Guidance for Incorporating Water Quality Into Redevelopment

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***by Freese and Nichols, Inc. (FNI)***

***on behalf of the North Central Texas Council of Governments (NCTCOG)***

Many of the cities in North Texas have reached fully developed land use conditions and are experiencing redevelopment as their populations continue to increase. It is fairly uncommon to have stormwater quantity and quality standards associated with redevelopment. Mitigating these impacts is important as older systems may have been developed using outdated techniques, data, and criteria which can result in flooding and reduced water quality. Addressing water quality during redevelopment can simultaneously provide relief to stormwater systems and support compliance with National Pollutant Discharge Elimination System (NPDES) permit requirements.

At the request of the North Central Texas Council of Governments (NCTCOG) and the iSWM Implementation Committee (IIC), Freese and Nichols, Inc. (FNI) researched the water quality requirements for redevelopment from several other communities in an effort to create a more regionally specific guidance on water quality for redevelopment. The following sections include guidance and criteria options regarding applicability and water quality requirements for redevelopment.

In the context of this guidance, redevelopment is considered to be the expansion of an existing site plan or the renovation of a site that requires land disturbing activity. It is not intended to encompass maintenance activities or utility access.

NCTCOG recognizes that each city will choose to incorporate water quality for redevelopment based on their needs and goals. Due to the individuality of each city and their processes we have not included in this guidance the processes, permits, or locations within code or ordinance to introduce this guidance. Those details will need to be coordinated by each respective city. Our research indicates that site plans and building permits are the most common processes used to determine if requirements have been met.

The next steps in the preparing guidance on redevelopment will be to determine scenarios for three (3) hypothetical case studies which will incorporate the applicability and treatment options described in the following sections.

Applicability

**Recommended Applicability Requirements**

A redevelopment that consists of land disturbance activity over 10,000 square feet will be applicable to water quality requirements for the total area of land disturbance activity.

**Alternative Reduced Applicability Method**

A redevelopment that increases the total impervious area of the site over 5,000 square feet will be applicable to water quality requirements for the added impervious area.

**Possible Exemptions**

Water quality requirements will be exempt if land disturbing activity is for maintenance or utility access purposes only.

Areas of added imperviousness or land disturbance will be exempt from meeting water quality requirements if they are designed as disconnected areas, meaning they discharge as sheet flow to a landscaped area or open space of at least 15 feet wide.

Water Quantity Requirements

Redevelopment actives shall not generate an increase in runoff from existing conditions.

Water Quality Requirements for Redevelopment

**Recommended Water Quality Requirements**

In order to meet water quality requirements the water quality volume (1.5 inch) of the applicable area shall be conveyed through a Primary water quality structural control or a series of Secondary controls that results in an equivalent pollutant removal rate.

**Alternative Reduced Water Quality Requirements**

In order to meet water quality requirements the water quality volume (0.75 inch) of the applicable area shall be conveyed through a Primary water quality structural control or a series of Secondary controls that results in an equivalent pollutant removal rate.

**Possible Additions to Recommended Water Quality Requirements**

The total cost of the water quality improvements shall be capped at 30% of the total project costs.

Properties located in areas with higher concentrations of trace metals, hydrocarbons, or other priority pollutants shall convey the runoff from the applicable area through a water quality control that achieves a minimum 50% removal rate of the pollutant of concern.

**Alternative Design Options for Meeting Water Quality Requirements**

In order to meet water quality requirements the site must incorporate at least one of the following site design practices:

* Reducing impervious cover by 5% or more relative to the existing site conditions
* Drain applicable area of rooftops to pervious filter strips
* Drain applicable area of parking lots to pervious filter strips
* Provide or preserve stream buffers located in a floodplain on site, if applicable
* All parking spaces over the maximum allotment shall be installed using permeable pavers or porous concrete.
* Up to 10% of required parking may be used as landscaping.

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|  | **Option 1 (Preferred)** | **Option 2 (Reduced)** | **Additional Considerations /Exemptions** |
| **Applicability** | Area of land disturbing activity over 10,000 square feet | Area of added impervious area over 5,000 square feet | * Exempt if land disturbing activity is for maintenance for utility access purposes only.
* Areas of added imperviousness or land disturbance will be exempt if they are designed as disconnected areas.
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| **Requirements** | Convey the water quality volume (1.5 inch) of the applicable area through a Primary water quality structural control | Reduce water quality volume provided in Option 1 to 0.75 inchesORIncorporate at least one of the following site design practices:* Reduce impervious cover by 5% or more
* Drain rooftops to pervious filter strips
* Drain parking lots to pervious filter strips
* Provide or preserve stream buffers, if applicable
* All parking spaces over the maximum allotment shall be installed using permeable pavers or porous concrete
* Up to 10% of required parking to be used as landscaping
 | * The total cost of the water quality improvements shall be capped at 30% of the total project costs.
* Properties located in areas with higher concentrations of priority pollutants shall convey the runoff from the applicable area through a water quality control that achieves a minimum 50% removal rate of the pollutant of concern.
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