

Introduction

The Greater Trinity River Region Total Maximum Daily Load (TMDL) Implementation Plan (I-Plan) describes the steps that watershed stakeholders and the TCEQ are taking toward achieving the pollutant reductions identified in the Upper Trinity, Lower West Fork, Mountain Creek Lake, and Cottonwood Branch and Grapevine Creek TMDLs technical reports. The TMDL area stakeholders also utilize the I-Plan as a schedule and guideline for implementation of beneficial activities. The I-Plan uses an adaptive management approach where measures are periodically assessed for efficiency and effectiveness by the voluntary stakeholders within the TMDL area (Figure 1). This iterative process of evaluation and adjustment ensures continuing progress toward achieving water quality goals, and expresses stakeholder commitment to the process.

At annual meetings, the I-Plan's managing body, the TMDL Coordination Committee, assesses progress using the schedule of implementation, interim measurable milestones, water quality data, priorities, and actions of the Technical Subcommittees. The TMDL Coordination Committee is made up of stakeholders within the TMDL area including: local governments, special districts, non-profit organizations, and other interested parties. There are three Technical Subcommittees that convene annually to review and evaluate the efforts underway related to relevant implementation strategies. The Technical Subcommittees make recommendations to the TMDL Coordination Committee on the priority status and efficacy of the implementation efforts underway within the TMDL area. If assessments find that insufficient progress has been made or that implementation activities have improved water quality, the implementation strategies can be adjusted or reprioritized. The first annual Implementation Status Report (the annual report) is meant to provide the Coordination Committee the tools to efficiently review the implementation and impact of strategies outlined in the I-Plan, and coordinate further with the Technical Subcommittees to identify areas to focus resources and efforts on moving forward. Implementation efforts outlined in the annual report were solicited by the North Central Texas Council of Governments (NCTCOG) through a TMDL area stakeholder survey and compiled from MS4 permit annual reports. Additionally, NCTCOG received feedback on activities underway during technical subcommittee roundtable discussions. Implementation strategies identified as having no progress made in the annual report will be considered as potential work plan projects based off priority for the coming fiscal year (FY) project development.

History

In 1996 portions of the Upper Trinity River and Lower West Fork Trinity River were listed as impaired for elevated bacteria in the *Texas Water Quality Inventory and 303(d) List* (now known as *Texas Integrated Report of Surface Water Quality for Clean Water Act Sections 305(b) and 303(d)*). In 2006, two tributaries of the Elm Fork Trinity River and multiple tributaries of the Lower West Fork Trinity were also added to the 303(d) list of impaired water bodies. These bacteria-impaired segments cover the heart of the Dallas-Fort Worth metropolitan area and impact 1.33 million people.

On May 11, 2011, the Texas Commission on Environmental Quality (TCEQ) adopted *Two Total Maximum Daily Loads for Indicator Bacteria in the Upper Trinity River, Dallas, Texas* (Segment 0805, Assessment Units 0805_03 and 0805_04). The Total Maximum Daily Loads (TMDLs) were approved by the U.S. Environmental Protection Agency (EPA) on August 3, 2011. On September 21 of that same year, the TCEQ adopted *Two Total Maximum Daily Loads for Indicator Bacteria in Cottonwood Branch and Grapevine Creek* (Segments 0822A and 0822B, Assessment Units 0822A_02 and 0822B_01). The EPA approved them on May 30, 2012. The TMDLs for the Lower West Fork Trinity River, Segment 0841 and its tributaries, were adopted September 24, 2013. On November 2, 2016 the TCEQ adopted *Four Total Maximum Daily Loads for Indicator Bacteria in the Cottonwood Creek, Fish Creek, Kirby Creek, and Crockett Branch Watershed Upstream of Mountain Creek Lake* (Segments 0841F, 0841K, 0841N, and 0841V, Assessment Units 0841f_01, 0841K_01, 0841N_01, and 0841V_01). The EPA approved them on December 7, 2016.

Overview of the Implementation Strategies



1. **Wastewater** – Wastewater management encompasses a broad range of efforts that promote effective and responsible water use, treatment, and disposal while encouraging the protection and restoration of the TMDL watersheds.



2. **Stormwater** – Stormwater run-off is a major cause of water pollution in the urban watersheds of the TMDL area. Stormwater travels through the storm sewer system into lakes and streams, often carrying trash, pollutants, and notably, bacteria from the urban landscape into urban streams, impacting health and habitat.



3. **Planning and Development** – Concerns about population growth and stormwater run-off from developing areas effecting stormwater quality are addressed with the implementation of strategies aimed at reducing the impact of construction and stormwater run-off on bacteria loading in local waterways.



4. **Pets, Livestock and Wildlife** – While it is difficult to estimate the population levels of pets, livestock, wildlife, and unmanaged feral animals in the TMDL area, the impact as a potential contributor to bacteria loading in local waterways cannot be ignored and should be incorporated into watershed management efforts.



5. **Onsite Sewage Facilities** – Enforcement regarding onsite sewage facilities (OSSFs) vary throughout the TMDL area. Even with enforcement action, owners of failing OSSFs systems may not have the resources to repair or replace ineffective systems.



6. **Monitoring Coordination** – The TMDL Coordination Committee encourages use of all feasible monitoring programs and the collective analysis of the respective data to help to determine the efficacy of the implementation strategies within the I-Plan.



7. **Education and Outreach** – Providing education and outreach resources to specific audiences and stakeholders in the TMDL area will support the implementation and longevity of the strategies outlined in the I-Plan.

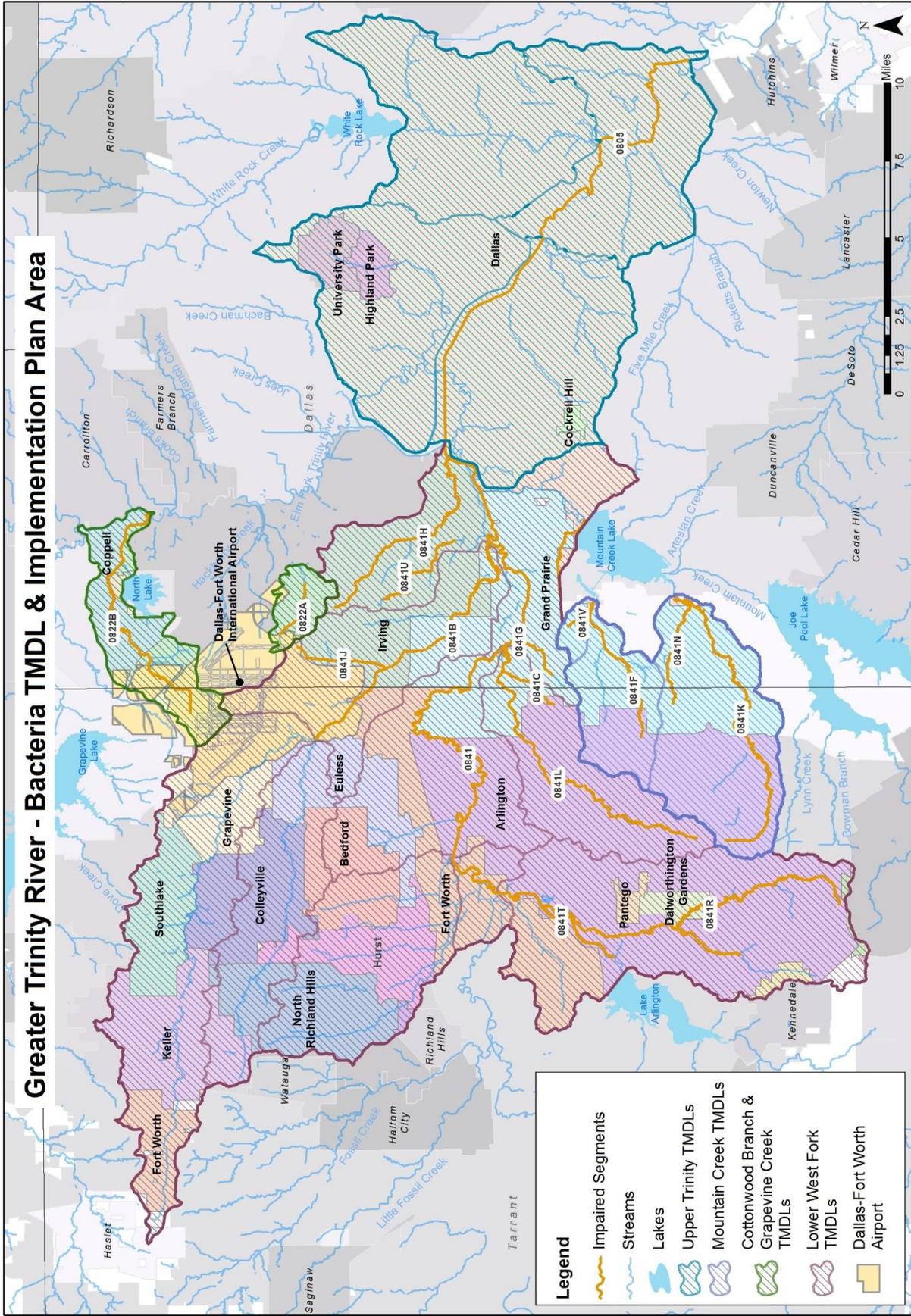


8. **Best Management Practices Library** – Structural, procedural, and education best management practices (BMPs) are crucial to the success of the I-Plan, offering stakeholders the opportunity to maximize limited funds, minimize implementation of ineffective projects, and take advantage of the depth of regional knowledge and experience.



9. **Implementation Strategy Evaluation** – Given the broad scope of the I-Plan and the difficulties in attributing numeric values to various bacteria sources, regular review of the implementation strategies is necessary for ongoing, successful results.

Figure 1. TMDL Area Project Area



This map/data was created by the North Central Texas Council of Governments (NCTCOG) for use "as-is" and as an aid in graphic representation only. The data is not verified by a Registered Professional Land Surveyor for the State of Texas and is not intended to be used as such. NCTCOG, its officials, and its employees do not accept liability for any discrepancies, errors, or variances that may exist.

Prepared in cooperation with the Texas Commission on Environmental Quality (TCEQ) and U.S. Environmental Protection Agency (EPA).

The preparation of this report was financed through grants from the U.S. EPA through the TCEQ.



Source: NCTCOG, TCEQ
Date Created: 03/10/2017

Q:\GIS\Water\water_quality\FY17 TMDL_GIS Data\2017 TMDL Map Updates

Stormwater Implementation Strategies

Summary

The Greater Trinity River region watersheds are primarily located in urban areas, causing increased stormwater run-off due to the impervious cover from urban development. The stormwater is carried through the metropolitan area in the storm drain collection system which discharges directly into the Greater Trinity River and its tributaries. Stormwater is not treated before it enters waterways and can be a major source of non-point source pollution, picking up trash and pollutants as it runs over the urban hardscape. Stormwater in the TMDL area is managed by several different municipal separate storm sewer (MS4) permits, held by municipal and public entities within the area. The MS4 permits require entities to implement best management practices to reduce the pollution of stormwater.

Activity

- The Stormwater Technical Subcommittee met on May 29, 2014; April 30, 2015; April 26, 2016; and May 11, 2017.

Focus of Implementation Strategies

- Increase participation in the Regional Stormwater Management Program (RSWMP) and associated Task Forces.
- Inclusion of bacteria specific information in the RSWMP Pollution Prevention and Public Education Task Force efforts.
- Increase access to funding through Supplemental Environmental Program (SEPs) and other available funding resources.
- Work with the TCEQ to review the Industrial Stormwater Multi-Sector General Permit classification review to require facilities in bacteria-impaired watersheds to perform benchmark sampling for bacteria.

Overview of Progress

- 2 stormwater implementation strategies have not been initiated
- 1 stormwater implementation strategy is in progress

Update to Strategy Priority Levels

- Upon review of the stormwater implementation strategies, the Stormwater Technical Subcommittee made no changes to priority levels.

2.0 MS4 participation in Regional Stormwater Management Program

Summary

Local and state governments along with transportation entities with MS4 permits employ extensive stormwater management programs to meet the requirements of the TCEQ MS4 permit. Several MS4s in the TMDL area already participate in the Regional Stormwater Management Program (RSWMP), which includes programs relevant to bacteria loading and the implementation strategies outlined in the I-Plan. The RSWMP engages large and small MS4s through task forces that address stormwater topics such as construction, illicit discharge, monitoring, pollution prevention, and public education. The TMDL Coordination Committee and Stormwater Technical Subcommittee support the efforts initiated under the RSWMP and encourage participation in the regional approach to achieve the inclusion of bacteria specific elements within the existing program.



Interim milestones

- Non-RSWMP MS4s approached by the TMDL Coordination Committee to participate in the regional program
- RSWMP approached for inclusion of bacteria related outreach in regional stormwater materials and programs

Project Status:  In progress

TMDL Coordination Committee Priority Level:  High

- NCTCOG provides TMDL Program activity updates at the quarterly RSWMP meetings to continually engage the MS4s participating in the TMDL and educate non-participants in the activities to reduce bacteria loading.
- The Illicit Discharge Detection and Elimination (IDDE) and Pollution Prevention Task Forces (P2) developed resources for municipalities to properly identify and prevent illicit discharges and stormwater BMP failures. The scope for the resources provide “non-stormwater” municipal staff a baseline knowledge to help staff recognize and report water pollution when traveling and working within the community.
 - [Illicit Discharge Detection and Elimination: Stormwater Training Series](#)
 - [Preventing Stormwater Pollution: What We Can Do](#)
- The Pollution Prevention Task Force provides annual site visits for participants to learn good housekeeping measures first hand from different municipal practices. 5 site visits have been conducted since 2013.
- NCTCOG has compiled a selection of standard operating procedures (SOPs) for stormwater Phase II communities in North Central Texas to support the good housekeeping/pollution prevention measures in MS4 permits.
- NCTCOG has provided targeted outreach to TMDL area stakeholders not currently participating in the Regional Stormwater Management Coordinating Council or Task Forces and has made resources available to entity staff.

Table 1. Update to Table 21. RSWMP Participation in Project Area, the Greater Trinity River Region I-Plan

Participants in RSWMP (as of FY2017)	Non-Participants
City of Arlington	City of Crockrell Hill
City of Bedford	City of Dalworthington Gardens
City of Colleyville	City of Haslet
City of Coppell	Dallas-Fort Worth International Airport
City of Dallas	Town of Pantego
City of Euless	
City of Fort Worth	
City of Grand Prairie	
City of Grapevine	
City of Hurst	
City of Irving	
City of Keller	
City of Kennedale	
City of North Richland Hills	
City of Southlake	
City of University Park	
Dallas Area Rapid Transit (DART)	
Dallas County	
North Texas Tollway Authority (NTTA)	
Dallas-Fort Worth International Airport	
Tarrant County	
Texas Department of Transportation (TxDOT) Dallas District	
TxDOT Fort Worth District	
Town of Highland Park	

2.1 Local Supplemental Environmental Projects

Summary

Local level Supplemental Environmental Projects (SEPs) can provide opportunity to expand watershed improvement initiatives and other environmentally beneficial projects that respondents can undertake in the settlement after an enforcement action. The TMDL Coordination Committee and Stormwater Technical Subcommittee encourage municipalities to engage in local level SEPs to bolster the expansion of stormwater management enforcement programs.

Interim milestones

- By 2023, 50% of large municipal MS4s will have local SEP programs in place
- By 2028, 15% of small municipal MS4s will have local SEP programs in place

Project Status:  Not initiated

TMDL Coordination Committee Priority Level:  Medium

Implementation Effort

- No progress has been made for this implementation strategy.
- NCTCOG provided information regarding the state level Supplemental Environmental Project (SEP) procedures to become a Third-Party Administrator.
- The Stormwater Technical Subcommittee will review the possibility of including procedures or guidelines to adopt local level SEPs for stormwater management as a part of the FY2018 work plan.

2.2 Land use, business, and regulatory review

Summary

Many existing rules, codes, and ordinances do not address bacteria sources as a pollutant in stormwater discharge. The TMDL Coordination Committee and Stormwater Technical Subcommittee encourage TMDL area municipalities to review applicable ordinances and codes that could be revised to address the discharge of bacteria, including land use and business practices.

Interim milestones

- Number of reported program expansion and/or modifications to address high risk business
- Changes to MSGP requirements

Project Status:  Not initiated

TMDL Coordination Committee Priority Level:  Medium

Implementation Effort

- At the 2016 TCEQ Stormwater and Water Quality Seminar, TCEQ provided information regarding future updates to the Stormwater Multi-Sector General Permit (MSGP) TXR050000, including the expansion of impaired receiving waters and TMDL requirements to include indication of category 4 and 5 impaired waters.
- No additional progress has been made on this implementation strategy.

Planning and Development Implementation Strategies

Summary

The TMDL area is experiencing rapid population growth resulting in increased land development, which creates challenges associated with increased stormwater run-off over expansive impervious land cover. Figure 6 shows land use in the TMDL area based on 2010 land use data. The impact of stormwater quality from construction and land development should be addressed as a part of reducing bacteria loading in local waterways. Implementing development practices, such as green infrastructure and low impact development (GI/LID), can help manage water quality by slowing down stormwater run-off and allowing natural processes and filtration to clean the water before it is delivered to local waterways. GI/LID can also provide habitat, flood protection, and aesthetic benefit which supports economic development by increasing the quality of life for North Texans. Proper management of stormwater run-off through GI/LID can reduce the impacts of the built environment on surrounding areas and water resources.

Activity

- The Stormwater Technical Subcommittee assumed the responsibilities of the Planning and Development Implementation Strategies and first met on May 29, 2014.
- The Stormwater Technical Subcommittee then met April 30, 2015; April 26, 2016; and May 11, 2017.

Focus of Implementation Strategies

- Increase adoption, implementation, and reduce barriers to, green infrastructure/low impact development (GI/LID).
- Encourage participation in the regional recognition program, *integrated* Stormwater Management (iSWM).
- Increase capacity and dissemination of technical and educational resources available regarding the impact of construction sites and disturb lands on stormwater quality.

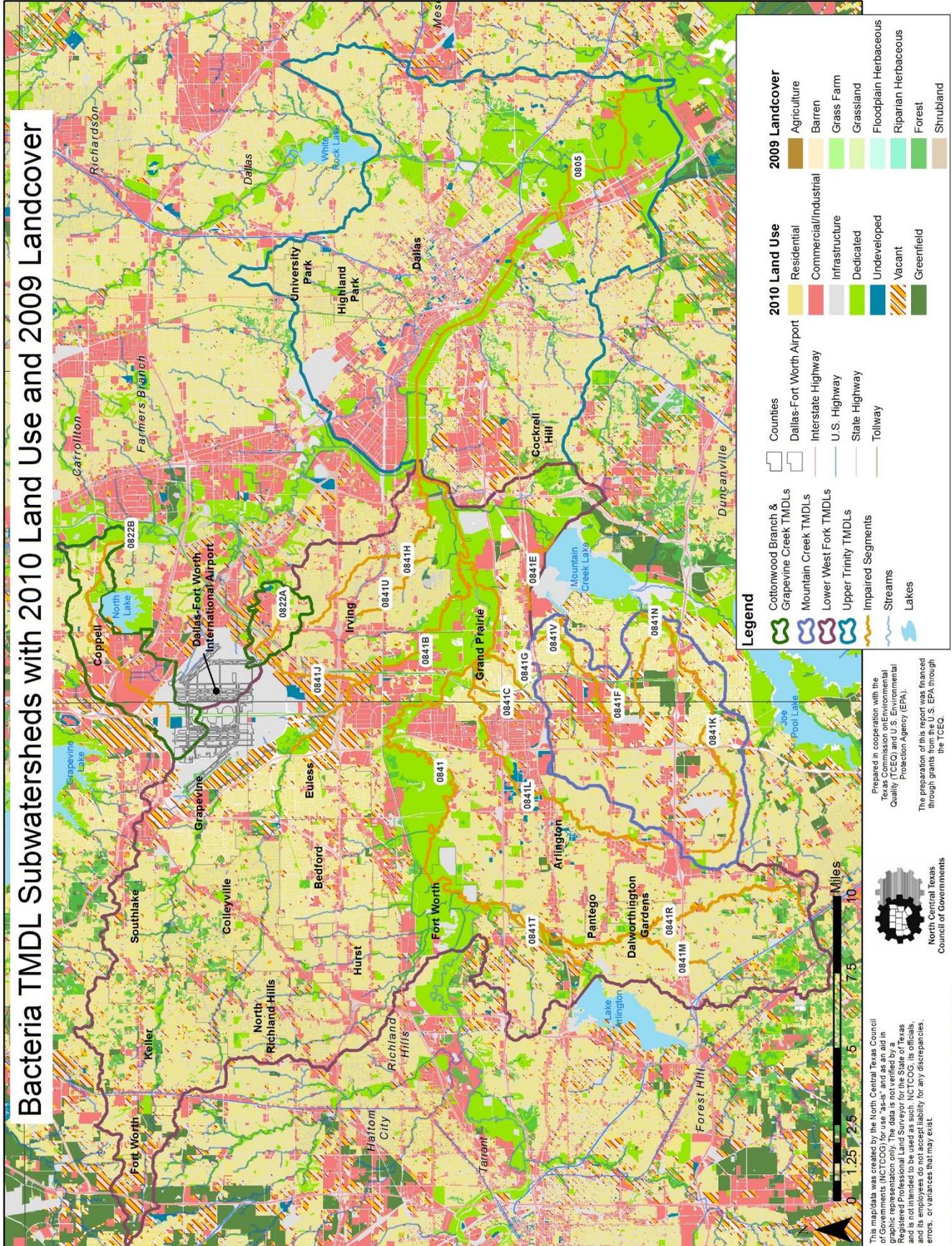
Overview of Progress

- 2 planning and development implementation strategies have been initiated
- 1 planning and development implementation strategy is in progress

Update to Strategy Priority Levels

- Upon review of the planning and development implementation strategies, the Stormwater Technical Subcommittee made no changes to priority levels.

Figure 2. Land Use in TMDL Area



Q:\ER_GIS\Water\water_quality\FY17 TMDL_GIS Data\2017 TMDL Map Updates

3.0 Adoption of green infrastructure and low impact development standards by municipalities

Summary

The TMDL Coordination Committee and Stormwater Technical Subcommittee support the implementation of green infrastructure and low impact development (GI/LID) throughout the TMDL area to help slow stormwater run-off and increase filtration to reduce bacteria entering into local waterways.

Interim milestones

- 25% of municipalities will evaluate their ordinances for impediments that discourage actions or practices that may improve water quality by 2017 with 50% doing so by 2023
- 25% of municipalities encouraged to adopt GI/LID standards by 2023 with 50% adopting such standards by 2038

Project Status:  Initiated

TMDL Coordination Committee Priority Level:  Ongoing

Implementation Effort

- NCTCOG held a Green Infrastructure/Low Impact Development for Improving Water Quality in North Central Texas workshop on July 12, 2016, engaging 60 participants about the influence of GI/LID on bacteria load reduction.
- The NCTCOG Regional Stormwater Management Program coordinated a Stormwater Management BMP and Post Inspection Workshop held in April 2016.
- 4 TMDL area stakeholders reported having GI/LID projects in their capital improvement plans (CIPs).
- 32 GI/LID resources are available in the BMP Library.
- The Integrated Stormwater Management Program (iSWM) addresses low impact development in the criteria for certification.
- iSWM has resources from previous workshops available online related to [Low Impact Development in North Texas](#).



Source: Ranjan S. Muttiah, City of Fort Worth

3.1 Recognition program participation

Summary

Recognition programs that provide awards or certification for the inclusion of GI/LID help increase awareness of these practices and promote adoption throughout the TMDL area. Through the Public Works Council, NCTCOG has developed the *integrated* Stormwater Management (iSWM) Program that has expanded into a tiered, certification program offering communities recognition for utilizing the iSWM criteria in their stormwater management programs. This program, along with other voluntary recognition programs, emphasize the importance GI/LID can help reduce the amount of bacteria that is carried into local waterways from stormwater run-off.



The *integrated* Stormwater Management (iSWM™) Program for Construction and Development

iSWM is a cooperative initiative that assists cities and counties to achieve their goals of water quality protection, streambank protection, and flood mitigation, while also helping communities meet their construction and post-construction obligations under state stormwater permits.

Interim milestones

- NCTCOG and participating stakeholders will promote and encourage participation in voluntary recognition programs that encourage GI/LID
- Stakeholders will review ordinances, policies, and procedures for impediments for participation in such programs

Project Status:  In progress

TMDL Coordination Committee Priority Level:
Ongoing



Implementation Effort

- 7 TMDL area stakeholders reported utilizing portions of the iSWM manuals and available tools to implement stormwater management measures in their MS4s.
- NCTCOG has expanded the *integrated* Stormwater Management Program (iSWM) into a tiered, certification-based approach. As local communities are implementing iSWM standards, they are working to achieve specific benefits and outcomes that positively impact the stormwater system. Applicants can be awarded Bronze, Silver, or Gold classification.
- NCTCOG has made iSWM program guidance available to local governments which highlight the benefits of joining the iSWM program and the updates that have been made since 2014 to [streamline the program](#).
- NCTCOG is working to develop a map of GI/LID projects planned or implemented throughout the region. This tool can be used to identify locations within the TMDL area that engage recognition programs that prioritize efforts to protect water quality. Projects could include those achieving SITES certification, LEED certification, CLIDE Award winners, and GI/LID capital improvement projects.

TMDL Area iSWM Silver Certification

The City of Kennedale

The City of Grand Prairie

The City of Fort Worth



City of Grand Prairie receiving iSWM Community Plaque.

3.2 Construction sites

Summary

Construction sites can pollute stormwater run-off with nutrients, sediment, and bacteria if improper sediment and erosion controls are not in place. Construction sites can increase the amount of bacteria in the environment with the use of landscaping fertilizer and portable toilet facilities on site. Best management practices need to be in place to ensure that control measures to reduce erosion of sediments are properly installed and maintained. The Regional Stormwater Management Program and the TMDL Coordination Committee support the dissemination of education and outreach materials and expansion of construction site inspection programs at the municipal level.

Interim milestones

- Evaluations conducted regarding the need or requirement for staffing an appropriate construction inspection program and subsequent increases in staffing levels as needed
- Development, distribution, and offering of educational materials and trainings

Project Status:  Initiated

TMDL Coordination Committee Priority Level:  Low

www.nctcog.org/TMDL

Implementation Effort

- Construction controls are required as a mandatory outcome in the new iSWM tiered certification program.
- The iSWM Program offers a Technical Manual for Construction Controls that cities and counties can adopt as a component of their stormwater management related development regulations.
- NCTCOG Regional Training Center offers Stormwater Pollution Prevention during Construction training courses to member governments; 427 entity staff have been trained since 2013.
- Several TMDL area entities provide construction BMP educational material to permit applicants upon review of construction site applications.
- RSWMP developed the [Construction Stormwater Awareness](#) video series, which equips non-stormwater municipal staff with the knowledge and resources necessary to recognize and report construction site BMP failures.
- RSWMP hosted a Stormwater Management BMP and Post Inspection Workshop in April 2016, training 40 attendees on BMP maintenance and post-construction inspections.

What Does My City Do?

In the City of Arlington, construction site inspections are performed a minimum of 2 times per month. The City is working to implement a method of tracking construction site review to streamline the process.

The City of Bedford discusses best management practices (BMPs) with construction permit applicants during the review process. City stormwater inspectors are regularly sent into the field to ensure proper BMPs are in place and enforced.

The City of Dallas offers educational opportunity to operators, consultants and municipal staff through construction stormwater control workshops.

The City of Fort Worth implemented the 2012 Grading Ordinance to control the impacts of earth-disturbing activities within the city boundary.

The City of Irving issues verbal notices, written warnings, and stop work orders to permit holders in the event of non-compliance with a construction site BMP measure.



Pets, Livestock, and Wildlife Implementation Strategies

Summary

E. coli can be found deposited in the environment as fecal bacteria found in pet waste, livestock, and unmanaged wildlife waste. Wildlife, specifically feral hogs, are attracted to riparian corridors and have direct access to deposit high concentrations of waste into streams and rivers. Pet waste, livestock waste, and wildlife waste can be carried over the landscape and washed into waterways by stormwater run-off. The deposition of waste within the TMDL area is a potential contributor to the bacteria loading in the Greater Trinity River region and can be managed by a myriad of strategies, including outreach and education and regional coordination.

Activity

- The Pet, Livestock, and Wildlife Technical Subcommittee met on April 23, 2015 and suspended meetings May 2015.
- The Stormwater Technical Subcommittee assumed the responsibilities of the Pet, Livestock, and Wildlife Technical Subcommittee and met on April 26, 2016 and May 11, 2017.
- The 2nd regional Urban Feral Hog Forum was held May 1, 2017.

Focus of Implementation Strategies

- Increase public education and outreach for proper disposal of pet waste.
- Engage with TMDL area stakeholders to discuss management strategies to reduce the impacts from feral hog populations on riparian areas and water quality.
- Define livestock populations within the TDML area entity jurisdictions.
- Create model management plans and ordinances for wildlife and pet waste management.
- Increase the inclusion of provisions for pet waste, wildlife waste, livestock waste, and stocking rates in municipal ordinances.

Overview of Progress

- 2 pet, livestock, and wildlife implementation strategies have been initiated
- 3 pet, livestock, and wildlife implementation strategies have not been initiated
- 2 pet, livestock, and wildlife implementation strategies are in progress

Update to Strategy Priority Levels

- Upon review of the pet, livestock, and wildlife implementation strategies, the Stormwater Technical Subcommittee made no changes to priority levels.

4.0 Feral hog management

Summary

Feral hogs are presenting increasing challenges to urban communities within the TMDL area. The large populations are not only destructive, causing property damage and infrastructure damage, but are a source of bacteria loading in TMDL area waterways through waste contributions and destabilization of riparian areas. The TMDL Coordination Committee and Stormwater Technical Subcommittee support the peer exchange of regional entities to engage in continual management strategies to curtail feral hog populations in both the urban and rural areas of North Texas, since wildlife populations do not follow jurisdictional boundaries.

Interim milestones

- An annual training workshop will be offered to stakeholders
- A feral hog forum will be initiated for control effort coordination

Project Status:

Initiated



TMDL Coordination

Committee Priority Level:



Implementation Effort

- 3 TMDL area stakeholders reported the implementation of some type of feral hog management strategies since 2013.
- In August 2015, Texas Parks and Wildlife (TPWD) provided a presentation to the Upper Trinity River Coordination Committee on feral hog and wildlife management and the impacts of bacteria loading in North Texas waterways.
- NCTCOG coordinated the second regional Urban Feral Hog Forum on May 1, 2017, engaging over 40 participants. The event convened stakeholders, policy makers, and experts to discuss management strategies for the increasing challenges and impacts associated with urban feral hog populations.



4.1 Ordinance evaluation for livestock waste management, stocking rates, and related measures

Summary

Bacteria can be present in livestock operations from waste contributions and manure distribution. It is difficult to assess livestock numbers, locations, and stocking rates from the municipalities in the TMDL area because management strategies vary greatly from city to city. This information is important in ensuring that land is not exceeding its stocking rate, or animals per acre, which would result in the land's inability to properly allow for enough infiltration of bacteria-laden stormwater. The TMDL Coordination Committee and Stormwater Technical Subcommittee encourage MS4 permit holders to evaluate the number of livestock and establish an ordinance, guidelines, or permitting process for allowing livestock within the city limits.

Interim milestones

- Development of educational materials for livestock owners and property owners housing livestock
- Provide information to municipalities on stocking rates and livestock management to assist with ordinance or guideline development

Project Status not initiated

www.nctcog.org/TMDL

TMDL Coordination Committee Priority Level Low

Implementation Effort

- 2 TMDL communities reported that a permitting process and ordinance are in place for livestock to be approved within city limits.
- One TMDL community identified and removed an illegal horse operation of over 100 stalls and 200 horses from the floodplain of the West Fork Trinity River, alleviating the impacts from an unknown source of concentrated bacteria.

4.2 Pet waste control measures

Summary

It is estimated that there are more than 580,000 cats and dogs living within the TMDL area. The large population of pets and pet waste is likely contributing to bacteria loading in the waterways. The TMDL Coordination Council and Stormwater Technical Subcommittee encourage municipalities to implement stronger pet waste public education and enforcement programs to minimize the impact of pet waste on the bacteria loading in the Greater Trinity River region.

Interim milestones

- All municipalities are encouraged to have pet waste control measures within their ordinances by 2033

Project Status:  In progress

**TMDL Coordination Committee
Priority Level:** Medium



Implementation Effort

- 4 TMDL area municipalities reported having provisions regarding pet waste control management strategies in established ordinances that prohibit residents from leaving deposited pet waste in public areas.
- NCTCOG has added the City of Dallas' "Specific Requirements for Dogs and Cats" ordinance to the BMP Library.
- 7 TMDL area entities outreach to residents through the Doo the Right Thing Campaign, a regional pet waste pledge and calendar contest that educates residents on the public health and water quality impacts associated with improper disposal of pet waste.
- Since 2014, 23% of the pledges received to 'Doo the Right Thing' were from residents in the TMDL area.

4.3 Avian management plan

Summary

Feeding of avian species in waterways or ponds promotes higher populations that would not exist without that activity. Because of the increased populations, the TMDL Coordination Committee and Stormwater Technical Subcommittee recommend implementation of measures that discourage avian feeding around waterways to limit the amount of avian waste entering the waterway, causing increased bacteria levels.

Interim milestones

- Existing or new avian-related educational materials will be developed for municipalities to educate their citizens
- MS4s will evaluate the need for avian management plans

Project Status:  Not initiated

TMDL Coordination Committee Priority Level:  High

Implementation Effort

- Currently, no TMDL area communities have an avian management plan.
- Examples of avian feeding guidelines and education strategies have been made available in the BMP library.
- No progress has been made on this implementation strategy. The Stormwater Technical Subcommittee will review the development of guidelines for an avian management plan as a part of FY2018 work plan.

4.4 Model ordinance development

Summary

To offer guidance to TMDL area entities, NCTCOG and the Stormwater Technical Subcommittee aim to develop a model ordinance document that will be a resource to municipalities working to include provisions for pet waste education and enforcement, livestock waste control measures, and stocking rates control measures into city ordinances.

Interim milestones

- The development or adaptation of a model ordinance
- Evaluation of existing ordinances for pet waste control and livestock waste control provisions

Project Status:  Not initiated

TMDL Coordination Committee Priority Level:  Low

Implementation Effort

- No progress has been made on this implementation strategy. The Stormwater Technical Subcommittee will review the development of a model ordinance document as a part of the FY2018 work plan.

4.5 Pet waste collection stations and BMPs at parks

Summary

Pet waste contributions can be controlled through education and outreach programs and installation of BMPs in areas with high concentration of pets. BMPs include buffer strips, swales, and other methods that allow for natural filtration of stormwater run-off from high concentration of pet locations, such as dog parks. The TMDL Coordination Committee and the Stormwater Technical Subcommittee encourage adequate usage of pet waste collection stations within municipal parks in conjunction with a strong education and outreach campaign focusing on the impacts pet waste on local water quality.



Interim milestones

- Development or adaptation of public education materials for park goers regarding pet waste and park best management practices
- MS4s with parks used by pets will use best management practices to help reduce bacteria loading

Project Status:  Initiated

www.nctcog.org/TMDL

TMDL Coordination Committee Priority Level:



Low

Implementation Effort

- During 2016, 5,750 pet dog-waste-bag dispensers were purchased through NCTCOG’s stormwater cooperative purchase; 3 TMDL area entities participated in the cooperative purchase.
- NCTCOG has worked with the TMDL area stakeholders to identify entities that install pet waste stations at municipal parks within jurisdictional boundaries; 2 TMDL area entities reported have >50 pet waste stations installed in municipal parks.
- The RSWMP Public Education Task Force creates resources available to local governments as a part of the Doo the Right Thing campaign.
- A [map of dog parks in the NCTCOG region](#) is available on the Doo the Right Thing campaign website.

4.6 Distribution of pet waste education materials

Summary

As a part of the existing Doo the Right Thing campaign, educational materials and resources are developed and made available for distribution to residents, providing increased education on impacts of pet waste on water quality. The TMDL Coordination Committee and Stormwater Technical committee encourage TMDL stakeholders to participate in, and maximize use of, existing pet waste education and outreach materials.

Interim milestones

- Use existing pet waste education materials and distribute to general public
- Include pet waste education materials with pet adoption and/or pet registration
- Increase in ordering of Doo the Right Thing materials through the RSWMP cooperative purchase

Project Status:

progress



In

TMDL Coordination Committee

Priority Level: Medium



Implementation Effort

- The RSWMP Public Education Task Force compiled resources on Doo the Right Thing campaign webpage, www.dfwstormwater.com/petwaste, which educate residents on the health and water quality risks associated with improper disposal of pet waste.
- The Doo the Right Thing Calendar Contest encourages residents to take the Doo the Right Thing pledge and offers a chance to submit a photo of their dog to be entered in the “cutest dog photo contest”. The winning dogs are featured in a calendar, which is made available to residents and organizations on the website.
- A [Doo the Right Thing video](#) was created by the Cities of Irving, Farmers Branch, Lewisville, Sherman, Grand Prairie and Plano to support education and outreach efforts related to pet waste disposal (the video is also available in Spanish).

