MEETING NOTICE
AND AGENDA

SHORELINE PRESERVATION WORKING GROUP
The Shoreline Preservation Working Group may take action on any item appearing on this agenda.

Thursday, March 1, 2012
11:30 a.m. to 1:00 p.m.
SANDAG, 7th Floor Conference Room
401 B Street, Suite 800
San Diego, CA 92101-4231

Staff Contact: Shelby Tucker
(619) 699-1916
Shelby.Tucker@sandag.org

PLEASE FEEL FREE TO BRING YOUR OWN LUNCH. LUNCH WILL NOT BE PROVIDED.

Guiding Principles:
• commitment to unified approach for local decisions on sand replenishment;
• address local needs and maximize positive regional impacts;
• encourage cooperation and coordination;
• contribute equitable fair share from local participants; and
• promote opportunities for beach sand replenishment.

AGENDA HIGHLIGHTS
• REGIONAL BEACH SAND PROJECT UPDATE
• DISTRIBUTION OF FUNDS FROM THE CALIFORNIA COASTAL COMMISSION BEACH SAND MITIGATION FUND

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To request this document or related reports in an alternative format, please call (619) 699-1900, (619) 699-1904 (TTY), or fax (619) 699-1905.
<table>
<thead>
<tr>
<th>ITEM #</th>
<th>RECOMMENDATION</th>
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<tbody>
<tr>
<td>1.</td>
<td>WELCOME AND INTRODUCTIONS</td>
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<tr>
<td>2.</td>
<td>PUBLIC COMMENTS/COMMUNICATIONS/MEMBER COMMENTS</td>
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<td></td>
<td>Members of the public shall have the opportunity to address the working group on any issue within the jurisdiction of SANDAG that is not on this agenda. Anyone desiring to speak shall reserve time by completing a “Request to Speak” form and giving it to the working group prior to speaking. Public speakers should notify the working group coordinator if they have a handout for distribution to working group members. Public speakers are limited to three minutes or less per person. Working group members also may provide information and announcements under this agenda item.</td>
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<td>3.</td>
<td>MEETING SUMMARY OF DECEMBER 1, 2011</td>
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<td>The meeting summary from December 1, 2011, is attached for the working group review and approval.</td>
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<td>4.</td>
<td>REGIONAL BEACH SAND PROJECT UPDATE</td>
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<td>SANDAG staff will provide the working group with an update on the status of the project, including construction bidding, schedule, and permits.</td>
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<td>5.</td>
<td>DISTRIBUTION OF FUNDS FROM THE CALIFORNIA COASTAL COMMISSION BEACH SAND MITIGATION FUND</td>
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<td>The City of Encinitas is requesting funds from the California Coastal Commission Beach Sand Mitigation Fund be used toward the placement of sand as part of the Regional Beach Sand Project. SANDAG staff is requesting the working group recommend that the Regional Planning Committee approve the use of funds. A copy of the resolution from the City of Encinitas is attached.</td>
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<td>6.</td>
<td>SURF SPOT MONITORING PROGRAM</td>
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<td>Julia Chunn from the Surfrider foundation will provide the working group with an overview of the Surf Spot Monitoring Program.</td>
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<td>ITEM #</td>
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<td>7.</td>
<td>REGIONAL MONITORING PROGRAM GOOGLE EARTH VISUALIZATION TOOL</td>
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<td>INFORMATION</td>
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<td>SANDAG staff will provide the working group with information on a visualization tool that can be used to display data from the Regional Shoreline Monitoring Program.</td>
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<td>8.</td>
<td>LEGISLATIVE UPDATE</td>
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<td>Steve Aceti, CalCoast, will discuss the status of state and federal legislation related to the shoreline management program.</td>
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<td>9.</td>
<td>ADJOURNMENT AND NEXT MEETING</td>
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<td>INFORMATION</td>
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<td>The next regularly scheduled working group meeting is Thursday, April 5, 2012, from 11:30 a.m. to 1:00 p.m.</td>
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+ next to an item indicates an attachment
MEETING SUMMARY OF DECEMBER 1, 2011

Members in Attendance:
Pam Slater-Price, County of San Diego, Chair
Joe Kellejian, City of Solana Beach, Vice Chair
Patrick Bilbray, City of Imperial Beach
James Bond, City of Encinitas
Carrie Downey, City of Coronado
Lee Haydu, City of Del Mar
Ann Kulchin, City of Carlsbad
Eileen Maher, San Diego Unified Port District
Mitch Perdue, U.S. Navy
Esther Sanchez, City of Oceanside
Lorie Zapf, City of San Diego

Advisory Members in Attendance:
Steve Aceti, (CalCoast)
Bryant Chesney, National Marine Fisheries Service (NMFS)
August Felando, California Lobster and Trap Fishermen’s Association (CLTFA)
Robert Hoffman, National Marine Fisheries Service (NMFS)

Staff Subgroup:
Steven Jantz, City of Carlsbad
Sachiko Kohatsu, County of San Diego
Leslea Meyerhoff, City of Solana Beach
Frank Quan, City of Oceanside
Greg Wade, City of Imperial Beach
Katherine Weldon, City of Encinitas

Others in Attendance:
Nick Buhbe, Nautilus Environmental
Julia Chunn-Hear, Surfrider Foundation
Walt Crampton, TerraCosta Consulting Group
Reinhard Flick, Scripps Institution of Oceanography
Karen Green, SAIC
Lawrence Honma, Merkel & Associates
Cindy Kinkade, AECOM
John Metz, Oceanside HBAC
Hannah Salides, UCSD

Action Requested: APPROVE
1. Welcome and Introductions

Vice-Chair Joe Kellejian, City of Solana Beach, called the meeting to order at 11:38 a.m., and welcomed the group.

2. Public Comment/Communications

Shelby Tucker, SANDAG, introduced Julia Chunn from Surfrider Foundation (Surfrider) to provide an update on the volunteer surf monitoring they have been developing in relation to the Regional Beach Sand Project II (RBSP II).

Ms. Chunn explained Surfrider made the decision to use a scientific based method to have surf quality parameters measured from installed video cameras using algorithms on breaking wave height, break zone activity levels, break zone locations, and useable beach area. Surfrider selected CoastalCOMS as their consultant to gather this data. However, volunteers will also review daily conditions at surf spots for surfer counts and wave quality parameters and compile their observations with the CoastalCOMS data.

Surfrider requested aid in coordinating with the coastal cities of Carlsbad, Encinitas, Imperial Beach, and Solana Beach. To install six video cameras at surf spots along these coastlines by the end of December 2011 and beginning of January 2012, Surfrider must obtain any necessary permits.

Surfrider will provide compiled reports to SANDAG, but is requesting that SANDAG provide them with the format that is desired.

Chair Slater-Price asked whether Surfrider has contacted coastal city managers yet in their coordination efforts. Ms. Chunn responded Surfrider has been in contact with two of the four cities. Mrs. Tucker noted SANDAG will help schedule a coordination meeting with coastal city staff members and Surfrider.

3. Summary of October 6, 2011, Meeting

Vice-Chair Kellejian made a correction, on page 7, the table should list Fletcher Cove instead of “Fletcher Cover.” Mrs. Tucker, SANDAG, noted the table should also list 650,000 cubic yards (cy) for the permitted quantity under Imperial Beach. Ann Kulchin, City of Carlsbad, motioned to approve the summary of the October 6, 2011, Meeting, and Carrie Downey, City of Coronado, seconded the motion. The motion carried without any objections.
4. Distribution of Funds from the California Coastal Commission Beach Sand Mitigation

Mrs. Tucker presented a report on the California Coastal Commission (CCC) Beach Sand Mitigation Funds. In 1996, SANDAG entered an agreement with CCC administration regarding beach sand mitigation funds, or fees collected by CCC as condition for development of permits. CCC agreed to deposit collected mitigation funds into accounts managed by SANDAG. These accounts are interest bearing accounts in the name of each city and are only to be used for beach nourishment. Moreover, these accounts are different than the beach sand recreation funds.

Mrs. Tucker reviewed the process of withdrawing these mitigation funds. Coastal cities must obtain formal approval through resolutions from their city councils and submit to the Shoreline Preservation Working Group (SPWG) for review. The SPWG then provides formal action to the SANDAG Regional Planning Committee (RPC) to review. Next, the RPC provides a recommendation to the CCC Executive Director to review and approve. The cities of Oceanside, Solana Beach, and Imperial Beach chose to withdraw funds from their mitigation accounts to supplement their required 15 percent match for RBSP II. Mrs. Tucker noted the cities were not required to use the mitigation accounts, but supported their decision to use their accounts in this way.

Mrs. Tucker stated the SPWG is being requested to recommend to the RPC to approve allocation of funds from these coastal cities mitigation accounts.

Esther Sanchez, City of Oceanside, motioned to recommend the RPC approve allocation of funds from these coastal cities’ mitigation accounts, and Vice-Chair Kellejian seconded the motion. The motion carried without any objections.

RBSP II Funding request: Oceanside: $38,000; Solana Beach: $375,000; Imperial Beach: $28,000

5. Regional Beach Sand Project II Communications Plan

Mrs. Tucker provided an update on the RBSP II Communications Plan which was provided in the Agenda packet on page 21. The goal of the RBSP II Communications Plan is to inform and educate the public prior to the start of RBSP II construction.

Key messages will include how RBSP II supports a healthy economy in the coastal cities, will enhance the nearshore environment, and sand nourishment can feed the beach and nearshore system for as much as five to ten years.

Mrs. Tucker requested the SPWG members review and recommend additional frequently asked questions that the public may have. Additionally, if there are other organizations or groups that should be added to the stakeholders list. Also, to reach more stakeholders, a general e-mail address will be setup for the public to send comments and questions to: beachsand@sandag.org, as well as an information hotline.

Informational project materials will be distributed through hard copy mailings, e-mail, and the Web site. Social Media tools will also be used including the SANDAG Facebook and Twitter pages, cities’ Facebook and Twitter pages, and organizations’ Web sites such as Surfrider, Environmental Rights Foundation, Wildcoast, and lagoon groups.
Articles will also be placed in the general press, affected cities' press, and other publications. Signage will be posted per permit conditions and additional information signs will be posted as well.

Mrs. Tucker encouraged the SPWG members to share the RBSP II Communications Plan timeline and workplan.

Vice-Chair Kellejian noted the lagoon organizations should be added to the list of stakeholders and if the coastal cities should obtain this information for SANDAG. Mrs. Shelby confirmed SANDAG already has the contact information for lagoon organizations. She added that a presentation will be prepared on the basic facts of the RBSP II to present if requested by various interested parties as part of a speakers' bureau.

Vice-Chair Kellejian commented he can be available to attend these meetings. Ms. Kulchin requested notification to SPWG members if presenting to their cities.

Lee Haydu, City of Del Mar, asked when outreach to communities will begin. Mrs. Tucker explained outreach is schedule to start at the beginning of 2012 before construction starts in April.

Chair Slater-Price commented the coastal chambers of commerce and downtown merchant associations should be added to the list of stakeholders.

Eileen Maher, San Diego Unified Port District, added the convention center to the list of stakeholders. She also noted the Port has a Facebook page where RBSP II information can be posted.

Mrs. Downey commented the City of Coronado's support for RBSP II and encouraged that the project be highlighted and presented as a cost-effective project which will benefits the region as a whole and not just the participating coastal cities.

Esther Sanchez, City of Oceanside, noted potential interested stakeholders including the California Surf Museum, Oceanside Market Center, and school events through the City of Oceanside's Parks and Recreation Department.

Surf clubs and surf shops were also cited by Mr. Bond and Chair Slater-Price.

Mrs. Downey motioned to approve the RBSP II Communication Plan with the inclusion of suggestions made, and Vice-Chair Kellejian seconded the motion. The motion carried without any objections.

6. Regional Beach Sand Project II Update

Mrs. Tucker provided an update on the RBSP II. The bidding documents were posted on Wednesday, November 23, 2011, which was slightly behind schedule. SANDAG is also working on making the final plans available for potential contractors as well as other interested parties to view online. A pre-bid meeting is scheduled for Wednesday, December 7, 2011, from 2:30 to 3:30 p.m., in the SANDAG Board Room. Based on online viewing data of the bidding documents, there is interest by
qualified bidders in the project. Contractors must submit documents to SANDAG by December 21, 2011, 2:30 p.m., when the bid opens.

Mrs. Tucker highlighted the last major permit, 404 ACOE, is being finalized with signatures by SANDAG and the ACOE. The project team will need help from SPWG members and city staff to coordinate obtaining local permits, traffic plans, and additional procedures or actions necessary to meet permit conditions.

Additionally, the Draft Monitoring Plan was finalized and distributed to staff at resource agencies at the beginning of November 2011 to review. Prior to today’s SPWG meeting, the resource agencies staff met and discussed the proposed Draft Monitoring Plan. A presentation of the Final Monitoring Plan will be provided at a future SPWG meeting.

7. **Sea Level and Beach Change Projection Methods**

Reinhard Flick, Scripps Institution of Oceanography, presented findings from methodology development research funded by the Department of Defense to assess how sea level rise will affect military facilities at Camp Pendleton and Coronado. However, this research also has implications and usefulness for the region as a whole.

Mr. Flick provided background information on the history of sea level rise and fall. Up until 6,000 to 8,000 years ago, sea level rose on average 5 feet per century for 80 centuries. This sea level rise was mainly attributed toward glaciers melting. Currently, if all of the ice melted in Greenland, there would be 7 meters or 23 feet of sea level rise, and for Antarctica, there would be 70 meters or 230 feet of sea level rise.

Global sea level rise has accelerated since the 1880s with a mean sea level rise (MSLR) of 15-20 centimeters (cm) per cubic yard (cy) rise globally. In San Francisco record rates of sea level rise occurred over most of the 20th century, but these varied greatly over time, which reflects local processes. Over the last 20 to 30 years from the 1990s on, global satellite coverage data demonstrated that on a global basis, the rate of rise has increased due to global warming over the last 20 years, with MSLR of 33 cm/cy from 1992 to 2009.

However, global rise is not distributed uniformly over the earth, with the eastern Pacific Ocean having no rise compared to rapid rise on the western Pacific Ocean. Moreover, there has been zero net MSLR in California over the last 30 years. This zero net MSLR is due to Gyre wind acceleration, coastal upwelling, water drawn offshore, and dynamical suppression compared to passive sea level rise of water going in the ocean from melting ice. Additionally, in the late 70s and early 80s, there was a shift in the northern Pacific climate, and the probability of future MSLR is unknown as fluctuations disguise possible scenarios. However, based on studying four scenarios, parabolic MSLR rise is predicted where MSLR could increase at more rapid rates in the future on both the eastern and western Pacific Ocean.
All of the beaches and infrastructures along the coast are built to be able to tolerate the predictable, seasonal tidal activity which results in 2 to 4 meters of sea level rise. In the San Diego region structures are built on average 10 feet above sea level. However, if MSLR occurs as predicted by 2 meters by 2100, this extra rise will affect coastal infrastructures and be additive to the seasonal tidal sea level rise variability.

The state of California issued a guidance document which can be helpful to local jurisdictions in taking sea level rise into account for coastal projects, but probabilities are still unknown.

Mr. Flick reviewed the historical shoreline position of the Naval Base in Coronado. Data on average beach width and wave energy was compared from 1980 to 2010. The average beach width was 230 meters, with more variability in the 1980s and less variability starting in 2000. A wave driven equilibrium shoreline change model was applied to this data. The outcomes included shoreline position as related to wave energy, bigger waves erode beaches faster and eroded beach changes lower for equal energy change, smaller waves accreted beaches and beach change faster for equal energy change. Moreover, the overall wave climate has been milder since 1997, therefore waves did not drive beach width retention.

At Fletcher Cove, prior to RBSP I the rate of erosion was 1.6 meters per year. Following the RBSP I placement of 146,000 cy of material and average decrease in wave heights, material stayed and nourished the beach for a longer period of time than would have occurred with larger waves. This type of data should continue to be collected in order to project what will be on beaches in the future. Application of the wave driven equilibrium shoreline model from 1980 to 2010 on wave data in Del Mar and Solana Beach trends indicated that the average beach width at Fletcher Cove from 2000 to 2009 was 38 meters, and there was little change in beach width mid-century.

Mr. Bond asked what was behind the loss of sand at Fletcher Cove lost sand following RBSP I. Mr. Flick explained the attributes at Fletcher Cove are no different than at other beaches, but loss was based on wave exposure, natural sand retention reef structures, and lack of sand in the system from rivers upstream.

Ms. Kulchin commented the sand left rapidly following RBSP I construction. Mr. Webb explained the material used for RBSP I was not as coarse as the material that will be used for RBSP II.

Mr. Flick reviewed North Island Naval Air Base Station SS0182 model. Currently, the average beach width is 160 meters, but applying different MSLR scenarios resulted in changes of beach width from less than 1 percent to greater than 10 percent.

Mr. Flick noted the Vulnerability and Adaptations to Extreme Events in California in Context of Climate Change workshop is an opportunity to learn more information about sea level rise for those interested in this subject. The workshop fee of $25 includes breakfast and lunch and will be held on December 13, 2011, at the Robert Paine Scripps Forum for Science, Society, and Environment from 8:00 a.m. to 5:45 p.m.
8. **Legislative Update**

Steve Aceti provided a legislative update regarding a potential measure that may be on the November 2012 ballot. In order to get on the ballot, 807,615 signatures must be collected by April 2012 by the author of the measure, Oscar Braun. The intent of this proposed measure is to dismantle the California Environmental Protection Agency and Air Resources Board, as well as repealing the California Environmental Quality Act, California Coastal Act, California Endangered Species Act, Assembly Bill 32 which regulates the state’s climate regulations, and Senate Bill 375 which sets state-wide greenhouse gas emissions reductions targets.

Mr. Aceti also provided information on work that Beacon, a group that does work similar to the SPWG based out of Santa Barbara will be conducting with the ACOE. Beacon received grant funding from the Department of Boating and Waterways to develop and build artificial reefs at the Ventura Oil piers.

Mr. Aceti noted the City of Solana Beach will be holding a meeting on December 7, from 2:00 to 5:00 p.m., to address changes to allow ACOE the authority to build sand retention structures.

Mr. Aceti also informed the SPWG about the 2012 H20 Conference. The conference will be held the last week of May 2012 at the Catamaran Resort in Mission Beach. The call for presentations will be released next week.

Mrs. Tucker added the American Beach and Shore Preservation Association annual conference will also be held at the Catamaran in October 2012. As this conference is normally held on the east coast, this will be an opportunity to highlight regional and state-wide projects. The call for papers will be released early in spring of 2012. Mrs. Tucker noted she is part of the planning committee along with Russ Boudreau and Susan Brodeur from Orange County.


Mrs. Tucker reviewed the 2012 SPWG meeting schedule on page 25 of the agenda packet. Due to the upcoming start of RBSP II construction, special meetings were added to the SPWG schedule in order to update members on the project’s status and to obtain input. From February to December 2012, meetings are scheduled for the first Thursday of every month. Agendas or cancellation notices will be distributed at least one week ahead of time to SPWG members and interested parties.

10. **Adjournment and Next Meeting**

Chair Slater-Price adjourned the meeting at 12:54 p.m. The next meeting is scheduled for Thursday, February 2, 2012, 11:30 a.m. to 1:00 p.m.
DISTRIBUTION OF FUNDS FROM THE CALIFORNIA COASTAL COMMISSION BEACH SAND MITIGATION FUND

Introduction

The City of Encinitas is requesting funding from the California Coastal Commission (CCC) Beach Sand Mitigation Fund (Mitigation Fund) administered by SANDAG for the Regional Beach Sand Project (RBSP). These funds are collected and held by SANDAG, for use by the city where the project is approved, whenever a Coastal Development Permit is issued by the CCC for a project that impacts the beach. Allocation of funds from a coastal jurisdiction’s account requires that jurisdiction’s formal approval through resolution by the City Council. The resolution provided by the City of Encinitas is included as Attachment 1.

Additionally, prior to allocation of any funds, the proposal must be reviewed by the Shoreline Preservation Working Group (SPWG), approved by SANDAG, and submitted to the Executive Director of the CCC for review and approval. This item is scheduled for consideration of approval at the March 2, 2012, Regional Planning Committee meeting.

Recommendation

The SPWG is asked to recommend that the Regional Planning Committee approve the allocation of funds from the Beach Sand Mitigation Fund in accordance with the resolution contained in Attachment 1 for the City of Encinitas and direct SANDAG staff to submit the proposal to the Executive Director of the CCC for review and approval.

Discussion

In 1996, SANDAG and the CCC entered into a Memorandum of Agreement (MOA) which outlines the administration of the Mitigation Fund. The Mitigation Fund consists of fees collected by the CCC as a condition of the coastal development permit process for the adverse impacts of shoreline protective structures, such as seawalls and revetments, on beaches within the region. Mitigation fees are deposited in an interest-bearing account created and managed by SANDAG. Only projects that involve sand replenishment for beaches in the San Diego region are eligible to use this funding.

The RBSP will place approximately 1.4 million cubic yards of beach quality sand on regional beaches from Oceanside to Imperial Beach beginning in April 2012. The project received a grant from the California Department of Boating and Waterways requiring a 15 percent local funding match. These funds will be used by each city as part of their required match for construction activities. The amount each city has in its respective account varies, therefore some cities have identified other funds to complete the 15 percent local funding match requirement.
The City of Encinitas is requesting to use up to $142,000 in mitigation funds to place sand on the beach within the city. The city will use these funds for pumping the sand onto the beach and preparing the site. These uses are consistent with the SANDAG Shoreline Preservation Strategy objectives, policies, and recommendations that relate to beach building and maintenance. Furthermore, the project meets the eligibility criteria included in the MOA.

Attachment: 1. Resolution No. 2012-09, A Resolution of the City Council of the City of Encinitas, California, to Request Funding from the California Coastal Commissions Beach Sand Mitigation Fund Administered by San Diego Association of Governments (SANDAG) for the Regional Beach Sand Project II

Key Staff Contact: Shelby Tucker, (619) 699-1916, Shelby.Tucker@sandag.org
Resolution 2012-09

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF ENCINITAS, CALIFORNIA, TO REQUEST FUNDING FROM THE CALIFORNIA COASTAL COMMISSIONS BEACH SAND MITIGATION FUND ADMINISTERED BY SAN DIEGO ASSOCIATION OF GOVERNMENTS (SANDAG) FOR THE REGIONAL BEACH SAND PROJECT II.

WHEREAS, the Beach Sand Mitigation Fund consists of fees collected by the California Coastal Commission through its coastal development permit process pursuant to special conditions of various permits, as mitigation for the adverse impacts of shoreline protective structures, such as seawalls and revetments, on the beaches within San Diego County; and

WHEREAS, the mitigation fees are deposited in an interest bearing account created at SANDAG, with all interest earned payable to the account for purposes stated below; and

WHEREAS, the purpose of the account is to provide a beach sand mitigation fund to aid local governments, working cooperatively through SANDAG, in the restoration of the beaches within San Diego County; and

WHEREAS, the fund shall be solely used to implement projects which provide sand to the region’s beaches; and

WHEREAS, the Regional Beach Sand Project (RBSPII) by SANDAG will add 286,000 cubic yards of sandy material to Batiquitos (105,000 cy), Moonlight Beach (92,000 cy) and Cardiff (89,000 cy) in Encinitas; and

WHEREAS, SANDAG requires an additional funding commitment from Solana Beach, Encinitas and Carlsbad for $173,360, $225,000 and $225,000 respectively for the placement of sand at the respective receiver sites, which were not included in the original Contract No. 5001253 as part of the project; and

NOW, THEREFORE, the City Council of the City of Encinitas, California does hereby resolve as follows

1 That the above recitations are true and correct.
2. According to the Memorandum of Understanding between the California Coastal Commission and SANDAG, the Beach Sand Mitigation Fund are eligible for projects that move sand to the beach.

3. That the City Council approves the request for funding from the Beach Sand Mitigation Fund for $141,706.

4. That SANDAG's Shoreline Preservation Working Group will evaluate the proposed beach replenishment project and determine if the money from the fund should be allocated to this project.

5. After adoption by SANDAG's Shoreline Preservation Working Group, the request must be submitted to the Executive Director of the Commission for review and approval.

PASSED AND ADOPTED at a regular meeting of the City Council of the City of Encinitas, California, held on the 8th day of the February 2012, by the following vote:

AYES. Barth, Bond, Gaspar, Muir, Stocks.

NAYS: None.

ABSTAIN: None.

ABSENT: None.

Jerome Stocks.
Mayor, City of Encinitas

ATTEST:

Deborah Cervone, City Clerk
Regional Beach Sand Project II: Surf Spot Monitoring
Surfrider Foundation San Diego Chapter

Introduction
In response to the Regional Beach Sand Project II (RBSPII) proposed for Spring 2012 construction by the San Diego Association of Governments (SANDAG), the Surfrider Foundation San Diego Chapter is commencing a Surf Spot monitoring program at surf spots nearby project receiver beaches. RBSPII will place close to 1,500,000 cubic yards of dredged sand at 8 receiver sites along San Diego County beaches. The project is scheduled to begin in July 2012, and will continue through October 2012 and will bring sand to 7 North County and 1 South County San Diego beaches. The overarching goal of the project is to provide an assessment of San Diego County surf spots and their response to the influx of sand from the RBSPII. Surf spot monitoring will consist of a network of 6 internet connected video cameras located at surf spots nearby the RBSPII receiver sites. Trained volunteers will analyze video and compile automated measurements from the surf camera network. The camera network will utilize the services of CoastalCOMS to provide a video archive for the camera network and apply algorithms developed and tested by coastal scientists to extract wave parameter estimates from the video. CoastalCOMS is a company that has been providing video-based coastal monitoring at beaches worldwide since the mid-1990s.

Project Background
Surf spots are an important part of our culture and economics, and should be protected to the full extent possible. Regional beach fill projects are also important to the economic stability of local municipalities, but should not be constructed at the expense of other important resources. Until this point, there has been no effort to assess the impact to San Diego County surf spots from beach fill projects, and often, only anecdotal evidence of the effects are discussed in planning documents. A goal of this project is to replace the anecdotal evidence, which is often unreliable due to the wide range of surfing skill and experience of those reporting it, with observations from a consistent framework of surf spot monitoring.

As part of Surfrider Foundation San Diego chapter’s comments on the RBSP II Environmental Impact Report, it was identified that there was some uncertainty regarding the beach fill’s impact on nearby surf breaks. When SANDAG brought the project to the California Coastal Commission for permit approval, Surfrider requested that surf spot monitoring be a part of the physical beach sand monitoring proposed by CCC. The CCC supported the idea of surf spot monitoring, and attached it to the annual reporting requirements for the project, but did not require SANDAG to commit resources towards surf spot monitoring, rather calling on Surfrider and other volunteer groups to organize and compile the monitoring program. Planning and development of the surf spot monitoring project has been ongoing since June 2011 and has a target install date of February 2012.

Surf Spot Monitoring Project Goals
As mentioned above, the overarching goal of the project is to provide a qualitative assessment of San Diego County surf spots and the response to the RBSPII by utilizing observations from a
surf spot monitoring network. The network has resources to run for 2 years and accomplish the following goals:

- Establish baseline data for surf quality and usable beach at surf spots throughout San Diego, with special focus on spots nearby RBSP II receiver beaches,
- Daily observation of surf quality parameters and surfer counts,
- Track changes in surf quality and surfability,
- Assess changes in beach width and shoreline position.

To fulfill the goals of this project, it is first necessary to define surf quality and methods of measuring surf quality. Surf quality is a very subjective measure, and its perception can vary greatly among surfers of varying experience levels, as such, a high quality surf spot has a different meaning to different surfers. For example, a beginner surfer may identify a high quality spot as a slow breaking sloped wave. Conversely, an experienced surfer would not classify the same wave as high quality, rather preferring a fast breaking plunging or tubular wave. These types of distinctions are reasons why particular surf spots are often designated as beginner, intermediate or expert spots. For the purposes of this project, surf quality will be measured as objectively as possible, and impacts on quality will be assessed spot by spot, and based on the quality traditional for the surf spot being monitored.

Observations of surf quality parameters will be gathered in a consistent method. The project will rely on 6 video cameras installed at surf spots nearby the RSBP II receiver beaches. The surf camera network will allow a stable platform for monitoring, and allow for consistent measurements that can be analyzed using algorithms for identifying features in the video. Using technology provided by CoastalCOMS, many of the required surf quality parameters will be measured directly from the video. For the parameters that cannot be measured automatically, trained volunteers will be used. Volunteers will review 10 minute video segments of daily conditions at a surf spot at the same time every morning, and compile the video derived measurements (wave height and period) along with additional observations (surfer count, ride length, and surf quality) in a web based form that will be analyzed at weekly intervals.

Volunteers will be trained to identify and estimate surf quality parameters, as well as extract video segments from the CoastalCOMS video archive and input observations into the web based form. Since there is a degree of subjectivity in describing surf spot quality, volunteers will be given information about the typical characteristics of the surf spots being monitored, including information about expected breaking conditions at each spot under various swell, tide and wind conditions as a supplement to the baseline information that will be collected before the sand fill is placed.

**Surf Quality Parameters**

In order to assess surf quality, a set of parameters has been identified for observation and analysis. These parameters are listed in the table below, where type of measurement describes how the quantity is observed, which can be video-derived (measured using automated process from video) or video observed (estimated by a volunteer viewing video). Some observations from external sources will be used, such as NOAA tide and wind gauges and Scripps Institution of Oceanography wave buoys.
<table>
<thead>
<tr>
<th>Parameter</th>
<th>Acceptable values</th>
<th>Type of Measurement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wave Height</td>
<td>Number in feet</td>
<td>Video derived, video observed</td>
</tr>
<tr>
<td>Wave Period</td>
<td>Number in seconds</td>
<td>Video derived, video observed</td>
</tr>
<tr>
<td>Number of ridable waves</td>
<td>Number</td>
<td>Video observed</td>
</tr>
<tr>
<td>Ride Length</td>
<td>Number in seconds</td>
<td>Video observed</td>
</tr>
<tr>
<td>Wave Type</td>
<td>Spilling, Plunging, Collapsing or Surging</td>
<td>Video observed</td>
</tr>
<tr>
<td>Quality of ride</td>
<td>Peeling, Hollow, Close out, Walled, Short ride, Long ride</td>
<td>Video observed</td>
</tr>
<tr>
<td>Tidal height</td>
<td>Number in feet</td>
<td>External source</td>
</tr>
<tr>
<td>Wind Speed</td>
<td>Speed in knots</td>
<td>External source</td>
</tr>
<tr>
<td>Wind Direction</td>
<td>Compass direction</td>
<td>External source</td>
</tr>
<tr>
<td>Number of Surfers</td>
<td>Number</td>
<td>Video Observed</td>
</tr>
</tbody>
</table>

Table 1: Surf spot monitoring parameters.

**Reporting**

Compilation and analysis of the surf quality parameters will be conducted by Surfrider Foundation San Diego chapter and will be provided to SANDAG as part of their annual reporting. SANDAG will provide a template to interface Surfrider’s surf spot assessment into their reporting format. Specifics will be discussed with Moffatt & Nichol.