of sardine-sized fish with a unique and unusual mating ritual, found only off the US coast of California and Baja California, Mexico. The grunion come to mate at night, on the sandy portions of the San Clemente beach during the summer months. Their eggs are laid on the beach, a few inches deep into the sand, between the low and high tide space, where they remain for 10 days before they hatch and the offspring move into the ocean. Because it is a special and protected species, its mating and hatching grounds require minimal disturbance.

The City of San Clemente ensures that driving, grooming and sand pushing activities are minimized during the grunion season and, especially, after a “grunion run.” Many people observe and participate in recreational activities related to “grunion runs.”

**Recreational, Aesthetic and Cultural Values** – These values are equally important to the residents and visitors who use the beach. San Clemente’s beach is vital to the city’s economy, culture, and quality of life. Citizens of San Clemente and visitors frequent the beach yearlong, and expect their experience to be safe, enjoyable and memorable. Water and beach related recreational activities, such as walks, swimming, surfing, sand castle building, and simply lying on the beach, are supported and enhanced by the City of San Clemente. The City provides Lifeguard services, and engages in beach cleaning and grooming, and sand pushing in order to ensure a pleasant beach experience for the citizens and visitors of San Clemente’s beach. Summer is the busiest time for the divisions of Beach Maintenance and Marine Safety.

Periodically, citizens and visitors make inquiries or complaints regarding: the look of the kelp wrack on the beach, and its need to be removed; the flies on the beach and concern regarding potential health hazards from the flies; and general annoyance with the flies’ presence. In addition, requests also arise to remove or do something about the cobble on the beach, the reduction of sand, and the desire for a larger beach area.

**Current Maintenance Practices**
San Clemente’s current practices for beach management have evolved over the years based on long-term professional experience, staff research and understanding of best management practices, and information gained through the City’s participation in the state-wide Beach Ecology Coalition. However, no formal policy exists, and sometimes requests from the public are in conflict with the current practices or environmental concerns. This proposed policy seeks to find balance between a healthy beach ecosystem, enjoyment by the public, and to gain approval at the policy level so the practices are fully vetted and in the best interest of the City.

Presently, sand grooming is accomplished May 15 to September 15 three times per week. A contractual operator uses the City’s large beach grooming machine to remove surface debris and “rake” the sand. An additional operator uses the City’s walk behind sand groomer in areas around fire rings and other amenities, and areas too tight for the larger device. Kelp is left the “wet sand” area below the wrack line (the juncture between the wet sand and the area where kelp has gathered). The kelp found on the dry sand or “towel areas” is removed and or
raked by the sand groomers. The kelp that is removed is disposed of using the regular trash bins at the City’s Corporation Yard on Pico, since the amount of moisture makes the kelp very heavy, and green waste recycling firms will not accept it. Cobble is allowed to remain, as it serves as a foundation between the bedrock and accumulated sand. The City protects the grunion areas by avoiding the use of mechanical equipment in the wet sand/wrack line area, and having beach vehicles avoid these areas. The City’s protocol for driving on the beach was created by the Marine Safety Division and has been used as the template by the Beach Ecology Coalition. Staff has been asked to lecture and train other entities on our practices.

Sand erosion remains a major issue, and staff push sand during the year as needed to protect buildings and amenities from high tides/storm surf. Twice a year, in late autumn and late spring, the City has contractual sand pushing accomplished. Contractors use larger equipment. The autumn pushing is primarily protection; whereas, the spring pushing is more directed at grooming the beach, removing drop offs, etc. The full ecological impacts of this have not been examined.

Beach trash is removed twice daily from May 15 to September 15, and once a day the remaining portion of the year.

**Regulatory - Findings, Declarations and Goals**
The California Coastal Act, as of 2010, finds and declares that the beach, as part of the coastal zone: “is a distinct and valuable natural resource of vital and enduring interest to all the people and exists as a delicately balanced ecosystem” (CCA 30001, a); and that “to promote the public safety, health and welfare, and to protect public and private property, wildlife, marine fisheries, and other ocean resources, and the natural environment, it is necessary to protect the ecological balance of the coastal zone and prevent its deterioration and destruction” (CCA 30001, c). To do so, the legislature finds and declares that the basic goals of the State for the coastal zone, which San Clemente’s beach is within, are to: “protect, maintain, and where feasible, enhance and restore the overall quality of the coastal zone environment and its natural and artificial resources” (CCA 30001.5, a); and “assure orderly, balanced utilization and conservation of coastal zone resources taking into account the social and economic needs of the people of the state” (CAC 30001.5, b).

**Trends**
With increasing research available on beach and marine environments, more holistic ways of looking at the management of beach and marine environments are emerging. Ecosystem-based management is an outgrowth of work in the National Parks which found that natural systems need to be considered in their totality. Ecosystem-based management (EBM) is an integrated approach to management that considers the entire ecosystem, including humans. For beach and marine environments, it seeks to provide an integrated approach which considers all interactions and interconnections occurring in the ecosystem, including those in which people play a role. The goal of ecosystem-based management is to maintain an ecosystem in a healthy, productive, and resilient condition, so that it can provide the services humans want and need. It differs from current approaches that usually focus on a single species, sector, activity or concern; it considers the cumulative impacts of different sectors. Key aspects of EBM include:
- Integration of ecological, social, and economic goals and recognition of humans as components of the ecosystem.
- Consideration of ecological— not just political— boundaries.
- Accounting for the complexity of natural processes and social systems and using an adaptive management approach in the face of resulting uncertainties.
- Engaging multiple stakeholders in a collaborative process to define problems and find solutions.
- Incorporating understanding of ecosystem processes and how ecosystems respond to environmental perturbations.
- Concerned with the ecological integrity of coastal-marine systems and the sustainability of both human and ecological systems.

**Peer Review**

This document was reviewed by Dr. Karen Martin of Pepperdine University in Malibu, Dr. Jenny Dugan of the University of California, Santa Barbara, and Chris Webb of Moffatt & Nichol. Dr. Martin is a Professor of Biology, and well known for her efforts with sandy beach ecology, marine biology, tide pools and grunion. Along with providing insight and suggestions, Dr. Martin stated “this is a very clear document that addresses some basic, important issues for beach management.” Dr. Dugan is an Associate Research Biologist at the Marine Science Institute. Her primary research has focused on sandy beach ecosystems, and the evaluation of the ecological impacts of human alterations of this ecosystem, including beach grooming. Dugan also provided input, and said “the report does a nice job of outlining a carefully crafted and thoughtful approach to improving the balance of managing recreational and natural ecosystem values on San Clemente Beaches. The ecological concepts and information are well presented and developed.” Mr. Webb is a Senior Coastal Scientist and Diver for Moffatt & Nichol, a firm specializing in the planning and design of facilities that shape coastlines, harbors and rivers. Mr. Webb stated that the information was conveyed very well.

**Recommendations**

The trend toward looking at the various natural elements within the context of a working ecosystem is important in finding a workable balance that places the needs and safety of the community alongside the importance of maintaining the beach in a way that promotes its long-term sustainability. San Clemente’s beaches are constrained by the existing conditions such as the location of the railroad, homes, and street patterns which create the upper limits of the sandy beach. Given the current constraints, the recommended policies below attempt to maintain the current use, accessibility, and enjoyment for the public, and to recognize and work in concert with the natural systems. Below is a table outlining the current practices and proposed new policy.
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<tr>
<th>Existing practice</th>
<th>Proposed Policy</th>
<th>Change from current</th>
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<tr>
<td><strong>Safety</strong></td>
<td>No Change</td>
<td>No</td>
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<tr>
<td>With over 2 million visitors annually, the safety of the public is a primary concern for the department. Use of emergency and maintenance vehicles and equipment on the beach is mandatory to ensure this safety. This position is supported by the mission statements for Marine Safety and Beach and Park Maintenance divisions, as shown in the following (respectively):&lt;br&gt;&lt;br&gt;- To maximize the safety and well-being of visitors to San Clemente's beach and marine environment through comprehensive public education, preventive measures, and responsive emergency intervention.&lt;br&gt;&lt;br&gt;- To maintain and preserve beaches, parks, medians, City maintenance landscapes, the City's urban forest and the pier in an efficient, safe and cost-effective manner.</td>
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<td><strong>Cobble</strong></td>
<td>No Change</td>
<td>No</td>
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<td>No action. Cobble is left in place and is not removed. Cobble is the underlying composition of the beach. Sand is deposited and removed seasonally. Long-term erosion of the sand has exposed more cobble. Since removal of cobble has unknown consequences to the long term health of the</td>
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<td><strong>Existing Practice</strong></td>
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<td><strong>Kelp</strong></td>
<td>Limit removal to summer only (May 15 through September 15), and allow kelp to remain during winter and spring break to allow kelp nutrients in sand. In cases of extreme kelp buildup, City Manager may direct additional removals during winter months. Seek to find alternative uses for kelp to divert some amounts from land fill.</td>
<td>Yes</td>
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<td><strong>Native Vegetation</strong></td>
<td>Protect existing vegetation on sand hummocks and dunes. Seek to identify small locations where native planting could be established. Although the natural role of sustaining sand, may be limited on our beaches, the addition of appropriately placed and maintained native plantings could provide aesthetic improvements, as well as educational</td>
<td>Yes</td>
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<td>Existing Practice</td>
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<td>Driftwood and Large Debris</td>
<td>Large pieces of driftwood and debris are removed to remove the potential for injury from being pushed from wave action or providing danger to beach users.</td>
<td>No change.</td>
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<td>Sand Grooming</td>
<td>No change.</td>
<td>No</td>
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<td>Sand Grooming is currently conducted May 15 through September 15 and, in winter, during hot periods, spring break, and time of high kelp deposit. Grooming machines clean and groom the dry sand areas of the beach. Wet sand areas are not groomed in an effort to protect grunion and the kelp wrack.</td>
<td>Reduce sand grooming to only summer season from May 15 through September 15 and preclude sand grooming during winter September 16 through May 14. This reduction is intended to allow any existing kelp to breakdown naturally and provide nutrients into sand.</td>
<td>Yes</td>
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<td>Sand pushing is the action of moving sand mechanically to retrieve sand that has moved, or to create berms to protect facilities, prevent further loss of sand, or to maintain usable towel space. Sand pushing is not done below the high tide level during grunion season.</td>
<td>Increase stockpiling of sand when available to maintain a larger inventory for use when needed.</td>
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<tr>
<td>Recreation</td>
<td>Existing Practice</td>
<td>Proposed Policy</td>
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<td>The City maintains play and exercise equipment, palapas, and volleyball courts located on the sand. These facilities are considered non-permanent and are not addressed in the City’s policy for Beach Facilities, and are therefore discussed here.</td>
<td>Maintain existing inventory at a service level C. Any new requests for equipment to be reviewed by the BP&amp;R Commission and approved by the City Council.</td>
<td>Yes, new approval process only</td>
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<td>Education</td>
<td>Varied programs focused primarily on urban run off and clean ocean. No existing programs to educate the public on overall beach ecosystem and the role kelp and natural systems play in creating a healthy beach.</td>
<td>Develop educational messages on beach safety, ecosystem, and the role of kelp, cobble, and animal life in creating a healthy beach. Use existing resources to convey public service information, including:</td>
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| | | | • Populate City website with educational information on San Clemente beach’s ecology and the City’s efforts to make the beach sustainable.  
• Review available Army Corps of Engineers’ data on beach change and health to track changes.  
• Develop City messaging and education on beach safety, rules, and |
Recommended
Action: STAFF RECOMMENDS THAT City Council adopt the Beach Ecology and Maintenance Policy No. 702-6.

Fiscal Impact: Potential savings of $1,000 per year as efforts are shifted from less grooming and kelp removal in winter to more sand pushing/stockpiling year round.

References
California Coastal Act of 1976
King, Phillip, 2002. Economic Analysis of Beach Spending and the Recreational Benefits of Beaches in the City of San Clemente. San Francisco State University.
San Clemente General Plan
San Clemente Parks and Recreation Master Plan
San Clemente Policy # 702-2: Management of Beach Facilities
Kelp Wrack: Hopping with Life in San Diego County, Sea Grant California
Loss of Coastal Strand Habitat in Southern California: The role of beach grooming, Jenifer E, Dugan and David M. Hubbard

Attachments: Draft Beach Ecology and Maintenance Policy No. 702-6

Notification: Interested parties
The Surfrider Foundation
1.0 PURPOSE:

The purpose of this Policy is to provide direction for the management and maintenance of the City’s beach that seeks to protect, maintain, and where feasible, enhance and restore the overall quality of the beach environment.

Rationale: San Clemente’s beach is an important environmental resource for the City that provides coastal protection from erosion and extreme weather and oceanic events, natural habitat for marine and coastal species, recreational activities and space, and an economic revenue source. To continue to provide these services, the beach must be maintained and managed in way that ensures the public’s safety and enjoyment, as well as a sustainable beach ecosystem. (A sustainable beach is structurally safe, ecologically healthy, productive and resilient, and aesthetically enjoyable and memorable to citizens and visitors.)

2.0 ORGANIZATIONS AFFECTED:

All Departments and Divisions

3.0 REFERENCES:
San Clemente General Plan
San Clemente Beaches, Parks and Recreation Master Plan
San Clemente Policy # 702-2: Management of Beach Facilities
San Clemente Policy # 702-3: Beach Sand Nourishment
San Clemente Sustainability Action Plan
California Climate Change Adaptation Policy Guide Draft 2012
California Coastal Act of 1976
California Environmental Quality Act 2012-update
4.0 **POLICY:**

Recognizing the vital importance of San Clemente’s beach, and its duty to protect, maintain, and whenever feasible, enhance and restore the natural environment for present and future generations, the City of San Clemente shall employ an integrated beach management and maintenance approach that considers the entire beach ecosystem. This approach shall sustain the beach ecosystem in a safe, healthy, productive and resilient condition by:

4.1 Recognizing changes and connections within and across the ecosystem
4.2 Addressing cumulative impacts
4.3 Managing for multiple objectives and users

5.0 **DEFINITIONS:**

5.1 “City” shall mean the City of San Clemente.
5.2 “Ecosystem” shall mean a natural unit consisting of all living organisms (biotic factors) in an area functioning together with all of the non-living physical (abiotic) factors of the environment.
5.3 “Sustainable” shall mean the capability of a unit or system to continue to function and of being maintained at a steady level, resilient to failure and damage, and without the need for exhausting energy and resource inputs. (A sustainable beach would function in a healthy, productive and resilient condition, without the need for exhausting energy and resource inputs for its maintenance.)

6.0 **PROCEDURE:**

6.1 **General Provisions**

6.1.1 The Beaches, Parks and Recreation Department shall be the lead department for the implementation of this Policy.
6.1.2 The lead department shall seek to develop educational and training programs for staff and contractors involved in the implementation of this Policy.
6.1.3 The lead department shall seek to develop monitoring and reporting tools, and coordinate with other departments for the implementation of this Policy.
6.2 Safety

6.2.1 Recognizing that maximizing the safety, health and wellbeing of the public at the beach is a primary concern, and the use of emergency and maintenance vehicles and equipment is necessary to ensure this safety: and public safety shall take precedence in implementation of this policy and operational practices.

6.3 Cobble

6.3.1 Recognizing that Cobble is a native geomorphological feature of San Clemente’s beach, occurring due to natural processes, and its removal has unknown consequences to the health of the beach structure, the City shall not remove Cobble from the beach.

6.4 Kelp

6.4.1 Recognizing that Kelp has an important role in the ecological and structural condition of the beach, provides habitat and nutrients for coastal marine animal and vegetative species, and provides direct and indirect support for sand retention, the City shall:

6.4.1.1 Remove excessive Kelp, in the dry sand areas, during the summer season, May 15th through September 15th, to provide maximum towel space for public use while protecting grunion-spawning grounds in the wet sand areas;

6.4.1.2 Allow Kelp to remain on the beach during the winter season, September 16th through May 14th;

6.4.1.3 At any time, remove excessive Kelp in cases of extreme Kelp buildup, at the direction of the City Manager or his designee.

6.5 Native Beach Vegetation

6.5.1 Recognizing that Native Beach Vegetation has a natural role in the ecological, structural and aesthetical conditions of the San Clemente Beach, providing habitat for coastal marine species, and sand retention support, the City shall:

6.5.1.1 Protect existing native beach vegetation in established sand hummocks and dunes;

6.5.1.2 Seek to identify locations where planting of native beach vegetation can be established and work with volunteer and non-profit groups for planting and establishment.
6.6 Driftwood and Large Debris

6.6.1 Recognizing that Driftwood and Large Debris can wash up on the beach, and while mostly comprised of natural materials, their size and/or shape can create potential dangers from wave action, or by its presence on the sand, the City shall:

6.5.1.1 Remove large driftwood and debris.

6.6 Sand

6.6.1 Recognizing that Sand has a primary role in the use and enjoyment that San Clemente’s Beach provides, the City shall:

6.6.1.1 Conduct scheduled sand grooming during the summer season, May 15th through September 15th, on dry sand areas, avoiding the wet sand areas in an effort to protect grunion-spawning grounds and Kelp wracks;

6.6.1.2 Conduct sand pushing twice a year, or as directed by the City Manager. Sand pushing is the action of moving sand mechanically with the intention to:
   • Create berms in order to protect beach facilities
   • Attempt to stockpile sand, whenever available in late autumn and early winter
   • Prevent loss of towel space into the ocean
   • Remove man made berms in the late spring to prepare the beach for towel space during the summer season

6.7 Recreation

6.7.1 Recognizing that Recreation is a vital aspect of San Clemente’s Beach, and that non-permanent facilities such as fire rings, volleyball courts, picnic tables, exercise and play equipment contribute to the use and enjoyment, the City shall:

6.7.1.1 Maintain the existing inventory of play and exercise equipment, volleyball courts, fire rings and picnic areas at a service level C;

6.7.1.2 Review changes or additions through the Beaches, Parks & Recreation commission, and gain approval from the City Council.

6.8 Education

6.8.1 Recognizing that the Education of the public has an important role in sustaining San Clemente’s Beach, the City Shall:

6.8.1.1 Develop educational messages on beach safety, ecosystems, and the role of the kelp, cobble, native beach
vegetation, sand, and human impacts in maintaining the beach in a sustainable condition.

6.8.1.2 Use existing communication channels, such as City and Department website, public service announcements, public signage and outreach events, and develop new sources to provide public education.

6.8.1.3 Provide support for volunteer and non-profit based groups to provide educational messages and events promoting the importance of the City's program for sustaining a healthy beach ecosystem.