

National Regional Sediment Management Demonstration Program  
Philadelphia District  
Results, Products and Lessons Learned from RSM Activities  
May 2004

The concept of Regional Sediment Management was first introduced at NAP through the National RSM Demonstration Program four years ago. The RSM concept is now not just familiar to a few coastal people, but has been embraced as a goal throughout NAP. RSM is presently being developed and implemented at NAP utilizing three separate, but interrelated initiatives: the National RSM demo program, the NJ Alternative Long-term Nourishment Feasibility Study (ALT-N) and the ongoing Coastal Monitoring Programs for specific coastal projects. Additionally, a new initiative at the North Atlantic Division required that each District establish an RSM team and will further aid in incorporating RSM into standard business practice.

Participation in the National RSM Demo Program was instrumental in being able to seek and develop these additional funding sources to accomplish RSM. Leveraging funds together with the Demo Program has significantly enhanced the RSM work that can be accomplished overall in the District and Division. For example, the technical lessons learned and stakeholder relationships developed in the Demo Program have assisted in RSM activities at numerous other coastal projects. Also, the Coastal Monitoring Program for Cape May City has funded the collection of beach profile data and vibrocore data to supplement the investigation being conducted under the RSM Demo Program. Additionally, the NJ ALT-N study funded the initial purchase and development of a Rapidly-Deployed Survey Vehicle that will support some data collection for the RSM Demo and the monitoring programs at various project locations. The ALT-N study has also funded the initial development of a coastal GIS system with the assistance of the Mobile District and their efforts in the National RSM Demo Program.

Specific to the RSM Demo program, three options to bypass sand across Cape May Inlet have been investigated and cost estimates, permit requirements and technical specifications for each of these options will be further developed during the remaining part of this FY. Additionally, Cape May Inlet itself is being investigated as a potential source of beachfill material for Cape May City. Presently, a small amount of material is dredged from the inlet channel as needed for navigation purposes, but sidecasted within the inlet. A sediment action was not able to be incorporated into the beach nourishment cycle planned for August (primarily for economic reasons), however it is anticipated that the techniques will be developed, demonstrated and able to be implemented prior to the next nourishment cycle in FY 2006.

At this stage in our RSM development, it is difficult to economically quantify the decreased costs, increased benefits to our projects. It is very evident that the RSM efforts have led to an enhanced business process, which will lead to project cost savings in the future. The most obvious benefits thus far have been increased communications within the District and between the District and various stakeholders. Partnerships that were not standard practice in the past have been initiated and developed. These relationships

will be essential for bringing RSM to full fruition. Other benefits that we have realized from the Demo project include the development and implementation of more efficient sediment management techniques, leveraging of work efforts by Mobile District in the development of NAP's GIS database and in the investigation of innovative dredging technologies. Once the Rapidly Deployed Survey Vehicle is fully implemented, we will see substantial cost savings in the monitoring programs of the individual projects.

During this past FY, it has been exciting to see RSM becoming part of our standard business practice on several coastal projects. We will present two case examples that demonstrate the way that RSM is being implemented within the Philadelphia District. The first case example is project-specific and deals with increased efficiency in construction, sand placement and coordination with stakeholders for the most recent beach nourishment in Ocean City, NJ. The fourth periodic nourishment cycle was conducted in Ocean City from November 2003 through February 2004 and included the placement of 1.6 Million cu yd of sand obtained from an adjacent inlet borrow area. During the course of project construction, various stakeholders made requests to conduct separate, but interrelated RSM actions in conjunction with the placement of sand for the Federal project. These actions included removing a shoal impeding navigation in the inlet, placing a taper area along the northern non-Federal portion of the project, creating a storm berm in an attempt to better manage the sand placed on the construction template in the Federal project area, and conducting a sand tracer study to track the movement of the beachfill out of a hot-spot area. These actions were accomplished through technical practices, communication skills and teamwork that have been fostered through the RSM Demo program. The second case example involves a regional study area from Hereford Inlet to Cape May Point. Six different studies or construction projects are ongoing within this region including the primary focus area of the RSM Demo Program (Cape May Sand Bypass).

Our top products and guidance from our leadership in the RSM program will include documentation of lessons learned in developing partnerships, especially related to environmental issues and policies. Politics and differing priorities of stakeholders can be overriding factors to the technical justification of an RSM project and can significantly delay implementation of the action. NAP has been able to work through some of these obstacles. Another significant product from our RSM program has been the initial development of an NAP coastal GIS system. We can also provide guidance to other Districts/Divisions on leveraging funds and collaboration of technical work within a District and with stakeholders. We can also share with other Districts/Divisions, our lessons learned from the development of the ATV survey vehicle and a website for the Atlantic Coast of NJ Regional Sediment Management Demonstration Program. By the end of this FY, we will have developed technical specifications and cost estimates for three innovative sand bypass techniques that can be shared with other Districts.

It would be helpful to discuss impediments that other Districts have experienced or foresee relative to constructing/conducting an actual sediment action. The correct RSM action is not always the most cost-effective action. Even though our administration is beginning to embrace RSM, we will have difficulty convincing supervisors that an action

is warranted if it costs additional money. One example includes the sidecasting of material within Cape May Inlet for navigation purposes when a beach nourishment project is located just over the jetty and is in need of sand. Because the quantity of sand taken out of the inlet is not enough to nourish the entire beach, it is not cost-effective to change this practice and place the sand directly on the beach. One solution to this problem would be the continued development of smaller-scale, but cost-effective innovative techniques to move sediment.

It would also be helpful to hear how other Districts/Divisions may be implementing RSM in other technical areas such as environmental restoration and flood control. NAD has tasked NAP to develop and implement RSM in these other areas and we would benefit from learning how others may be attempting it.