



COLORADO

Colorado Water Conservation Board

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TO: Colorado Water Conservation Board Members

FROM: Tom Browning, P.E.
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DATE: January 11, 2016

AGENDA ITEM: 15 - Criteria and Guidelines for Fallowing-Leasing Pilot Projects

Staff Recommendation

Staff recommends Board approval of the updated Criteria and Guidelines for Fallowing-Leasing Pilot Projects, as proposed.

Background

Staff provided the Board with an informational update during the September 2015 CWCB meeting about proposed revisions to the Criteria and Guidelines for Fallowing-Leasing Pilot Projects. The original authorizing language for the program was contained in HB13-1248, with more recent legislative additions contained in SB15-198. Changes to the previously adopted Criteria and Guidelines (approved by the Board in November 2013) are based on those legislative requirements. Additional revisions came from the Criteria and Guidelines technical committee, which focused on real-world experiences related to the Catlin Canal Pilot Project. Revisions also include suggested feedback from the project applicant and interested stakeholders.

This agenda item will also include a report and brief presentation from the Lower Arkansas Valley Water Conservancy District regarding the first-ever pilot project that operated during the 2015 irrigation season. The Board may recall its approval of the Catlin Canal pilot during the January 2015 CWCB meeting. The success of the Catlin project serves as confirmation that ATMs, such as lease-fallowing projects, represent viable options for temporary water transfers. Projects of this nature are tied to goals contained in Colorado's Water Plan.



CRITERIA AND GUIDELINES
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Colorado Water Conservation Board and Colorado Division of Water Resources

Approved by CWCB: November 19, 2013

Proposed Amendments by CWCB: January xx, 2016

I. INTRODUCTION

A. Purpose of the Criteria and Guidelines Document

House Bill (HB) 13-1248, signed into law by the Governor on May 13, 2013, authorizes the Colorado Water Conservation Board (the “~~““““CWCB””””~~” or the “Board”) to administer a pilot program to test the efficacy of fallowing-leasing as an alternative to permanent agricultural dry-up.¹ The pilot program may consist of the selection of up to ten separate pilot projects, each lasting up to ten years in duration, to test the practice of fallowing irrigated agricultural land and leasing the associated water rights for temporary municipal use.

Senate Bill (SB) 15-198, signed into law by the Governor on May 1, 2015 amends the provisions of HB13-1248 by expanding the allowed uses for the leased water to include agricultural, environmental, industrial, and recreational uses. SB15-198 further amends the comment period provided in the law to better match the time periods between Board meetings.

HB13-1248 charges the Board, in consultation with the State Engineer, to establish criteria and guidelines for the application, selection, and approval process for pilot projects. This document, hereinafter referred to as the “Criteria and Guidelines,” was developed through the cooperation and collaboration of the CWCB, the State Engineer’s Office, and the public in accordance with that legislative directive: and was originally approved on November 19, 2013. The Criteria and Guidelines were amended and approved by the Board on XX, 2015. The amended document incorporates the provisions of SB15-198 and also amends technical guidance based on an evolving understanding of the operation of pilot projects.

~~These Criteria and Guidelines will become effective upon Board approval.~~

B. Background

The Statewide Water Supply Initiative estimates that by 2050, Colorado may lose 500,000 to 700,000 acres of currently irrigated farmland to meet municipal growth demands. The CWCB, IBCC, and Basin Roundtables have determined that the status quo path of continued “buy and dry” of agricultural lands is contrary to the vision for our state as being a great place to live and work. There is a widespread desire to minimize permanent agricultural dry up while finding ways to provide water for current and future municipal needs: as well as, environmental, industrial, and recreational needs, and the need to allow for more flexible use of water for irrigation. If significant progress can be made through alternative water transfers such as

¹ HB13-1248 was codified as Section 37-60-115(8), C.R.S. (2013).

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rotational fallowing and interruptible supply agreements, then the projected losses of irrigated acres could be noticeably reduced.

There is a recognized need to look for ways to increase flexibility within Colorado's system of water law, while respecting individual property rights. While there is much work to be done, alternative water transfers may very well provide a viable option for municipal water providers in the not-so-distant future. Through HB13-1248, as amended by SB15-198, fallowing-leasing pilot projects can be tested to overcome challenges and develop opportunities for temporary ~~agriculture-to-municipal~~ water transfers from agriculture use to other beneficial uses.

C. Rotational Fallowing Pilot Project Goals and Purposes

In HB13-1248, the Colorado General Assembly declared its commitment to develop and implement programs to advance various agricultural transfer methods as alternatives to permanent agricultural dry-up. It further stated that Colorado needs to evaluate whether fallowing-leasing is a practical alternative to traditional "buy and dry" methods, and determined that the CWCB is the appropriate state agency to test the efficacy of implementing fallowing-leasing.

The purpose of this document is to meet the spirit and intent of both HB13-1248 and SB15-198 and to enact Criteria and Guidelines in collaboration with the office of the State Engineer. Pilot project sponsors are strongly encouraged to review existing reference material specific to agricultural water transfers prior to submitting pilot project proposals or applications to the CWCB. This recommendation will help to further guide preparation of proposal or application materials. Suggested reference documents include, but are not limited to, the *FLEX Market Model Project Completion Report* (CWCB, et. al., June 30, 2013) and *Considerations for Agriculture to Urban Water Transfers* (Arkansas Basin Roundtable, September 10, 2008).

D. Content of this Criteria and Guidelines Document

1. Purpose of the Criteria and Guidelines

This Criteria and Guidelines document provides guidance for the pilot project selection, application, and approval process. As described in Section 37-60-115(8)(b), C.R.S. (2013), the general purpose of the pilot program is to:

- a. demonstrate cooperation among different types of water users, including cooperation among shareholders, ditch companies, water user associations, irrigation districts, water conservancy districts, water conservation districts, and municipalities;
- b. evaluate the feasibility of delivering leased water to temporary municipal, agricultural, environmental, industrial, and recreational users;
- c. provide sufficient data from which the CWCB, in consultation with the State Engineer, can evaluate the efficacy of using streamlined approaches for determining critical components of a fallowing-leasing plan, including historical consumptive use, return flow characteristics, the potential for material injury to other water rights, and

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conditions to prevent material injury to other water rights; and

- d. demonstrate how to operate, administer, and account for the practice of following irrigated agricultural land for leasing water for temporary municipal, agricultural, environmental, industrial, and recreational use without causing material injury to other vested water rights, decreed conditional water rights, or contract rights to water.

2. Components of the Criteria and Guidelines, according to statute

Pursuant to Section 37-60-115(8)(d), this Criteria and Guidelines document includes:

- a. the determination of an application fee and for selected pilot projects, an annual review fee;
- b. a listing of the information to be included in a pilot project application for approval, including a description of the proposed pilot project;
- c. the maximum quantity of transferable consumptive water use per year for any single pilot project;
- d. the identification of any geographic areas that are not eligible for pilot projects;
- e. provision for a time period of at least ~~75~~sixty days during which the CWCB shall accept comments after the applicant has provided notice of the application for approval of a pilot project;
- f. the requirement and criteria for a conference between the applicant for a pilot project, the State Engineer, and owners of water rights or contract rights to water that file comments on the application;
- g. guidelines for the operation and administration of the pilot projects to assure that a pilot project will effect only a temporary change in the historical consumptive use of the water right in a manner that will not cause injury to other water rights, decreed conditional water rights, or contract rights to water, and will not impair compliance with any interstate compact;
- h. criteria for selecting pilot projects that range in size and complexity;
- i. criteria for selecting pilot projects over a five-year period, ending December 31, 2018, to provide a window for potential pilot project sponsors to apply;
- j. provision for a requirement that a proposed pilot project meet applicable local government land use requirements, prevent erosion and blowing soils, and comply with local county noxious weed regulations;
- k. the requirement that, during the term of a pilot project, land and water included in a pilot project are not also included in a substitute water supply plan pursuant to Sections 37-92-308(5) or (7), C.R.S. (2013), an interruptible water supply agreement pursuant to Sections 37-92-309, C.R.S. (2013), or another pilot project;
- l. a requirement for periodic reports to the Board on the operation of a pilot project; and

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- m. a requirement that priority is given to pilot projects that can be implemented using existing infrastructure.

3. Additional components of the Criteria and Guidelines

This Criteria and Guidelines document also includes:

- a. a description of the submittal, selection, review, and approval process;
- b. pilot project selection criteria;
- c. guidance on accepted methodologies, modeling, and accounting practices; and
- d. ongoing requirements of an approved pilot project.

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II. CRITERIA AND GUIDELINES

A. Summary of the Submittal, Selection, Approval, and Review Process

The submittal and approval process for proposed pilot projects and pilot project applications entails four discrete steps:

1. submittal of a proposed pilot project to the Board for consideration and selection;
2. submittal of a pilot project application to the Board for consideration;
3. written determination by the State Engineer; and
4. approval of the pilot project by the Board.

*~~*Note: For any pilot projects intended to operate during 2014, the sponsor of a proposed pilot project may pursue step 1 and step 2 at the same time, effectively completing those steps in parallel and allowing for only one notice, one notice period, and a combined selection and approval process. However, the sponsor will do this at the sponsor's own risk since the final approval by the Board would then be based not only on the State Engineer's evaluation of the comprehensive engineering and resulting written determination, but also on threshold selection criteria such as the limit on the number of pilot projects, the number of pilot projects per basin, or whether the other standards provided in Sections 37-60-115(8)(a) and (b), are met.~~*

The following is a general summary of the process for completing the four discrete steps outlined above. Specific requirements for each step are described in greater detail later in this Criteria and Guidelines.

Step 1: submittal of a proposed pilot project to the Board for consideration and selection (see Section 37-60-115(8)(a) through(c)).

In order to be considered for selection, pilot project sponsors must submit a pilot project proposal to the Board containing, at a minimum, a general description of the proposed pilot project, the land to be fallowed, and the proposed municipal, agricultural, environmental, industrial, or recreational use, along with the items listed in Section II.F. below. ~~If the sponsor of a proposed pilot project is pursuing selection through step 1 prior to pursuing approval through step 2, the~~ The submittal for selection ~~should need~~ not include technical analyses regarding historic use, historic consumptive use, or return flows. ~~That~~ However, that detailed information ~~should instead must~~ be submitted as part of the application in step 2.

Following the submission of a pilot project proposal by a sponsor, the CWCB will post the proposal on its website and the sponsor shall provide written notice. Parties may submit comments on the proposed pilot project to the CWCB within 30 days of the notice, and the Board will consider the proposed pilot project for selection at its next regularly scheduled meeting that is more than 60 days after receiving the proposal.

Upon the Board's review and consideration, the Board may either select the proposed pilot project to participate in the program, request that a sponsor provide more information regarding the proposed pilot project for reconsideration by the Board at its next regularly

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scheduled meeting, or deny a proposal. If a proposed pilot project is selected, the sponsor shall then be required to submit a pilot project application to the Board.

Step 2: submittal of a pilot project application to the Board for consideration (see Section 37-60-115(8)(e)).

After selection by the Board, pilot project sponsors must submit a pilot project application to the Board for consideration. All pilot project applications must include, at a minimum, the information detailed in section II.G., below. In addition, pilot project applicants must provide notice of the application as provided in ~~in~~ Section 37-60-115(8)(e) and II.H., below. ~~If the sponsor of a proposed pilot project is pursuing selection and approval through step 1 and step 2 simultaneously, the notice requirements of both steps apply but may be satisfied concurrently.~~

The Board will receive comments on pilot project applications for a period of ~~seventy-five~~⁶⁰ days after notice of the application has been provided. At any time during the comment period, the Staff, the SEO, or the Applicant may call up to two informal meetings between all interested parties to review the application and to identify concerns. Within thirty days ~~of~~^{after} the end of comment period, the applicant for a pilot project, the State Engineer, and owners of water rights or contract rights to water that file comments on the pilot project application must hold a conference to confer about the pilot project application. Following the conference, the pilot project applicant and the owners of water rights or contract rights to water must file a joint report outlining agreed-upon terms and conditions for the proposed pilot project and explaining the reasons for failing to agree on any terms and conditions for the pilot project, if any.

Step 3: written determination by the State Engineer (see Section 37-60-115(8)(f)).

Following the application submittal process described above, the State Engineer will consider the pilot project application, comments received, and the joint report, if any. ~~The State Engineer will then~~Within 15 days after receiving the joint report, or if the Board does not receive any comments on the application, within 30 days of the end of the comment period, the State Engineer will make a written determination as to whether the pilot project can operate without causing injury and without impairing compliance with any interstate compact, as further described in Section II.J., below. The State Engineer's written determination will also provide terms and conditions necessary for pilot project operation and administration.

Step 4: approval of the pilot project by the Board (see Section 37-60-115(8)(f)).

If the State Engineer makes a favorable determination as to a pilot project as described above, the Board may in its discretion approve the pilot project application, adopting all terms and conditions recommended by the State Engineer, in addition to terms and conditions adopted by the Board at its discretion.

B. Application Fee

The application fee for pilot project applications is five hundred dollars (\$500), to be submitted to the CWCB at the time a pilot project application is submitted for consideration. There is no annual review fee for approved pilot projects.

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C. Pilot Project Selection Criteria

1. Pursuant to Section 37-60-115(8)(a), a proposed pilot project submitted to the Board to be considered for selection must demonstrate the practice of:
 - a. fallowing agricultural irrigation land; and
 - b. leasing the associated water rights for temporary municipal, agricultural, environmental, industrial, or recreational use.
2. In addition, consistent with the purpose of the pilot program as stated in Section 37-60-115(8)(b), proposed pilot projects must have the potential to:
 - a. in fallowing irrigated agricultural land for leasing water for temporary municipal, agricultural, environmental, industrial, or recreational use, demonstrate cooperation among different types of water users, including cooperation among shareholders, ditch companies, water user associations, irrigation districts, water conservancy districts, water conservation districts, and municipalities;
 - b. evaluate the feasibility of delivering leased water to the temporary municipal, agricultural, environmental, industrial, or recreational users;
 - c. provide sufficient data from which the Board, in consultation with the State Engineer, can evaluate the efficacy of using a streamlined approach, such as an accounting and administrative tool, for determining:
 - i. historical consumptive use,
 - ii. return flows,
 - iii. the potential for material injury to other water rights, and
 - iv. conditions to prevent material injury; and
 - d. demonstrate how to operate, administer, and account for the practice of fallowing irrigated agricultural land for leasing water for temporary municipal, agricultural, environmental, industrial, or recreational use without causing material injury to other vested water rights, decreed conditional rights, or contract rights to water.
3. The Board will not select a pilot project that involves:
 - a. the fallowing of the same land for more than three years in a ten-year period or the fallowing of more than thirty percent of a single irrigated farm² for more than ten consecutive years;^{3,4}

² For the purposes of this Criteria and Guidelines document, a “single irrigated farm” shall be defined as land owned and operated by one entity. All parts of the single irrigated farm should be contiguous or in close proximity.

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- b. the transfer or facilitation of the transfer of water across the continental divide by direct diversion, exchange, or otherwise; or
- c. the transfer or facilitation of the transfer of water out of the Rio Grande basin by direct diversion, exchange, or otherwise; or
- d. following-leasing from lands on more than one ditch-, if the use of more than one ditch would have the effect of circumventing the limitation on the number of pilot projects that can be authorized. The Board retains discretion to select a pilot project if more than one ditch is proposed to be used in a unified pilot project proposal.

4. The Board will give priority to pilot projects that can be implemented using existing infrastructure.

The sponsors of potential pilot projects should submit pilot project proposals to the CWCB in report form with narrative and necessary attachments to demonstrate each of the above selection criteria are met. The Board will not consider and does not require the submittal of detailed engineering reports for the purpose of selecting a pilot project proposal at the selection stage.

D. Maximum Quantity of Transferable Consumptive Use Water Per Year

Pursuant to Section 37-60-115(8)(a), no more than three pilot projects may be located in any one of the major river basins, namely: the South Platte River Basin; the Arkansas River Basin; the Rio Grande River Basin; and the Colorado River Basin. For the purpose of determining the number of pilot projects in “any one of the major river basins,” the South Platte River Basin is defined herein as Division 1, further defined in Section 37-92-201(1)(a), C.R.S. (2013); the Arkansas River Basin as Division 2, further defined in Section 37-92-201(1)(b); the Rio Grande River Basin as Division 3, further defined in Section 37-92-201(1)(c); and the Colorado River Basin as Divisions 4, 5, 6, and 7, as defined in Section 37-92-201(1)(d)-(g).

For pilot projects located in any one of the major river basins, the Board may select and approve pilot projects with transferrable consumptive use ranging in quantities from 100 acre-feet to 1,000 acre-feet per year. The Board recognizes that Colorado law defines a “significant water development activity” as “any removal of water that results in the transfer of more than one thousand acre-feet of consumptive use of water per year by a single applicant or an applicant's agents.” C.R.S. § 37-92-103(10.7) (2013). Notwithstanding that definition, the Board

³ ~~Taken together, these conditions mean that a pilot project can be designed to operate by following any portion of the lands included in a pilot project for up to ten years in a consecutive ten-year period so long as the statutory limitations are met: that no piece of land is fallowed for more than three years in a consecutive ten-year period and no more than thirty percent of a single irrigated farm is fallowed for more than ten consecutive years. (See Section 37-60-115(8)(c) (I) and (II)).~~

⁴ Taken together, these conditions mean that a pilot project can be designed to operate by following any portion of the lands included in a pilot project for up to ten years in a consecutive ten-year period so long as the statutory limitations are met: that no piece of land is fallowed for more than three years in a consecutive ten-year period and no more than thirty percent of a single irrigated farm is fallowed for more than ten consecutive years. (See Section 37-60-115(8)(c) (I) and (II)).

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may select and approve pilot projects with transferrable consumptive use larger than 1,000 acre-feet per year at its discretion. However, under no circumstances will the Board consider a pilot project with transferrable consumptive use of more than 10,000 acre-feet in any one year or 30,000 acre-feet over a ten-year period. For any proposed pilot projects with transferrable consumptive use in excess of 1,000 acre-feet per year, the Board shall give special consideration to comments received, if any, and to protecting the interests of other water users and the state's water resources before granting approval.

E. Geographic Areas not Eligible for a Pilot Project

Subject to the limitation provided in Section 37-60-115(8)(a), which limits the number of pilot projects to no more than three in "any one of the major river basins," no geographic areas are ineligible for a pilot project.

F. Information to be Included in a Pilot Project Proposal; Pilot Project Selection Process

In order to be considered for selection, pilot project sponsors must submit a pilot project proposal to the Board containing, at a minimum, the following:

1. a general description of the proposed pilot project, including the land to be fallowed and the proposed municipal, agricultural, environmental, industrial, or recreational use, identifying the following:
 - a. the specific water rights to be utilized by the pilot project and ownership of them;
 - b. the specific lands and parcels that will be analyzed and dried up, and the ownership of them;
 - c. the source of water that will be used to meet return flow obligations;
 - d. how and where any necessary replacement water will be delivered to the appropriate stream location(s);
 - e. any stream reaches that will be used to operate the proposed transfer of water, along with a description of any administrative or hydrologic obstacles to exchanges or delivery of the replacement water; and
 - f. any and all structures necessary for operation of the pilot project and ownership of them.
2. evidence to demonstrate that the proposed pilot project meets the eligibility requirements identified in Sections 37-60-115(8)(a) through (c), also listed in section II.C.;
3. evidence to demonstrate that all necessary approvals and agreements between ditch companies, ditch members, municipalities, and other parties have been obtained or will be reasonably obtained; and
4. evidence to demonstrate that all applicable limitations or requirements of any water

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conservancy districts have been considered.

All pilot project proposals should be limited to ten pages. ~~If the sponsor of the proposed pilot project is pursuing selection through step 1 prior to pursuing approval through step 2,~~ ~~the~~The submittal for selection should not include technical analyses regarding historic use, historic consumptive use, or return flows. ~~That~~However, that detailed information ~~should~~ instead must be submitted as part of the application for approval in step 2.

Following the submission of a pilot project proposal by a sponsor, the CWCB will post the proposal on its website. In addition, consistent with the notice process described in Section 37-60-115(8)(e)(II), the sponsor of a proposed pilot project shall provide written notice and a copy of the proposal by first-class mail or electronic mail to all parties that have subscribed to the substitute water supply plan notification list, as described in Section 37-92-308(6), for the division or divisions in which the subject water rights are located and in which the proposed pilot project will be operated, and file proof of the written notice with the Board. Parties may submit comments on the proposed pilot project to the CWCB within 30 days of the notice, and the notice shall so provide.

The CWCB will consider the proposed pilot project for selection at its next regularly scheduled meeting that is more than 60 days after receiving the proposal. The CWCB will consult with the State Engineer and consider any comments submitted prior to acting on the proposal. The CWCB may, at any time, request a sponsor to provide more information regarding a proposed pilot project.

Upon the Board's review and consideration of a proposed pilot project, and whether it meets the requirements of Sections 37-60-115(8)(a) through (c) and the requirements set out in this Criteria and Guidelines document, the Board may select the proposed pilot project to participate in the program, request that the sponsor provide more information regarding the proposed pilot project for reconsideration by the CWCB at its next regularly scheduled meeting, or deny the proposal.

If a proposed pilot project is selected, the sponsor shall be required to submit a pilot project application to the Board within ninety days of the Board's selection. The Board may, in its discretion, extend this deadline for good cause shown by the sponsor.

G. Information to be Included in a Pilot Project Application

1. As described in Section 37-60-115(8)(e)(I), pilot project applications submitted to the Board for consideration must include, at a minimum, the following:
 - a. a description of the proposed pilot project;
 - b. an analysis of the historical use, the historical consumptive use, and the historical return flows of the water rights or contract rights to water proposed to be used for temporary municipal, agricultural, environmental, industrial, or recreational use using a water budget model;
 - c. a map showing all parcels that will be fallowed as part of the pilot project;
 - d. evidence that the applicant has satisfied the requirements in II.K. below;

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- e. a description of the source of water to be used to replace all historical return flow obligations, with evidence that the source will provide a firm yield of water to replace all return flow obligations, during the pilot project and after completion of the pilot project; and
- f. any additional information requested by the Board.

All parcels that will be fallowed and dried up must be verified as having been historically irrigated (*e.g.*, land historically dry-land farmed may not be considered fallowed for the purposes of a pilot project), and no partial year dry-up shall be permitted. An aerial photo from each decade of the relevant study period will be acceptable evidence. In the absence of aerial photography, the applicant may submit other evidence that will be subject to verification by the Board and other parties.

- 2. All pilot project application analyses of the historical use, the historical consumptive use, and the historical return flows of the water rights or contract rights to water proposed to be used for temporary municipal, agricultural, environmental, industrial, or recreational use using a water budget model, as required above, shall comply with the following:

- a. ~~Any pilot project proposed to operate prior to 2015 shall be evaluated with the Excel or Matlab version of the ISAM, currently available from the Division of Water Resources; starting in 2015, or as soon as it is available,~~ proposed pilot projects shall be evaluated with the Lease Fallowing Tool, ~~which is being developed for the CWCB and should be operational in January 2015.~~ The individual components of analyses submitted shall include the following tables and other information. All tables should show monthly values, and a separate table should be used for each individual farm that is included in a pilot project. A list of the tables, along with one sample table, is included in Appendix A. Pilot project sponsors and applicants should contact the Division of Water Resources for electronic versions of all tables in Excel format:

- i. A table identifying all assumptions, presumptive factors, and methodologies used in the analyses;
- ii. Tables of historical use and historical consumptive use, based on at least 30 years of diversion records, including:
 - 1. historical total river headgate diversions to the relevant ditch and the proportionate share of those diversions attributable to the relevant individual farm(s);
 - 2. ditch losses and off-farm losses (use cited information from a previous change case or information from the relevant ditch company);
 - 3. farm headgate delivery (use diversion records);
 - 4. farm efficiency (use 55 percent); and
 - 5. potential consumable amount of the farm headgate delivery (use

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farm headgate delivery multiplied by farm efficiency);

i. —

6. stored soil moisture limited to six inches or 0.5 acre-feet per acre.

iii. Tables of historical use and historical consumptive use, based on crop demand, including:

1. description of crop mix (use ditch-wide crop statistics available in Colorado's Decision Support System basin models or the Arkansas River Hydrologic Institute (HI) Model; or if neither of those is available, use county-wide statistics—);
2. crop potential evapotranspiration (PET) (use Modified Blaney Criddle with TR-21 coefficients);
3. total precipitation (use weather station closest to the ~~relevant ditch headgate~~centroid of the historically irrigated fields to be fallowed for which the record contains adequate data for the chosen study period);
4. effective precipitation (use factors from United States Bureau of Reclamation method); and
5. crop irrigation requirement (CIR).

~~b. Actual demand met by subject water right(s) (use the minimum of potential consumable amount of farm headgate delivery and crop irrigation requirement plus soil moisture deficit, with stored soil moisture limited to six inches or 0.5 acre-feet per acre) including:~~

iv. volumetric limit for Farm headgate depletions, which are equal to the Farm Headgate Delivery minus the un-lagged return flows and are calculated in the Lease Fallowing Tool. Farm headgate depletions will be used to determine the following volumetric limits:

1. ~~monthly consumptive use amount, based on~~volumetric limits, calculated as the average of the three greatest ~~years of monthly amounts for each month of farm headgate depletions in~~ the study period; and
2. ~~volumetric limit for annual consumptive use amount, based on~~volumetric limit, calculated as the average of the three greatest ~~years~~annual amounts for each year of farm headgate depletions in the study period.

3.

~~iv-v.~~ v. Historical return flows.

1. The portion of the monthly farm headgate delivery not used to

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meet the irrigation demand will be the return flow fraction, or 45 percent of the farm headgate delivery, being the remaining fraction of the farm efficiency:

- a. twenty percent of the return flow fraction will be designated as surface runoff, and
 - b. eighty percent of the return flow fraction will be designated as deep percolation to the alluvial aquifer.
2. Unit Response Functions (URFs) shall be used for determination of timing of groundwater return flows from each farm to the stream or natural drains, using the following approaches, assumptions, and factors:
- a. use the Glover-Balmer analytical solution (Glover equation) to calculate the lag effect of deep percolation return flows;
 - b. specific yield = 0.20;
 - c. transmissivity according to cited reference or through the applicant's detailed analysis;
 - d. the relevant ditch represents the location of the no-flow boundary unless geologic and hydrologic conditions indicate that the relevant ditch does not reasonably represent the no-flow boundary, which boundary should then be determined based on actual geologic or hydrologic conditions;
 - e. the distance to the river is equal to the length of a line extending perpendicular from the river or drain to the centroid of the irrigated land; return flows accrue to the river or drain at this location on the river; and
 - f. the number of month time steps (URF period) for the URF will be limited to the number of months required for at least ninety percent of the impact to occur to the stream; the URFs will then be normalized by apportioning the remaining return flows across the URF period.

3. Tables of Historical Delayed Return Flow Remaining to the Stream after Diversions have Ceased

- a. Applicant must specifically identify how delayed return flows are to be met in timing, location, and amount, on a monthly basis, with due consideration of losses.

~~3.4.~~ If return flow obligations are to be met by recharge, ~~no~~ URFs ~~are required~~ do not need to be used in developing the Applicant's proposed accounting if:

- ~~1.~~ all return flows for a farm are met by recharge from a recharge

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facility within one quarter mile of the dried up land;

- a. and the recharge water is delivered in the same time and amount, with an additional amount to account for recharge pond evaporation, as the deep percolation portion of the farm delivery for the dried up land; and/or

~~2. the application includes a plan for monitoring and accounting to ensure that recharged water infiltrates and percolates to the water table without consumption.~~

- b. if the recharge plan would result in the replacement of the actual amount of deep percolation return flow obligations by the recharge accruing to the river at the approximate location and at the approximate time.

~~4.5.~~ A comparison of historic values determined above and projected operations.

H. Notice of Pilot Project Applications

Pursuant to Section 37-60-115(8)(e)(II), after having been selected as a pilot project, ~~or concurrent with the selection process if the applicant combines the selection and the approval process, pilot project applicants~~ Applicants must provide notice of applications submitted to the Board.

Applicants shall provide written notice that a pilot project application has been submitted to the Board along with a copy of the pilot project application and all accompanying materials submitted (or information on how to obtain them) by first-class mail or electronic mail to all parties that have subscribed to the substitute water supply plan notification list and the CWCB notification list, as described in Section 37-92-308(6), for the division or divisions in which the water right is located and in which it will be used, and file proof of the written notice with the Board. Such notice shall provide that parties may submit comments on the pilot project application to the CWCB within ~~seventy-fivesixty~~ sixty days of the notice.

I. Comment and Conference Criteria

The CWCB will receive comments on pilot project applications for a period of ~~seventy-fivesixty~~ sixty days after notice of the application was provided. ~~These~~ Should the Staff deem the application incomplete, based on the Staff's review or comments from any party, at its discretion, the Staff may extend the end of the comment period as may be appropriate, but by no more than sixty days after additional information is provided and the Staff deems the application complete. The comments should include: any claim of injury; any terms and conditions that the person filing a comment believes should be imposed on the pilot project in order to prevent injury to other water rights, decreed conditional water rights, or contract rights to water; and other information that the person filing the comment believes the Board should consider in reviewing the application. All comments claiming injury must: (1) identify with specificity the

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water right(s) for which the person filing the comment either owns or has a contract right; (2) provide analyses of the nature and extent of the claimed injury to the identified water right(s) based upon the methodologies and approaches, assumptions, and presumptive factors set forth in section II.G., herein; and (3) propose specific terms and conditions that would protect the identified water right(s) from the claimed injury.

Within thirty days ~~of~~after the end of the comment period, the applicant for a pilot project, the State Engineer, and owners of water rights or contract rights to water that file comments on the pilot project application shall hold a conference, convened and facilitated by CWCB staff, to confer about the pilot project application. Conference participants shall discuss how the pilot project could be structured to prevent material injury to other water rights and contract rights to water.

Within fifteen days ~~of~~after the conference, the pilot project applicant and the owners of water rights or contract rights to water shall file a joint report with the CWCB and the State Engineer outlining any agreed-upon terms and conditions for the proposed pilot project, and explaining the reasons for failing to agree on any terms and conditions for the pilot project if the applicant and the owners fail to reach a full agreement at the conference.

J. Determination of the State Engineer; Guidelines for Operation and Administration of a Pilot Project

Taking into consideration the pilot project application, comments, and the joint report, if any, and utilizing the methodologies and approaches, assumptions, and presumptive factors set forth in section II.G, herein, the State Engineer will make a written determination regarding a pilot project application within ~~thirty~~fifteen days ~~of~~after receipt of the joint report, or if the Board does not receive any comments on the application, within thirty days after the period of time for the comments has expired. The written determination of the State Engineer will describe the operation and administration of the pilot project and will include, but is not limited to, the following:

1. the State Engineer's opinion as to whether the pilot project can operate without causing injury to other water rights, decreed conditional water rights, or contract rights to water, and without impairing compliance with any interstate compact;
2. terms and conditions necessary to ensure the pilot project will operate and can be administered without causing injury to other water rights, decreed conditional water rights, or contract rights to water and without impairing compliance with any interstate compact;⁵ these terms and conditions may also include, where applicable:
 - a. a requirement that all parcels included in a pilot project are accounted for, dried up, and administered according to the protocol described in Appendix B of this document;
 - b. a requirement that the accounting use the tables listed in Appendix A of this document as the tool for comparing historical use analyses with projected

⁵ Pursuant to Section 37-60-115(8)(d)(VI)(C), and as described in II.I. of this document, the joint report may include terms and conditions for the proposed pilot project. Those terms and conditions may be adopted by the State Engineer.

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operations as a pilot project;

c. a requirement that the pilot project accounting be conducted in conformance with Appendix C of this document;

d. a requirement that any approved recharge facilities be operated in and accounting for in conformance with Appendix D of this document;

e. ~~e.~~ a requirement that the water rights subject of a pilot project be run through the applicable ditch; and

f. ~~f.~~ a condition that reservoir water that is subject of a pilot project can be used for municipal, agricultural, environmental, industrial, or recreational use only as the remaining irrigation portion is used for irrigation; and

3. any other information the State Engineer deems pertinent to the operation of a pilot project.

Upon receipt of the State Engineer's written determination, the Board shall take action on the pilot project application at its next scheduled meeting, unless such meeting is scheduled to commence in less than fourteen days from the date the CWCBC receives the State Engineer's written determination, in which case the Board shall take action on the pilot project application at its following meeting.

K. Consideration of Additional Requirements

Pursuant to Section 37-60-115(8)(d)(X), pilot project applicants must provide evidence that through the operation of a pilot project, the applicant will:

1. meet applicable local government land use requirements;
2. prevent erosion and blowing soils; and
3. comply with local county noxious weed requirements.

Neither the Board nor the State Engineer will perform a technical evaluation to validate whether an applicant has met these requirements. Rather, the State Engineer, in the written determination, will validate whether an applicant has provided sufficient evidence that it will continue to satisfy these requirements throughout the pilot project's duration.

L. Limitations on Participation in Other Statutory Mechanisms

Pursuant to Section 37-80-115(8)(d)(XI), during the term of a pilot project, land and water included in a pilot project shall not also be included in a substitute water supply plan pursuant to Section 37-92-308(5) or (7), an interruptible water supply agreement pursuant to Section 37-92-309, or another pilot project.

M. Accepted Methodologies, Modeling, and Accounting Practices

As stated in section I.D., the purpose of the pilot program is to provide sufficient data

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from which the CWCB, in consultation with the State Engineer, can evaluate the efficacy of using streamlined approaches for determining critical components of a fallowing-leasing plan, including historical consumptive use, return flow characteristics, the potential for material injury to other water rights, and conditions to prevent material injury to other water rights. Section II.G. includes methodologies and approaches, assumptions, and presumptive factors that provide for a streamlined application, review, and approval of the pilot projects.

The Board has adopted these methodologies, approaches, and assumptions in this Criteria and Guidelines document, with public participation, to streamline the process for pilot project application development, review, and approval. The Board's intent is that the good faith adherence to these Criteria and Guidelines by applicants, any parties filing comments on pilot project applications, the State Engineer, and the Board will assist the Board's approval process and will reduce or eliminate the need for appeal on the technical bases outlined in this document.

These Criteria and Guidelines were developed for the purposes of fallowing-leasing pilot projects and are applicable only for the purposes of pilot projects authorized under Section 37-60-115(8).

N. Ongoing Requirements of an Approved Pilot Project

According to Section 37-60-115(8)(i), the CWCB, in consultation with the State Engineer, shall annually report to the Water Resources Review Committee, created in Section 37-98-102, C.R.S. (2013), or its successor committee, on the reported results of the pilot projects, including any recommendations for legislation to implement fallowing-leasing. The CWCB, in consultation with the State Engineer, shall provide a final report to the Water Resources Review Committee, or its successor committee, by July 1, 2029, or the year in which the final pilot project is completed, if before 2029, as required by Section 37-60-115(8)(h)(II)(i).

As a part of its approval of a pilot project, the CWCB will also set forth requirements for the applicant to report on the operation and outcome of the pilot project and solicit input from parties involved in the conference described in paragraph II.I. of this document, including information regarding the success of streamlined approaches and the effectiveness of the pilot projects in accomplishing the purposes identified in Section 37-60-115(8)(b).

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All submittals by an applicant to the Division of Water Resources pursuant to a pilot project approval shall be posted on the Division of Water Resources website, ftp site, or other publicly available media within a reasonable time not to exceed ten days, and shall remain publicly available until all lagged return flow obligations from the pilot project have been replaced. The Division of Water Resources shall establish a notification list of parties participating in the pilot project application process to be used to provide notice when documents have been posted.

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APPENDIX A

Tables for Information to be Included in a Pilot Project Application (see section II.G.)

A. Required Tables

The tables in the following list will generally be required in a pilot project application, along with fully functional electronic files used in the development of the tables:

1. River Headgate Diversions for All Sources Considered in Pilot Project
2. River Headgate Diversions Pro-Rata by Share or Percent of Water Right for Pilot Project Farm(s)
3. Farm Headgate Deliveries
4. Farm Crop Acreages and Crop Distributions
5. Farm Crop Potential Evapotranspiration
6. Farm Precipitation
7. Farm Effective Precipitation
8. Farm Irrigation Water Requirement
9. Farm Headgate Delivery Available to Meet Crop Irrigation Requirement
10. Farm Crop Irrigation Requirement Met by Irrigation Water Applied or in Soil Moisture
11. Total Return Flows at Farm(s)
12. Tailwater/Surface Runoff Return Flows at Farm(s)
13. Deep Percolation/Ground Water Return Flows at Farm(s) (unlagged)
14. Historic Depletions at Farm(s) including Depletion and Return Flow Factors

15. Historical Delayed Return Flow Remaining to the Stream after Diversions have Ceased

16. Delayed Return Flow Remaining to Stream as Percent of Cumulative Farm Headgate Deliveries

B. Tables to be Included as Applicable

The tables in the following list may be required in a pilot project application, depending on the specifics of the pilot project:

1. Pond Evaporation Data
2. Unit Response Function Normalized by 90%
3. Simulated Recharge Operations
4. Simulated Lagged Stream Return Flow Summary
5. Monthly Accounting Example

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6. Daily Accounting Example

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Sample Table

The following is a sample table for River Headgate Diversions for All Sources Considered in Pilot Project. Pilot project sponsors and applicants should contact the Division of Water Resources for electronic versions of all tables in Excel format.

Table 1 - River Headgate Diversions for All Sources Considered in Pilot Project Plan													
Farm Name or Designation: Farm 1													
Source of Data:													
Notes:													
Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
(Cal)	(AF)	(AF)	(AF)	(AF)	(AF)	(AF)	(AF)	(AF)	(AF)	(AF)	(AF)	(AF)	(AF)
1983													
1984													
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2011													
2012													
Maximum													
Minimum													
Average													

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APPENDIX B

Administration of Dry-Up Parcels

A. Identification of Parcels for Pilot Projects

1. By March 1 of each plan year for an approved pilot project, the pilot project sponsor shall notify and provide mapping to the Division Engineer of those parcels to be fallowed and the associated shares for the upcoming plan year. Lands and shares available and approved for fallow through operation of an approved pilot project are limited to those identified in the pilot project application.

To the greatest extent possible, mapping of parcels to be fallowed should be developed from irrigated acreage mapping done under the various Decision Support System projects and maintained by the Colorado Water Conservation Board (CWCBC) on Colorado's Decision Support System (CDSS) website. If other mapping is used (e.g., Farm Service Agency), the source of the mapped data should be provided as part of the application citing the year(s) used for parcel evaluation and selection.

~~1.2. Mapped parcels shall be provided in GIS format compatible with the ArcView software unless provisions are made to coordinate mapping with the State Engineer's Office. Mapping for identified parcels must be provided with pilot project applications.~~

- ~~2.3. Pilot project sponsors and applicants seeking to identify any lands they believe were historically irrigated that do not lie within the mapped irrigated lands developed for CDSS, must provide backup documentation to demonstrate continuous irrigation for the parcel over the majority of the study period.~~

~~3.4. Mapped parcels shall be provided in GIS format compatible with the ArcView software unless provisions are made to coordinate mapping with the State Engineer's Office. Mapping for identified parcels must be provided with pilot project applications.~~

B. Minimum Standards for Parcel Selection

- ~~4.5. Fallowed parcels must be at least ten acres in size unless they comprise all of an existing CDSS parcel that is already less than ten acres. Parcels that represent a portion of an existing field can only be split in the same direction of historic irrigation unless a means of physical separation is approved by the CWCBC based on the written determination of the State Engineer. A physical separation must exist between any irrigated portion of a parcel and the dry-up portion. For dry-up fields left fallow or with a dry-land cover crop without permanent root system (that is, not alfalfa or pasture grass for example), the separation can be a ditch or tilled strip at least ten feet in width that prevents irrigation application from reaching the dry-up parcel. For partial fields containing deep-rooted crops such as alfalfa or pasture grass, a deep tilled separation of at least 25 feet must be maintained along with any ditches necessary to ensure no irrigation application to the dry-up portion. For any dry-up parcel that is planted with a dry-land crop (haygrazer, milo, millet, etc.), the crop should either be drilled at an angle to normal irrigation direction or a tilled strip~~

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maintained at the top of the field that clearly separates the crop from any possible irrigation source (preferably both).

- 5.6. All parcels containing alfalfa or pasture grass shall be subject to a reduction in the approved amount of transferrable consumptive use if the field is subirrigated. The reduction will be calculated according to Table 1 on the following page-(below). Necessary monitoring well configuration, if any, will be determined through the application of terms and conditions as required by each individual pilot project.

C. Additional Provisions.

7. By May 15 of each year of operations of an approved pilot project, the pilot project sponsor shall notify the Division Engineer of the status (dry-land crop (must specify type), tilled and fallow, not tilled and fallow, stubble of past crop left on field, etc.) of each fallowed field in the pilot project.
8. Re-irrigation of dry-up parcels shall not be allowed by any other source of water including other surface water, ditch company shares, or ground water during the year in which the parcel is fallowed for pilot project operations. No partial year dry-up shall be permitted.
9. A pilot project sponsor shall monitor fallowed parcels on a periodic basis to confirm the adequacy of dry-up in conformance with the terms and conditions of this protocol. Should non-compliance with the dry-up requirements of this protocol be discovered, a pilot project sponsor shall immediately notify the Division Engineer in writing and take such corrective action as is required by the Division Engineer. Fallowed parcels shall be subject to inspection by the Division Engineer who shall inform the pilot project sponsor if non-compliance is found.
10. Prior to any pilot project operations, a pilot project sponsor shall ensure that the owners/operators all participating farms are contractually bound to provide for weed control and erosion protection for the lands removed from irrigation as a part of the pilot project. This will include the acknowledgement of and agreement to comply with any applicable county code noxious weed management requirements.

Table 1

Depth to Ground Water (Feet)	Percent Reduction in CU Credit	
	Pasture Grass	Alfalfa
1	85%	100%
2	50%	90%
3	30%	75%
4	20%	50%
5	15%	35%
6	10%	20%

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7	5%	15%
8	0%	10%
9	0%	0%

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Appendix C

Accounting for Pilot Project Operations

1. All diversions and deliveries of water rights under a pilot project approval shall be measured in a manner acceptable to the Division Engineer. The pilot project proponent shall install and maintain measuring devices as required by the Division Engineer.
2. Accounting of water in an approved pilot project shall be provided to the Division Engineer on forms, at a frequency, and at times acceptable to him/her. Unless otherwise specified, accounting shall be submitted monthly and must be received by the 10th day of the month following the month being reported.
3. The name, mailing address, and phone number of the contact person who is responsible for operation and accounting of the pilot project must be provided on the accounting forms.
4. Pilot project accounting shall comply with the following unless deemed unnecessary by the Division Engineer:
 - a. Daily accounting shall be maintained for the measured amount of water delivered attributed to fallowed shares/water rights at each augmentation station and any approved recharge facility.
 - b. Consumptive use and return flow factors shall be applied to daily measured deliveries at the locations where the shares/water rights are delivered.
 - c. Daily accounting shall be maintained for the amounts of consumptive use, tailwater, and unlagged deep percolation portions of the measured amount of water delivered at each augmentation station and any approved recharge facility.
 - d. Monthly accounting shall be maintained for current and future lagged return flows obligations that have resulted from deliveries attributable to fallowed shares/water rights during the present month and all previous months.
 - e. Monthly accounting shall be maintained for any calculated recharge accretions to the stream system from actual infiltration at any approved recharge facilities from deliveries attributable to the fallowed shares/water rights.
 - f. Monthly accounting shall be maintained for lagged return flow obligations not replaced by recharge, distributed on a daily basis.
 - g. Daily accounting shall be maintained for consumptive use water and unlagged deep percolation water delivered through the augmentation stations for replacement of lagged return flow obligations that are not replaced by recharge.

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- h. Daily accounting shall be maintained for measured deliveries of any other water supplies used to replace lagged return flow obligations that are not replaced through recharge, including the location of each such supply and transit losses associated with delivery of each supply to the location where the return flow obligation is owed.
- i. Daily balance of the project's net effect on the river.
- j. Daily net amount of consumptive use water and unlagged deep percolation return flow water delivered through the augmentation stations and not needed for replacement of return flow obligations.
- k. Daily amount of consumptive use water and unlagged deep percolation return flow water placed into storage.
- l. Daily amount of consumptive use water and unlagged deep percolation return flow water delivery to each approved lessee.

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Appendix D

Use of Recharge in Pilot Project Operations

1. Any recharge facility to be used to meet return flow obligations under a pilot project approval shall be constructed, tested, operable, and approved by the Division Engineer prior to use in pilot project operations.
2. Any recharge facility shall be surveyed and a stage-area capacity table approved by the Division Engineer prior to use.
3. All deliveries to recharge and recharge pond stage shall be measured in a manner acceptable to the Division Engineer. The pilot project sponsor shall install and maintain measuring devices as required by the Division Engineer.
4. Recharge facility accounting shall include and/or comply with the following information:
 - a. Measured and recorded inflow and measured precipitation as recorded by the nearest weather station. Missing station data shall be replaced by the next closest weather station;
 - b. Daily content by stage gage, either automated or with a documented time recorded;
 - c. Daily evaporation determined by daily evaporation rate by pond surface area for each day water is present in the pond;
 - d. Recharge shall be computed from a mass balance standpoint with no credit for recharge or precipitation;
5. Recharge facility operations shall comply with the following:
 - a. The area in and around the pond shall be kept clear of vegetation unless the approved pilot project authorizes such vegetation and accounts for the associated reduction in recharge credits that would be available in the absence of vegetation;
 - b. Regular monitoring of the area in and around a recharge facility shall be conducted for any increased vegetative growth or pond seepage coming to the surface;
 - c. Observations shall be made and recorded of any spills, seeps, or overtopping of recharge facilities when the facilities are near full. Credit for recharge infiltration to ground water shall only be allowed if approved by the Division Engineer and when spills, seeps, or overtopping are observed and amount of

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such spills, seeps, or overtopping may be reasonably estimated and deducted from the amount delivered to recharge.