

**North & South Branch Raritan Watershed Management Area
Stormwater Management & Hydrology Work Group
Strategy Worksheet NSSM-S1B1**

Strategy: Regulatory Measures to Prevent Potential Flood Damages NSSM-S1B1: Establish state, county and municipal regulatory measures that would prevent flooding problems from getting worse due to land use changes.	Strategy Priority: L (H/M/L)
Objectives Addressed by Strategy: NSSM-O1B: To have no increase in potential flood damages, by 2008.	Strategy Schedule: (Begin/End)
Narrative Description of Strategy: Using the results of several steps listed in NSSM-S1A1 (implementation of a flood damage reduction study for the WMA), this strategy would identify and mitigate the potential for flood damages incurred by new development. Specifically, this strategy would ensure that the new stormwater management rules to be proposed by the NJDEP in 2002 would be implemented via ordinance adoption at the county and municipal level. The effectiveness of the ordinances will be tracked and revised as necessary to ensure compliance with the new NJDEP regulations.	
<p>While many areas within the WMA experience localized flooding problems following periods of heavy rainfall, the majority of flooding problems occur at the confluence of the North & South Branch Raritan Rivers and even further downstream at the confluence of the mainstem Raritan River and Millstone River (just outside of the N&S Branch Raritan WMA). In 1999, Hurricane Floyd deluged parts of Branchburg, Bridgewater and Flemington and resulted in new peaks of record at five gauging stations within the WMA (i.e., Spruce Run at Glen Gardner, Neshanic River at Reaville, North Branch Raritan River at North Branch, North Branch near Raritan and North Branch at Old York Road). Although much of the land along the North and South Branch Raritan Rivers is predominantly agricultural (according to the 1995 NJDEP land use/land cover data), development pressure and suburban sprawl are converting a great deal of agricultural land to urban land uses. Along with urban land uses comes an increase in impervious cover that both increases stormwater runoff and decreases ground water recharge, along with bridges over streams, stormwater outfall structures and other changes to the stream corridor. If the appropriate mitigation measures are not taken, new development can exacerbate existing flooding problems downstream.</p>	
Areawide WQM Plan Consistency Determination Issues: NA	

Action Plan (Steps or Tasks)	Responsible Parties for Planning, Design & Implementation	Responsible Parties for Oversight	Resource Needs (L,M,H,VH)	Committed or Recommended Resources	Major Challenges and Opportunities	Evaluation Method & Indicators	Schedule and Milestones for Implementation
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C = Committed; R = Recommended

General Estimates: Low = \$5,000 - \$50,000; Moderate = \$50,000 - \$250,000; High = \$250,000 - \$1 million; Very High = over \$1 million

Acronyms: NJDEP=NJ Department of Environmental Protection; NRCS=Natural Resources Conservation Service; ANJEC=Association of NJ Environmental Commissions;

Committee Abbreviations: N&S Branch WMAC = North & South Branch Raritan Watershed Management Area Committee; NSSM = North & South Branch Raritan Stormwater Management & Hydrology Work Group; NSHW = North & South Branch Headwaters & Stream Management Work Group; NSEO = North & South Branch Raritan Education & Outreach Work Group; RBEO = Raritan Basin Education & Outreach Committee; RBC = Raritan Basin Council; TAC = Technical Advisory Committee

Action Plan (Steps or Tasks)	Responsible Parties for Planning, Design & Implementation	Responsible Parties for Oversight	Resource Needs (L,M,H,VH)	Committed or Recommended Resources	Major Challenges and Opportunities	Evaluation Method & Indicators	Schedule and Milestones for Implementation
1. Using results of NSSM-S1A1 Step 1 in (identification of areas with flooding problems) and Step 4 (identification of causes of flooding), develop a method to track whether new development is contributing to increased flooding problems throughout the WMA.	C: R: NRCS, NJDEP, NSSM	C: R: N&S Branch WMAC, NJDEP	L-M	C: R: Existing resources; 319 funding	Challenge: Determining the cumulative impacts requires intensive monitoring and a reasonable model for assessing impacts	Method	
2. Identify or develop a model to assess potential flood damages from different land uses (i.e., various types of development).	C: R: NRCS, NJDEP, NSSM	C: R: N&S Branch WMAC, NJDEP	L-M	C: R: Existing resources	Challenge: Generally applicable model needed, in absence of watershed-based models	Model	
3. Evaluate the mitigation costs associated with rectifying problems associated with new development identified in Step 1.	C: R: NRCS, NJDEP, NSSM	C: R: N&S Branch WMAC, NJDEP	L	C: R: Existing resources		Estimated costs for rectifying problems	

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<p>4. Develop regional (watershed-based) stormwater management plans for problem areas (focused on flow issues at least) for problem areas identified in Step 1, in context of pending NJDEP Stormwater Management Rules.</p>	<p>C: R: NRCS, NJDEP, NSSM</p>	<p>C: R: N&S Branch WMAC, NJDEP</p>	<p>M-H per plan H-VH overall</p>	<p>C: R: Existing resources; 319 funding</p>	<p>Challenge & Opportunity: Bringing communities together</p> <p>Encourage municipalities to work together to have consistency in their plans (will need incentives to do this)</p> <p>Counties could play a more significant role (take on mandates or regional solutions)</p> <p>Will be difficult to do large scale projects with new NJDEP Administration</p>	<p>Regional stormwater management plans</p>	<p>Rules proposed 6 January 2003</p>
<p>5. Provide support to counties and municipalities for implementation of NJDEP's new stormwater management rules, specifically ordinance adoption.</p>	<p>C: R: League of Municipalities, N&S Branch WMAC, NSSM</p>	<p>C: R: N&S Branch WMAC, NJDEP</p>	<p>L</p>	<p>C: R: Existing resources; foundation funds</p>		<p>Ease of municipal incorporation of stormwater regulations</p>	

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6. Develop municipal and county capacity to enforce stormwater ordinances.	C: R: Counties, municipalities	C: R: N&S Branch WMAC, NJDEP	L	C: R: Existing resources	Challenge: Funding of inspectors or enforcement actions	Enforcement mechanisms Enforcement of ordinances when violations occur	
7. Track the effectiveness of ordinances and remedy portions (ordinance implementation, verification, enforcement) to achieve improved stormwater management results per criteria.	C: R: League of Municipalities, ANJEC, N&S Branch WMAC, NSSM	C: R: N&S Branch WMAC, NJDEP	M	C: R: Existing resources	Challenge: Funding for tracking system development and data collection	Populated tracking system (database); analysis of data	Tracking program; data collection and incorporation; data evaluation; causation analysis, re-evaluation of ordinance or enforcement mechanisms; maintaining current data in tracking program; periodic evaluation