

Texas Institute for Applied Environmental Research: Assessment of Water Quality and Watershed Based Planning for Nolan Creek/South Nolan Creek (58-13-30061)
Progress Report: FY 2015 Quarter 2 covering December 1, 2014 – February 28, 2015 (submitted March 13, 2015)

TASK	DELIVERABLE	DUE DATE	DATE SUBMITTED
Contract Executed September 18, 2012			
1.2	Quarterly Progress Report FY13 Q-1 No. 1 Quarterly Progress Report FY13 Q-2 No. 2 Quarterly Progress Report FY13 Q-3 No. 3 Quarterly Progress Report FY13 Q-4 No. 4 Quarterly Progress Report FY14 Q-1 No. 5 Quarterly Progress Report FY14 Q-2 No. 6 Quarterly Progress Report FY14 Q-3 No. 7 Quarterly Progress Report FY14 Q-4 No. 8 Quarterly Progress Report FY15 Q-1 No. 9 Quarterly Progress Report FY15 Q-2 No. 10 Quarterly Progress Report FY15 Q-3 No. 11 Quarterly Progress Report FY15 Q-3 No. 12	Dec. 15, 2012 Mar. 15, 2013 Jun. 15, 2013 Sep. 15, 2013 Dec. 15, 2013 Mar. 15, 2014 Jun. 15, 2014 Sep. 15, 2014 Dec. 15, 2014 Mar. 15, 2015 Jun. 15, 2015 Sep. 15, 2015	Dec. 14, 2012 Mar. 15, 2013 Jun. 14, 2013 Sep. 13, 2013 Dec. 13, 2013 Mar. 18, 2014 Jun. 11, 2014 Sep. 12, 2014 Dec. 15, 2015
1.3	Contract Communication Post-Award Meeting Post Award Meeting Minutes Quarterly Communication Minutes	Oct., 18, 2012 Dec. 15, 2012 Quarterly with QPR	Held Sep. 21, 2012 at TCEQ Offices in Austin Submitted with Dec. 2012 QPR Jan. 26, 2015 TIAER PM contacted TCEQ regarding changes in leadership at TIAER and potential impacts on this project. A preliminary request was put forward for a 6- month extension. Quarterly communication is summarized in Attachment #1. In addition to contact with TCEQ, a planning meeting was held between TIAER and CoK in Killeen on Feb. 11, 2015. A summary of items discussed at this meeting is also included in Attachment #1.
1.4	Annual Report Article FY13 Annual Report Article FY14 Annual Report Article FY15	Upon Request Upon Request Upon Request	
1.5	Project Coordination Meeting with EPA	Sep 30, 2014	

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TASK	DELIVERABLE	DUE DATE	DATE SUBMITTED
2.1	QAPP Planning Meeting with City of Killeen	Oct. 18, 2012	Feb. 11, 2013 TIAER met with CoK in Killeen to discuss the QAPP and Monitoring plan drafts. Task Completed.
2.2	Draft QAPP for Monitoring	Nov. 16, 2013	Feb. 22, 2013 - A draft Monitoring QAPP was sent to the TCEQ Project Manager for review. Received comments Mar. 28 and responded with final revision dated Apr. 17, 2013 and QAPP approved May 2, 2013. Task Completed.
2.3	Draft QAPP for Modeling	Nov. 16, 2013	Feb. 22, 2013 – A draft Modeling QAPP was sent to the TCEQ Project Manager for review. Received comment Apr. 4 and responded with final revision dated May 13, 2013 approved May 16, 2013. Task Completed.
2.4	QAPP Updates FY14 FY15	No less that 60 days prior to end of effective period	FY14 Annual revision to Monitoring QAPP approved Mar. 6, 2014. FY14 Annual certification for Modeling QAPP approved Feb. 12, 2014. FY15 Annual certification for Monitoring and Modeling QAPPs approved Feb. 6, 2015.
2.5	QAPP Amendments Draft QAPP Amendments Final	As needed As needed	No activity this quarter
2.6	Data Submittals (quarterly data submittals requested by TCEQ PM)	Mar. 15, 2013 Jun. 15, 2013 Sep. 15, 2013 Dec. 15, 2013 Mar. 15, 2014 Jun. 15, 2014 Sep. 15, 2014 Dec. 15, 2014 Mar. 15, 2015 Jun. 15, 2015 Aug. 15, 2015	Data collection started in May 2013 with approval of monitoring QAPP. First data submittal sent Sep. 13, 2013. Second submittal sent Dec. 16, 2013 Third submittal sent Mar. 12, 2014 Forth submittal Jun. 13, 2014 Fifth submittal Sep. 10, 2014 Sixth submittal Dec. 11, 2014 Seventh submittal Mar. 9, 2015

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TASK	DELIVERABLE	DUE DATE	DATE SUBMITTED
3.1	Draft PPP Final PPP	Dec. 15, 2012 Mar. 15, 2013	Feb. 25, 2013 – Submitted to TCEQ PM Mar. 4, 2013 – PPP approved by TCEQ PM. Mar. 5, 2013 – Distributed final PPP in PDF form to project partners and TCEQ PM.
3.2 – 3.5	Stakeholder Group Development, Activities, Meetings and Project Dissemination	Bi-annually	Last public stakeholder meeting held Sep. 25, 2014.
3.6	Draft Building Partnerships – Element E, Part A Report Final Building Partnerships – Element E, Part A Report	Mar. 15, 2013 Aug. 15, 2015	Mar. 4, 2013 – TCEQ PM gave final approval of PPP and approved document was sent in PDF form to project partners. To be updated as needed.
4.1-4.2	Inventory of existing data and GIS representation for watershed in shapefile or ArcGIS grid format	Revised due date Dec. 5, 2014	Draft report completed and delivered to TCEQ Dec. 5, 2014 with maps of GIS data for the watershed.
4.3	Draft Watershed Characterization Report Final Watershed Characterization Report	Revised due date Dec. 5, 2014 Revised due date Feb. 20, 2015 Apr. 15, 2015	Draft completed and delivered to TCEQ Dec. 5, 2014. Comments received from TCEQ Jan. 12, 2015. Extension requested for final report.
5.2	Draft Water Quality Monitoring Plan Final Water Quality Monitoring Plan	Nov. 16, 2012 Dec. 15, 2012	Reconnaissance and planning meeting held between TIAER and CoK Jan. 18, 2013 Submitted to TCEQ PM for review Feb. 22, 2013 and approved Mar. 8, 2013. Task Completed.
5.3	Source Survey Technical Report	Dec. 15, 2014	Draft completed and delivered to TCEQ Dec. 15, 2014. Comments received from TCEQ Jan. 28, 2015. Final report responding to TCEQ comments expected by Apr. 15, 2015.
5.5	Draft Watershed Characterization – Phase 2 Report Final Watershed Characterization – Phase 2 Report	Apr. 15, 2015 Jul. 15, 2015 Jun. 15, 2015 Aug. 31, 2015	As monitoring will not be completed until sometime in June, moving the due date for this report is requested, so all direct monitoring data can be included in this report.
6.2	Watershed maps that identify potential cause and sources of water quality problems	Jun. 15, 2015	

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TASK	DELIVERABLE	DUE DATE	DATE SUBMITTED
6.5	Draft Watershed Characterization Phase 3 Report with Loadings Final Watershed Characterization Phase 3 Report with Loadings	June 15, 2015 Jul. 15, 2015	
7.1	Define Education Goals	Mar. 15, 2013	Strategies for reaching targeted audience outlined in PPP
7.2	Identify Target Audience	Mar. 15, 2013	Target audience identified in PPP
7.3	Design Implementation Measures	Mar. 15, 2013 Jun. 15, 2015	This is part of the Information & Education Plan Report. Requesting change in due date for this deliverable to match report associated with Task 7.5.
7.4	Evaluate Education and Outreach Program FY13 FY14 FY15	Sep. 15, 2013 Sep. 15, 2014 Sep. 15, 2015	
7.5	Draft Information & Education Plan Report Final Information & Education Plan Report	Jun. 15, 2015 Jul. 15, 2015	
8.1- 8.2	Draft Project Report Final Project Report	Jul. 15, 2015 Aug. 15, 2015	

GENERAL COMMENTS

TASK	COMMENTS/ACTIVITIES
1. Project Administration	Project administrative duties occurred as needed including emails, quarterly communication, development of quarterly progress reports and reimbursement requests. Completed Close-out strategy as requested by TCEQ. Notified TCEQ of change in leadership at TIAER and made a preliminary request for a 6-month, no-cost extension of the project.
2. Quality Assurance	Annual certification reviews conducted and approved for FY15 in early Feb. for both the monitoring and modeling QAPPs.
3. Building Partnerships	Stakeholder list updated based on requests. Meeting held with CoK on February 11, 2015, which included a brief discussion of PPP updates.
4. Watershed Characterization – Data Inventory	Draft report completed and submitted to TCEQ on Dec. 5, 2014. Comments received from TCEQ Jan. 12, 2015. Working on response to comments.
5. Watershed Characterization – Data Collection and Analysis	Routine monitoring was conducted monthly throughout the quarter at all 11 stations and is summarized in Table 1 at the end of the General Comments Section. Storm monitoring was conducted in late March at the four storm sampling stations (see Table 2). Corrective Action Reports and Corrective Action Plans issued for project samples are presented in Table 3 with the Corrective Action Status as Table 4. Source Survey Technical Report (Task 5.3) prepared and submitted to TCEQ Dec. 15, 2014. Comments received on draft report from TCEQ Jan. 28, 2015. Working on response to comments.
6. Identification of Causes and Sources of Pollution and Estimation of Pollutant Loads	SELECT model modified for use with ArcGIS version 10.0. Input parameters for Nolan watershed collected and preliminary analyses conducted. Review with CoK of preliminary output was conducted on Feb. 11, 2015, and some changes were recommended based on city ordinances regarding livestock and updates to some GIS layers. Suggestions were made to better separate urban point source areas as defined by MS4 permits from less dense urban areas or urban clusters outside urban areas as defined in the Census data.
7. Information and Education Component	Some results from the evaluation tool distributed at Sep. 2014 public meeting were included in the draft Source Survey Report (Task 5.3).
8. Project Report	No activity to report

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**Table 1. Routine Monthly Monitoring for December 1, 2014 through February 28, 2015.
Number of samples and comments, as applicable.**

Collection Date	TCEQ Station ID	Sonde	Nutrients & TSS	<i>E. coli</i>	Flow	Comments
10Dec2014	11915	1	1	1	1	
10Dec2014	18828	1	1	1	1	
10Dec2014	21436	1	1	1	1	
10Dec2014	18827	1	1	1	1	
10Dec2014	21437	1	1	1	1	
10Dec2014	11913	1	1	1	1	
10Dec2014	11911	1	1	1	1	
10Dec2014	11910	1	1	1	1	
10Dec2014	11908	1	1	1	1	
10Dec2014	11905	1	1	1	1	
10Dec2014	14237	1	1	1	1	
07Jan2015	11915	1	1	1	1	
07Jan2015	18828	1	1	1	1	
07Jan2015	21436	1	1	1	1	
07Jan2015	18827	1	1	1	1	
07Jan2015	21437	1	1	1	1	
07Jan2015	11913	1	1	1	1	
07Jan2015	11911	1	1	1	1	
07Jan2015	11910	1	1	1	1	
07Jan2015	11908	1	1	1	1	
07Jan2015	11905	1	1	1	1	
07Jan2015	14237	1	1	1	1	
04Feb2015	11915	1	1	1	1	
04Feb2015	18828	1	1	1	1	
04Feb2015	21436	1	1	1	1	
04Feb2015	18827	1	1	1	1	
04Feb2015	21437	1	1	1	1	
04Feb2015	11913	1	1	1	1	
04Feb2015	11911	1	1	1	1	
04Feb2015	11910	1	1	1	1	
04Feb2015	11908	1	1	1	1	
04Feb2015	11905	1	1	1	1	
04Feb2015	14237	1	1	1	1	

Sonde data includes dissolved oxygen, specific conductance, pH, and water temperature.
Nutrients include nitrite-nitrogen + nitrate-nitrogen (NO₂-N+NO₃-N, dissolved), total Kjeldahl nitrogen (TKN), orthophosphate-phosphorus (OPO₄-P, dissolved), and total phosphorus (TP).

Table 2. Storm Monitoring for December 1, 2014 through February 28, 2015. Number of samples and comments, as applicable. Nutrient and TSS, unless noted, represent a flow-weighted sample collected with an automated sampler. Samples for *E. coli* are grab samples collected during elevated flow conditions.

Collection Date	TCEQ Station ID	Nutrients & TSS	<i>E. coli</i>	Flow	Comments
22Jan2015	18828	1	1	1	
22Jan2015	11913	1	1	1	
22Jan2015	11910	1	1	1	
22Jan2015	11905	1	1	1	

Nutrients include nitrite-nitrogen + nitrate-nitrogen (NO₂-N+NO₃-N, dissolved), total Kjeldahl nitrogen (TKN), orthophosphate-phosphorus (OPO₄-P, dissolved), and total phosphorus (TP).

Corrective Action Reports

The below listing includes CARs where data quality was potentially impacted and required notification and review by the TIAER PM. The deficiencies were not such to require immediate reporting to TCEQ, and are, thus, reported with the QPR.

Table 3
Summary of new Corrective Action Reports

TIAER CAR # & CAP#	Sample Collection Date	Report Initiation Date	TIAER Sample Number(s)	Site(s)	Description of Deficiency	Cause(s)	Resulting or Suggested Action	Corrective Action for Specific Incident	Corrective Actions to be Taken	Proposed Completion Date	Date Closed
15-0008 & CAP #10	07Jan2015	29Jan2015	1000094130	11911	Matrix spike recovery 71% for NO ₂ -N, NO ₃ -N; MS=13.5 & sample = 12.8 mg/L; spike 1 mg/L	High sample concentration requiring dilution	None	Flag data with “SR” for data submittal	Review data for acceptability for project objectives.	15Mar2015	25Feb2015
15-0018 & CAP #11	10Dec2014	19Feb2015	1000094104	18828	RPD for field split greater than 30% for TKN (sample 0.73 mg/L and split 1.39 mg/L)	Unknown, all other analytes in split passed as well as other batch QC	Continue to monitor	Flag data with “SP” for data submittal	Review data for acceptability for project objectives.	15Mar2015	09Mar2015

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Table 4
Corrective Action Status Table

Corrective Action # (CARs)	Date Issued (CAP)	Description of Deficiency	Action Taken	Date Closed
1 (CARs 13-0092 & 13-0105)	06Sep2013	Matrix spike beyond recovery limits (NO ₂ -N+NO ₃ -N & TKN)	Associated sample data to be flagged with “SR” in data submittal. No specific corrective action identified. Lab will continue to monitor for trends.	01Oct2013
2 (CAR 13-0097)	06Sep2013	Quanti-Tray comparator for <i>E. coli</i> analysis was used past expiration	Expired comparator was checked against new comparator. Added comparator expiration date to monthly maintenance check schedule.	10Jan2014
3 (CAR 13-0101)	06Sep2013	Field filtration of NO ₂ -N+NO ₃ -N and PO ₄ -P was unable to occur.	Field crew directed to use alternative parameter codes as outlined in the QAPP. Field personnel reminded to verify that loaded equipment matches the items on the equipment check list, which is located in the Nolan field notebooks.	03Sep2013
4 (CARs 13-0137 & 13-0138)	12Dec2013	Matrix spike beyond recovery limits (NO ₂ -N+NO ₃ -N & PO ₄ -P)	Associated sample data to be flagged with “SR” in data submittal. No specific corrective action identified. Lab will continue to monitor for trends.	13Jan2014
5 (CARs 14-0022, 14-0031 & 14-0038)	05Jun2014	Matrix spike beyond recovery limits (PO ₄ -P, NO ₂ -N+NO ₃ -N & TKN)	Associated sample data to be flagged with “SR” in data submittal. No specific corrective action identified. Lab will continue to monitor for trends.	09Jun2014
6 (CAR 14-0031)	05Jun2014	Sonde incorrectly calibrated for specific conductance	Field personnel instructed to review calibration procedures prior to next monitoring event. Data omission to be noted with data submittal.	27May2014

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Corrective Action # (CARs)	Date Issued (CAP)	Description of Deficiency	Action Taken	Date Closed
7 (CARs 14-0045, 14-0046 & 14-0047)	05Sep2014	RPD for field split greater than 30% for TKN	Associated sample data flagged with “SP” in data submittal. Historical data reviewed in comparison to sample values to determine acceptability for project objectives.	12Jun2014
8 (CARs 14-0089 & 14-0100)	09Dec2014	Matrix spike beyond recovery limits (NO ₂ -N+NO ₃ -N)	Associated sample data flagged with “SR” in data submittal. Historical data reviewed in comparison to sample values to determine acceptability for project objectives.	09Dec2014
9 (CAR 14-0101)	09Dec2014	RPD for field split greater than 30% for TKN	Associated sample data flagged with “SP” in data submittal. Historical data reviewed in comparison to sample values to determine acceptability for project objectives.	09Dec2014
10 (CAR 15-0008)	10Mar2015	Matrix spike beyond recovery limits (NO ₂ -N+NO ₃ -N)	Associated sample data flagged with “SR” in data submittal. Historical data reviewed in comparison to sample values to determine acceptability for project objectives.	25Feb2015
11 (CAR 15-0018)	10Mar2015	RPD for field split greater than 30% for TKN	Associated sample data flagged with “SP” in data submittal. Historical data reviewed in comparison to sample values to determine acceptability for project objectives.	09Mar2015

Attachment #1
Minutes from Quarterly Project Communication

Date: January 26, 2015

TIAER Project Manager, Anne McFarland, called Kyle Girten, the Nonpoint Source Team Leader at TCEQ, concerning a change in leadership at TIAER. TIAER's Director, Dan Hunter, will be taking a position with the Texas Department of Agriculture as assistant commissioner for water and rural affairs effective February 2, 2015, and Anne McFarland has been appointed to serve as interim executive director for TIAER until a replacement is hired. Given the hiring process may take up to six months for a new director for TIAER, Anne asked about the possibility of a 6-month, no-cost extension for the project. She anticipates that progress on the project will continue while she assumes the role as interim director for TIAER, but that progress will likely occur at a slower pace. Kyle was positive that an extension would likely be approved and directed Anne to work with the TCEQ project manager, Megan Wilson, on this request.

Throughout the Quarter:

Throughout the quarter, several emails and a few phone calls were exchanged between Anne McFarland and Megan Wilson regarding the Close-out Strategy for the project budget as well as the request for a 6-month, no-cost extension. As part of the Close-out Strategy, Anne indicated that a budget amendment will be needed moving money between some categories, but that this shifting of funds would be relatively small compared to the overall project budget.

Date: February 11, 2015

TIAER personnel Anne McFarland and Todd Adams met with City of Killeen staff Kristina Ramirez, Israel Garza and Melissa Zeig to discuss the Nolan Creek project. Agenda items included the following:

- Close-out Strategy for the Budget – CoK, as a subcontractor to TIAER, will be revising their budget and SOW for the project and a new subcontract will be developed.
- Impact of a 6-Month Extension on Project Deliverables – A new timeline was discussed and the general recommendation was that the timeline for deliverables not shift too much from the current one, but allow more time for review, particularly by stakeholders.
- Review of Comments from TCEQ on the Data Inventory and Source Survey Reports – CoK was requested to assist particularly with those in Section 4 of each report dealing with urban sources.
- Overview of Preliminary SELECT Results – CoK recommended some changes in dealing with livestock (not permitted within city limits per ordinance), questioned if the Fort Hood WWTF had an active permit, and discussed the separation of urban runoff from MS4 areas, which have dense populations, from urban runoff from less dense urban areas outside city boundaries (i.e. urban clusters as noted in the Census data).
- Potential Updates for PPP – Anne commented that after a review of the PPP, she saw a need for only minimal changes. Stakeholder lists have been updated after each public meeting, if changes are noted.
- Discussion of Next Public Meeting – It was suggested that the next public meeting might occur sometime in August. Several project reports are to be drafted this spring and early summer, and these reports should be ready for stakeholder review before the next public meeting occurs.