

**Arroyo Colorado Agricultural Nonpoint Source Assessment
FY 06 CWA 319(h)
TSSWCB Agreement No. 06-10-07-05**

Quarter no. 6 From 4/01/08 Through 6/30/08

I. Abstract

The in-stream drainage ditch sampling continues to move forward while we have had a minor setback in the edge-of-field sampling (delayed until next year). The Land Use/Land cover map (Task 4) was submitted to TSSWCB for comment as well as the historical data summary (task 2). Finally, the development of the BMP Inventory map will finally begin this next quarter as all data was collected and is being worked on by scientists at Temple.

II. Overall Progress and Results by Task

TASK 1: Project Coordination and Administration

Subtask 1.1: TWRI will organize an Ag Monitoring Oversight Committee to coordinate project efforts with all project participants. This Committee will be composed of TAES, TAMUK, TCE, TCEQ, TDA, Texas Sea Grant, TSSWCB, Nueces River Authority, producer groups, irrigation districts, and drainage districts. This Committee will meet at least semi-annually to discuss project status, provide input on monitoring design, coordinate project activities, and coordinate monitoring efforts with educational activities.

The following actions have been completed during this reporting period:

- a. The Arroyo Colorado Watershed Partnership Ag Issues Workgroup (Ag Monitoring Oversight Committee) will meet on July 24, 2008.

45% Complete

Subtask 1.2: TWRI will prepare electronic quarterly reports for submission to the TSSWCB. All progress reports will be provided to the Ag Monitoring Oversight Committee [Final report provided under Task 8].

The following actions have been completed during this reporting period:

- a. Submitted Year 2, Quarter 3 Report on July 17, 2008.

45% Complete

Subtask 1.3: Monitoring results will be transferred to TCE and TAES for development of educational materials and presentation to stakeholders. Based on the results of the monitoring, TCE will hold workshops demonstrating the impacts of implementing BMPs in the watershed and coordinate periodic meetings of ag producers to bring awareness concerning the impact of

the drainage ditches on the mitigation of pollutants from the fields (the educational activities are funded under a FY05 project).

The following actions have been completed during this reporting period:

- a. Nothing to report at this time.

0% Complete

Subtask 1.4: TWRI will attend meetings with the TSSWCB project manager and other meetings, as needed, to review project status, deliverables, etc. During quarters when no Ag Monitoring Oversight Committee are scheduled, TTVN meetings will be conducted with project participants to discuss project activities, project schedule, lines of responsibility, communication needs, and other requirements

The following actions have been completed during this reporting period:

- b. In addition to the upcoming Ag Issues Workgroup (Ag Monitoring Oversight Committee) meeting, TWRI, TSSWCB, TAES-Weslaco and TAMUK will meet on July 24, 2008 to discuss project status and activities.

45% Complete

Subtask 1.5: TWRI will participate in Arroyo Colorado Partnership and Arroyo Colorado Agricultural Issues Work Group Meetings.

The following actions have been completed during this reporting period:

- a. A special Ag Workgroup Session was held in preparation for the upcoming Ag Issues Workgroup Meeting in July. Meeting Summary is included in Appendix A.
- b. An update of project activities (data collected under Task 6 and 7) will be presented at the Arroyo Colorado Agriculture Issues Workgroup Meeting in Weslaco on July 24, 2008.

45% Complete

Subtask 1.6: TWRI will submit appropriate Reimbursement Forms.

The following actions have been completed during this reporting period:

- a. TAES submitted an invoice in the amount of \$9,905.72 covering all TAES expenses to April 30, 2008. Total funds expended on the project thus far is \$82,252.13.

20% Complete

Subtask 1.7: TWRI will develop (Months 1-3), host and maintain (Months 3-36) an internet website for the dissemination of information on educational, monitoring and demonstration activities taking place across the Arroyo Colorado watershed. Website delivery of information will be the most time and cost effective way to disseminate information to interested people or groups.

The following actions have been completed during this reporting period:

- a. Nothing to report at this time.

40% Complete

TASK 2: Compilation and Evaluation of Prior Studies and Data

Subtask 2.1: TWRI, with assistance from members of the Ag Monitoring Oversight Committee, will compile historical water quality data and information from previous studies and conduct a detailed analysis of the most significant water quality parameters to investigate the trends and the different biological and physical process taking place in the watershed that contribute to changes in water quality in the Arroyo

The following actions have been completed during this reporting period:

- a. Historical data, in the form of individual databases is being gathered by TWRI. These include Nueces River Authority data, Texas Agricultural Extension Service data (Fipps et. al.), Texas Stream Team data and possibly (if available) self-reporting data from the waste water treatment facilities. These databases (again if accessible) will be posted on the Arroyo Colorado website at <http://www.arroyocolorado.org/Data.php>. This site will serve as a clearing house of data available for the general public.
- b. A compilation of historical data collected related to agricultural issues was also summarized in the draft report submitted to TSSWCB on June 30, 2008.

30% Complete

Subtask 2.2: TWRI, with assistance from members of the Ag Monitoring Oversight Committee, will organize the results from the earlier non-point source pollution projects conducted in the Arroyo Colorado watershed and summarize the results and conclusions of these studies.

The following actions have been completed during this reporting period:

- a. Draft report of summarized data was submitted to TSSWCB on June 30, 2008.

50% Complete

Subtask 2.3: TWRI, with assistance from members of the Ag Monitoring Oversight Committee, will identify critical data gaps that should be filled.

The following actions have been completed during this reporting period:

- b. Draft report of identified data gaps was submitted to TSSWCB on June 30, 2008.

50% Complete

Subtask 2.4: TWRI will transfer results to TCE to be used to develop educational material through the FY05 Arroyo Education Project.

The following actions have been completed during this reporting period:

- a. Nothing to report at this time.

0% Complete

TASK 3: Inventory Conservation Practice Implementation

Subtask 3.1: TAES-Temple, with assistance from TCE, USDA-NRCS, USDA-FSA, the TSSWCB Harlingen Regional Office, and the SWCDs, will identify all producers in the watershed.

The following actions have been completed during this reporting period:

- a. Producer data was received from TSSWCB and is now with personnel at TAES-Temple and is being compiled.

100% Complete

Subtask 3.2: TAES-Temple, with assistance from TCE, USDA-NRCS, USDA-FSA, the TSSWCB Harlingen Regional Office, and the SWCDs, will compile information on the location and types of Conservation Practices implemented in the Arroyo Colorado Watershed since 1995. This will include, but not be limited to, practices implemented through the Environmental Quality Incentives Program (EQIP) and the Water Quality Management Plan (WQMP) Program.

The following actions have been completed during this reporting period:

- a. TSSWCB provided WQMP data to TAES-Temple. No EQIP data is included in the database provided.

50% Complete

Subtask 3.3: TAES-Temple will assemble a geo-referenced database and develop a map (hard copy and electronic) displaying conservation practice implementation information collected in Subtask 3.2.

The following actions have been completed during this reporting period:

- a. TSSWCB provided data was transferred to GIS specialist at TAES-Temple and is currently being analyzed to develop into a map.

30% Complete

Subtask 3.4: TAES-Temple will transfer the information from Subtask 3.1 and Subtask 3.3 to TCE for use in targeting educational activities.

The following actions have been completed during this reporting period:

- a. Nothing to report at this time.

0% Complete

Subtask 3.5: TAES-Temple will identify areas needing priority implementation work through correlation with Task 4 and the results from Tasks 6-9.

The following actions have been completed during this reporting period:

- a. Nothing to report at this time.

0% Complete

TASK 4: Update Land Use/Land Cover Data

Subtask 4.1: The Spatial Sciences Lab (SSL) will obtain 1998 LULC for the Arroyo Colorado Watershed from TCEQ and all data used to produce it. Coordinate with TPWD and the Habitat Work Group to obtain relevant recent LULC data. Identify the major changes from 1998 to 2005.

The following actions have been completed during this reporting period:

- a. Data obtained and a draft LU/LC map was submitted to TSSWCB on CD during this past quarter. SSL is awaiting approval from TSSWCB to finalize the LU/LC map.

90% Complete

Subtask 4.2: SSL will obtain 2003 LANDSAT ETM+ Data, Path 26/ Row 42 and Path 27/ Row 42. Proceed to image classification at a level equivalent to the MRLC classification to level 2.

The following actions have been completed during this reporting period:

- b. Data obtained and a draft LU/LC map was submitted to TSSWCB on CD during this past quarter. SSL is awaiting approval from TSSWCB to finalize the LU/LC map.

90% Complete

Subtask 4.3: If available, SSL will obtain applicable digital data on cropland from USDA – FSA and add up to level 2 classification.

The following actions have been completed during this reporting period:

- c. Data obtained and a draft LU/LC map was submitted to TSSWCB on CD during this past quarter. SSL is awaiting approval from TSSWCB to finalize the LU/LC map.

90% Complete

Subtask 4.4: If available, SSL will obtain digital location data on citrus production from USDA-APHIS and add up to level 2 classification.

The following actions have been completed during this reporting period:

- d. Data obtained and a draft LU/LC map was submitted to TSSWCB on CD during this past quarter. SSL is awaiting approval from TSSWCB to finalize the LU/LC map.

90% Complete

Subtask 4.5: If available, SSL will obtain digital data on locations of sugarcane fields from sugar mill and add up to level 2 classification.

The following actions have been completed during this reporting period:

- e. Data obtained and a draft LU/LC map was submitted to TSSWCB on CD during this past quarter. SSL is awaiting approval from TSSWCB to finalize the LU/LC map.

90% Complete

Subtask 4.6: SSL will obtain 2004 1m DOQ for Cameron, Hidalgo and Willacy counties. Improve the level 2 classification to a level 4 classification by manual digitalization.

The following actions have been completed during this reporting period:

- f. Data obtained and a draft LU/LC map was submitted to TSSWCB on CD during this past quarter. SSL is awaiting approval from TSSWCB to finalize the LU/LC map.

90% Complete

Subtask 4.7: SSL will obtain most recent digital data from irrigation districts and add up to level 4 classification.

The following actions have been completed during this reporting period:

- g. Data obtained and a draft LU/LC map was submitted to TSSWCB on CD during this past quarter. SSL is awaiting approval from TSSWCB to finalize the LU/LC map.

90% Complete

Subtask 4.8: SSL will obtain 1998 tile drainage data and if available, obtain updated data from TSSWCB and TCE.

The following actions have been completed during this reporting period:

- a. Tile drainage data was unavailable.

100% Complete

Subtask 4.9: SSL will obtain 1998 data on colonia and if available, obtain updated data from TWDB. Superpose colonia data to level 4 classification.

The following actions have been completed during this reporting period:

- h. Data obtained and a draft LU/LC map was submitted to TSSWCB on CD during this past quarter. SSL is awaiting approval from TSSWCB to finalize the LU/LC map.

90% Complete

Subtask 4.10: SSL will obtain 1998 data on non-colonia septic systems and if available, obtain updated data from Lower Rio Grande Valley Development Council (LRGVDC). Superpose non-colonia septic systems data to level 4 classification.

The following actions have been completed during this reporting period:

- a. Non-colonia septic systems data unavailable from the LRGVDC.

100% Complete

Subtask 4.11: SSL will obtain 1998 data on land Application and if available, obtain updated data from NPDES Permits. Superpose land application data to level 4 classification.

The following actions have been completed during this reporting period:

- i. Data obtained and a draft LU/LC map was submitted to TSSWCB on CD during this past quarter. SSL is awaiting approval from TSSWCB to finalize the LU/LC map.

90% Complete

TASK 5: Develop Quality Assurance Project Plan

Subtask 5.1: TWRI will develop a Quality Assurance Project Plan (QAPP) that will detail project goals and objectives relating to water quality monitoring activities; identify the data needed to fulfill those objectives; list field and laboratory methods; describe procedures and schedules to be followed; and specify a data management structure and the quality assurance protocols.

100% Complete

Subtask 5.2: TWRI will provide annual revisions and necessary amendments to the QAPP to the TSSWCB and EPA.

The following actions have been completed during this reporting period:

- a. TWRI provided TSSWCB via e-mail notification of minor changes within task 6 activities. The following are changes outlined in the email to TSSWCB dated June 9, 2008.
 - Drainage ditch site (HC2), which is on 493 is difficult to sample due to poor access and has excessive flow. Additionally, it possibly drains more than agricultural outflows. Andy Garza suggested an alternative site (a drainage ditch across from 493), which is better suited for sampling as it contains more vegetation, has better access and handles solely ag drainage.
 - It was recommend to change the site description and lat/long coordinates listed in Table B1.1 so that the QAPP can be updated in the next annual revision..1 in the QAPP.
- b. Other QA/QC issues did arise during the past quarter as sampling events were missed under task 7. Summaries of these issues were provided to personnel involved with copy to TSSWCB.

0% Complete

TASK 6: Perform Sub-Watershed Monitoring and Measure Pollutant Attenuation in Drainage Ditches

Subtask 6.1.1: TAMUK will perform routine monthly grab sampling at four drainage ditch sites.

The following actions have been completed during this reporting period:

- a. Two sampling events May 27th/June 3rd and another on June 27th were carried out to collect samples at the drainage ditches.
- b. Sample analysis is currently being carried out for the June 27th sampling event following the QAPP holding time and analysis protocol guidelines.

20% Complete

Subtask 6.1.2: TAMUK will periodically operate automated samplers and water-level recorders at all four drainage ditch sites to characterize the effects of run-off generated by high storm flow pulses.

The following actions have been completed during this reporting period:

- a. activity will be started once the first-flush (or saturation of soil after initial rainfalls) have occurred to provide a consistent runoff event.
- b. As access to electricity is an issue at drainage ditches, new battery-operated samplers capable of functioning without electricity have been identified and are being procured for the project.

2% Complete

Subtask 6.1.3: Stage-discharge relationships will be developed, maintained and updated, as necessary, for all drainage ditch sites.

The following actions have been completed during this reporting period:

- a. Two data points for establishing the stage-discharge relationship have been obtained at all 4 sampling sites. These measurements were carried out using the Marsh-McBirney flowmate. The depth area velocity method is being applied to obtain the required stage discharge relationships.
- b. An impeller type flow-meter (suitable at high flows) was also tested during the sampling campaign. The depth area/velocity method will be used to obtain stage discharge measurements using this instrument as well.
- c. Collection of additional points was not possible in this quarter as lack of rainfall and irrigation activities have essentially kept the flows and depths in the ditches relatively constant.

10% Complete

Subtask 6.1.4: TAMUK will conduct routine general maintenance of all automated sampling and water level equipment to help ensure that these instruments will operate properly during storm flow conditions.

The following actions have been completed during this reporting period and will continue in subsequent project periods:

- a. A new flowmeter capable of measuring high discharges was field tested (in selected irrigation canals) during the June sampling event. This instrument was seen to provide reproducible results and will be employed as necessary during high flows in the drainage ditches.

10% Complete

Subtask 6.1.5: TAMUK will develop a report summarizing the monitoring data.

The following actions have been completed during this reporting period:

- a. A report is being compiled on the data collected so far, data from June 27th sampling campaign are being analyzed and will be included in the report.
- b. A project update summarizing the data collected so far will be presented on July 24th at the Arroyo Colorado Agriculture Workgroup Meeting in Weslaco.

5% Complete

Subtask 6.2.1: In coordination with the sub-watershed monitoring sites discussed in Task 6.1, TAMUK, with assistance from TAES, will assess nitrogen and phosphorous mitigation processes in drainage ditches.

The following actions have been completed during this reporting period:

- a. Adequate data is not available at this point to carry out this analysis. The task will be carried out once adequate sampling has been carried out.

10% Complete

Subtask 6.2.2: TAMUK, with assistance from TAES, will develop a suite of suitable BMPs that incorporates the information obtained from the investigation of agricultural drainage ditches described in Subtask 6.2.1 above.

The following actions have been completed during this reporting period:

- a. Nothing to report at this time.

0% Complete

TASK 7: Evaluate BMPs to Reduce NPS Pollution at the Farm Level

Subtask 7.1: Selection of sites. Texas Cooperative Extension (TCE), Texas Agricultural Experiment Station-Weslaco (TAES-Weslaco), and Texas A&M University-Kingsville (TAMUK) will select suitable demonstration sites to assess loadings from agricultural runoff and leachate produced by different BMPs and compare traditional practices with innovative BMP for the three (3) most representative crops of the watershed. Six (6) representative sites will be characterized and physical characteristics of such as topography, soil texture, salinity and fertility levels, water quality and crops will be obtained and evaluated

The following actions have been completed during this reporting period:

- a. Six sites have been selected and included in the QAPP.

100% Complete

Subtask 7.2: Installation of sensors. Flow meters, rain gauges, piezometers, soil water sensors will be installed by TAES-Weslaco in the demonstration sites

The following actions have been completed during this reporting period:

- a. **Site FA** (no drain tiles): Watermark sensors were installed to monitor soil moisture along the season on this sorghum field on March 7 on one location at 6, 12 and 24 inches deep and removed on June 20 for harvest reasons.

- b. **Site FB** (no drain tiles): Watermark sensors were already installed by the ADI on one location from this sugarcane field at 6, 12 and 24 inches deep to monitor soil moisture along the season.
- c. **Site FC** (no drain tiles): Watermark sensors installed to monitor soil moisture along the season on March 7 on one location at 6, 12 and 24 inches deep and removed on June 13 for harvest reasons. Corn was harvested mid-June.
- d. **Site FD** (drain tiles): After sorghum was planted, Watermark sensors were installed to monitor soil moisture along the season on one location at 6, 12 and 24 inches deep and removed for harvest reasons.
- e. **Site FE** (no drain tiles): The drain tile outlet could not be located so far. Sorghum is not harvested yet and the Watermark sensors that were installed on March 6th on one location at 6, 12 and 24 inches deep to monitor soil moisture along the season were removed on July 1st to prepare for harvest.
- f. **Site FF** (drain tiles): The drain outlet has been under water most of the time. This could be an issue when sampling will occur. Corn has been harvested mid-June.

10% Complete

Subtask 7.3: Collection and analysis of Data. Runoff and leachate samples will be collected by TAES-Weslaco for the different practices and laboratory analyses will be performed to determine agricultural loadings such as nutrients and solutes. BMPs and traditional practices will be compared economically and their relationship with nutrient loadings will be established

The following actions have been completed during this reporting period:

- a. Water use (irrigation depth) and runoff (flow ending into drain ditches) have been evaluated for **sites FA** (1 irrigation event), **FB** (2 irrigation events), **FC** (1 irrigation event), **FE** (1 irrigation event) **and FF** (1 irrigation event) with flow meters, circular flumes and pressure transducers. **Site FD** was not evaluated.
- b. Water sampling has been done and samples sent to TAMUK for analysis regarding **sites FA, FC and FF**. At report time, no analysis results were received from the laboratory to assess the water quality. The only water quality parameters at our disposal are the ones measured at the field.
- c. TAES-Weslaco faced several factors that delayed sampling or caused lack of sampling during 2008 season:
 - Late start in the season. All equipment was not available for proper sampling regarding QAPP protocol, which resulted in missed irrigation events; an unaffordable error when sometimes only 2 irrigation events occur within a season.
 - Volume handling concerns for water samples at the laboratory
 - Lack of communication between the farmer and the technician taking the samples (farmers did not always call during an irrigation event, or technician was not available to take the call, or a language barrier)
- d. In order to insure a proper sampling in the future, these actions have been decided:
 - Farm managers will be called 3 times a week when irrigation is expected to occur so it won't be missed.
 - Farmers will get cellular phone numbers from Task 7 technician so he can be reached at any time before an irrigation event occurs.

- Signs will be posted in the fields reminding the farmers about the project.
 - Notice of sampling (3-5 days before sampling) will be given to TAMUK laboratory to ensure their ability to analyze the water samples
- e. **Due to the delay and missed sampling events, all sampling for task 7 was postponed until spring 2009. Thus, a one-year extension will likely be requested.**

0% Complete

Subtask 7.4: Field Days and Result Demonstrations. TCE will conduct one field day and one result demonstration per year to demonstrate and transfer the result to farmers and interested persons. Newspaper and communications media will be used to divulge the results

The following actions have been completed during this reporting period:

- a. Nothing to report at this time.

0% Complete

TASK 8: Develop Final Report

Subtask 8.1: TWRI, with assistance from TAES and TAMUK, will prepare final report for submittal to the TSSWCB.

0% Complete

III. Related Issues/Current Problems and Favorable or Unusual Developments

- Issues that affected the sampling edge-of-field sampling task (task 7) were brought to the attention of TWRI during this past quarter. Unfortunately, these issues were not caught in time and some fields completed irrigation events without TAES-Weslaco being able to obtain a sample for this season. Therefore, after conversations with TAMUK and TSSWCB, it was decided that all sampling for task 7 will be postponed until spring 2009. Thus, a one-year extension will likely be requested.

IV. Projected Work for Next Quarter

Task 1

- Year 2, Quarter 3 Report will be submitted.
- Host an Ag Issues Workgroup meeting on July 24, 2008 (including members of the Ag Monitoring Oversight Committee) to discuss project status.
- Participate in an AC Steering Committee Meeting (July 24, 2008) and provide a project update to the Steering Committee.

Task 2

- Address written comments from TSSWCB.

Task 3

- Begin developing actual map of BMPs and land covered under WQMPs.

Task 4

- Address written comments from TSSWCB to finalize and post LULC map.

Task 5

- Revisions, if necessary, to the QAPP will be submitted

Task 6

- Sub-watershed monitoring will continue.

Task 7

- Signs will be created for posting at the irrigation sites to notify personnel to contact employees prior to irrigation events.
- BMP evaluation will be put on hold until the next season (early 2009).

APPENDIX A

Special Ag Workgroup Meeting May 29, 2008 Summary

Attendees:

Pam Casebolt
Aaron Wendt
Lee Munz
Brad Cowan

Andy Garza
Laura De La Garza
Cecilia Wagner

Increasing the maximum of cost-share:

- TSSWCB will recommend increasing the maximum allowed per individual from \$10,000 to \$15,000 at the July Board Meeting. The one-time rule would remain. But they are working on the sub-application process. A producer can multiple times, but in the end, the total cost share he could receive is the cap (\$15,000). Current rule is that the producer has to apply for all of the cost share at one time.
- TSSWCB clarified that the Water Quality Management Program has a statewide rule of \$10,000 maximum. SWCDs can then set their own maximum but it can not exceed \$10,000. The fact that the AC districts are bringing this to the board, it would affect the entire program statewide. At that point, the districts then have to take action to up their maximum. But even then, the existing workplan that is leading the cost-share program has a maximum set in it at \$10,000 so if the Board and then the districts take action, they would have to follow with contract amendments to make sure the AC program can use the maximum passed by the Board.

Targeting Producers:

- Is there a map of all producers who have received cost share, what cost-share practices they have implemented and who have WQMPs?
 - Yes, this is part of Task 3 of the Ag Assessment Project
 - With retirement of Rosenthal, development of map was delayed. Kannan was waiting on TSSWCB to deliver the data, which occurred in mid-May 2008
 - Kannan will then develop a map, which is in progress now
- From map, information about targeted education programs can be developed including the possibility of direct mailing, contact and cost-share priorities.

Future funding needs:

- With 319 funds coming again, what additional funds are needed to address ag issues in the AC?
 - Andy mentioned wanting more funds to provide assistance from the technical side (i.e. provide follow-up to producers who have developed a WQMP). Currently Ronnie Ramirez writes plans, but could they allocate more of his time to follow up.
 - This would go along the lines of weaning the producers off of 319 for cost-share and rather use 319 for technical assistance and keep using the 503 as cost-share money.
 - Current 503 allocations: Hidalgo - \$85,500; Cameron - \$48,000 to \$50,000

- Current 319 workplan for costshare: Cameron – \$56,000 (started with \$550,000); Hidalgo – \$56,000 (started with \$230,000)
- With the current budget, Andy feels they have enough funds to carry them through Aug 2009 to provide technical assistance. **But it is clear that next year, we will need a 319 proposal to TSSWCB to provide technical assistance for WQMPs and maintaining cost-share practices and we would just rely on the 503 program for actually implementing practices.**

Increasing the number of eligible practices:

Existing Practices

- The WQMPs is site-specific to the producer doing it. Table 11 and Table 12 in the WPP consist of practices that we are targeting and those that we would like to target for WPP implementation, respectively. *Note: TSSWCB has a master list of cost shareable practices, which do not necessarily include ‘management practices’.* Tables 11 and 12 include both management practices and implemented practices.
- Additionally, the 319 workplan defines which practices can be funded. The 319 workplan says cost-share will be provided to practices that reduce nutrient loading (mostly table 11 if you want a list)
- List of approved practices is available on the TSSWCB web site.
 - **Pam will email everyone the TSSWCB practice list.**
 - **Andy will email the District’s practice list.**
 - From these lists, we need to know which are management practices, which are practices that are cost-shareable, and which are funded by 319, 503 and NRCS, which are Cameron County, which are Hidalgo County.
 - **Andy will send an initial list and then from there, we can modify it if necessary.**

Adding Practices

- Aaron is interested in Channel Stabilization and Channel Bank Vegetation. The reason they are probably not on the list is because 1) they are not installed often or 2) they are not cost-effective. Many practices ‘not on the list’ take a lot of money. We would need to present it to the Board and provide justification of its effectiveness and prove that people would actually put them into place to get them added to the list.
- What is an example of bank stabilization?
 - Cedar Creek (near Dallas) – producers have implemented practices along the creek. But in the AC – it is probably the drainage ditch stabilization, which is not the grower’s responsibility but rather the drainage districts.
 - Would 319 funds help drainage districts? Yes – which is the point of the TWRI/TAMUK study where we are quantifying the effects of the drainage ditch vegetation.
- What about Constructed Wetlands as a possible practice?
 - Currently not on the TSSWCB list, which would require the entire process that was described above of getting the board to approve an additional practice. NRCS has a program under the current farm bill that is wildlife habitat development, which could possibly be considered wetland development.

Practice Fact Sheets

- TSSWCB BMP manual (<http://www.tsswcb.state.tx.us/files/contentimages/bmp.pdf>).

- NRCS also has fact sheets on most of their practices. Also field office tech guide
- Fact sheets should be brief and educational: what is the practice; why we are doing it (its impact on the AC), and a map on the back. Provide a little more detail than the bmp manual and a little less detail than the FOTG.
- Needed Fact Sheets:
 - Rotation
 - Residue mgnt
 - Irrigation mgmt
 - Tailwater recovery
 - Landleveing – definition, benefits, where practice applies, pictures with it.
 - Bank stabilization