

## **Description of Pilot Study of Regional Stormwater Detention and Volume Control Credit Trading Program per WMO Article 208.1**

### Goals of the Pilot Study:

- A. To determine whether allowing developments to meet a portion of the required volume control or detention in offsite facilities results in increased risk of flooding to downstream areas.
- B. To determine whether allowing use of offsite detention and volume control facilities for developments in two sample watersheds, without requiring developers to prove they have a site constraint or limitation:
  1. Leads to more development in these watersheds, and/or
  2. Leads to construction of stormwater retention facilities in flood prone areas within the watershed planning area.
- C. To determine whether additional conditions should be placed on developments that seek to use offsite detention and volume control facilities, to protect adjacent properties or to administer the program more effectively.

### Background:

The MWRD recognizes that a successful stormwater credit trading program has the potential to provide new and innovative stormwater solutions for communities, optimizing the collective efforts to reduce urban flooding as part of regional development. Exploring the use of credit trading solutions for stormwater management is a worthy effort by the MWRD and emulates similar recent efforts made by the United States Environmental Protection Agency with respect to environmental credit trading. Since its inception the WMO has allowed the use of offsite facilities to meet stormwater detention and volume control requirements. To date, no developers have utilized this option. Based on market research surveys conducted by outside agencies, the primary reasons offsite volume control and detention have not been used are:

1. Few supply sites exist.
2. Applicants do not have a simple way to learn about available supply sites.
3. Applicants must demonstrate that site constraints or site limitations prevent them from being able to provide the required volume control or detention volume, respectively, on site.

During the development of the May 16, 2019, WMO amendment, the MWRD proposed removing restrictions that limited the use of offsite facilities to meet detention or volume control requirements to projects that could demonstrate a site constraint or site limitation. In addition, the MWRD proposed amending the Technical Guidance Manual to include a potential offsite storage credit trading program. Based on feedback received during the public comment period, the MWRD removed the proposed changes concerning use of offsite facilities from the amendment, citing the need for further study.

## Scope of Pilot Study:

Part 1: One concern raised during the public comment period was that allowing use of offsite facilities to meet volume control and/or stormwater detention requirements will increase the risk of flooding adjacent properties. MWRD proposes to model a sample set of developments for which WMO permits have already been issued. Municipalities in which these developments are located will be asked whether they would have prohibited the project to utilize offsite volume control and/or detention facilities, due to concerns about downstream flooding impacts. MWRD will analyze these developments to determine the volume control and detention volume that must be provided onsite to ensure that the post-development runoff rate does not exceed the existing runoff rate for the 2-, 10-, and 100-year storm events using updated Bulletin 70 rainfall data. Post-development runoff rates will consider the following volume control storage scenarios: (1) 100% onsite; (2) 50% onsite and 50% offsite; and (3) 100% offsite. Through discussion with the Technical Advisory Committee (TAC), detention volume for the 10-year storm event with a 24-hour duration must be provided onsite to minimize sewer system surcharging during more-frequent less-intense storm events.

MWRD will evaluate results to determine the volume control and detention volume that can be located offsite while providing enough onsite volume such that the post-development runoff rates do not exceed the existing condition for the sample set of developments. These results will provide an understanding of the extent that offsite volume control and detention may be utilized as a stormwater compliance option for development.

Part 2: MWRD recommends amending the WMO to allow use of offsite facilities on developments in two watershed planning areas, without the requirement that applicants demonstrate site constraints/limitations. This would only be allowed on developments for which WMO permit applications were received during the pilot study period. The amended WMO would contain an end date for this allowance. MWRD recommends allowing the less restricted use of offsite facilities in the Lower Des Plaines and in the Little Calumet River watershed planning areas. Of the watershed specific release rates contained in Appendix B of the WMO, the Lower Des Plaines watershed planning area is required to use the lowest release rate of 0.20 cfs/acre. The Little Calumet River watershed planning area is required to use the second lowest release rate of 0.25 cfs/acre. These watershed planning areas are recommended for the pilot study because the use of offsite facilities may facilitate compliance with the more restrictive release rates and because these watershed planning areas represent different regions within Cook County. Use of offsite facilities for volume control and detention in these watershed planning areas would be in accordance with the following parameters:

1. An applicant may provide up to 50% of the required volume control storage for a development offsite, in accordance with the requirements of Article 503.4.B(2) and (3), but without needing to demonstrate a site constraint, as long as at least 50% of the required volume control storage is provided in retention based practices on the development site and the development complies with all other requirements of the WMO. Should an applicant also wish to use offsite detention, they would be held to the requirements described below.

2. An applicant must provide sufficient onsite detention volume such that the post-development runoff rates do not exceed the existing condition while providing supplemental detention volume offsite within the same watershed planning area for the remaining required detention volume not provided onsite. It is preferable, though not mandatory, that the offsite detention be in a location that is upstream or hydrologically equivalent to the development. The development must comply with all WMO requirements other than Article 504.15 and 504.16.A (WMO as amended May 16, 2019). Any applicant that proposes to provide a portion of required detention volume offsite must demonstrate that the peak runoff rates from the site under the post-development condition during the 2-, 10-, and 100-year storm events do not exceed the peak runoff rates from the site in its existing condition. The amount of detention volume provided onsite will vary depending on the individual project characteristics; however, detention volume for the 10-year storm event with a 24-hour duration must be provided onsite at a minimum. Should an applicant also wish to satisfy volume control requirements using offsite retention-based practices, the requirements described under #1 would apply. If an applicant cannot provide detention volume for the 10-year storm event with a 24-hour duration onsite, the permit cannot be issued for the development. In the event of redevelopment of a site with an existing MWRD-permitted detention facility where the redevelopment increases the total imperviousness of the site, the detention volume following redevelopment cannot be less than the MWRD-required detention of the site before redevelopment occurred.

As indicated above, to date, no developers have provided volume control or detention offsite. Removing the requirement to demonstrate a site constraint or limitation as proposed may motivate some developers to investigate the option of using offsite facilities. Supply sites could increase in number if property owners believed a meaningful amount of demand for supply sites exists. To facilitate this, MWRD recommends working with the Office of Public Affairs to issue a press release on the pilot study, highlighting the revised regulations for the Lower Des Plaines River and Little Calumet River watershed planning areas. Information will also be posted on the MWRD's website. A Constant Contact announcement will be issued. The pilot study will be discussed at Watershed Planning Council meetings. To address the challenge of developers who want to use offsite facilities learning about available supply sites, MWRD recommends posting information about the supply sites on the MWRD's website as WMO permits for those sites are issued.

If permits are issued for developments proposing to use offsite facilities to meet volume control/detention requirements, staff will track the location of supply sites to assess whether they address known flooding concerns. During the permit review process for supply sites, staff will ask applicants whether the supply site addresses a known flooding problem. This information will be provided as part of the summary of supply sites that staff will prepare. Staff will also assess whether the temporary allowance to use offsite facilities to meet volume control/detention requirements spurs development within the Lower Des Plaines River and Little Calumet River watershed planning areas. MWRD will determine this during the permit review process by asking developers who propose to use offsite facilities about how significantly the option for offsite trading affected their decision to build their development in its proposed

location. MWRD will request the developers' cost/benefit analysis leading to their selection of the development location, though they will not be obligated to provide this. Staff will report to the Board on the number of developments that utilize offsite volume control and detention, and the total volumes of offsite volume control and detention used to meet WMO requirements, by May 2025.