Department of Ecology

Process Design: Voluntary Clean Water Guidance for Agricultural Activities

June 21, 2017

Purpose

The goal of this process is to produce voluntary clean water guidance for agricultural activities. The guidance document will identify the practices that are most effective in achieving and maintaining water quality standards for agricultural sources of nonpoint source pollution.

The document will be organized by practice (see example template). Under each practice the following information will be included:

- The water quality parameters the practice addresses.
- General practice information, applicability and key design considerations.
- Implementation considerations and cost information. Information will be provided on capital cost, operation and maintenance requirements and costs, potential cost savings, technical requirements, lifespan, land area requirements, and other implementation factors. Information on possible challenges and opportunities for voluntary implementation will also be included in this section.
- Effectiveness information. Wherever possible, quantitative estimates of pollutant reductions will be made. Where quantitative estimates are not possible a qualitative scale will be used. Information on supporting practices and limitations that may impact pollutant reduction performance will be listed. Pollutant reduction effectiveness information will be presented in a table that includes at a minimum the following water quality parameters/pollutants: bacteria, nutrients (nitrogen and phosphorous), sediment, temperature and toxics. When appropriate, pollutant reduction values will be presented in ranges.

Principles

- The process should promote collaboration, transparency and common understanding.
- Pollutant reduction determinations will be based on the use of sound science.
- The guidance will identify the practices that solely or in combinations support compliance with the water quality standards and protect all beneficial uses.
- Water quality protection and compliance with water quality standards is most likely achieved through using a combination of practices together at a site.

- It will be important to provide implementation support to encourage the adoption of voluntary clean water practices, particularly for practices that require significant investment, on-going maintenance, and/or take land out of agricultural production.
- The Department of Ecology, the Department of Agriculture, the Conservation Commission and Conservation Districts are important partners in the effort to increase the voluntary use of effective clean water practices at agricultural sites.

Structure

Ecology will use an advisory group whose members will serve on one of two workgroups – one to help evaluate the pollutant reduction effectiveness of practices and identify the practices that have the greatest pollutant reduction capabilities, and one to help assess implementation costs and barriers. The two workgroups will operate separately but in parallel. Opportunities for joint discussion will be provided during meetings of the full advisory group. The first meeting will be a joint meeting of the full advisory group. As work progresses the emphasis will shift to more workgroup meetings with fewer meetings of the full advisory group.

1. Advisory Group

a. *Identifying Participants*. Advisory group participants will be identified through a solicitation process. We will request that people interested in participating on the advisory committee submit information on their background, experience, and whether they are interested in participating on the implementation or effectiveness workgroup.

b. *Number of Participants.* The advisory group will consist of approximately 10-14 members. At least 5 members need to be qualified to participate on the effectiveness evaluation workgroup.

c. *Group Composition*. Our goal is to have a balanced mix of participants that represent diverse perspectives. Optimally, the advisory group will include a mix of representatives from the following stakeholders:

- Producers and producer groups
- Local government-conservation districts and county government
- State Government-Department of Agriculture, Conservation Commission, Department of Health, Department of Fish and Wildlife, Puget Sound Partnership and Department of Natural Resources
- Environmental groups
- Tribes
- Federal Government-Natural Resource Conservation Service (NRCS), Environmental Protection Agency, and National Oceanic and Atmospheric Administration
- Academia

d. *Workgroups*. Advisory group participants will serve on one of two workgroups – Implementation Evaluation Workgroup and Effectiveness Evaluation Workgroup. We will look for individuals who have an implementation background to serve on the Implementation Evaluation Workgroup and a technical/science background to serve on the Effectiveness Evaluation Workgroup when choosing participants for the Advisory Group. A majority of the work will be conducted during workgroup meetings.

e. *Advisory Group Meetings*. While the majority of the work in evaluating data and providing information and input to Ecology will be completed in the workgroups, meetings of the full advisory group provide an opportunity for all participants to understand and learn from each other's work. Further, full advisory group meetings will provide a venue to make sure the end product is cohesive and keep members up-to-date on the work as a whole.

2. Implementation Evaluation Workgroup

a. *Goal and Outcome*. The goal of the implementation work is to understand what it takes to implement effective clean water practices in agricultural settings, and to identify barriers to implementation as well as opportunities to encourage voluntary implementation of these practices.

b. *Implementation Evaluation Workgroup Composition*. The implementation evaluation workgroup will offer ongoing advice and input for the implementation sections of the guidance, and collaborate with the staff leading the workgroup. Workgroup participants will be identified through the solicitation process. We encourage participation from agricultural production interests, technical assistance providers, and individual producers. The implementation evaluation workgroup should include key staff from the Department of Agriculture and the Conservation Commission. Implementation workgroup members must possess one or more of the following experiences:

- Experience or education related to the implementation of best management practices in agricultural settings.
- Experience providing technical assistance on agricultural best management practices.
- Experience implementing agricultural best management practices on their own property.

c. *Approach*. The workgroup will compile, review, and synthesize information on the implementation considerations for practices including, but not limited to, capital cost, operation and maintenance requirements and costs, technical requirements, lifespan, land area requirements, and other implementation factors.

The implementation workgroup will also explore barriers and motivators for the implementation of clean water practices, with a view toward providing information that could inform subsequent work on how to increase voluntary implementation of practices. This should include structured interviews or other information gathering with both the target audiences for practices (i.e., agricultural producers) and technical assistance agencies such as local conservation districts, the NRCS, land grant universities, and voluntary program coordinators in city and county governments. Two documents will be

produced for each practice that is reviewed: (1) a technical support document (which details the literature and sources of information the workgroup reviewed and a detailed discussion of the relevant implementation information) and (2) a results summary that will be used for the implementation portion of the guidance document.

d. *Support Staff*. Support will be provided by Ecology staff or a third party. Support staff will support the implementation evaluation workgroup in the following ways:

- Plan the review-refine questions that the review will answer and develop a review protocol.
- Conduct review-search for implementation data/literature; select relevant data/information.
- Synthesize data/information into cost estimates, lifespan estimates, etc.
- Develop approach to identify implementation barriers.
- Write technical report and summary of the main review outcomes for the guidance document.

3. Effectiveness Evaluation Workgroup

e. *Goal and Outcome*. The goal of the effectiveness evaluation workgroup is to determine what amount of pollution control or reduction can be expected from practices. We anticipate this work will result in a table describing the pollutant reductions of individual practices for all water quality parameters, and an associated narrative describing each practice and its appropriate use to achieve the described pollutant reductions. Wherever possible, quantitative estimates of pollutant reductions will be made. Where quantitative estimates are not possible because of, for example, gaps in information or understanding, a qualitative scale will be used. It is not anticipated that each individual practice will, on its own, be 100% effective in eliminating all water pollution and supporting compliance with the water quality standards. Rather, to achieve full effectiveness combinations of practices may be needed.

f. *Effectiveness Evaluation Workgroup Composition*. The effectiveness evaluation workgroup will be composed of advisory group members with technical or science backgrounds. The workgroup will offer ongoing advice and input to the lead technical staff. The workgroup will offer advice on which practices to evaluate, data and information on effectiveness to compile and review, the synthesis process, and preparation of the effectiveness estimates. Workgroup participants will be identified and recruited to participate by Ecology. We will also invite stakeholders to identify potential workgroup participants. Our goal is to identify and recruit independent experts to participate on the workgroup.

Participants will need to demonstrate technical qualifications and expertise in water pollution control and/or identification and evaluation of practices to prevent or control pollution, ideally in an agricultural or other nonpoint setting. We encourage participants with publication experience and technical scientists with experience in conducting or reviewing research work to participate on this workgroup. The effectiveness evaluation workgroup will provide its input to Ecology, which has decision-making responsibility for identifying clean water practices for agriculture. Participants must have education or experience in agronomy or rangeland science, engineering, water quality, stormwater

management, fisheries/aquatic science, water quality modeling, or planning or conducting/reviewing effectiveness monitoring studies.

g. *Approach*. The workgroup will first compile information and data on the pollutant reductions of the identified practices. Second, the pollutant reduction data and information will be reviewed and synthesized to develop pollutant reduction estimates for each practice. The workgroup will consider science from all credible sources including peer-reviewed government and university research, and other published studies. Applicable historic information, privately produced technical reports, and unpublished data may have value and will be considered as long as they can be assessed for accuracy and credibility. Two documents will be produced for each practice that is reviewed: a technical support document and a results summary that will be used for the effectiveness portion of the guidance document.

h. *Lead technical staff*. The work of compiling and synthesizing pollutant reduction information will be carried out by technical staff at Ecology. The lead technical staff will regularly check in with the effectiveness workgroup for input and advice. The effectiveness evaluation will build on currently available science, research, and effectiveness evaluations conducted in Washington and other states. The lead technical staff will follow the steps described below:

    - Plan the Review- Refine questions that our review will answer and develop a review protocol.
    - Conduct the review-search for data/literature, select relevant data sources (articles and studies), assess the quality of methodology used in producing the data, and extract the data to synthesize.
    - Synthesize data into effectiveness estimates.
    - Write technical support document and summarize results for the guidance document.

i. *Support Staff*. Ecology will provide support staff that will assist the lead technical staff and the workgroup.

j. *Independent peer review (if necessary)*. If the technical evaluations of effectiveness are based largely on peer reviewed literature, a separate peer review of the outcome of this process may not be necessary. The decision to put the guidance through an independent peer review will be based on the quality of the information available and in consultation with the Effectiveness Evaluation Workgroup.

Identifying Practices

We will work with the full advisory group to compile a preliminary list of existing practices that are commonly used in Washington State to be evaluated. Any practice that is designed to reduce or eliminate water pollution, or has documented, measurable pollutant removal results will be included in the draft list. Members of the public will be able to propose additional practices for evaluation. When practices are proposed for evaluation the proponent should include information documenting the expected pollutant removal and demonstrate the applicability of the practice to agriculture. The aim is to produce an inclusive list of practices, but avoid evaluating practices that do not have a water quality nexus or lack sufficient information to be evaluated. To compile

the list of general practices we will review existing compilations of practices including, but not be limited to, the NRCS Field Office Technical Guide (FOTG), practices used by other states, and land grant university extension service guidance.

Once practices to evaluate are identified, there will be a sequencing step to determine how to move forward with the effectiveness evaluations for individual practices. We will identify the first practices that will be evaluated in consultation with the advisory group. Our goal is to complete as much of the effectiveness evaluation work as quickly as possible. We will therefore start with practices that have the broadest applicability and largest impact on water quality.

Decision Making

Ecology is tasked with identifying practices that will result in compliance with the water quality standards. Our goal is to use an inclusive process and the expertise of workgroup members to inform and guide our responsibility to complete the guidance.

Timing

Work to identify clean water practices for agriculture is an important part of implementing our state's Nonpoint Plan. Our intention is to proceed as efficiently as we can without sacrificing the quality of the work. The effectiveness evaluation and implementation evaluation workgroups should proceed roughly in parallel.

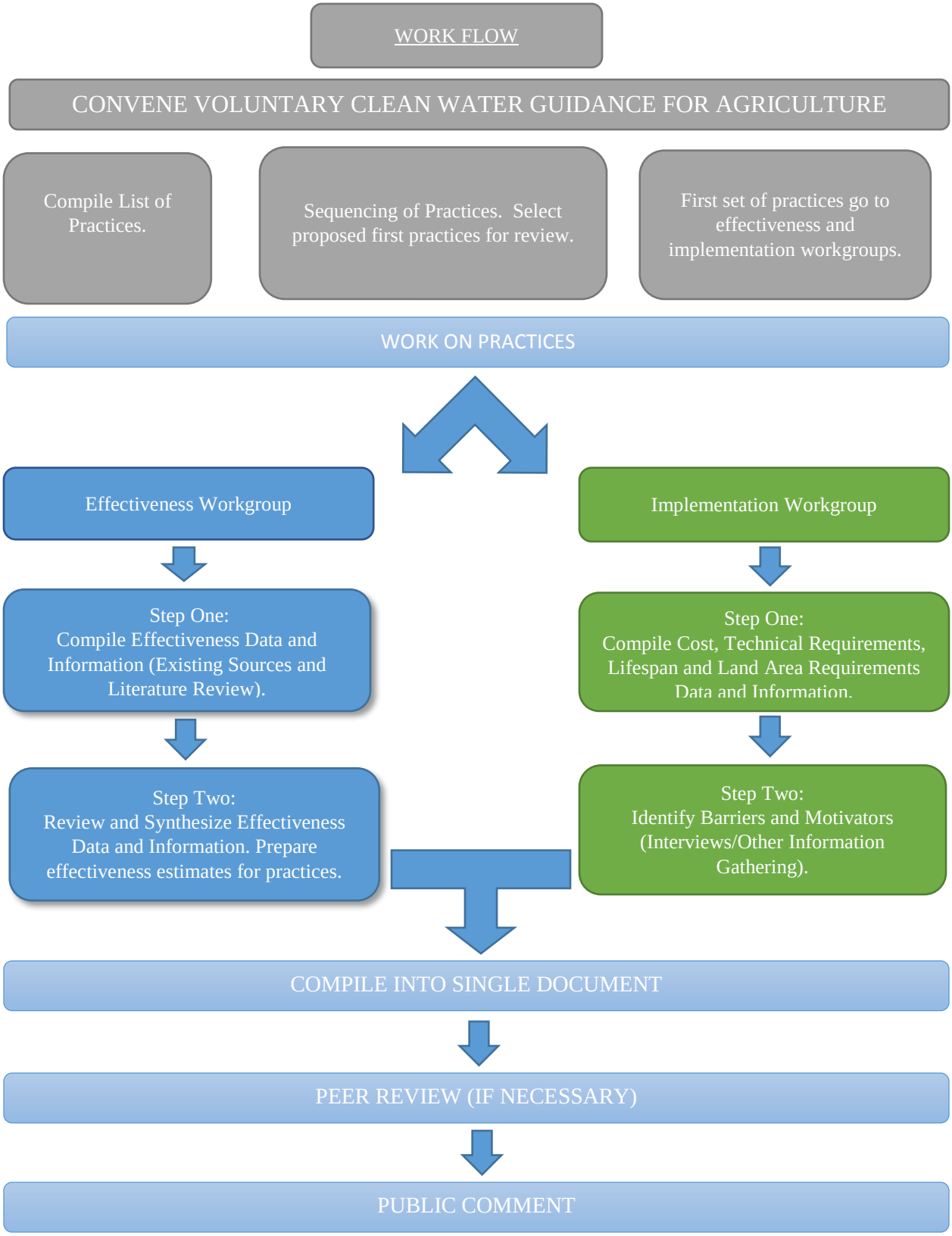
General Schedule:

- July 2017: Assemble Advisory Group.
- August 2017: First meeting of Advisory Group.
- August 2017: Compile list of practices and finalize first practices to evaluate.
- September 2017: First workgroup meetings.
- October 2017-June 2018: Conduct literature reviews, synthesize information and draft guidance for the first group of practices. Hold workgroup meetings as necessary (2-4 meetings), and full advisory group meetings as necessary (1-2 meetings).
- Summer 2018: Complete draft of guidance.
- Fall 2018: Guidance for first practices finalized.

We anticipate that we will have a rolling process where work on sets of practices are finalized and added to the guidance document on an annual and on-going basis.

Consultation with Tribes

We will offer consultation to tribal governments on a government-to-government basis.



* We anticipate that sets of practices will be finalized and added to the guidance document on an on-going basis. After a set of practices is compiled and reviewed, the workgroups will start on the next set of practices.

Template

Title of Clean Water Practice

Introduction/Practice Description

- Provide short description of the practice.

Water Quality Parameters

- List all the water quality parameters that the practice can address.
- Provide a short description of how the practice addresses each parameter.

Implementation Information

Cost Information

- Provide information on capital cost, and operation and maintenance costs.

Operation and Maintenance Considerations

- Provide information on operation and maintenance requirements.

Other Implementation Considerations

- Provide information on other implementation considerations. For example, technical requirements, lifespan, and land area requirements.

Barriers and Motivators for Implementation

- Develop a narrative description of the results of the implementation workgroup's analysis of barriers and motivators for the implementation of clean water practices, with a view toward providing information that could inform subsequent work on how to increase voluntary implementation of practices.

Pollutant Reduction Effectiveness Information

Pollutant Reduction Information

- Information on pollutant reduction estimates for practices and beneficial uses protected.
- Wherever possible, quantitative estimates of pollutant reductions will be made.
- Where quantitative estimates are not possible a qualitative scale will be used.
- Pollutant reduction information will be separated by water quality parameter.
- Pollutant reduction Effectiveness information will be presented in tables were appropriate.

Key Water Quality Design Considerations

- Provide information on practice design information that is necessary to achieve the described effectiveness.
- Provide information on other practices that can be implemented to improve effectiveness.

Additional Resources

- National Resource Conservation Service Field Office Technical Guide reference.
- Other guidance on how to implement the practice.

References

- List of references.

For more information:

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To request ADA accommodation including materials in a format for the visually impaired, call the Water Quality Program at Ecology, 360-407-6600. Persons with impaired hearing may call Washington Relay Service at 711. Persons with speech disability may call TTY at 877-833-6341.