

Order R1-2026-0035

**General Waste Discharge Requirements for Commercial Lily Bulb Operations in
the Smith River Plain**

Attachment D: Methodologies and Procedures

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I. Guidance for Determining Major Storm Events

Attachment A: Monitoring and Reporting Program requires three Surface Water Monitoring events per year during a Major Storm Event. This section provides guidance on determining a Major Storm Event, measuring precipitation, obtaining official forecasts, and examples of forecasts.

A Major Storm Event is defined as a storm that is forecasted and produces at least one inch of precipitation within a 24-hour period and is preceded by a minimum of 48 hours producing less than 0.25 inches of precipitation. A Major Storm Event has ended when no more than 0.25 inches of precipitation has been produced within a 48-hour period.

Collection of samples during a Major Storm event shall occur within 24 hours following the first inch of precipitation and before cumulative precipitation exceeds three inches within a 24-hour period.

Precipitation forecasts shall be obtained from the National Weather Service Forecast Office of the National Oceanic and Atmospheric Administration (NOAA) for the town of Smith River, CA (41.93°N 124.14°W). North Coast Water Board staff recommends using the following link to obtain precipitation forecasts information.

<https://www.weather.gov/wrh/WxTable?LAT=41.9286&LNG=-124.1460&DAYS=7&INT=6>

Once a Major Storm Event has been identified for a sampling event, precipitation shall be monitored on an hourly basis using two rain gauges to confirm when sampling should occur. For the monitoring stations on the Smith River Plain (see Attachment A: Monitoring and Reporting Program), the rain gauge shall be located north of the Smith River and on the coastal side of Highway 101. For the Kamph Park Creek monitoring station, the rain gauge shall be located on the coastal terrace within one mile of the monitoring station. The rain gauge shall be installed and maintained using guidance found at the following website.

https://www.waterboards.ca.gov/water_issues/programs/swamp/docs/cwt/guidance/5111.pdf

II. Sample Collection and Handling Instructions

Enrollees shall follow the below procedures to comply with water quality monitoring requirements in this Order:

- 1) Identify the sampling parameters required to be tested and the number of locations that will be sampled.
- 2) Request the laboratory provide the appropriate number of sample containers, types of containers, sample container labels, blank Chain of Custody forms, and sample preservation instructions.
- 3) Prior to sampling, record information about the planned sampling event into Field Sheets and Chain-of-Custody forms. This information should include the Enrollee name along with the sample location identifier and sample container types and number to be filled. Field measurement data and observations shall be recorded as they are collected.
- 4) Collect samples in accordance with the following instructions:
 - a) Sampling from an Edge-of-Field discharge point, drainage ditch, or swale: sample from a consistently flowing part of the concentrated flow. If the discharge point is too small or shallow, install a barrier device in the channel or deepen a small area so you are able to sample directly into the bottles. Allow sufficient time to pass after disturbing the bottom so that any solids stirred up do not contaminate your sample.
 - c) Sampling From a Stormwater Detention / Retention Basin or Other Treatment Device: sample at the outlet of the structure. Collecting samples from stagnant or slowly moving water inside a pond will not yield a representative sample as the pollutants might not be adequately mixed. Stormwater basins may hold stormwater for long periods of time.
 - d) Sampling From a Well: locate a valve or cold water tap as near to the well as possible, preferably prior to any storage/pressure tanks or physical/chemical treatment system that might be present. Open the valve (turn on pump if needed), monitor and record pH, specific conductance and temperature of the groundwater removed during purging at 5-minute intervals. Once these parameters have stabilized within 10 percent over 10 minutes, the well has been purged. Observe and record the rate and volume of water purged using a graduate bucket and stopwatch. Remove any hose that may be present before sample collection and reduce the flow to a low level to minimize sample disturbance. Collect samples directly into the laboratory supplied containers.
- 5) All monitoring instruments and equipment shall be calibrated and maintained in accordance with manufacturers' specifications to ensure accurate measurements.

- 6) Use only the sample containers provided/specified by the laboratory to collect and store samples. Use of any other type of containers could cause sample contamination.
- 7) Prevent sample contamination by not touching or putting anything into the sample containers before collecting samples.
- 8) Not overfill sample containers. Overfilling can change the analytical results. g. Secure each sample container cap without stripping the cap threads.
- 9) Label each sample container. The label shall identify the date and time of sample collection, the person taking the sample, and the sample collection location or discharge point. The label should also identify any sample containers that have been preserved.
- 10) Use the appropriate sample shipping method to the laboratory. The laboratory should receive samples within 48 hours of the physical sampling (unless otherwise required by the laboratory to meet all method hold times). The options are to either deliver the samples to the laboratory, arrange to have the laboratory pick them up, or ship them overnight to the laboratory.
- 11) Carefully pack the sample container into an ice chest or refrigerator to prevent breakage and maintain temperature during shipment; frozen ice packs or ice is placed into the shipping container to keep the sample close to 4° C (39° F) until arriving at the laboratory (do not freeze samples).
- 12) Complete a Chain of Custody form with each set of samples. The Chain of Custody form shall include the discharger's name, address, and phone number, identification of each sample container and sample collection point, person collecting the samples, the date and time each sample container was filled, the analysis that is required for each sample container, and both the signatures of the persons relinquishing and receiving the sample containers. Salinity (recorded through field measurement) shall be recorded on the Chain of Custody form for all dissolved copper samples.
- 13) Designate and train personnel for the collection, maintenance, and shipment of samples in accordance with the above sample protocols and laboratory-specific practices.

III. Quality Assurance and Quality Control Requirements

This section establishes minimum Quality Assurance and Quality Control (QA/QC) requirements that Enrollees, Coalitions, and contracted laboratories shall follow when conducting surface water, groundwater, and Drinking Water Supply Well monitoring required by Attachment A: Monitoring and Reporting Program. These requirements are intended to produce data of sufficient quality to support Adaptive Management decisions and the general objectives of the Monitoring and Reporting Program. Compliance with this Section satisfies the QA/QC obligations of this Order; Enrollees and Coalitions are not required to develop or submit a separate Quality Assurance Project Plan (QAPP) for review and approval. The State Water Board's Surface Water Ambient Monitoring Program (SWAMP) Quality Assurance Program Plan¹ may be consulted for additional guidance.

- 1) Data Quality Objectives: Data collected pursuant to Attachment A shall meet the following minimum Data Quality Objectives unless an alternative is approved in writing by the Executive Officer.
 - a) Precision. Relative Percent Difference (RPD) between field duplicates and between laboratory duplicates or matrix spike/matrix spike duplicate pairs shall be no greater than 25 percent for results above five times the Reporting Limit. Precision is not evaluated where both results are below five times the Reporting Limit.
 - b) Accuracy. Recoveries from Laboratory Control Samples (LCS), matrix spikes (MS), and matrix spike duplicates (MSD) shall fall within the laboratory's published control limits, or within 70 to 130 percent where the laboratory has not established formal control limits. Surrogate recoveries for organic methods shall fall within the laboratory's established control limits.
 - c) Representativeness. Samples shall be collected in accordance with the procedures in Section II of this Attachment D such that they represent the water quality at the designated monitoring location at the time of collection.
 - d) Comparability. All laboratory analyses shall be conducted using the analytical methods specified in Tables A.4 (surface water) and A.7 (groundwater) of Attachment A, or alternative methods of equivalent or better sensitivity approved by the Executive Officer.
 - e) Completeness. The Enrollee or Coalition shall provide an explanation in the Annual Compliance Report for any required sample not collected or not successfully analyzed.

¹ SWAMP QAPP: https://www.waterboards.ca.gov/water_issues/programs/swamp/quality_assurance.html

- 2) Laboratory Selection: All laboratory analyses required under this Order shall be conducted by a laboratory certified under the State Water Board's Environmental Laboratory Accreditation Program (ELAP) for the applicable analytical method. Current ELAP-certified laboratories are listed at https://www.waterboards.ca.gov/drinking_water/certlic/labs/. The Enrollee or Coalition shall maintain documentation of the laboratory's current ELAP certification and shall make this documentation available to North Coast Water Board staff upon request.
- 3) Sample Containers, Preservation, and Hold Times: In addition to the sample handling procedures in Section II of this Attachment:
 - a) Sample containers, chemical preservatives, and maximum hold times shall conform to the requirements of the analytical method specified for each parameter in Tables A.4 (surface water) and A.7 (groundwater) of Attachment A and to the current SWAMP Quality Assurance Program Plan.
 - b) Containers shall be supplied by the analyzing laboratory, pre-cleaned and pre-preserved (where chemical preservation is required) in accordance with the applicable method.
 - c) Samples requiring thermal preservation shall be maintained at $4^{\circ}\text{C} \pm 2^{\circ}\text{C}$ from the time of collection until receipt at the laboratory. Samples shall not be frozen.
 - d) Samples shall be received at the laboratory within 48 hours of collection unless a shorter time is specified by the applicable analytical method.
 - e) Samples received outside the method-specified hold time, or that did not meet preservation requirements during transport, shall be flagged in the laboratory analytical report and discussed in the Quality Assurance narrative submitted pursuant to Provision 8 of this Attachment D. Where practicable, the Enrollee shall resample affected stations during the next Major Storm Event.
- 4) Field Instrument Calibration: In addition to the requirement in Section II of this Attachment D to calibrate and maintain field instruments in accordance with manufacturer specifications:
 - a) Multi-parameter water quality instruments used for field measurement of pH, specific conductance, temperature, salinity, and any other field parameter required by Attachment A shall be calibrated at the beginning of each sampling day using fresh certified standards.
 - b) Calibration verification (a post-calibration check using a standard not used for calibration) shall be performed at the end of each sampling day. If the verification reading deviates from the expected standard value by more

than the manufacturer's acceptance criterion, or by more than 10 percent where the manufacturer has not specified a criterion, all field measurements collected since the most recent successful calibration verification shall be flagged for review.

- c) Calibration standards, calibration readings, and calibration verification readings shall be recorded on the Field Sheet for each sampling event, along with the date of standard preparation or the expiration date stated by the manufacturer.
 - d) The Enrollee or Coalition shall maintain a Field Operations Log documenting equipment inventory, instrument calibration history, accuracy and precision check results, and any corrective actions taken during the monitoring program. The log shall be retained per Provision 10 of this Attachment and made available to North Coast Water Board staff upon request.
- 5) Field Quality Control Samples: The following field Quality Control samples shall be collected during each Surface Water Monitoring sampling event and each Groundwater Monitoring sampling event:
- a) Field Blank. One field blank per sampling event, prepared by pouring laboratory-supplied analyte-free water through reusable sampling equipment (where applicable) and into the same containers used for field samples, then submitted to the laboratory using the same analytical methods as the field samples.
 - b) Field Duplicate. One field duplicate per sampling event, collected by filling two sets of sample containers concurrently from the same location using the same procedures, and submitted to the laboratory blind (i.e., labeled to prevent identification by the laboratory as a duplicate). Field duplicates shall be analyzed for all parameters analyzed in the parent sample.
 - c) Equipment Blank. Where reusable sampling equipment is decontaminated and reused between stations within a single sampling event, one equipment blank per sampling event shall be collected by passing analyte-free water through the decontaminated equipment and into the same containers used for field samples.
 - d) All field Quality Control sample results shall be reported alongside the corresponding field sample results. Field blank detections above the Reporting Limit, and RPD between field duplicates exceeding the precision Data Quality Objectives shall be addressed in the Quality Assurance narrative.
- 6) Laboratory Quality Control: The analyzing laboratory shall include the following Quality Control samples with each analytical batch. An analytical batch is defined

as up to 20 samples of similar matrix prepared together.

- a) Method Blank. One method blank per analytical batch. Results shall be below the Reporting Limit for all target analytes. Detections above the Reporting Limit shall be discussed in the laboratory case narrative.
 - b) Laboratory Control Sample (LCS). One LCS per analytical batch, prepared at approximately five times the Reporting Limit. Recovery shall be within the laboratory's established control limits, or within 70 to 130 percent where no control limits have been established.
 - c) Matrix Spike and Matrix Spike Duplicate (MS/MSD). One MS/MSD pair per analytical batch for organic analyses. Recoveries shall fall within the laboratory's established control limits, or within 70 to 130 percent where no control limits have been established. RPD between MS and MSD shall not exceed 25 percent.
 - d) Surrogate Standards. Surrogate standard requirements, including frequency, identity, and acceptance criteria for recovery, shall conform to the requirements of the applicable analytical method specified in Tables A.4 and A.7 of Attachment A. Surrogate recoveries shall fall within the laboratory's established control limits and results reported with each analytical batch.
 - e) Instrument Calibration. Initial calibration and continuing calibration verification shall be performed in accordance with the applicable analytical method.
- 7) Reporting Limits: The laboratory's Method Detection Limit (MDL) and Reporting Limit (RL) for each analytical method shall be at or below the Water Quality Benchmark for the corresponding parameter as specified in Tables A.4 (surface water) and A.7 (groundwater) of Attachment A. Where an analytical method's lowest demonstrable Reporting Limit is above the applicable Water Quality Benchmark, the Enrollee or Coalition shall notify the Executive Officer in writing prior to the next sampling event and shall identify the alternative analytical method or accommodation proposed to address the limitation.
- 8) Data Verification: Upon receipt of each laboratory analytical report, the Enrollee, Coalition, or designated contractor shall verify each report to confirm:
- a) Hold times and preservation requirements were met for each sample;
 - b) Field Quality Control and laboratory Quality Control results meet the Data Quality Objectives of this Attachment;
 - c) Method blank detections, if any, do not invalidate associated field sample results;

- d) Field measurement records (pH, temperature, conductivity, and other applicable field parameters) and calibration documentation are present and complete; and
- e) Chain-of-Custody records are complete and traceable from field collection to laboratory receipt.

Results that fail verification shall be flagged in the data record, and the Enrollee or Coalition shall identify whether the flagged result is usable, usable with qualifications, or rejected. A Quality Assurance narrative summarizing all flagged results, the nature of the failure, and the usability determination shall be included with each Annual Compliance Report.

9) Electronic Data Deliverables:

- a) Surface Water Monitoring data shall be submitted in a CEDEN-compatible Electronic Data Deliverable format. Templates and format specifications are available at <https://ceden.org>.
- b) Drinking Water Supply Well Monitoring data shall be submitted electronically to the State Water Board's GeoTracker database by the testing laboratory in the Electronic Deliverable Format (EDF). Data shall include the Assessor's Parcel Number of the well and the well's latitude and longitude coordinates.
- c) Groundwater Trend Monitoring data shall be submitted to GeoTracker in the EDF format by the testing laboratory.

10) Records Retention: The Enrollee, Coalition, or designated contractor shall retain the following records for a minimum of five years from the date of sample collection:

- a) Field Sheets, including all field measurement readings and calibration records;
- b) Chain-of-Custody forms;
- c) Laboratory analytical reports, including all Quality Control sample results and case narratives;
- d) Quality Assurance narratives prepared under Provision 8 of this Attachment D; and
- e) Documentation of ELAP certification of the analyzing laboratory for each method used during the retention period.

Records required under Records Retention requirements of this Attachment D shall be made available to North Coast Water Board staff upon request and may be reviewed as

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part of any inspection or compliance review conducted under this Order.

IV. Streamside Area Examples

A Streamside Area is comprised of two contiguous components: a Riparian Vegetation Area and a Vegetated Buffer in which different requirements are applied. A Streamside Area is defined as the area between the waterside edge of vegetation and where the field side edge of the Vegetated Buffer meets the Farm Area. The Riparian Vegetation Area extends from the waterside edge of vegetation to the Vegetated Buffer in Perennial and Ephemeral/Intermittent Streams. The Vegetated Buffer is measured from the Riparian Vegetation Area to the Farm Area along Perennial and Ephemeral/Intermittent Streams, and from the waterside edge of vegetation in Hydrologically Connected Undesignated Channels, Unfarmed Wetlands, and Hydrologically Connected Lakes, Ponds, or On-Stream Reservoirs. See also Appendix I: Acronyms, Definitions, and Endnotes for definitions of terms related to the Streamside Area.

For the purposes of this Order, the waterside edge of vegetation is the line on the bank established by the fluctuations of water and indicated by physical characteristics such as a clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas. The purpose of establishing the Streamside Area at the waterside edge of vegetation is to identify where riparian vegetation that provides shade begins.

Figure D.1 is an example of a Streamside Area on a Perennial Stream. The Riparian Vegetation Area extends 25 ft. from the waterside edge of vegetation in the Perennial Stream. The requirements specific to the Riparian Vegetation Area are given in the Streamside Area Section of the Order. Contiguous to the Riparian Vegetation Area is a Vegetated Buffer, which must extend at least 25 ft. until it hits the Farm Area. Headlands and equipment turn-around areas are allowed within the Vegetated Buffer provided the applicable requirements given in the Streamside Area section of the Order are followed.

Figure D.2 shows an example of a Streamside Area on an Ephemeral/Intermittent Stream. Figure D.3 shows an example of a Streamside Area on a Hydrologically Connected Undesignated Channel.

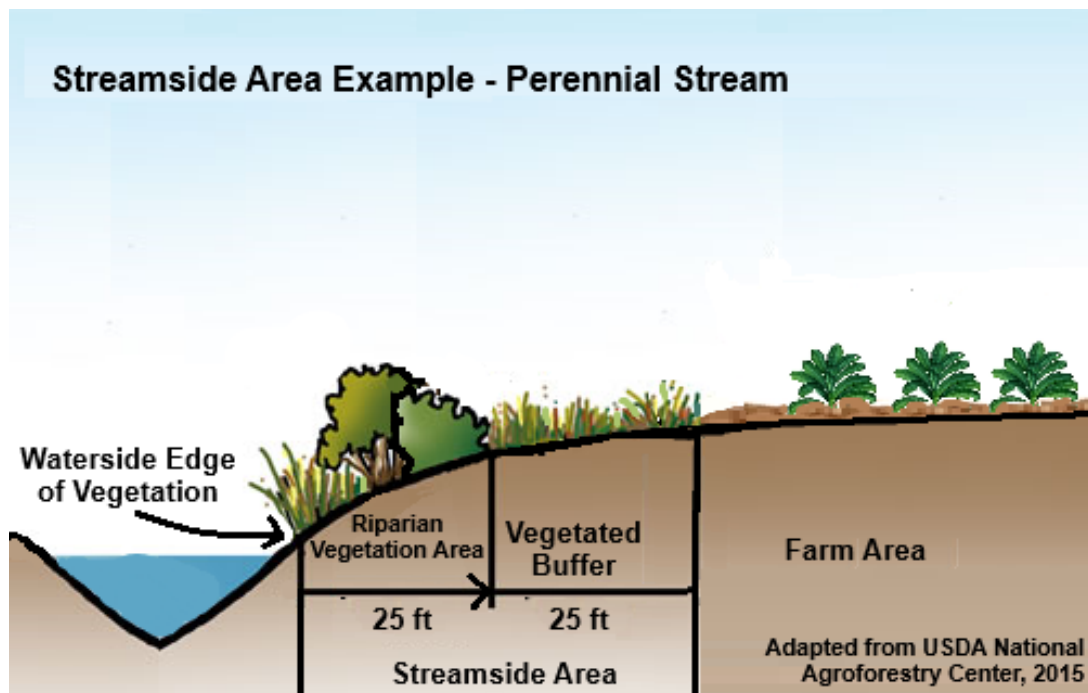


Figure D.1: Streamside Area on a Perennial Stream

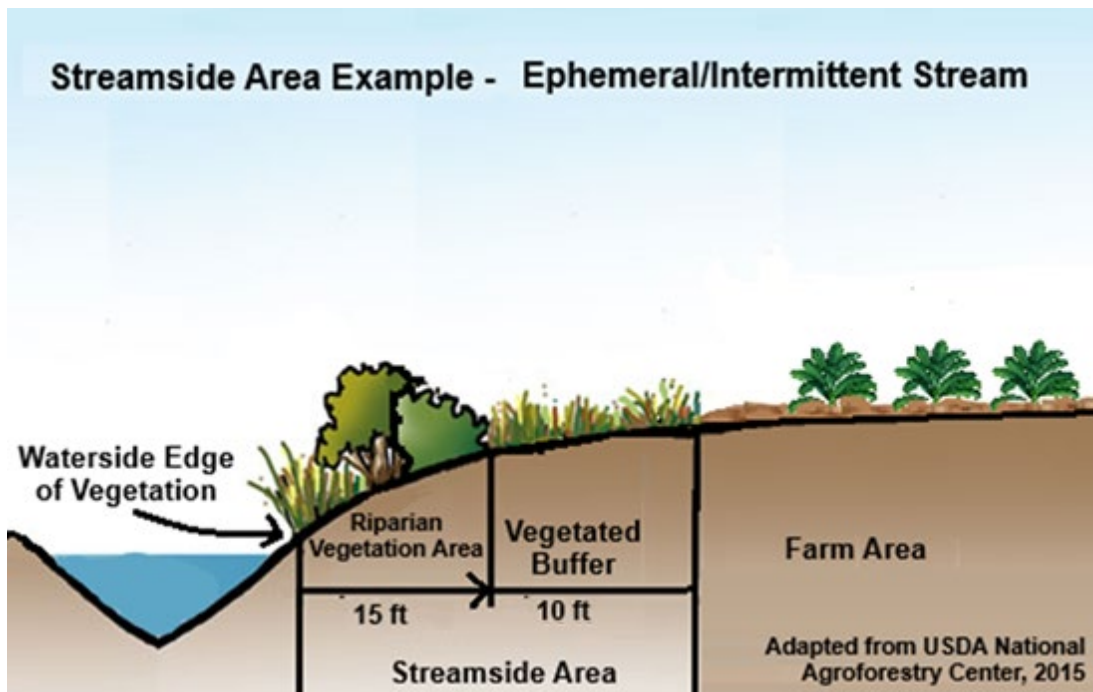


Figure D.2: Streamside Area on Ephemeral/Intermittent Stream

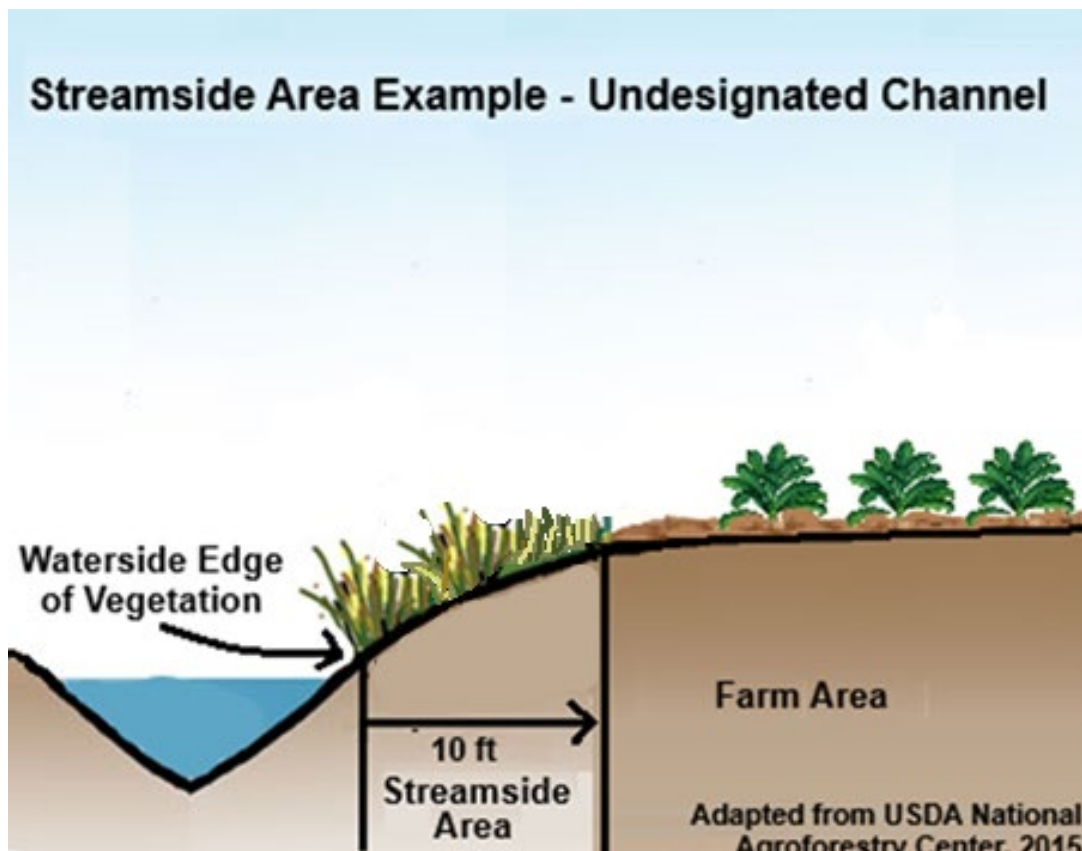


Figure D.3: Streamside Area Example, Undesignated Channel

V. Adaptive Management Flowchart for Surface Water

The flowchart below provides a visual guide to the Adaptive Management Program requirements in response to Water Quality Benchmark exceedances. See Section II.H: Adaptive Management Program in this Order for more detail.

