

6.0 Objectives and Actions for Sustainable Land Use Planning in the Barnegat Bay Watershed

Goal - To improve and sustain collaborative regional approaches to responsible land use planning and open space protection in the watershed that protect and improve water quality, water supply, living resources, soil function and hydrology.					
Objective	Action ID	CCMP Action	Lead Partner (s)	Time-frame	Costs
1. Work to raise the level of awareness and provide technical support to state, counties and municipalities to reflect and complement the CCMP goals and objectives in plans and land use practices			County Planning Offices, Municipalities, NJDEP, Sustainable Jersey, JCNERR, Pinelands Commission		
	1-1	Align and expand existing municipal plans, BMPs, incentive programs and other related planning tools (e.g. MLUL, CRS, County All-Hazards Mitigation Plan, GTR and Sustainable Jersey, Pinelands Comprehensive Management Plan, etc.), to promote, and include opportunities that complement CCMP goals and objectives. METRICS: Number of municipalities participating in the process to align and expand existing plans to incorporate CCMP goals; number of municipalities participating in GTR, CRS, SJ PERFORMANCE MEASURE: 1-a. At least 3 adjacent or mutually interested municipalities per year will be engaged; more if volunteer; all by 2028	BBP, NJDEP, County and Local Planning and OEM, Pinelands Commission, Sustainable Jersey	1-a L	\$\$
	1-2	Identify regulatory gaps and overlaps and promote planning tools (such as draft ordinances, policies and model language)	NJDEP – (Nutrient TMDL, GAP 2.0, Restoration Enhancement Strategy)	1-2a S 1-2b S	\$\$

		<p>that support sustainable land use development practices to achieve regional resilience and seek to inform changes to align the State Coastal Management Plan, State Plan Endorsement and State Land Use Plan</p> <p>METRICS: Compilation of current municipal policies, ordinances, model language, assessment tools by (BB) municipalities</p> <p>MILESTONES: 1-2a - Compilation of current municipal, county and Pinelands CMP land use policies, ordinances, tools. Completed by 2020</p> <p>1-2b - Development of a BB-wide assessment of the above compilation (gaps and over laps) by municipality. Completed by 2021</p> <p>1-2c - Preparation of resource library of model ordinance, tools and policies Completed by 2022</p>	<p>ANJEC; County and Municipal Planning; Pinelands Commission</p>	<p>1-2c M</p>	
	<p>1-3</p>	<p>Coordinate with county, municipal, regional (Pinelands Commission) and state planning representatives to develop a Barnegat Bay-wide comprehensive <i>Land Use Element</i> to include CRS, Open Space, Working Waterfronts, Regional Resilience, Restoration and Enhancement activities/targets</p> <p>METRICS: Active participation by representatives of county, municipal and state planning agencies. Compilation of policies,</p>	<p>County Planning Offices, Municipalities, NJDEP, Pinelands Commission</p> <p>DF – 1-3d Crosswalk with Communications Plan – Marketing the <i>Land Use Element</i> – can be adopted by reference, MOA and/or as part of MLUL.</p>	<p>1-3a S M/T1-3b S 1-3c M 1-3d L</p>	<p>\$\$- \$\$\$</p>

		<p>ordinances and planning tools that reflect comprehensive/regional (for BB) Land Use Element.</p> <p>: Change to Metric or Milestone throughout</p> <p>1-3a Convene an intergovernmental working group; Participation by representatives of all communities and effected county and state agencies (including utilities) – Completion by 2019</p> <p>MILESTONES:</p> <p>1-3b - Completion of Framework Document by 2020</p> <p>1-3c -Preparation of Draft BB-wide comprehensive/regional <i>Land Use Element</i> by 2022</p> <p>1-3d - Adoption by appropriate county, municipal and state agencies of BB-wide comprehensive/regional <i>Land Use Element</i> by 2025</p>			
	<p>1-4</p>	<p>Develop a BBP Recognition Award Program (including potential for funding availability-to award recipients) for municipalities who are implementing CCMP Actions and coordinating in the development of the BB-wide <i>Land Use Element</i>.</p> <p>METRICS:</p> <p>Number of Communities participating in and demonstrating a commitment to adopting CCMP goals and objectives through including in ordinance, planning and implementation initiatives.</p>	<p>BBP</p>	<p>1-4a S</p> <p>1-4b S</p> <p>1-4c L</p>	<p>\$-\$\$</p>

		<p>MILESTONES: 1-4a - Guidelines for Recognition Award Program completed by 2019</p> <p>1-4b - Recognition awards provided by 2020</p> <p>1- 4c - Participation/awards to at least all municipalities in BB Watershed for their participation by 2028</p>			
<p>2. Encourage economically and environmentally sustainable land use development and redevelopment techniques and solutions that conserve, restore and enhance Barnegat Bay resources</p>					
	<p>2-1</p>	<p>Support and encourage land use practices that incorporate BMPs (such as Low Impact Development (LID) and Sustainable Jersey actions); minimize soil disturbance, forest and wetland loss and protect soil integrity, and recharge, and promote nature-based infrastructure</p> <p>METRIC: Progress towards adoption of land use practices (including nature-based infrastructure) that incorporate LID, minimize soil disturbance, protect soil integrity and recharge areas.</p> <p>MILESTONES: 2-1a - Decrease the area of effective impervious cover in the watershed by 10</p>	<p>County Planning Offices, Municipalities, NJDEP, JCNERR, Pinelands Commission, Pinelands Preservation Alliance</p>	<p>2-1a L 2-1b M</p>	<p>\$ - \$\$</p>

		percent by 2033 relative to a 2015 baseline. 2-1b - Adoption of new or revised ordinance and policies that will encourage redevelopment and limit loss of vegetative cover....			
	2-2	Support the development of localized and/or regional adaptation plans for vulnerable, low-lying communities (e.g. communities experiencing repetitive losses). METRICS: The number of communities that are developing specific (adaptation) plans, adopting ordinances or more progressive sea level rise projections to deal with repetitive losses in low lying communities MILESTONES: 2-2a - Bay-wide Assessment of potential restoration projects/project sites Completed by 2021 2-2 b - Number of restoration, enhancement or adaptation projects implemented – Easy target 1 every 2 years 2-2c - Number of communities adopting at least the 2030 Rutgers SLR Projection through ordinance for a Bay-wide resiliency target – at least 3 communities/year with all communities by 2028	BBP, NJDEP, County and Local Planning, Sustainable Jersey, NGO Partners (ALS, SBB, NJCF, NJF, TNC)	2-2a M 2-2b M 2-2c M-L	\$\$
	2-3	Promote innovative zoning and land use management techniques such as: transfer of development rights (TDR), rolling	County Planning Offices, Municipalities, NJDEP, JCNERR, UCI,	2-3a S 2-3b S	\$\$

		<p>easements, acquisition (fee simple and easements), buy-outs, strategic retreat, non-contiguous density transfer, center-based development and septic density.</p> <p>METRICS: Increased community resilience, sustainability and safety; foster preparedness and information sharing among local decision makers to climate change, sea level rise and other coastal hazards (low-lying communities; lessen/eliminate repetitive losses)</p> <p>PERFORMANCE MEASURES: 2-3a Compilation of current ordinances and municipal policies already in place – see target 1-2</p> <p>2-3b Preparation of draft assessment of current ordinances and municipal policies (above) – see Target 1-2, 1-3</p> <p>2-3c Municipal, County and Agency adoption of innovative zoning and land use management techniques – See target 1-3, 1-4</p>	<p>NJ Future, Sustainable Jersey, ANJEC; Pinelands Commission</p>	<p>2-3c M</p>	
	<p>2-4</p>	<p>Provide landowners with existing information and modeling tools that identify hazard vulnerability, adaptation and response actions</p> <p>METRICS: Improved homeowner knowledge and decision making in response to climate impacts and coastal hazard events; property maintenance and renovation; interaction with local government</p> <p>MILESTONES:</p>	<p>BBP, NJS GC</p>	<p>2-4a M 2-4b M 2-4c M/L</p>	<p>\$\$</p>

		<p>2-4a - Develop a Land-owner self-assessment tool (and potential funding opportunities/tax incentives) to encourage adoption of resiliency and climate adaptation strategies and responses (GTR for Landowners) and to foster their understanding of municipal responsibilities – help Municipalities reach their CRS, SJ, GTR goals – Completed 2022</p> <p>2-4b - Presentations to homeowners owners, neighborhoods, OEM and municipal representatives Completed in 2023</p> <p>2-4c - 25% of full-time or waterfront homeowners attend presentations; ask for assistance; implement actions – can track similar to Clean Marina Program (Pledge and Implementation then Recognition Award)</p>			
	<p>2-5</p>	<p>Promote land use practices that ensure that water supply reserves are not exceeded and are distributed equitably.</p> <p>METRICS: Increased understanding of the land use practices that lead to conservation, reclamation and recharge of water resources</p> <p>PERFORMANCE MEASURES:</p> <p>2-5a - Work with local, county and state government entities and the public to identify, implement and advance land use practices including the use of gray water and other water conservation practices</p>	<p>BBP, Pinelands Commission, NJDEP, Counties, Municipalities, Utilities</p>	<p>2-5a M</p>	<p>\$</p>

		(metering, recharge, stormwater retrofits, limiting the loss of natural infiltration areas rain gardens etc.) to ensure water supply reserves are not exceeded and are equitably distributed.			
	2-6	<p>Promote land use practices that ensure that water-dependent uses are recognized and remain a priority and that other authorized waterfront uses are compatible in order to lessen the conflicts between development and commercial and recreational activities.</p> <p>METRICS: Increased understanding of the scope and challenges of the marine-dependent coastal economy of BB; Community (government) support for policies and decisions that promote investment in and continuation of marine industry and water dependent activities.</p> <p>MILESTONES: 2-6a - Completion of a report on the distribution of water dependent industries, economic significance, threats and conversion to other uses. Completed by 2020 2-6b - Identify Working Waterfront Preservation models that have been successful in stemming the loss of marine dependent activities Completed by 2022 2-6c - Outreach and engagement with business owners, neighborhoods, legislators, municipal finance representatives on implementation of Preservation models and opportunities to</p>	BBP, NJDEP, NJS GC, NJDOT/OMR, Counties, Municipalities	2-6a S 2-6b S 2-6c M 2-6d L	\$-\$\$

		<p>preserve sustainable working waterfronts and water dependent activities. Completed in 2023</p> <p>2-6d - Implement a Barnegat Bay-wide Working Waterfront Preservation Element (including ordinances, funding mechanisms) recognizing the historic, cultural, recreational, economic, environmental contribution and climate impacts (to) of the working waterfront to Barnegat Bay with full adoption as a MLU Element in the Watershed by 2028.</p>			
	2-7	<p>Conserve and enhance forestry areas with multiple ecosystem benefits</p> <p>METRICS: Acres of forest conserved</p> <p>MILESTONES: 2-7a Using updated LU/LC identify contiguous forest areas; those in active Forest Practice and those that are protected; available for preservation</p> <p>2-7b Identify LU Ordinances and Policies that guide management, protection and sustainable forestry practices to limit clear-cutting and encroachment of development; promote water quality, wildlife habitat and natural vegetative cover.</p> <p>2-7c Quantify/calculate the contribution of forest canopy to air quality in the BB Estuary Watershed; Qualify forest diversity</p> <p>2-7d Coordinate efforts to maintain forest extent and health via stewardship</p>	<p>Crosswalk with water quality/water supply</p> <p>BBP, NJDEP, NJDoAg, NRCS, EPA, Counties, Municipalities, Pinelands Commission</p>	<p>2-7a S</p> <p>2-7b S</p> <p>2-7c S/M</p> <p>2-7d M</p> <p>2-7e M</p>	\$ - \$\$

		<p>programs, forest management practices, land conservation programs and the Pinelands Comprehensive Management Plan</p> <p>2-7e Promote crop diversity and water management as strategies against climate-related impacts to agriculture/forestry.</p>			
3. Support open space acquisition, planning and management for people and nature.					
	3-1	<p>Convene intergovernmental working group to review all existing public and private planning documents (such as Green Acres Inventory, County and Municipal Open Space Inventories, TPL 2020 Plan, municipal master plans, CIPs, and All Hazard Mitigation Plans, Conservation Blue Print initiative) and holdings, in order to coordinate future efforts to maximize ecological services of preserved lands.</p> <p>METRICS: Convene workgroup</p> <p>Milestone:</p> <p>3-1a Identify participants, invite and convene working group to format inventory by 2019</p>	<p>County Planning Offices, Municipalities, NJDEP, USFWS, Land Conservancies, BBP, JCNERR, TPL, Pinelands</p>		\$
				3-1a S	

	<p>3-2</p>	<p>Compile a comprehensive inventory of open space and lands held in permanent and temporary easements</p> <p>METRICS: Comprehensive Inventory</p> <p>MILESTONES:</p> <p>3-2a - Compile and use existing datasets (a GIS based-see OASIS) comprehensive inventory of permanent and temporary open space and easements held in conservation status by 2023</p> <p>PERFORMANCE MEASURES</p> <p>3-2b - Work with (encourage) ANJEC and municipal Environmental Commissions to update their Community Natural Resource Inventory – Minimum of 5 communities/year [starting in 2019]</p>	<p>County Planning Offices, Municipalities, NJDEP, USFWS, Land Conservancies, BBP, JCNERR, TPL, Pinelands</p> <p>https://www.njmap2.com/blueprint/</p>	<p>3-2a M</p> <p>3-2b S</p>	<p>\$ - \$\$</p>
	<p>3-3</p>	<p>Promote acquisition and management of lands towards achieving community and natural resource protection and resilience and a landscape that supports recreation and the cultural heritage of the BB' through implementation of current and future watershed wide open space plans (NJDEP Green Acres, TPL, County, Local Open Space Plans, Conservation Blue Print initiative) and tools (TNC, NALCC, www.njmap2.com)</p> <p>METRICS:</p> <p>MILESTONES:</p> <p>3-3a - Conserve an additional XX acres of land through acquisition, easement or</p>	<p>County Planning Offices, Municipalities, NJDEP, USFWS, Land Conservancies, BBP, JCNERR</p>	<p>M/T3-3a M/L</p>	<p>\$</p>

		conservation dedication (scenic areas, special areas, no take, conservation management, farmland and forest preservation) within the watershed by 2033, while maintaining the total area of protected lands identified in 2018			
	3-4	<p>Promote the expansion of the NJDEP Environmentally Sensitive Areas Plan</p> <p>METRICS:</p> <p>MILESTONES:</p> <p>3-4a - Support the identification and designation of Environmentally Sensitive areas within the BB – <i>NJDEP Restoration, Enhancement & Protection Strategy</i>.</p> <p>3-4b - Assist in the public awareness of resource protection issues, targeted public education campaigns, resource and site monitoring</p>	NJDEP, NOAA, USF&WS	<p>3-4a S/M</p> <p>3-4b S/M/L</p>	\$
4. Support the conservation, protection and restoration of wetlands	4-1	<p>Promote the understanding of the balance of wetlands and nearshore areas as natural habitats and the functions they provide to the ecosystem and development.</p> <p>METRICS:</p> <p>PERFORMANCE MEASURES:</p> <p>4-1a Identify and conserve open space landward of coastal wetlands to allow for natural transition upland.</p>	NJDEP, NPS, NOAA, USF&WS, BBP, ALS, TPL, TNC, OCNLT, EPA, NRCS	<p>4-1a S/M</p> <p>4-1a Ongoing</p> <p>4-1b Ongoing</p>	\$\$ - \$\$\$\$

		<p>4-1a Enhance the resiliency of coastal / BB habitats (wetlands, forests) by prioritizing open space protection and management to protect the remaining high-value undeveloped lands and promote Blue Acres Acquisitions for future resilience.</p> <p>4-1b Enhance the resiliency of wetland and edge habitats and existing waterfront development by promoting natural and nature-based infrastructure, living shorelines and dunes over hard structures (bulkheads, sea walls).</p>			
	<p>4-2</p>	<p>Coordinate opportunities to conserve, protect restore and create wetlands through the use of innovative strategies, tools and funding opportunities (such as: TDR, Acquisition, Easement, Mitigation, Adaptation, Beneficial Reuse of Dredge Material, Infrastructure Trust, Jersey-Friendly Yards Program)</p> <p>METRICS:</p> <p>MILESTONES:</p> <p>4-2a Identification of priority wetlands for restoration</p> <p>4-2b Identification and continued monitoring of the rate of (localized) shoreline loss (due to slr, erosion, boat wakes)</p> <p>PERFORMANCE MEASURES</p>	<p>NJDEP, NPS, NOAA, USF&WS, BBP, ALS, TPL, TNC, OCNLT, Pinelands Commission, NRCS</p>	<p>4-2a S</p> <p>4-2b S/M – ongoing</p> <p>4-2a Ongoing</p> <p>4-2b Ongoing</p> <p>4-2c M</p> <p>4-2d Ongoing</p> <p>4-2e Ongoing</p> <p>4-2f M/Ongoing</p>	<p>\$\$</p>

		<p>4-2a Explore opportunities for the creation of wetlands as an adaptation strategy to minimize shoreline erosion and net loss of wetlands</p> <p>4-2b Promote a coordinated and collaborative approach among agency and local partners to shoreline restoration – natural and nature-based solutions</p> <p>4-2c Through regulation, ordinance and LU Policy support adoption of riparian corridor protection measures</p> <p>4-2d Through regulation and LU policy and management support adoption of salt marsh buffers – allow for landward migration of wetlands, protect wetlands from NPSP, protect development from storm surge run-up</p> <p>4-2e Promote the protection of forested wetlands for infiltration, WQ and habitat diversity</p> <p>4-2f Promote the coordination of comprehensive monitoring and reporting on wetlands mitigation, restoration – maintain a registry of projects for when funding becomes available)</p>			
	<p>4-3</p>	<p>Promote a balanced, collaborative and coordinated approach to the dredging of the Barnegat Bay, disposal and beneficial re-use of dredge materials</p> <p>METRICS:</p>	<p>BBP, NJDEP, NJDoT, USACE, NRCS,NOAA, USGS,Counties, Municipalities, Commercial Interest Groups</p> <p>Crosswalk with Communications Plan</p>	<p>4-3a S</p> <p>4-3b M</p> <p>4-3c M</p>	<p>\$</p>

		<p>MILESTONES:</p> <p>4-3a -Convene a Sediment Management Working Group that includes representatives from federal, state, local agencies, commercial (boating and fisheries) and wildlife interests to identify issues of concern, needs and opportunities to be addressed in a BB-specific Sediment Management Plan.</p> <p>4-3b - Develop a sediment management plan for the BB. That includes potential for beneficial reuse of dredge materials</p> <p>4-3c - Establish a baseline/timeline for projects in the BB</p>			
<p>5. Conduct studies to improve scientific and societal understanding of the impacts of current and future land use practices to the Barnegat Bay and watershed</p>					
	<p>5-1</p>	<p>Identify the social, economic and environmental impediments and solutions for implementing sustainable land use practices on existing and future private developments – including green and gray infrastructure strategies in relation to SLR and climate change, repetitive losses and ‘Willingness to Pay’ and contingent valuation studies.</p> <p>METRICS: Completion of report/study</p> <p>MILESTONES:</p>	<p>County Planning Offices, Municipalities, NJDEP, JCNERR, BBP, EPA, NOAA, Universities</p>	<p>5-1a S/M</p> <p>5-1b M</p> <p>5-1c M</p>	<p>\$\$</p>

		<p>5-1a: Conduct cost benefit analysis of various land use practices including implementation of green and gray infrastructure strategies</p> <p>5-1b: Update and expand a “Willingness to Pay” social science study to investigate citizens’ thoughts regarding the cost of sustainable land use practices.</p> <p>5-1c: Complete Cost Benefit Analysis and Willingness to Pay Study.</p>			
	5-2	<p>Support the development of an updated Land Use Land Cover Map including analysis of LU/LC Change, analysis of impervious surface; shoreline (land/water interface); V Datum – would be beneficial for all levels of gov’t, for planning and for development purposes.</p> <p>METRICS:</p> <p>MILESTONES:</p> <p>5-2a: Work with NJDEP, NOAA, EPA and others to update and maintain an updated Land Use/Land Cover Map, LU/LC Change and Shoreline Analysis (update data every 5 years- 2015 as baseline).</p> <p>5-2b: (From above) Update existing build out analysis and impervious surface analysis.</p> <p>5-2c: Set a milestone (target) for reducing hardened shoreline throughout the Watershed – this can also be a</p>	<p>County Planning Offices, Municipalities, NJDEP, JCNERR, USGS, NOAA, EPA</p>	<p>M/T5-2a S</p> <p>M/T5-2b S</p> <p>M/T5-2c S/M</p> <p>M/T5-2d S</p> <p>M/T5-2e S/M</p> <p>M/T5-2f M – Ongoing</p> <p>M/T5-2g S-ongoing</p> <p>M/T5-2h S/M</p>	<p>\$\$\$\$</p>

		<p>combination of greening existing bulkheads-<i>set target based on current shoreline/reduce # of existing hardened structures-#of projects that are nature-based as milestone)</i></p> <p>5-2d - Work with Federal Partners (NOAA/USGS) to update the VDatum for the estuary;</p> <p>5-2e - Make above available for planning, project development, project implementation to inform flooding, sea level rise, FEMA FIRMs</p> <p>5-2f - Conduct outreach to local government and community to inform them of data and how it may affect them</p> <p>5-2g - Work with partners (NOAA, EPA, NJDEP and others) to monitor and document actual sea level rise (can use information to compare and adjust local projections)- See M/T4-2b</p> <p>5-2h - Update/Improve/Promote use of NJDEP CZM Coastal Atlas</p>			
<p>6. Increase education and outreach efforts targeted at sustainable land use practices for public and private land</p>					

	<p>6-1</p>	<p>Promote appreciation of the diversity of Barnegat Bay resources, land uses and management through appropriate recreational, conservation, and educational uses on public land and water bodies.</p> <p>METRICS:</p> <p>PERFORMANCE MEASURES:</p> <p>6-1a Promote:</p> <ul style="list-style-type: none"> ● Water conservation activities – rain barrels; riparian buffer; native vegetation; grey water systems ● Paddle for the Edge Citizen Science Program ● Citizen monitoring ● Education on Maritime heritage – oyster/shellfish farming/Tidelands Laws ● Importance of ESAs ● Clean Marina Program – boat owners using public launch sites. ● Wetlands and SAV Restoration ● Provide public awareness and outreach program on local sea level rise monitoring (see M/T5-2g) ● Continue to promote Jersey-Friendly Yards Program 	<p>Land Conservancies, Counties, Municipalities, BBP, NJDEP, NGO Partners (TNC, ALS, SBB, NJSGC...</p>	<p>Ongoing</p>	<p>\$\$</p>
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	<p>6-2</p>	<p>Develop and coordinate workshops on sustainable land use practices for specific audiences to encourage incorporation of sustainable land use practices. [Include the economic, cultural and recreational contribution of maritime industries]</p> <p>METRICS:</p> <p>MILESTONES:</p>	<p>County Planning Offices, Municipalities, NJDEP, USFWS, Land Conservancies, BBP, JCNERR, NRCS, Pinelands Commission, Sustainable Jersey, NGO Partners ...</p>	<p>Ongoing</p>	<p>\$\$</p>
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