

Process for Updating Kansas WRAPS Plans to Address EPA's Nine Required Elements for Watershed Plans to Restore Impaired Water Bodies

Introduction

The U.S. Environmental Protection Agency has identified nine minimum elements that need to be included in a watershed plan for impaired waters. Impaired waters are rivers, streams, lakes or wetlands which have a Total Maximum Daily Load established by KDHE and water bodies listed on the Kansas 303(d) List of Impaired Waters. The EPA nine minimum elements must be addressed in watershed plans that utilize EPA Section 319 funds for plan implementation for these water bodies. These elements are described in EPA's "Handbook for Developing Watershed Plans to Restore and Protect Our Waters, March 2008" (www.epa.gov/nps/watershed_handbook). Following is a process for ensuring that Kansas Watershed Restoration and Protection Strategy (WRAPS) plans satisfy these requirements. The nine elements include:

1. *Identification of causes of impairment and pollutant sources or groups of similar sources that need to be controlled to achieve needed load reductions, and any other goals identified in the watershed plan.*
2. *An estimate of the load reductions expected from management measures.*
3. *A description of the nonpoint source management measures that will need to be implemented to achieve load reductions and a description of the critical areas in which those measures will be needed to implement the plan.*
4. *Estimate of the amounts of technical and financial assistance needed, associated costs, and/or the sources and authorities that will be relied upon to implement this plan.*
5. *An information and education component used to enhance public understanding of the project and encourage their early and continued participation in selecting, designing, and implementing the nonpoint source management measures that will be implemented.*
6. *Schedule for implementing the nonpoint source management measures identified in this plan that is reasonably expeditious.*
7. *A description of interim measurable milestones for determining whether nonpoint source management measures or other control actions are being implemented.*
8. *A set of criteria that can be used to determine whether loading reductions are being achieved over time and substantial progress is being made toward attaining water quality standards.*
9. *A monitoring component to evaluate the effectiveness of the implementation efforts over time, measured against the criteria established under item 8.*

Final DRAFT April 6, 2009

Element 1: <i>Identification of causes of impairment and pollutant sources or groups of similar sources that need to be controlled to achieve needed load reductions, and any other goals identified in the watershed plan.</i>	
Action Steps	Resources
<ul style="list-style-type: none"> • Identify the impaired water bodies within the watershed from the KDHE 303(d) list (http://www.kdheks.gov/tmdl). This may already be identified in existing plans. Note when KDHE intends to develop a TMDL for the impaired water. • Identify Total Maximum Daily Loads (TMDLs) for the impaired water bodies in the watershed (http://www.kdheks.gov/tmdl). Existing plans should already identify existing TMDLS. Note the implementation priority placed on the TMDL by KDHE and the State Water Plan. • TMDL and 303(d) list information should be summarized in the plan. Water bodies that are not impaired but need protection from potential pollution threats should also be considered. 	<p><u>KDHE can provide</u></p> <ul style="list-style-type: none"> • Map of impaired waters bodies for the WRAPS watershed • Timetable for development of TMDLs • List of high, medium and low priority TMDLs for the WRAPS watershed • Map of High Priority TMDLs • Fact sheet summarizing TMDLs and impaired water bodies for the WRAPS watershed <p><u>Other Resources</u></p> <ul style="list-style-type: none"> • Existing WRAPS documents
<ul style="list-style-type: none"> • Identify the primary point and nonpoint sources of pollution that need to be controlled to address the impairments. Existing plans should identify the primary sources. A list of Kansas NPS pollutant source categories is provided in Attachment 1. 	<p><u>KDHE can provide</u></p> <ul style="list-style-type: none"> • TMDL documents • Source water assessments • Map of regulated facilities • Land use/land cover maps <p><u>Other Resources</u></p> <ul style="list-style-type: none"> • Existing WRAPS documents • WRAPS Service Providers • NRCS Rapid Watershed Assessments • Conservation District Information <ul style="list-style-type: none"> ○ Local NPS Management Plans • SCC - Existing TMDL needs inventories for

Final DRAFT April 6, 2009

	<p>high priority TMDL watersheds</p> <ul style="list-style-type: none"> • LEPP personnel • Other available reports, plans and local expertise
<p><i>Element 2: An estimate of the load reductions expected from management measures.</i></p>	
<p><i>Element 3: A description of the nonpoint source management measures that will need to be implemented to achieve load reductions and a description of the critical areas in which those measures will be needed to implement the plan.</i></p>	
Action Steps	Resources
<ul style="list-style-type: none"> • The TMDLs should provide the applicable load reduction goals to address the water quality impairments. If the TMDL does not specify load reduction goals, KDHE should be requested to interpret the TMDL and provide an estimate of the necessary load reductions. • If a TMDL has not been developed for the impaired water bodies, the impaired water bodies should be prioritized and presented to KDHE to request TMDL development and load analysis. 	<p><u>KDHE can provide</u></p> <ul style="list-style-type: none"> • TMDL load reduction goals (or estimate of load reduction necessary to achieve the TMDL) • Current 303(d) listed waters with anticipated schedule for TMDL development <p><u>Other Resources</u></p> <ul style="list-style-type: none"> • Existing WRAPS documents
<ul style="list-style-type: none"> • Many existing WRAPS plans generally identify the types and numbers of best management practices to be implemented, but may not estimate the corresponding pollutant load reductions or identify priority subwatersheds for BMP implementation. • Critical areas (priority subwatersheds) should be identified (include a map) where BMP implementation should be focused initially and an inventory of BMP needs conducted. If the plan does not already identify critical areas, they can be identified by the SLT using a variety of methods (see Resources) • Priority subwatersheds should be identified at the HUC-12 level (or smaller) to facilitate targeted implementation. Targeting 	<p><u>KDHE can provide</u></p> <ul style="list-style-type: none"> • TMDL assessment information (high and medium priority TMDLs should be emphasized. Low priority TMDLs should be deferred to KDHE for further refinement). • Basic watershed modeling to identify priority subwatersheds based on estimated pollutant loading • Analysis of KDHE water quality monitoring data • Estimates of load reductions for BMPs

Final DRAFT April 6, 2009

<p>within a HUC 12 is desirable if sufficient assessment information is available. Additional assessment and targeting activities should be described in the plan if needed.</p> <ul style="list-style-type: none"> • Once the types and numbers of BMPs to be implemented are determined, the corresponding load reductions can be estimated using various methods. • Documentation of BMP effectiveness should be provided. Kansas State University has prepared a publication that estimates the effectiveness of various agricultural BMPs in reducing particular pollutant loads (Attachment 2). • Once the load reductions from the management measures to be implemented are estimated, they can be compared to the total load reductions needed from Element 2 and the adequacy determined. Adjustments can be made to the recommended management measures in the plan (or to the TMDL load reduction goal) if needed. • 	<ul style="list-style-type: none"> • Land use/land cover maps <p><u>Other Resources</u></p> <ul style="list-style-type: none"> • WRAPS Service Providers • Existing WRAPS documents • Existing hydrologic models for the watershed • NRCS Rapid Watershed Assessments • Conservation District Information <ul style="list-style-type: none"> ○ Local NPS Management Plans • SCC - Existing TMDL needs inventories for high priority TMDL watersheds • KDWP Biological Surveys • Other existing studies, assessments and local expertise
<p><i>Element 4: Estimate of the amounts of technical and financial assistance needed, associated costs, and/or the sources and authorities that will be relied upon to implement this plan.</i></p>	
<p>Action Steps</p>	<p>Resources</p>
<ul style="list-style-type: none"> ○ Many existing WRAPS plans contain this information. If not, estimates for both technical and financial assistance should be made by the SLT using available sources, such as NRCS, SCC and Conservation District data. 	<ul style="list-style-type: none"> ○ Existing WRAPS documents ○ Applicable agencies and programs can be identified from various sources, including: <ul style="list-style-type: none"> ○ KS-WRAPS website (www.kswraps.org) ○ TMDL documents ○ Local NPS Management Plans ○ Government agency and program directories ○ Other resources – e.g. websites/directories of nonprofit organizations and foundations

Final DRAFT April 6, 2009

	<ul style="list-style-type: none"> ○ Local knowledge, expertise and resources
<p><i>Element 5: An information and education component used to enhance public understanding of the project and encourage their early and continued participation in selecting, designing, and implementing the nonpoint source management measures that will be implemented.</i></p>	
Action Steps	Resources
<ul style="list-style-type: none"> • Target audiences, I&E goals and anticipated activities should be identified • Most existing WRAPS plans do a good job of addressing I&E activities • If few I&E activities are identified, the SLT should consider additional activities to be undertaken and incorporate them into the plan. 	<p><u>KDHE can provide</u></p> <ul style="list-style-type: none"> • Examples of successful I & E programs and activities <p><u>Other Resources</u></p> <ul style="list-style-type: none"> • Existing WRAPS documents • WRAPS Service Providers • Other Organizations – (e.g. KACEE, Conservation Districts, KSU Extension)
<p><i>Element 6: Schedule for implementing the nonpoint source management measures identified in this plan that is reasonably expeditious.</i></p> <p><i>Element 7: A description of interim measurable milestones for determining whether nonpoint source management measures or other control actions are being implemented.</i></p>	
Action Steps	Resources
<ul style="list-style-type: none"> • This should address short term (e.g. 1-3 years), mid-term (e.g. 3-5 yrs) and long term (e.g. 10+ yrs) timeframes • Schedules should identify the primary activities and management measures to be implemented on a yearly basis • Interim milestones should be included that can be measured to monitor progress in implementing the desired management measures, such as: <ul style="list-style-type: none"> ○ Number and types of BMPs implemented ○ Number of applicable permits/certifications issued 	<p><u>KDHE can provide</u></p> <ul style="list-style-type: none"> • Suggested interim milestones <p><u>Other Resources</u></p> <ul style="list-style-type: none"> • WRAPS Service Providers • Conservation Districts • SCC, NRCS, FSA

Final DRAFT April 6, 2009

<ul style="list-style-type: none"> ○ Modeled or measured results ○ Other measurable social indicators of progress through information and education efforts, and outcomes from the SLT process 	
<p><i>Element 8: A set of criteria that can be used to determine whether loading reductions are being achieved over time and substantial progress is being made toward attaining water quality standards.</i></p>	
Action Steps	Resources
<ul style="list-style-type: none"> • The watershed plan should relate its long term goals to 1) the desired uses of the specific waters in the watershed and 2) the water quality threats (pollutants) to those uses. Each plan should indicate whether the plan intends to restore or protect those waters. • The plan should employ either of two tiers for establishing criteria: <ul style="list-style-type: none"> ○ Indicators expressed through use-based physical or biological observations (e.g. fish kills, algae blooms). Load reduction estimates may also be used as an indicator of improvements in water quality conditions. ○ Quality-based parameters expressed through chemical and biological quantified data. This should be coordinated with existing TMDLs or source water protection plans (e.g. atrazine concentrations, Macroinvertebrate Biotic Index scores). • The watershed plan should define the time period and the indicators/parameters that will be measured and evaluated at both the mid-point of implementation and for the expected endpoint of plan implementation. • Establish mid-point interim targets of initial implementation efforts in critical areas; these should measure expected changes in the indicators or parameters of waters subjected to the initial efforts at water quality improvement. 	<p><u>KDHE can provide</u></p> <ul style="list-style-type: none"> ○ Suggested criteria (indicators & parameters) ○ Suggested interim targets <p><u>Other Resources</u></p> <ul style="list-style-type: none"> • KSU, KBS, KDWP, USGS, COE, EPA • WRAPS Service Providers

Final DRAFT April 6, 2009

<ul style="list-style-type: none"> • A significant lag time may be associated with some pollutants and short term improvements in water quality may not be measurable. This should be considered when establishing interim targets. • Establish, with the aid of KDHE, criteria tied to achieving water quality standards to serve as the long-term evaluation of WRAPS implementation. 	
<p><i>Element 9: A monitoring component to evaluate the effectiveness of the implementation efforts over time, measured against the criteria established under item 8.</i></p>	
Action Steps	Resources
<p>Regardless of which tier of criteria the WRAPS utilizes, the following questions should be addressed by the monitoring plan.</p> <ul style="list-style-type: none"> • What indicators or parameters will be monitored? How do they relate to the BMPs being implemented? • Where (which sub-watersheds) will the monitoring occur? • When and how often will monitoring occur, both before and after implementation? • Will monitoring be conducted during implementation? • Who (State agencies, service providers) will do the monitoring? • How will monitoring be done (in-field data collection, modeling with ground truthing, routine observation, quality assurances)? • How are existing monitoring efforts (KDHE, KSU, USGS, KBS, KDWP, etc) incorporated into the WRAPS evaluation? • What additional resources need to be invested toward monitoring? • How will data be managed and shared? • Describe how implementation activity tracking will be coordinated with water resource monitoring. • Describe how the results of monitoring and evaluation will be fed back into the watershed planning process for the next iteration of plan revision and implementation strategy. 	<p><u>KDHE can provide</u></p> <ul style="list-style-type: none"> • State water quality monitoring network <p><u>Other Resources</u></p> <ul style="list-style-type: none"> • Agencies - KSU, KBS, KDWP, USGS, COE, EPA, NGOs • WRAPS Service Providers