

# Integrated Stormwater Management (iSWM) Subcommittee Meeting

Staff Planner: Casey Cannon

October 5, 2022



North Central Texas  
Council of Governments  
Environment & Development

# Agenda

## 1. Welcome and Introductions

### PRESENTATION/ACTION ITEMS

2. **Approval of July 13, 2022, Meeting Summary.** The meeting summary will be presented to the Subcommittee for approval.
3. **Approval of iSWM FY23 Work Program Tasks.** NCTCOG will seek approval from the Subcommittee on FY23 Work Program Tasks.
4. **Approval of iSWM Outcome 17 (Water Quality) Revisions.** The proposed revisions to the iSWM Criteria Manual and Tiered Measurement Form regarding Outcome 17 (Water Quality) will be presented for approval to the Subcommittee.

### INFORMATION ITEMS

5. **Update on iSWM FY23 Contract Procurement.** NCTCOG will update the Subcommittee on the FY23 contract procurement process and will solicit volunteers for RFP scoring.
6. **The City of Arlington iSWM Application.** The City of Arlington has submitted an application for iSWM certification and the review process is complete. NCTCOG will update the Subcommittee on the status of Arlington's application.
7. **Regional Public Works Program Update.** NCTCOG will provide an update on the FY23 Regional Public Works Program.
8. **Total Maximum Daily Load Program Update.** NCTCOG will provide an update on the FY23 Total Maximum Daily Load Program.

### OTHER BUSINESS AND ROUNDTABLE DISCUSSION

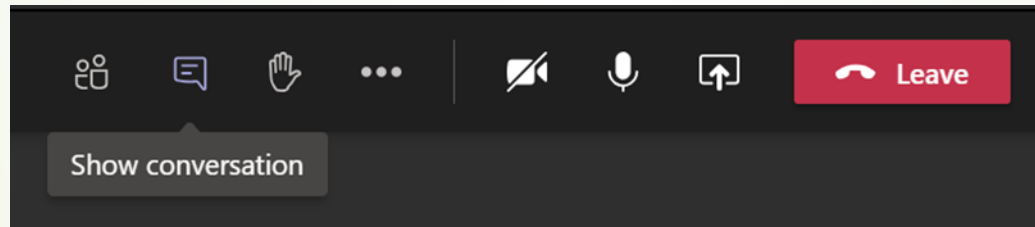
9. **Discussion on August 21-22 Flooding Events.** Ranjan Muttiah will lead a discussion regarding the flooding events that occurred on August 21-22 of this year in the North Central Texas Region.
10. **Upcoming Events and Conferences.**
11. **Future Agenda Items and Roundtable Discussion.**
12. **Schedule for the Next Meeting.** The next meeting is scheduled for January 11, 2023, online via Microsoft Teams.

Adjournment



# WELCOME AND INTRODUCTIONS

- The meeting agenda, presentation and handouts are located on the iSWM Subcommittee webpage - <https://www.nctcog.org/envir/committees/public-works-council/iswm-implementation-subcommittee>
- Please use the chat function to add your name and organization for attendance



- Approval of July 13, 2022, [Meeting Summary](#)

## Approval of iSWM FY23 Work Program Tasks

---

- Proposed tasks for FY23 are available [online](#). They have been organized by priority from feedback collected in a previous survey on iSWM Tasks.
- Open to discussion and recommendation of new tasks for the Work Program.

# Approval of iSWM FY23 Work Program Tasks

	Task	Category
1	<b>iSWM BMP Training (1-2 Hour)</b> - Training communities on engineering design or maintenance of BMPs	Outreach
2	<b>Develop Technical Case Studies</b> - Case study for the engineering or the design and construction of selected BMP devices to be used as a demonstration project. Similar to SARA LID Training Program <a href="https://www.sariverauthority.org/public-services/low-impact-development/lid-training-program">https://www.sariverauthority.org/public-services/low-impact-development/lid-training-program</a> .	Outreach
3	<b>iSWM Implementation guidance for communities in the region</b> - Continued outreach and workshops for iSWM Implementation and/or technical implementation guidance.	Outreach
4	<b>iSWM Promotional Presentation for Partnering Organizations</b> - Host event/training promoting iSWM and BMPs through industry and interest groups (i.e., ULI, TREC, AIA, APA, ASLA, USGBC, GDPC, CNU, DBA) and additional developer training/outreach.	Outreach
5	<b>Stormwater Quality Monitoring of Existing iSWM BMPs</b> - Establish an annual iSWM BMP monitoring program for determining pollutant removal efficiency of existing local N. Texas structural BMPs installed according to the iSWM design criteria. Select a limited number of existing BMPs in the region and confirm that the device(s) were constructed to iSWM criteria. Then monitor stormwater runoff into the device and the resulting outflow from the device to determine the removal efficiency of selected pollutants.	New/Revised Technical Content
6	<b>Website updates</b> - Add images and visual cues to help people navigate the website certification guidance page or other quality of life updates.	Website update
7	<b>Guidance or training on temporary sediment basins.</b>	Outreach New/Revised Technical Content
8	<b>Guidance on Pipe Utility Crossing</b> - Create general guidance describing BMPs and recommendations for pipe utility crossings.	New/Revised Technical Content
9	<b>Expanded use of trees in detention ponds for dual purposes; water quality and carbon sequestration.</b>	New/Revised Technical Content



# Approval of Outcome 17 Updates

---

## Background


- In 2014, the iSWM contractor was tasked with meeting with community members. NCTCOG learned that communities did not like the point system, and that the pass/fail grade was perceived as a barrier to communities becoming certified. The subcommittee determined that the point system would not be used moving forward. It was recommended that the water quality option 1 be revised or replaced.

17	Water Quality Protection				Require integrated site design practices; treat the water quality volume; and/or enact regional water quality programs	Section 1.3, Table 1.3; Section 3.2
----	--------------------------	--	--	--	--	-------------------------------------

# Approval of Outcome 17 Updates

---

- NCTCOG staff and Halff Associates collaborated to develop initial recommended updates
- Volunteer members recommended putting a greater emphasis on treatment of the water quality volume than on the *integrated* site design practices
- Volunteers have provided comments, which have been taken into consideration by staff and Halff Associates
- Documents posted [online](#).

17	Water Quality Protection				Require treatment of water quality protection volume and participation in regional offsite treatment, when available 	Section 1.3, Table 1.3; Section 3.2	
----	--------------------------	--	--	--	--	-------------------------------------	--

# Approval of Outcome 17 Updates

## Removal of Options in Water Quality Protection

### 3.2 Water Quality Protection

#### 3.2.1 Introduction

iSWM requires the use of *integrated* Site Design Practices as the primary means to protect the water quality of our streams, lakes, and rivers from the negative impacts of stormwater runoff from development. The *integrated* Site Design Practices shall be designed as part of the iSWM Plans. In addition to the *integrated* Site Design Practices, required water quality protection can be achieved by two additional options: (1) by treating the water quality protection volume and (2) assisting with off-site pollution prevention activities. These three approaches are described below.

Local Provisions:

#### 3.2.2 Option 1: *integrated* Site Design Practices and Credits

The *integrated* Site Design Practices are methods of development that reduce the "environmental footprint" of a site. They feature conservation of natural features, reduced imperviousness, and the use of the natural drainage system. In this option, points are awarded for the use of different Site Design Practices. A minimum number of points are needed to meet the iSWM requirements for Water Quality. Additional points can be gained to qualify for development incentives.

##### List of *integrated* Site Design Practices and Techniques

Twenty *integrated* Site Design Practices are grouped into four categories listed below. Not all practices are applicable to every site.

- **Conservation of Natural Features and Resources**
  1. Preserve Undisturbed Natural Areas
  2. Preserve Riparian Buffers
  3. Avoid Floodplains
  4. Avoid Steep Slopes
  5. Minimize Siting on Porous or Erodible Soils
- **Lower Impact Site Design Techniques**
  6. Fit Design to the Terrain
  7. Locate Development in Less Sensitive Areas
  8. Reduce Limits of Clearing and Grading
  9. Utilize Open Space Development

#### 3.2.3 Option 2: *Treat the Water Quality Protection Volume*

Treat the Water Quality Protection Volume by reducing total suspended solids from the development site for runoff resulting from rainfall of 1.5 inches (85<sup>th</sup> percentile storm). Stormwater runoff equal to the Water Quality Protection Volume generated from sites must be treated using a variety of on-site structural and nonstructural techniques with the goal of removing a target percentage of the average annual total suspended solids.

A system has been developed by which the Water Quality Protection Volume can be reduced, thus requiring less structural control. This is accomplished through the use of certain reduction methods, where affected areas are deducted from the site area, thereby reducing the amount of runoff to be treated. For more information on the Water Quality Volume Reduction Methods see [Section 1.3 of the Water Quality Technical Manual](#).

#### 3.2.4 Option 3: *Assist with Off-Site Pollution Prevention Programs and Activities*

Some communities have implemented pollution prevention programs/activities in certain areas to remove pollutants from the runoff after it has been discharged from the site. This may be especially true in intensely urbanized areas facing site redevelopment where many of the BMP criteria would be difficult to apply. These programs will be identified in the local jurisdiction's approved TPDES stormwater permit and/or in a municipality's approved watershed plan. In lieu of on-site treatment, the developer can request to simply assist with the implementation of these off-site pollution prevention programs/activities.

Developers should contact the municipality to determine if there are any plans to address runoff pollutants within the region of proposed development. If no plans exist, consider proposing regional alternatives that would address pollution prevention.



# Approval of Outcome 17 Updates

## Removal of Point System in Water Quality Protection

### 3.2 Water Quality Protection

#### 3.2.1 Introduction

iSWM requires the use of *integrated* Site Design Practices as the primary means to protect the water quality of our streams, lakes, and rivers from the negative impacts of stormwater runoff from development. In addition to integrated Site Design Practices, iSWM requires treating the water quality protection volume (Option 1). Assisting with off-site pollution prevention activities (Option 2) is dependent on the availability of a regional program and is encouraged, but not the primary intent. These three approaches are described below.

[Local Provisions:]

#### 3.2.2 *integrated* Site Design Practices and Credits

The *integrated* Site Design Practices are methods of development that reduce the "environmental footprint" of a site. They feature conservation of natural features, reduced imperviousness, and the use of the natural drainage system. In this option, points are awarded for the use of different Site Design Practices. A minimum number of points are needed to meet the iSWM requirements for Water Quality. Additional points can be gained to qualify for development incentives.

#### List of *integrated* Site Design Practices and Techniques

Twenty *integrated* Site Design Practices are grouped into four categories listed below. Not all practices are applicable to every site.

- **Conservation of Natural Features and Resources**
  1. Preserve Undisturbed Natural Areas
  2. Preserve Riparian Buffers
  3. Avoid Floodplains
  4. Avoid Steep Slopes
  5. Minimize Siting on Porous or Erodible Soils
- **Lower Impact Site Design Techniques**
  6. Fit Design to the Terrain
  7. Locate Development in Less Sensitive Areas
  8. Reduce Limits of Clearing and Grading
  9. Utilize Open Space Development

#### Point System

All sites that meet iSWM applicability must provide on-site enhanced water quality protection. Under the *integrated* Site Design Practice option, sites that accumulate a minimum number of points by incorporating *integrated* Site Design Practices are considered to have provided enhanced water quality protection.

The point system is made up of three components:

1. The initial percentage of the site that has been previously disturbed sets the minimum requirement. This is shown in the left-hand column of Table 3.4.
2. A minimum required total of Water Quality Protection (WQP) points is needed to meet the basic water quality criteria. This minimum is shown in the center column of Table 3.4.
3. Optional additional points can be accumulated through additional use of Site Design Practices to be eligible for developer incentives. Each developer incentive attained requires ten (10) additional Site Design Practice points above the minimum required points as shown in the right-hand column of Table 3.4.

As shown in Table 3.4, the initial percentage of site disturbance sets the minimum required points necessary to meet Water Quality Protection criteria. If a developer wishes to go beyond this minimum, then the number of additional points required to attain specific development incentives is also given.

Table 3.4 <i>integrated</i> Site Design Point Requirements		
Percentage of Site (by Area) with Natural Features Prior to Proposed Development	Minimum Required Points for Water Quality Protection (WQP)	Additional Points Above WQP for Development Incentives
> 50%	50	10 points each
20 – 50%	30	10 points each
< 20%	20	10 points each

The minimum number of points required to achieve WQP, as shown in the center column of Table 3.4, depends on the proportion of undisturbed natural features that exist on the site before it is developed. It is assumed that disturbing a site that has little previously disturbed area will cause more relative environmental impact than a site that has already incurred significant site disturbance. Therefore, disturbing a "pristine" site carries a higher restoration/preservation requirement.

For the purpose of this evaluation, undisturbed natural features are areas with one or more of the following characteristics:

- Unfilled floodplain
- Stand of trees, forests
- Established vegetation
- Steep sloped terrain
- Creeks, gullies, and other natural stormwater features
- Wetland areas and ponds

The number of points credited for the use of *integrated* Site Design Practices is shown in Table 3.5. To determine the qualifying points for a site, the developer must reference Table 3.5 and follow the guidance for each practice in the *Planning Technical Manual*.

# Approval of Outcome 17 Updates

---

## Proposed Revisions: *integrated* Site Design Practices

### 2.0 *integrated* Development Process

*This Chapter discusses the five-step development process. Local governments will integrate these processes into their current process by the addition of local provisions.*

#### 2.1 Planning

##### 2.1.1 *integrated* Site Design Practices

The *integrated* Site Design Practices are methods of development that reduce the "environmental footprint" of a site that conserves natural features, reduces imperviousness, and uses of the natural drainage [features](#) as much as practicable .

##### List of *integrated* Site Design Practices and Techniques

Twenty *integrated* Site Design Practices are grouped into four categories listed below. Not all practices are applicable to every site. It is recommended to implement at least 50% of the practices that are applicable to each site.

- **Conservation of Natural Features and Resources**
  1. Preserve Undisturbed Natural Areas
  2. Preserve Riparian Buffers
  3. Avoid Floodplains
  4. Avoid Steep Slopes
  5. Minimize Sitting on Porous or Erodible Soils
- **Lower Impact Site Design Techniques**
  6. Fit Design to the Terrain
  7. Locate Development in Less Sensitive Areas
  8. Reduce Limits of Clearing and Grading
- **Utilize Open Space Development**
  9. Utilize Open Space Development
  10. Consider Creative Designs
- **Reduction of Impervious Cover**
  11. Reduce Roadway Lengths and Widths
  12. Reduce Building Footprints
  13. Reduce the Parking Footprint
  14. Reduce Setbacks and Frontages
  15. Use Fewer or Alternative Cul-de-Sacs
  16. Create Parking Lot Stormwater "Islands"
- **Utilization of Natural Features for Stormwater Management**
  17. Use Buffers and Undisturbed Areas
  18. Use Natural Drainageways Instead of Storm Sewers
  19. Use Vegetated Swale Instead of Curb and Gutter
  20. Drain Rooftop Runoff to Pervious Areas



# Approval of Outcome 17 Updates

## Proposed Revisions: Water Quality Protection

### 3.2 Water Quality Protection

#### 3.2.1 Introduction

iSWM requires the use of the water quality protection volume to capture the 85<sup>th</sup> percentile of the 24-hour storm as the primary means to protect the water quality of our streams, lakes, and rivers from the negative impacts of stormwater runoff from development. While the treatment of the water quality protection volume is required by iSWM, it is also recommended to minimize the need for treatment by utilizing the *integrated* Site Design Practices, as described in Section 2.1.1. In addition to the water quality protection volume, iSWM encourages involvement in off-site pollution prevention activities, but it is not the primary intent of iSWM.

[Local Provisions:]

#### 3.2.2 Treat the Water Quality Protection Volume

Treat the Water Quality Protection Volume by reducing total suspended solids from the development site for runoff resulting from the 85<sup>th</sup> percentile of the 24-hour storm (1.5 inches). Stormwater runoff equal to the Water Quality Protection Volume generated from sites must be treated using a variety of on-site structural and non-structural techniques with the goal of removing a target percentage of the average annual total suspended solids.

The Water Quality Protection Volume can be reduced through practices . given in [Section 1.3 of the Water Quality Technical Manual](#).

#### Water Quality Protection Volume

The Water Quality Protection Volume (WQ<sub>x</sub>) is the runoff from the first 1.5 inches of rainfall. Thus, a stormwater management system designed for the WQ<sub>x</sub> will treat the runoff from all storm events of 1.5 inches or less, as well as a portion of the runoff for all larger storm events. For methods to determine the WQ<sub>x</sub>, see [Section 1.2 of the Water Quality Technical Manual](#).

[Local Provisions:]

#### 3.2.3 Assist with Off-Site Pollution Prevention Programs and Activities

Some communities have implemented pollution prevention programs/activities in certain areas to remove pollutants from the runoff after it has been discharged from the site. This may be especially true in intensely urbanized areas facing site redevelopment where many of the BMP criteria would be difficult to apply. These programs could include a regional Watershed Protection Plan, or may be identified in the local jurisdiction's approved TPDES stormwater permit and/or in a municipality's approved watershed plan. When on-site treatment options are very limited, the developer may request an alternative of assisting with the implementation of these off-site pollution prevention programs/activities.

Developers should contact the municipality to determine if there are any plans to address runoff pollutants within the region of proposed development. If no plans exist, consider proposing regional alternatives that would address pollution prevention.

[Local Provisions:]

# Approval of Outcome 17 Updates

## Proposed Revisions: Table 1.3

Table 1.3 Summary of Options for Design Focus Areas			
Design Focus Area	Reference Section	Required Downstream Assessment	Design Options
Water Quality Protection	3.2	no	<b>Option 1:</b> Use <i>integrated</i> Site Design Practices for conserving natural features, reducing impervious cover, and using the natural drainage systems
			<b>Option 2:</b> Treat the Water Quality Protection Volume (WQV) by reducing total suspended solids from the development site for runoff resulting from rainfalls of up to 1.5 inches (85 <sup>th</sup> percentile storm)
			<b>Option 3:</b> Assist in implementing off-site community stormwater pollution prevention programs/activities as designated in an approved stormwater master plan or TPDES Stormwater permit

# Approval of Outcome 17 Updates

## Proposed Revisions: Table 1.3

Table 1.3 Summary of Options for Design Focus Areas			
Design Focus Area	Reference Section	Required Downstream Assessment	Design Options
Water Quality Protection	3.2	no	<b>Required:</b> Treat the Water Quality Protection Volume (WQ <sub>v</sub> ) by reducing total suspended solids from the development site for runoff resulting from rainfalls of up to 1.5 inches (85 <sup>th</sup> percentile storm)
			<b>AND</b> Assist in implementing off-site community stormwater pollution prevention programs/activities such as a nearby Watershed Protection Plan, or as designated in an approved stormwater master plan or TPDES Stormwater permit
			<b>Recommended:</b> Use <i>integrated</i> Site Design Practices for conserving natural features, reducing impervious cover, and using the natural drainage systems

If there are any questions, feedback, etc. please reach out:  
[ccannon@nctcog.org](mailto:ccannon@nctcog.org)



## FY23 Contract Procurement

- The FY23 RFSQ is undergoing final review prior to posting to the public for bid. It should be finalized very soon.
- We will need volunteers from the Subcommittee to help score responses, likely early November.

# iSWM PROGRAM UPDATES

---

## Arlington iSWM Application Review

- The Review of Arlington's iSWM Application is complete. They have received a Bronze iSWM Certification. More updates to follow.



# PUBLIC WORKS PROGRAM UPDATE

---

- Public Works Council (PWC), November 17<sup>th</sup>, 9:30am via Microsoft Teams
- Sustainable Public Rights-of-Way Subcommittee (SPROW)
  - Caroline Waggoner has volunteered to become the next chair
  - Next meeting TBD
- Standard Drawings Subcommittee, in person at NCTCOG offices (Regional Forum Room), October 24<sup>th</sup>
  - Division 2000 and 6000 are going through internal review by NCTCOG
  - Division 4000 and 5000 have been edited by NCTCOG and will go through final round of review by the subcommittee
- Trainings and events will be identified and planned after the November PWC meeting

For more information on the Public Works program please contact Jason Heflin at [JHeflin@nctcog.org](mailto:JHeflin@nctcog.org) or (817) 695-9213.

# TMDL PROGRAM UPDATE

---

- “***Don’t Feed the Birds***” and “***No Muss, No Fuss – Be Wise When You Flush***” draft educational explainer videos and script now available online for review and comment
  - Don’t Feed the Birds [video](#) and [script](#)
  - No Muss, No Fuss – Be Wise When You Flush [video](#) and [script](#)
- Upcoming Meetings and Events:
  - **Joint TMDL Stormwater and Wastewater Technical Subcommittee Meeting:**  
October 11, 2022 at 9:30 AM via Microsoft Teams

For more information on the TMDL program please contact Hannah Allen at [hallen@nctcog.org](mailto:hallen@nctcog.org) or (817) 695-9215.

## UPCOMING EVENTS, CONFERENCES, AND OPPORTUNITIES

---

- Community Rating System (CRS) Users Group/Elected Officials Floodplain Seminar
  - October 25, 2022, 9:30-11:30 a.m. at NCTCOG offices
  - Worth two CECs from TFMA
  - Registration available [online](#)
- International Low Impact Development Conference
  - August 6-9, 2023
  - Oklahoma City, OK
  - Information available [online](#).



# ROUNDTABLE DISCUSSION

NOW, It's YOUR Turn...

## UPCOMING NCTCOG MEETINGS

---

### **Next iSWM Meeting: January 11, 2023 at 1:30 p.m.**

- Joint TMDL Stormwater & Wastewater Technical Subcommittee Meeting, **October 11, 2022**
- Public Works Council Standard Drawings Subcommittee, **October 24, 2022**
- Community Rating System (CRS) Users Group/Elected Officials Floodplain Seminar, **October 25, 2022**
- Regional Stormwater Management Coordinating Council, **November 9, 2022**
- Public Works Council Meeting, **November 17, 2022**

Meeting Information at:

<https://www.nctcog.org/envir/committees>

# UPCOMING iSWM Agenda Topics

---

**Next iSWM Meeting: January 11, 2023** at 1:30 p.m.

- Consultant selection for new iSWM contract. Updates on FY23 Work Program Tasks.

# Contact Connect

## Casey Cannon

Environment & Development Planner  
North Central Texas Council of Governments

[ccannon@nctcog.org](mailto:ccannon@nctcog.org)

817.608.2323

## Carolyn Horner

Senior Environment & Development Planner  
North Central Texas Council of Governments

[chorner@nctcog.org](mailto:chorner@nctcog.org)

817.695.9217

## Edith Marvin

Director of Environment & Development  
North Central Texas Council of Governments

[emarvin@nctcog.org](mailto:emarvin@nctcog.org)

817.695.9211



<http://iswm.nctcog.org/>



[Facebook.com/nctcogenv](https://www.facebook.com/nctcogenv)



[@nctcogenv](https://twitter.com/nctcogenv)



[nctcogenv](https://www.instagram.com/nctcogenv)



[youtube.com/user/nctcoged](https://www.youtube.com/user/nctcoged)



[EandD@nctcog.org](mailto:EandD@nctcog.org)