

# **Guidance for the Development of Municipal Mitigation Plans – February 2006**

## **Purpose**

The Stormwater Management rules, N.J.A.C. 7:8, establish design and performance standards for management of stormwater that address water quality, water quantity and recharge. These standards are to be met on the site of the proposed development and, to the maximum extent practicable, using nonstructural stormwater management strategies. The Department recognizes that situations may arise in which the design and performance standards may be impossible to meet on the site of a proposed project because of site constraints such as soils or slope. Therefore, at N.J.A.C. 7:8-4, the Stormwater Management rules allow a municipality to develop a mitigation plan to accommodate these special cases.

A municipal mitigation plan is an optional element of a Municipal Stormwater Management Plan, but is required for a municipality to grant a variance or exemption to the design and performance standards for stormwater runoff quality, stormwater runoff quantity, and ground water recharge, established under the Stormwater Management rules at N.J.A.C. 7:8-5. A municipal mitigation plan must identify the measures necessary to offset the deficit created with respect to the design and performance standard(s) that would result from the grant of a variance or exemption at a project site. The plan must ensure that the mitigation is completed in the drainage area and for the performance standard(s) for which the variance or exemption was granted for a project. In order to be in effect, a municipal mitigation plan must be adopted into the municipal stormwater control ordinance and approved by the county review agency.

The existence of a mitigation plan does not supersede the requirements that an applicant meet the design and performance standards for ground water recharge, stormwater quantity, and stormwater quality on site to the maximum extent practicable and that the standards be met using nonstructural techniques to the maximum extent practicable. Instead, it allows municipalities, in limited circumstances, to waive strict compliance with one or more of the performance standards, where full compliance cannot reasonably be accommodated on site, provided there is mitigation of the effect of the deficient compliance provided in accordance with an approved mitigation plan. The test of reasonable accommodation includes reducing the size, scale or layout of the proposed project in order to meet the design and performance standards on site and thereby avoid the need to seek a variance or exemption. A waiver cannot be granted if the project requesting a waiver/exemption would result in a localized adverse impact or create a compliance deficit that can not be compensated for by off site mitigation.

It should be noted that the standards for the Special Water Resource Protection Area (SWRPA) established under the Stormwater Management rules at N.J.A.C. 7:8-5.5(h) cannot be waived through the municipal mitigation plan. A municipality is authorized to

develop a Stream Corridor Protection Plan, in accordance with N.J.A.C. 7:8-4.2(c)13, which can adjust the spatial extent within which the SWRPA requirements apply. All Stream Corridor Protection Plans must be approved by both the county review agency and the New Jersey Department of Environmental Protection, Division of Watershed Management prior to implementation.

Subject to the caveats for applicability and consistent with the provisions of an approved mitigation plan, a municipality may waive one or more of the design and performance standards for projects reviewed under the Municipal Land Use Law, or for projects undertaken by the municipality that are not subject to MLUL. Waivers for linear development projects must be evaluated using the requirements under N.J.A.C. 7:8-5.2(e), which includes the requirement to address mitigation for the performance standard for which strict compliance was not obtained. Where the Department issues a permit that includes a stormwater management review and an associated waiver under the provisions of the specific permit, the municipality is not required to further consider the project under the provisions of the municipal mitigation plan. However, the municipality may choose to require mitigation for projects receiving a waiver from the Department.

Beyond the specific regulatory purpose described, a mitigation plan can also be used to identify existing problems resulting from current stormwater management practices and the means to address them proactively. In addition, where current stormwater management practices contribute to water quality problems or designated use impairments, TMDL implementation plans can target problem areas and prioritize funding available for watershed restoration. Further, measures to address existing stormwater management problems can become a regulatory requirement when they are identified as “additional measures” in a municipal stormwater permit. “Additional measures” become a permit requirement when they are identified in an adopted TMDL or water quality management plan amendment.

## **Mitigation Plan Requirements**

There are two basic approaches that can be used to identify mitigation projects through a municipal mitigation plan. Municipalities may identify a pool of specific mitigation projects that could be selected by an applicant to offset the effect of a requested waiver/exemption or to address an existing stormwater problem, or choose to provide a process through which an applicant has the flexibility and responsibility to identify an appropriate mitigation project and a location to implement the mitigation project to offset the deficit that would be created by the grant of a waiver/exemption or to address a stormwater based impairment. Ideally, municipalities will offer both options.

In order to select an appropriate mitigation project to respond to a requested waiver/exemption requires, an assessment of the impact that would result from the requested deviation from full compliance with the standard(s) in the drainage area affected by the proposed project is required. For example, a waiver for stormwater quantity requirements must focus on the impacts of increased runoff on flooding,

considering both quantity and location. Stormwater quality mitigation must aim to prevent an increase in pollutant load to the waterbodies that would be affected by the waiver/exemption. Ground water recharge mitigation must seek to maintain the baseflow and aquifer recharge in the area that would be affected by the waiver/exemption. For the purpose of this discussion, the term “sensitive receptor” is used to refer to a specific area or feature that would be sensitive to the impact assessed above.

Selection of an appropriate mitigation project for a requested waiver/exemption must adhere to the following requirements:

1. The project must be within the same area that would contribute to the receptor impacted by the project. *Note that depending on the specific performance standard waived, the sensitive receptor and/or the contributory area to that receptor may be different.* If there are no specific sensitive receptors that would be impacted as the result of the grant of the waiver/exemption, then the location of the mitigation project can be located anywhere within the municipality, and should be selected to provide the most benefit relative to an existing stormwater problem in the same category (quality, quantity or recharge).
2. Legal authorization must be obtained to construct the project at the location selected. This includes the maintenance and any access needs for the project in the future.
3. The project should be close to the location of the original project, and if possible, be located upstream at a similar distance from the identified sensitive receptor. This distance should not be based on actual location, but on a similar hydraulic distance to the sensitive receptor. For example, if the project for which a waiver is obtained discharges to a tributary, but the closest location discharges to the main branch, it may be more beneficial to identify a location discharging to the same tributary.
4. For ease of administration, if sensitive receptors are addressed, it is preferable to have one location that addresses any and all of the performance standards waived, rather than one location for each performance standard.
5. It must be demonstrated that implementation of the mitigation project will result in no adverse impacts to other properties.
6. Mitigation projects that address stormwater runoff quantity can provide storage for proposed increases in runoff volume, as opposed to a direct peak flow reduction.

### **Stormwater Quantity Considerations**

Increased stormwater runoff volume from new development can cause damages to property and habitat due to increased flood elevations and/or flood velocities. Mitigation project areas can include locations that will provide for additional storage and slower release of excess stormwater. Mitigation of stormwater quantity can be accomplished by increasing flood storage areas along the waterway, creating new best management practices (BMPs) to control previously uncontrolled runoff or by retrofitting existing stormwater structures to decrease the volume and peak of runoff.

In areas adjacent to the stream, a hydrologic and hydraulic analysis can be performed to determine if increasing storage capacity would offset the additional volume of runoff and associated peak increase from sites upstream of the storage area. Increases in the storage capacity of an existing structure, such as upstream of a bridge or culvert, can also be considered provided that it is demonstrated that such an increase does not exacerbate flooding at other areas.

Note that work in regulated areas, such as floodplains and wetlands must be performed in accordance with applicable regulations such as the Flood Hazard Area Control Act Rules and the Freshwater Wetland Act Rules. Also, many areas of open space in New Jersey have received funding by the Department's Green Acres Program and many of those encumbered lands have restrictions placed on them as a result of that funding. Any and all restrictions placed on these lands must be investigated by the municipality before these areas can be utilized for mitigation to ensure that there are no conflicts.

Some examples of areas or features sensitive to changes with regard to flooding include:

*Culverts and bridges*—these features may constrict flow and cause flooding or may provide storage that, if lost, would cause downstream flooding problems

*Property subject to flooding*—areas of concern include those where there is historical evidence of recurrent problems, particularly if exacerbated over time because of increasing impervious surface in the contributing watershed

*Eroding/widening stream banks or channels*—particularly if due to changes in hydrology due to effects of development

*Category One waters*—flooding affects could alter habitat that was the basis for the designation

*Wetlands*—changes in hydrology can affect viability of wetlands, either by increasing or decreasing volumes and velocities of water discharging to the wetlands

### **Stormwater Quality Considerations**

Stormwater quality is regulated for the purpose of minimizing/preventing nonpoint source pollution from reaching the waterway. Mitigation for stormwater quality can be achieved either by directing the runoff from the water quality design storm into a natural area where it can be filtered and/or infiltrated into the ground, by constructing a new BMP to intercept previously untreated runoff or by retrofitting existing stormwater systems that previously did not provide sufficiently for water quality.

Existing forested and other vegetated non-wetland areas can also be used as a water quality mitigation area if runoff is discharged as sheet flow through the area in a non-erosive manner, and the vegetated area is restricted from future development. A discussion of the appropriate widths for these vegetative filters is provided in Chapter 9 of the New Jersey Stormwater Best Management Practices Manual (BMP Manual).

If a mitigation project cannot be identified that would compensate for a waiver related to water quality, and provided the project requiring a waiver would not result in a measurable change in water quality relative to TSS and nutrients, the mitigation project could be designed to address another parameter of concern in the watershed (as indicated by an impairment listing and/or an adopted TMDL) for which stormwater is a source, such as fecal coliform.

Some examples of areas or features sensitive to water quality changes include:

*Trout associated waters*—chemical pollutants and temperature effects can diminish viability of populations

*Lakes, ponds or other impoundments*—these waterways are sensitive to addition of nutrients

*Threatened and endangered species or their habitats*—sensitive to both quality and quantity changes

*Drinking water supplies*—adverse affects on quality can increase the cost of treatment or threaten the use

*Category One waters*—an issue where quality was the basis of the designation

*Waterways with a water quality or use impairment*—deterioration of quality in an impaired waterway will increase the cost and challenge of restoration

### **Ground Water Recharge Considerations**

Recharge is regulated to maintain the availability of ground water as a water supply source as well as to provide a stable source of baseflow in streams.

There are two requirements associated with the recharge standard. The first is that 100 percent of the site's average annual pre-developed ground water recharge volume be maintained after development and the second is that 100 percent of the difference between the site's pre- and post-development 2-year runoff volumes be infiltrated. To mitigate for groundwater recharge design requirements, either computational method can be utilized to determine the volume lost that needs to be provided by the mitigation project.

One method to accomplish ground water recharge mitigation is to discharge runoff as sheet flow across a vegetated area to allow for the infiltration of runoff. It should be noted that, if this measure is used, calculating compliance with the recharge standard is limited to the 2-year storm standard, given existing methods.

Some examples of areas or features sensitive to ground water recharge changes include:

*Springs, seeps, wetlands, white cedar swamps*—sensitive to changes in ground water level/hydrology

*Threatened and endangered species or their habitats*—some are sensitive to changes in ambient ground water levels

*Streams with low base flow or passing flow requirements*—would be particularly sensitive to changes in hydrology

*Aquifer recharge zones*—loss of recharge in these areas can adversely affect ground water supply

*Category One waters*—loss of base flow can affect many of the bases for designation

### **Identification of Specific Mitigation Projects**

As discussed above, mitigation projects should be selected after examining existing problems related to stormwater quality, quantity, and recharge in the affected drainage area. Municipal mitigation plans can be a very effective means to address existing problems resulting from stormwater management while ensuring that existing problems are not made worse and new problems are avoided.

Where a list of mitigation projects is identified, the plan must also identify the type of design and performance standard the individual projects may mitigate. Wherever possible, quantification of the mitigation provided by each project relative to the applicable standard should also be included.

Initially, some municipalities may wish to allow developers to fund analyses to identify potential mitigation projects that could be used to address deficits in complying with each of the performance standards. However, the funding option shall only be allowed where the project requesting the waiver will have no measurable impact with respect to flooding, erosion, water quality degradation, etc. The funding option may also be appropriate in situations where the size of an individual project requesting a waiver/exemption is small, or the degree of deficit in complying with the design and performance standard(s) is small. Or, where the project requiring mitigation is for one individual single family home, given authority constraints, a financial contribution may be a preferred option. In these situations, it may not be practical to implement a commensurate mitigation project and may be preferable to accumulate funds to implement a larger mitigation project. In such cases, the receipt of the financial contribution shall satisfy the mitigation obligation for the project. However, the municipality becomes responsible to ensure that the mitigation occurs in a timely fashion and must provide a detailed discussion of the status of the mitigation fund and funded projects in the annual report required under the NJPDES municipal stormwater permit.

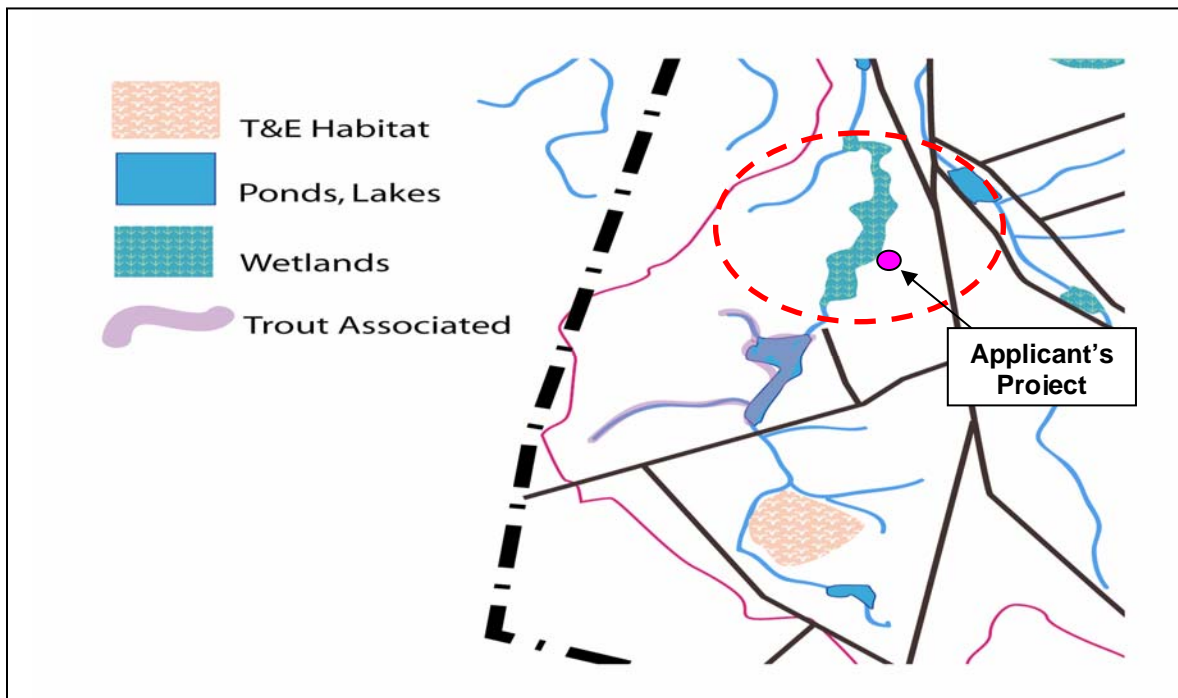
The identification of sensitive receptor areas for stormwater quantity, stormwater quality and stormwater recharge will require collecting and organizing, preferably in a Geographic Information System (GIS) format, both existing and new monitoring data, flooding information and unique local knowledge about conditions in the municipality. This identification process may be done by the municipality to establish a menu of

specific mitigation projects or project locations, or by an individual developer as part of the mitigation process established in the mitigation plan.

Preliminary screening information to identify sensitive receptors is available in GIS format from the Department's GIS website at <http://www.nj.gov/dep/gis/>. However, information from existing GIS coverages must be supplemented by local information about locally flood prone areas, including specific stream segments and drainage areas that have inadequate bridges or culverts, areas with stormwater induced stream bank or channel erosion, waterways that have been listed as impaired for water quality or designated uses, etc.

For each of sensitive receptor or groups of receptors, the pertinent drainage area must be identified. The pertinent drainage area is that which encompasses the area that would affect the sensitive receptor(s). Typically, the pertinent drainage area would be the contributory drainage area to the receptor. However, depending on the receptor, only portions of the contributory drainage area may be appropriate to consider locating a mitigation project that would adequately address the impact of a waiver/exemption on a particular sensitive receptor.

In the example below sensitive receptors for water quality are depicted in a drainage area. In order to mitigate for the performance standard waived, the mitigation project must take place in an area that contributes to the same sensitive receptor.



For example, the wetlands area circled is a sensitive receptor relative to water quality. The applicant has a project upstream of the wetland that is unable to comply with the water quality performance standards. Therefore, the mitigation project may be located in the drainage area to the same wetlands complex. However, there is a pond upstream of

the wetlands that may reduce the effectiveness of a mitigation project relative to the wetlands if placed upstream of the impoundment. Therefore, the mitigation project should be located downstream of the impoundment, even though the contributory drainage area to this wetlands complex includes the impoundment and areas upstream.

## **Administrative Requirements**

Each municipality that received a Tier A or Tier B NJPDES Municipal Stormwater General Permit is required to file an annual report to demonstrate continuing compliance with the permit requirements. The municipality must indicate in the annual report form whether any variances or exemptions from stormwater management standards have been given. When submitting the annual report as required by the NJPDES permit, the municipality must provide an annual submission of its variances, exemptions, and related mitigation projects to the NJDEP Division of Watershed Management (DWM). This annual report to DWM must include both projects reviewed by the municipality under the Municipal Land Use Law, as well as the municipality's own projects unable to fully comply with the design and performance standards. The following information is required for each waiver granted from the performance standard(s).

- **Impact from noncompliance.** Provide a table quantifying what would be required for the project to achieve the standards, the extent to which this value will be achieved on site and the extent to which the value must be mitigated off site.
- **Narrative and supporting information regarding the need for the waiver including:**
  - The waiver cannot be due to a condition created by the applicant. If the applicant can comply with the Stormwater Management rules through a reduction in the scope of the project, the applicant has created the condition and a waiver **cannot** be issued. Demonstrate that the need for a waiver is not created by the applicant.
  - Provide a discussion and supporting documentation of the site conditions peculiar to the subject property that prevent the construction of a stormwater management facility that would achieve full compliance with the design and performance standards. Site conditions may include soil type, the presence of karst geology, acid soils, a high groundwater table, unique conditions that would create an unsafe design, as well as conditions that may provide a detrimental impact to public health, welfare, and safety.
  - Demonstration that the grant of the requested waiver/exemption would not result in an adverse impact that would not be compensated for by off site mitigation.
- **Sensitive Receptor:** Identify the sensitive receptor(s) related to the performance standard from which a waiver is sought. Demonstrate that the mitigation site contributes to the same sensitive receptor.



- **Design of the Mitigation Project:** Provide the design details of the mitigation project. This includes, but is not limited to, drawings, calculations, and other information needed to evaluate the mitigation project.
- **Responsible Party:** List the party or parties responsible for the construction and the maintenance of the mitigation project. Documentation must be provided to demonstrate that the responsible party is aware of, has authority to, and accepts the responsibility for construction and maintenance. Under no circumstance shall the responsible party be an individual single-family homeowner. Selection of a project location that is under municipal authority avoids the need to obtain authority from a third party for the construction and future maintenance of the project.
- **Maintenance:** Include a maintenance plan that addresses the maintenance criteria at N.J.A.C. 7:8-5.8. In addition, if the maintenance responsibility is being transferred to the municipality or another entity, the entity responsible for the cost of the maintenance must be identified. The municipality may provide the option for the applicant to convey the mitigation project to the municipality, if the applicant provides for the cost of maintenance in perpetuity.
- **Permits:** Obtain any and all necessary local, State or other applicable permits for the mitigation measure or project must be obtained prior to the municipal approval of the project for which mitigation is being provided.
- **Construction:** Demonstrate that the construction of the mitigation project coincides with the construction of the proposed project. A certificate of occupancy or final approval by the municipality for the project requiring mitigation cannot be issued until the mitigation project or measure receives final approval. Any mitigation projects proposed by the municipality to offset the stormwater impacts of that municipality's own projects must be completed within 6 months of the completion of the municipal project, in order to remain in compliance with their NJPDES General Permit.