8.0 ADDITIONAL CONSIDERATIONS OF ALTERNATIVES

Additional considerations for the regional sediment management Alternatives presented in Section 7 include economics (costs versus benefits), funding sources, and permit requirements. These additional considerations are discussed below.

8.1 Economic Feasibility
Economic feasibility of regional sediment management depends on project costs and project benefits. Typically, if the benefits outweigh the costs (i.e., the ratio of benefits to costs is greater than 1.0) the project is economically feasible at a conceptual stage.

8.2 Program Costs
Program costs include those for planning, engineering, construction, maintenance, monitoring and reporting, and potential mitigation. Cost estimates for the two major alternatives (nourish with and without sediment management devices and sub-alternative Scenarios of using upland or offshore sediment) are shown as annualized costs in Table 18 and in Appendix D. The Coastal Sediment Benefits Analysis Tool (CSBAT) developed for CSMW by the USACE (Everest, 2008) was used for reference information to estimate certain project costs. Annualized costs are those required on a yearly basis to implement the regional program, perform on-going renourishment, and monitoring and maintenance. As shown in Table 18, the costs associated with the no sediment management devices Alternative range from $18 million using only offshore dredged sediment, to $37 million using only upland sediment. In comparison, costs associated with the Alternative that includes sediment management devices vary from $16-$26 million, depending on whether offshore or upland sediment sources are used, respectively.

The least expensive Scenario is the use of offshore sediment alone, based on the costs to truck material throughout the region. If trucking and handling of the material can be minimized, costs to implement projects using upland sediment will decrease and become more in line with costs to dredge from offshore.

In 2007, SANDAG performed a separate cost estimate predicting a total 40-year project cost (SANDAG 2007a) assuming that sediment management devices are proven to be effective. SANDAG found that costs to nourish every five years without sediment management devices would total $395 million over the 40-year period, while the total cost to implement sediment management devices with nourishment every ten years (50% reduction in nourishment) would be $299 million. Thus, cost savings of $96 million, or 25 percent, could be realized over 40 years through implementing sediment management devices and nourishment compared to nourishment only.
8.3 Program Benefits

Benefits associated with the recommended regional program include increased recreation from wider beaches, increased sandy beach and hard bottom habitat areas, reduction of damage to infrastructure from increased shore-property protection, increased public safety, reduced emergency services cost, reduced clean-up costs, increased tax revenues to local agencies, and potential other factors. Benefits were estimated using a method developed by Dr. Phil King and used by SANDAG (2007b) that includes recreation and protection of public property. The CSBAT model was not used to estimate benefits because the model is focused only on certain sites that do not include all the RSM sites, and therefore the model code would have to be modified to estimate benefits at all RSM sites. The annual benefits of the project, regardless of Alternative or Scenario, are estimated at approximately $18.7 million. This estimate is based on the benefits specified in the SANDAG Feasibility Study (2007b) for the square footage of new beach created by either adding sediment to the region at the target rate of 1 million cubic yards per year without sediment management devices or adding 500,000 cubic yards per year of sediment to the region every year with sediment management devices.

Using these values (Table 18) the benefit-to-cost (B/C) ratio for the regional program with no sediment management devices ranges from between 0.5 for Upland Sediment Scenario to 1.0 for the Offshore Sediment Scenario. The most likely scenario would be some combination of the two sediment sources. The B/C ratio for the sediment retention Alternative ranges from 0.7 using upland sediment to 1.2 using offshore sediment.

The matrix B/C ratios are listed in Table 18 below. The most likely Scenario will involve a combination of different sediment sources, so the B/C ratio for the regional program ranges from 0.5 to 1.2. The lowest B/C ratio is for Scenario 1A and the highest B/C ratio is for Scenario 4. If transport costs for upland sediment can be reduced, then the associated B/C ratios may increase and become larger than 1.0. The highest benefit/cost ratios are realized when offshore sediment is used, assuming inflation does not outpace interest rates into the future.

<table>
<thead>
<tr>
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<tbody>
<tr>
<td>Scenario 1A - No Mgmt Devices, 1 M CY/YR, upland (0% fines), offshore sediment</td>
<td>$37,020,026</td>
<td>1,000,000</td>
<td>$18,740,321</td>
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<tr>
<td>Scenario 1B - No Mgmt Devices, 1 M CY/YR, upland (25% fines), offshore sediment</td>
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<tr>
<td>Scenario 2 - No Sediment Management Devices, 1 M CY/YR, offshore sediment</td>
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<td>$18,740,321</td>
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<tr>
<td>Scenario 3 – Sediment Management Devices, 500 K CY/YR, upland sediment</td>
<td>$25,968,700</td>
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<td>$18,740,321</td>
<td>0.7</td>
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<tr>
<td>Scenario 4 – Sediment Management Devices, 500 K CY/YR, offshore sediment</td>
<td>$15,707,571</td>
<td>500,000</td>
<td>$18,740,321</td>
<td>1.2</td>
</tr>
</tbody>
</table>
8.4 Possible Funding Sources

A dedicated source of funding is highly desirable if the regional program is to be successful in its implementation. There are a number of possible local and regional sources to help cover the funding requirements of the two Alternatives. These include both existing and newly created funding sources. Existing possibilities for future funding include the state Ocean Protection Council, the State Coastal Conservancy, and the CCC mitigation funds that is currently administered by SANDAG. New potential funding sources include user fees such as rental car fees and parking fees at the beaches, as well as additional sales taxes, development impact fees, property tax assessments, and transient occupancy tax increases.

A more detailed analysis of potential funding sources should be conducted in the future to determine the optimum mixture of revenue streams and prepare a strategy for pursuit of those potential funding sources. The decision of whether or not to pursue funding sources through increased sales taxes or other issue-specific measures will depend on several factors, the most important of which will be the state of the economy and the prevailing political climate.

8.4.1 Regional Sales Tax

A regional sales tax could be used to provide a potential funding source to meet the regional sediment management needs of San Diego County. A regional sales tax would generate the greatest amount of flexibility and stability as the revenues would be controlled regionally and such funds would be better protected against inflation. The regional tax could be tied directly to regional sediment management needs (e.g., beach restoration) and/or regional needs.

8.4.2 Rental Car Fees

A fee could be levied on rental car leases within San Diego County to provide funding for regional sediment management activities. This fee could be levied on a cost per day basis (e.g., $0.25/day) or as a percentage of the rental price.

8.4.3 Transient Occupancy Tax

During the past two years, the SANDAG Shoreline Preservation Working Group has been discussing the use of a Transient Occupancy Tax (TOT) as a method for funding the region’s beach sand replenishment program. A TOT would provide a reliable funding source based on the fact that TOTs have been implemented throughout the country with a great degree of success. Encinitas and Solana Beach currently levy a TOT and all the funds from that tax are dedicated to beach replenishment.
8.4.4
Property Tax Assessments

Property tax assessments have been imposed by many cities and counties to help finance general obligation bonds for local flooding and storm-water management programs. This type of tax could be used to cover regional sediment management activities within San Diego County.

8.4.5
Parking Fees

A fee could be levied on beach parking within San Diego County coastal cities to provide funding for regional sediment management activities. This fee could be levied as an increase in existing parking fees where such fees exist, or as new parking fees in areas where no such fees exist. Implementing parking fees at city and state beaches would be difficult due to concerns about negative impacts on public access. Consequently, it might be better to levy parking fees only in non-beach areas (such as downtown or redevelopment districts) within coastal city jurisdictions.

8.4.6
Development Impact Fees

Development Impact Fees on residential, commercial, and industrial development could be considered to help fund regional sediment management needs. Studies could be prepared to demonstrate the impact new development has on sediment transport through coastal watersheds to the beaches in order to determine an appropriate cost sharing distribution.

8.4.7
Inland Sediment Transport Offset Fund

The recent development of opportunistic beach fill programs (e.g., SCOUPs I and II) throughout San Diego County represents the first step in facilitating sediment provision from inland sources to regional beaches. The next step is to implement these programs such that the beneficial reuse of suitable inland sediment on local beaches is considered a viable option for excavation projects within the coastal cities of San Diego County. The last step towards achieving this tangible goal is to provide economic incentives or funding for project proponents (e.g., coastal cities) and sediment suppliers (e.g., developers) to do the work. Funding or incentives are necessary because, in many cases, it will be more expensive for sediment suppliers to place suitable inland sediment on local beaches than it would be to use the material for other purposes such as fill or aggregate. Sediment suppliers may also find it more expensive to process and permit opportunistic beach fill projects in comparison to these other options. Consequently, funding or incentives are necessary to offset these additional costs, thereby making it financially viable for project proponents and sediment suppliers to place suitable inland sediment on local area beaches.
A matching fund could be set up to cover incremental costs associated with implementation of the opportunistic sand programs developed throughout coastal San Diego County. The matching fund could take many forms, and several options are identified below.

- **Option 1: State Fund – Full Incremental Cost Coverage**
  - Administration – California Department of Boating and Waterways
  - Funding – State bonds, supplemental taxes, and use fees
  - Uses – All incremental costs including planning, design, construction, and monitoring

- **Option 2: Regional Fund – Full Incremental Cost Coverage**
  - Administration – SANDAG
  - Funding – Regional bonds and supplemental taxes
  - Uses – All incremental costs including planning, design, construction, and monitoring

- **Option 3: Local Fund – Full Incremental Cost Coverage**
  - Administration – Coastal Cities
  - Funding – Municipal bonds and supplemental taxes
  - Uses – All incremental costs including planning, design, construction, and monitoring

- **Option 4: State Fund – Partial Incremental Cost Coverage**
  - Administration – California Department of Boating and Waterways
  - Funding – State bonds, supplemental taxes, and use fees
  - Uses – Incremental construction costs

- **Option 5: Regional Fund – Partial Incremental Cost Coverage**
  - Administration – SANDAG
  - Funding – Regional bonds and supplemental taxes
  - Uses – Incremental construction costs

- **Option 6: Local Fund – Partial Incremental Cost Coverage**
  - Administration – Coastal Cities
  - Funding – Municipal bonds and supplemental taxes
  - Uses – Incremental construction costs

The matching fund could utilize existing or new funding sources, including the potential funding sources identified in Sections 8.4.1 through 8.4.6. Alternatively, this fund could be an entirely new and separate funding source for regional sediment management. The coastal cities could impose a supplemental fee for the issuance of grading permits within their jurisdiction. If set aggressively enough (i.e., high fee) then this fee could be used as an incentive for project sediment suppliers to place suitable inland sediment on local beaches by making it more expensive to do otherwise. Alternatively, the fee could be set at low to modest levels to allow development to move forward without substantial cost increases while slowly and incrementally building the fund.
8.5 Permitting Requirements

Implementing the Coastal RSM Plan will require permits from the agencies listed below. Local agencies may require other permits not included in this list that should be inventoried. The most expeditious manner to implement the Coastal RSM Plan would be to secure general permits from all agencies as is described in more detail in the following section of this report.

- **USACE** – Either individual Sections 10, 106, and 404 permits or a Regional General Permit (RGP) for RSM projects in San Diego County. Issuance of these permits requires the USACE to consult with NOAA National Marine Fisheries Service and the U.S. Fish and Wildlife Service (USFWS) where necessary for Essential Fish Habitat (EFH) and Endangered Species Act issues, respectively. In the event a threatened or endangered species is present, a Section 7 Consultation would be required with the USFWS.

- **California Coastal Commission** – Coastal Development Permit (CDP) or Federal Consistency Determination.

- **California State Lands Commission** – Lease of State Lands for placement of sediment below the mean high tide line, which will include the requirement to perform a mean high tide line survey prior to the first placement and potentially re-survey every few years, if deemed necessary by the Commission as part of a long-term program.

- **Regional Water Quality Control Board** – Section 401 Certification for typical nourishment, and Waste Discharge Requirements (WDRs) under the State’s Porter-Cologne Act and Clean Water Act if discharging fluidized dredge material (e.g., from a harbor, wetland, or lagoon).

- **California State Department of Parks and Recreation** – An Encroachment Permit will be required if the receiver site is located within a State Park or State Beach, or if access across state property is necessary for project implementation. This program could also require a special use permit or right of entry permit. The proponents will need to coordinate with California State Parks well in advance of beach nourishment activities.

- **Local Agencies** – A permit may be required from the local agency of the receiver site. This may include grading permit, Coastal Development Permit (CDP), special use permit, and variances to applicable ordinances. The Cities that could issue a CDP include Oceanside, Carlsbad, Encinitas, Del Mar, San Diego, Coronado, and Imperial Beach. Solana Beach may possess the authority to issue CDPs with an approved Local Coastal Program.

- **California Department of Fish and Game** – Potentially, a Streambed Alteration Agreement may be required if the receiver site is at or adjacent to an existing river mouth or streambed. Potentially, a California Endangered Species Act incidental take permit, 2081(b), if there is a likelihood of taking a state listed species.

- **Compliance with the California Environmental Quality Act (CEQA) and the National Environmental Policy Act (NEPA)** – The projects specified in the Plan must be consistent with CEQA and NEPA through environmental review. A joint Program CEQA/NEPA document could be required in the form of an Program Environmental Impact Report/Environmental Impact Statement (EIR/EIS). More information about environmental review is provided in section 9.1.9 of this report.
Separate permits may be required for the acquisition of the source material. For example, a grading permit may be required for upland construction generating opportunistic beach fill or a USACE permit may be required for dredging or excavation within a riverbed, lagoon, or embayment. These are assumed to be the burden of the material supplier.

8.6 Existing Permits
The USACE LA District Regulatory Branch is currently processing a number of 10-year permits at many of the potential receiver sites and sediment sources discussed above. Most of these permits are directly applicable to comprehensive sediment management as intended by the concept of regional sediment management. These permits and their status as of the time of Plan development include:

- Tijuana Estuary Sediment Fate and Transport Science Study – Permit previously issued and phase 1 of the project was constructed, monitoring results may affect 80-20 rule;
- City of Coronado Opportunistic Beach Fill Program - Permit still in processing;
- City of Imperial Beach Opportunistic. Beach Fill Program - Permit still in processing;
- City of Solana Beach Opportunistic. Beach Fill Program - Permit still in processing;
- City of Encinitas Opportunistic Beach Fill Program - Permit still in processing;
- City of Carlsbad Opportunistic Beach Fill Program – Permit previously issued and no work done yet;
- City of Oceanside Opportunistic. Beach Fill Program - Permit still in processing, public notice period occurring;
- San Dieguito River Inlet Dredging and Beach Nourishment Project – 10-year permit issued and some work done last year on each side of the inlet;
- San Elijo lagoon Inlet Dredging and Beach Nourishment Project – 10-year permit to be issued; and
- Los Penasquitos Inlet Dredging and Beach Nourishment Project – 10-year permit to be issued.