



DELAWARE ESTUARY REGIONAL SEDIMENT MANAGEMENT PLAN



A comprehensive long-term master plan to identify a new sediment management program, procedures and management practices with regionally-targeted goals, objective and strategies



AUGUST, 2013

Regional Sediment Implementation Workgroup

2016 Delaware Estuary List of Pilot Projects

October 1, 2015 – September 30, 2016

Project Name	Type of Project	Project Lead	Projected Cost	Sources of Funding	Projected Date	Status	Other	Recommendations
Fortescue	Marsh Restoration and Beach Nourishment	NJDOT, NJDEP and TNC	\$4M	NJDOT and NFWF	Placement of material is estimated for Spring and Fall 2016	Individual permits issued. Anticipated completion by April 2016	NJDEP is working with NJDOT; sinking marsh; objective to place to target elevation; 40,000cy of silt and sand; source of material is Fortescue Channel to Fortescue wetlands; 25 acres	Determine usefulness of SQG-retroactive review per RDT suggestion
Prime Hook	Restoration	USFWS/Corps		20 million – Sandy funds (obligated)	Projected construction to start in October 2015	Contract awarded; dredging on schedule	Breach repair (5 major breaches); IAG developed with Corps; largest breach closed; Jan 2016 storm opened another breach thus extend beach fill project	Determine usefulness of SQG-retroactive review per RDT suggestion

Prime Hook	Restoration	DOI/USFWS		20 million (Sandy Funds)	2015 / 2016 Need breach repair to occur first	Construction started in July 2015	Berm/dune construction in Unit #2 in Prime Hook; 2200 acres; 800K cy sand from offshore borrow site	
Buoy 10	Beneficial Use	Army Corps			Tbd	4 geo-cores collected in 2015 (>90% sand); approx. 500,000 cy above regional depths	Potential source for DMU study; available for use by agencies/permitting	Corps collected cores to identify source, type, and quantity of viable sediment; Corps needs to submit for WQC
Misphillion	Beneficial Use	DNREC		NFWF funding—contract awarded	Tentative-late June 2016	Extended rock fill; 40K cy of sand from upland source; Permits obtained, late June 2016 const anticipated	Navigation based issue; about to move outside of the channelized inlet and block off any flow; rebuild the shoreline; biggest population of red knots and horseshoe crabs	On schedule; reviewed 60% add sand to back beach

Murderkill placement on South Bowers Beach and Bowers	Beneficial Use	DNREC		DNREC-	Oct 2015	Phase I- 20,000 cy of sand is placed/complete; Phase II- construct terminal groin on south side (in design); Phase III- Placement of sand on Bowers and S. Bowers.	20,000 cy; silt material placed in open water disposal area (Corps disposal area); sand placed on beach; potential fee increase for BU	
Project Name	Type of Project	Project Lead	Projected Cost	Sources of Funding	Projected Date	Status	Other	Recommendations
Clearview Superfund Project	Beneficial Use	PADEP	\$30M need appropriation	Corps / EPA	End of 2017	60% design submitted May 2016	350,000 cy; from Fort Mifflin (organic material)	
Clearview superfund pilot project	Beneficial Use	EPA	TBD	EPA	TBD	Seeking material at other CDFs (i.e. Pedricktown and 2 DE sites north and south of the Christina River	50,000 – 60,000 cy	Pilot project using dredge material as substrate for tree planting: material may be sourced from Oldmans and Wilmington Harbor- cost effective

Killcohook	Beneficial Use	Corps	No cost	Corps	Ongoing; continuing to remove material	300-350K cy removed; sand	Construction purposes (concrete mix); landscaping stone; stones for septic tanks	
Oldmans	Beneficial Use	Corps	No cost	Corps; contract ends @ end of month	Ongoing	Real Estate agreements signed; no material moved	Remediation site in PA; used as material for a cap	
National Park	Beneficial Use	Corps			Start after Killcohook mining	Project going out to bid; Contractor (R.E. Pearson) selected (\$1.05/cy) 300,000 cy; sand		Construction grade (concrete mix) material; constructed road
Fort Mifflin	Beneficial Use	Corps			Advertisement beginning Spring 2016	Navy; renewable capacity contract; 150,000 cy (>\$40/cy) Contractor – Portico; sub-Clean Earth; 2) Potential PIDC contract for	20Kcy removed for daily cover; NAVY is creating capacity on site	Construction grade material

						Navy Yard (100k)		
Harrison Ave. Landfill, NJ	Living Shoreline	PDE / NJDEP			Tbd	Draft design phase	Mouth of Cooper River; hybridized shoreline; will be a 3 year project; 30,000 cy from Palmyra Cove; 2)	
Cooper River Lake	Landfill cover	Local				70Kcy to landfill may complete project	110,000cy; expensive; geotubes since rapid dewatering did not work	
Project Name	Type of Project	Project Lead	Projected Cost	Sources of Funding	Projected Date	Status	Other	Recommendations
Phoenix Park, South Camden, NJ	Living Shoreline (Phase 3)	PDE / Natl fish and wildlife foundation	\$150,000 – 200,000	Tbd		Draft design phase	Former factory site to convert to park and convert to in water living shoreline; part of federal urban waters partnership; Palmyra Cove has 30,000+cy sand for beneficial use	
Broadkill	Living Shoreline	PDE	tbd	EPA Region 3	Construction complete	Installed biologs; doing well- natural grass recruitment within 2yrs	Lewes/Rehoboth Canal	PDE to draft Fall 2016 report to synthesize cost and upkeep/maintenance of LS projects

Broadkill	Beneficial Use	Corps/ DNREC		Corps	Dredging is complete	Dune constructed to 16ft 1.4M cy; resent breach; Next phase are crossover construction and plant dune grass	DE River Deepening; 1.7M cy sand; DNREC built crossings and other easements; 50 yr agreement for periodic nourishment at 5-7 yr cycle	Weeks Marine; Sediment from Reach E; state meeting to discuss access points
Wilmington Harbor	Deposition Reduction Project (engineering study)	Port of Wilmington		Port of Wilm.-Moffet& Nichol		Concern by USFW on turbo scouring units and fish habitat	Fluidizer project to reduce sedimentation in the Harbor	See Citgo refinery study
Higbee Beach WMA	Marsh Restoration and widening/Dune restoration	NJDEP FWS	?	NRDC	Complete in late 2017	Planning Phase	Use of USACE Cape May CDFs; 200,000 cy; complete sediment sample for marsh restoration	
Thompson Beach	Dredge tidal creeks (PSEG restoration) for marsh restoration	ALS/DEP/N FWF	?					
Gandys Beach	Beach nourishment	USACE	\$10M	USACE Continuing Authorities Program		Planning/Feasibility for shore protection	Coordinate with TNC living shorelines project	

Table ES.1: Recommended Actions

Recommendation			Projects	Date of Completion	Lead Agency
Funding Limitations (FL)					
#1	FL-1A	Coordinate with legislators and others – use Harbor Maintenance Trust Fund allocations for navigation and green infrastructure projects.	2012 WRDA Language 2012 Harbor Maintenance Trust Func	TBD	DNREC – Tony Pratt DNREC – Tony Pratt
	FL-1B	Coordinate with legislators and others - added economic and ecosystem service values of RSM and beneficial use of dredged material.		TBD	RSMIW
#2	FL-2A	USACE to develop more flexible interpretation of the Federal "least cost standard" to consider full range of economic benefits for dredged material management and beneficial use options.	2012 WRDA Language	TBD	DNREC – Tony Pratt
	FL-2B	USACE to evaluate existing/alternative authorities to more easily beneficially use dredged material, especially for habitat restoration.			USACE
#3	FL-3A	Identify Federal/State funding programs to implement RSMP and support beneficial use of dredged material.			RSMIW
	FL-3B	Explore private/public funding opportunities with commercial entities and non-governmental organizations.			RSMIW
	FL-3C	Identify and evaluate potential demonstration projects - especially for private-public funding.			RSMIW
Programmatic and Regulatory Issues (PRI)					
#1	PRI-1A	Joint Federal/State effort to develop consistent programs - dredging operations, dredged material management and beneficial use.			Fed/State
	PRI-1B	RDT to determine the practicality of developing general permits for RSM implementation and dredged material beneficial use projects.			RDT
#2	PRI-2A	RDT/RSMIW to develop a regional dredged material management plan using an asset management approach.			RDT/RSMIW

PRI-2B	Agencies review programs to consider potential project impacts on RSM.	Fed/State
PRI-2C	RDT to continue to convene and share information.	RDT
PRI-2D	Develop regional data sharing capability and analytical tools to evaluate sediment conditions and management strategies.	States

Recommendation		Projects	Date of Completion	Lead Agency	
Operational Management Concerns (OM)					
#1	OM-1A	Convert upland CDFs to CMFs to facilitate beneficial use of dredged material.	Kilkohook cdf Pedricktown / Oldmans cdf Cinnaminson Burlington Island Palymrya Cove	Ongoing Ongoing Ongoing Ongoing Ongoing	USACE USACE NJDOT NJDOT NJDOT
#2	OM-2A	PDE to develop estuary-wide database of potential sites for beneficial use of dredged material.	Delaware Estuary Project Registry http://deestuaryarchive.mobiusnm.com/science_programs_regional_restoration_registry2.asp	Ongoing	PDE
	OM-2B	RSMIW to develop a marketing program to promote the beneficial use of dredged material in the estuary.			RSMIW
	OM-2C	RDT/RSMIW to Identify, evaluate and implement demonstration projects.	The Implementation Team created a Pilot Project List	Ongoing	RSMIW/RDT
Environmental Management Concerns (EM)					
#1	EM-1A	PDE/States to identify tidal wetlands at risk of loss to be protected through dredged material beneficial use, living shorelines, etc.	PDE project with Dodge Foundation and TNC		PDE
	EM-1B	Coordinate RSMP implementation with other habitat restoration plans.			RSMIW/PDE

	EM-1C	RDT to establish interagency workgroup to identify opportunities for beach nourishment using sand dredged from navigation channels.	The RDT serves as the interagency workgroup for this objective	RDT
#2	EM-2A	Coordinate with non-tidal watershed erosion control projects to understand impacts to regional sediment management.		RSMIW/NRCS/PWD/ States
#3	EM-3A	RDT to review and identify BMPs for dredging and dredged material management operations to reduce water quality impacts.		RDT

Education and Outreach Needs (EON)

#1	EON -1A	Develop an education and outreach campaign to the general public to explain the economic importance of navigation, dredging and dredged material management.		USACE
#2	EON-2A	USACE/EPA to develop an education and outreach campaign to the general public to change the perception of dredged material as a waste.	Philadelphia River Day	USACE/EPA

<i>Recommendation</i>			<i>Date of Completion</i>	<i>Lead Agency</i>
Science and Research Needs (SRN)				
#1	SRN-1A	Develop a better understanding of the estuarine sediment dynamics through a variety of research projects.		USACE/DRBC
	SRN-1B	Fully characterize sediment processes and outputs for upstream watersheds.		NRCS/USGS
#2	SRN-2A	Develop a better understanding of the importance of sediment to ecological processes/habitats, in particular wetlands		PDE
	SRN-2B	Implement demonstration projects to gain additional knowledge.	Pepper Creek Thin Layer Placement Pepper Creek Thin Layer Placement	DNREC / Inland Bays DNREC / Inland Bays
			May 2013 – 47 acres September 2013 – 40 acres	

#3	SRN-3A	Monitor and evaluate contamination of sediments throughout the system for a target list of contaminants of concern.	EPA/DRBC/ States
	SRN-3B	RSMIW to develop an interagency workgroup to develop regional criteria for the beneficial use of dredged material in aquatic restoration projects.	RSMIW
	SRN-3C	EPA/States to identify contaminated sediment hot spots and related pollutant sources and develop a plan to address them.	EPA/States/USGS
#4	SRN-4A	USACE to evaluate the application of engineering modifications and alternative technologies to reduce dredging or change local sediment dynamics.	USACE
	SRN-4B	USACE to evaluate the use of alternative dredging methods and techniques that could reduce dredging needs.	USACE

Recommended Action Table (Ongoing)

Programmatic and Regulatory Issues (PRI)			
ID	Recommended Action	Lead Agency	Champion
PRI-1B	RDT to determine the practicality of developing general permits for RSM implementation and dredged material beneficial use projects	RDT	
PRI-2B	Agencies review programs to consider potential project impacts on RSM	Fed/State	
Operational Management Concerns (OM)			
OM-2A	PDE to develop estuary-wide database of potential sites for beneficial use of dredge material	PDE	
Environmental Management Concerns (EM)			
EM-1B	Coordinate RSMP implementation with other habitat restoration plans	RSMIW/PDE	
Science and Research Needs (SRN)			
SRN-1A	Develop a better understanding of the estuarine sediment dynamics through a variety of research projects	USACE/DRBC	
SRN-3A	Monitor and evaluate contamination of sediments throughout the system for a target list of contaminants of concern	EPA/DRBC/States	
SRN-3B	RSMIW to develop an interagency workgroup to develop regional criteria for the beneficial use of dredged material in aquatic restoration projects	RSMIW	