SECTION A: GENERAL INFORMATION

1. Relevant Catchment ID or Annual Report
   Identify the specific item being reviewed.
2. Brief Description of Situation
   Concisely identify the context for the situation. Identify whether the issue relates to a (1) new credit schedule, (2) a revision to an existing credit schedule, or (3) and annual report. For credit schedules, define the stage of review: Step 1.2: Verify Catchment Credit Schedule, Step 1.4: Accept Catchment Registration. Provide a brief statement describing the general situation surrounding the issues and questions identified.
3. Urban Jurisdiction Contact Information
   Identify the responsible urban jurisdiction, primary contact, and contact information.
4. Regulatory Agency Contact Information
   Identify the responsible regulatory agency, primary contact, and contact information.
5. Initiation Date
   Record the date of the initial transmittal of the document in question.
6. Statement of Resolution
   Once all issues have been resolved, provide signatures under the statement indicating that there are no remaining issues that must be addressed before proceeding.

SECTION B: ISSUE IDENTIFICATION & RESOLUTION

1. Issue #__: Title
   Provide a sequential issue number for each issue and a representative title for ease of reference. Indicate whether the issue is a(n) (1) question, (2) item to discuss, or (3) change request related to a specific field or statement
2. Issue Initially Identified By
   Indicate who initially identified the question.
3. Question or Issue Description
   Clearly describe the question or issue. When referring to a document, identify the page number and paragraph. When referring to a calculation, identify the specific parameters or methods. Use the space provided or develop a memo to more completely describe the issue. If using a memo, reference the memo in the description and attach as a separate file or page.
4. Question or Issue Resolution
   Give a brief description of the answer or resolution. Use the space provided or develop a memo to more completely describe the issue. If using a memo, reference the memo in the description and attach as a separate file or page.
5. Resolution Sign-off
   Once the question has been addressed or the issue resolved to the degree necessary to proceed, the regulator and urban jurisdiction each initial and date the IRP. This indicates that the item does not need any further attention.
6. Additional Issues
   Same descriptions as items B1 through B5.

Annual Stormwater Report - Credit Declaration Section Outline

Each urban jurisdiction develops an Annual Stormwater Report (ASR) to comply with reporting requirements set forth by the TRPA, and in NPDES permits or Memoranda of Agreement. The overall ASR may cover a wide range of stormwater-related topics. Chapter 2 of the Lake Clarity Crediting Program Handbook (Handbook) calls for the development of a Credit Declaration Section of the ASR. The Credit Declaration Section is developed in Step 2.4, presenting the inspections results and implementation efforts from Steps 2.1 and 2.2. The information presented in the Credit Declaration Section is the basis for awarding credits related to individual Catchment Credit Schedules (CCSs), and is used to inform (1) the overall TMDL Performance Report, (2) the Synthesis of Findings Report, and (3) development of change recommendations to improve the efficiency and effectiveness of the Lake Clarity Crediting Program (Crediting Program).

Figure ASR.1 is the recommended outline for the Credit Declaration Section. Reports generated by the TMDL Accounting and Tracking Tool (Accounting and Tracking Tool) provide most of the numeric information required for the Credit Declaration Section. This document presents technical guidance to define the intent and recommended content of each part of this Credit Declaration Section outline. Appendix B provides an example of the annual process for developing an ASR and declaring credits.

The following is a recommended outline for the *Catchment Declaration Section* of an *Annual Stormwater Report*:

1. **Credit Declaration Overview** – Reference Attachment A.1: Urban Jurisdiction Credit Summary
   - 1.1. **Catchment Credit Declaration Discussion** – Reference Attachment A.2: Annual Catchment Credit Reports for each active CCS
   - 1.2. **Credit Distribution Summary** – Reference Attachment A.3: Credit Distribution Summary Report
   - 1.3. **Implementation Summary**
     - 1.3.1. Summary of Treatment BMP Implementation
       - Inspection Findings
       - Maintenance Actions Overview
     - 1.3.2. Summary of Road Maintenance Practices
       - Inspection Findings
       - Maintenance Actions
     - 1.3.3. Summary of Private Property BMP Implementation
       - Inspection Findings
       - Implementation Actions
     - 1.3.4. Summary of Other Pollutant Control Strategies Implementation
       - Inspection Findings
       - Implementation Actions
   - 1.4. **New Catchments & Implementation Plan Progress**
     - 1.4.1. New Catchment Credit Schedules
     - 1.4.2. Progress Towards Implementing Stormwater Management Plans
       - Table of Planned and Actual Implementation Schedule
       - Expected Progress for Upcoming Year
   - 1.5. **Program Recommendations**
     - 1.5.1. Program Improvement Discussion & Potential Change Recommendations

Figure ASR.1: Credit declaration report outline

TECHNICAL GUIDANCE

The following provides brief instructions for developing the recommended content for each enumerated portion of the Credit Declaration Section outline.

Credit Declaration Overview

Provide a brief description of the information presented in the Urban Jurisdiction Annual Credit Summary generated by the Accounting and Tracking Tool. This text should highlight the most important factors influencing the overall results of the urban jurisdiction's efforts to implement pollutant controls and meet credit targets for the year. This may include both successes and challenges. Include the Urban Jurisdiction Annual Credit Summary as an attachment to the ASR.

Catchment Credit Declaration Discussion

Describe any notable factors related to specific urban catchments and CCSs. It is only necessary to include specific descriptions for CCSs for which the urban jurisdiction's declared credit amount is different from the calculated credit provided by the Accounting and Tracking Tool. See the Crediting Program credit award method described in Appendix C. The urban jurisdiction may also provide descriptions highlighting notable successes and challenges related to any CCS. The text refers to Annual Catchment Credit Reports generated by the Accounting and Tracking Tool for each CCS, and a full set of Annual Catchment Credit Reports for all registered catchments are attached to the ASR.

Credit Distribution Summary

Develop a table summarizing the number of credits distributed to and received from other jurisdictions. Table ASR.1 shows the recommended table structure and column definitions. Complete the table only for catchments with credits distributed between multiple jurisdictions. Provide description of cooperation between urban jurisdictions as needed.

Catchment ID	Total Credits Declared	Credits Declared by Reporting Urban Jurisdiction	Credits Declared by [Partner Urban Jurisdiction Name]	Credits Declared by [Partner Urban Jurisdiction Name]	Credits Declared by [Partner Urban Jurisdiction Name]
Unique Catchment ID – name begins with urban jurisdiction abbreviation	Total # of Credits Declared for the Catchment in This Year (the sum of the remaining columns should equal this number)	# of Credits Declared by Urban Jurisdiction Developing this Report	# of Credits Declared by Partner Urban Jurisdiction #1	# of Credits Declared by Partner Urban Jurisdiction #2	# of Credits Declared by Partner Urban Jurisdiction #3

Table ASR.1: Recommended credit distribution summary table

IMPLEMENTATION SUMMARY

Provide a brief overview of implementation efforts related to maintaining the conditions within registered (and, if desired, unregistered) urban catchments. This may include a description of overall resources and a discussion of successes and challenges.

Summary of Treatment BMP Implementation

Describe activities related to maintaining treatment BMP conditions. Relate descriptions to the Implementation Plan Summary information included in individual CCSs, and other implementation planning documents used by the urban jurisdiction.

- Inspection Findings

  Provide an overview of inspection efforts, notable results, and how inspection results were used to direct treatment BMP maintenance actions. Reference inspection results stored in the Accounting and Tracking Tool and individual urban jurisdiction BMP database reports that may be included as attachments to the ASR.

- Maintenance Actions

  Provide a summary of maintenance actions, including any notes related to specific catchments and treatment BMPs.

Summary of Road Maintenance Practices

Describe activities related to maintaining road conditions. Relate descriptions to the Implementation Plan Summary information included in individual CCSs and other implementation planning documents used by the urban jurisdiction.

- Inspection Findings

Provide an overview of inspection efforts, notable results, and how inspection results were used to direct roadway maintenance actions. Reference inspection results stored in the Accounting and Tracking Tool and individual implementer database reports that may be included as attachments to the ASR.

If an operations-to-conditions relationship exists for road abrasive application and sweeping practices, clearly present the data and describe the findings drawn from the data that support the operations-to-conditions relationships.

- Maintenance Actions

Provide a summary of maintenance actions including any notes related to specific catchments and roads.

Summary of Private Property BMP Implementation

Describe activities related to implementing the urban jurisdiction's private property BMP program. Relate descriptions to the Implementation Plan Summary information included in individual CCSs and other implementation planning documents used by the urban jurisdiction.

- Inspection Findings

Provide the results for private property BMP implementation from the past year and over time. For individual catchments, reference results stored in the Accounting and Tracking Tool.

- Implementation Actions

Provide a summary of private property BMP program implementation activities, including and notes related to specific catchments.

Summary of Other Pollutant Control Strategies Implementation

Describe activities related to implementing other pollutant control strategies described in individual CCSs. Relate descriptions to the Implementation Plan Summary information included in individual CCSs and other implementation planning documents used by the urban jurisdiction.

- Inspection Findings

Provide an overview of inspection efforts, notable results, and how inspection results were used to direct program implementation and maintenance actions. Reference inspection results stored in the Accounting and Tracking Tool and individual urban jurisdiction BMP database reports that may be included as attachments to the ASR.

- Maintenance Actions

Provide a summary of activities to implement other pollutant control strategies, including any notes related to specific catchments.

NEW CATCHMENTS & IMPLEMENTATION PLAN PROGRESS

Briefly describe efforts to implement new pollutant controls through capital improvements, procurement of new equipment, implementation of programs and ordinances, and any other efforts that are intended to reduce pollutant loading to Lake Tahoe.

New, Extended, Revised & Expiring Catchment Credit Schedules

Identify any CCSs established, extended or revised during this reporting year. Highlight any notable changes in overall implementation activities that are expected as a result of new actions. Also, identify any CCSs that expired during this year and what is being done to compensate for the resulting reduction in credit.

Progress Towards Implementing Stormwater Management Plans

Refer to the urban jurisdiction's Stormwater Management Plan and describe progress toward implementing the approved plan. Also describe efforts to implement projects on the urban jurisdiction's Environmental Improvement Program project lists.

- Table of Planned and Actual Implementation Schedule

The Stormwater Management Plan includes a table summarizing planned implementation of pollutant controls by catchment, providing a rough estimate or range of predicted credit, and the expected year of implementation and CCS registration. This table is reproduced in the ASR and columns added showing the actual year of implementation and credit amount, as well as providing any notes related to the specific catchment.

- Expected Progress for Upcoming Year

Add comments to the Table of Planned and Actual Implementation Schedule describing activities making progress toward implementing pollutant controls in specific catchments. Also, provide a brief narrative of near-term plans to progress toward achieving pollutant load reductions and meeting credit requirements in the next year or two.

PROGRAM RECOMMENDATIONS

Identify logistical and technical issues that, if changed or addressed, would improve the efficiency and effectiveness of the Crediting Program and efforts to reduce pollutant loading to Lake Tahoe.

PROGRAM IMPROVEMENT DISCUSSION & POTENTIAL CHANGE RECOMMENDATIONS

Describe challenges related to performing the Crediting Program steps and using the standard tools and methods. Also identify any aspects of the Crediting Program that improve the urban jurisdiction's ability to target implementation efforts and to communicate with regulators.

For specific operational issues, suggest changes to be considered for the annual program adjustment process described in Chapter 3 of the Handbook.

SCIENCE QUESTIONS FOR INVESTIGATION

Identify scientific investigations and monitoring efforts that would help inform the urban jurisdiction's future decision-making and improve the ability of the Crediting Program and related standard tools and methods to more effectively incentivize implementation of actions to improve Lake Tahoe clarity.

PIR — Program Improvement Recommendation

LCCP

SECTION A: GENERAL INFORMATION

Recommendations submitted with this form will be considered for inclusion in the **Program Adjustment Recommendations**. For each program change recommendation, fill in a separate Change Recommendation section.

I. CHANGE IDENTIFICATION

1. TITLE USED TO IDENTIFY CHANGE	2. YEAR OF PROPOSED CHANGE DECISION
Date	Year

3. POINT OF CONTACT		Provide the contact information for the appropriate representative
Name	E-mail	Phone

4. CHANGE PROPOSED AND ACTIVELY SUPPORTED BY

Urban Jurisdictions

- ☐ CALTRANS
- ☐ CSLT
- ☐ DOUGLAS
- ☐ EL DORADO
- ☐ NDOT
- ☐ PLACER
- ☐ WASHOE

Funding Partners & Scientists

- ☐ CTC
- ☐ NDSL
- ☐ RSWMP INVESTIGATORS
- ☐ OTHER: _____

Regulatory Agencies

- ☐ LRWQCB
- ☐ NDEP
- ☐ TRPA
- ☐ U.S. EPA

Stakeholders (name of group or individual)

- ☐ OTHER:_____
- ☐ OTHER:_____
- ☐ OTHER:_____
- ☐ OTHER:_____

II. RECOMMENDATION

5. PROPOSED CHANGE — Indicate all of the following related to the proposed change.

- ☐ LOAD REDUCTION ESTIMATION METHODS
- ☐ PROGRAM OPERATIONS & CREDITING PROGRAM HANDBOOK
- ☐ CONDITION ASSESSMENT METHODS
- ☐ OTHER:_____

6. NEEDS ADDRESSED BY RECOMMENDATION — Briefly describe the need for change and the issues that the change would address. Refer to items on the Identified Operational Improvements list as appropriate.

7. RECOMMENDED ACTION — Describe the specific changes that are required to implement the change. Include section references to documents and specific language, if appropriate.

8. POTENTIAL COMPLICATIONS/IMPACTS OF ACTION — Describe any ramifications or related changes that would be required to completely implement the change.

9. ADDITIONAL MATERIALS — If additional space is needed, specify in a separate memo or attachment, and complete the fields below.

Filename	Date

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PURPOSE OF THE FILE STRUCTURE

The Files Structure Template provides a consistent structure to organize the files of different formats related to (1) specific catchments and catchment credit schedules, (2) urban jurisdiction implementation plans, inventories and annual stormwater reports, and (3) the Lake Clarity Crediting Program overall, including Handbook files, forms, Performance Reports, Synthesis of Findings Reports, Lists and Program Improvement Recommendations.

TECHNICAL GUIDANCE

Figure FST.1 illustrates the file structure template that should be used on file sharing sites related to the Crediting Program.

The operational tools and templates of the Crediting Program (fill-able forms, inventory templates, etc.) are found in the Templates sub-folder of the Handbook folder. The Handbook also houses program management reports and the handbook source files (available only to Crediting Program Managers) for future revision and adaptation.

The Urban Jurisdictions folder details a digital hierarchy that urban jurisdictions use to submit and store digital files related to their jurisdiction. Sub-folders of the Urban Jurisdictions folder include locations to store all information related to active catchments within the jurisdiction, historical documentation of archived (inactive) catchments. Information related to the urban jurisdiction's programmatic operations and strategies such as implementation plans, annual reports and general jurisdiction maps are stored in the General sub-folder.

The Crediting Program File Structure can be copied and pasted to a user's computer from the Crediting Program file sharing site or supplied Crediting Program compact discs.

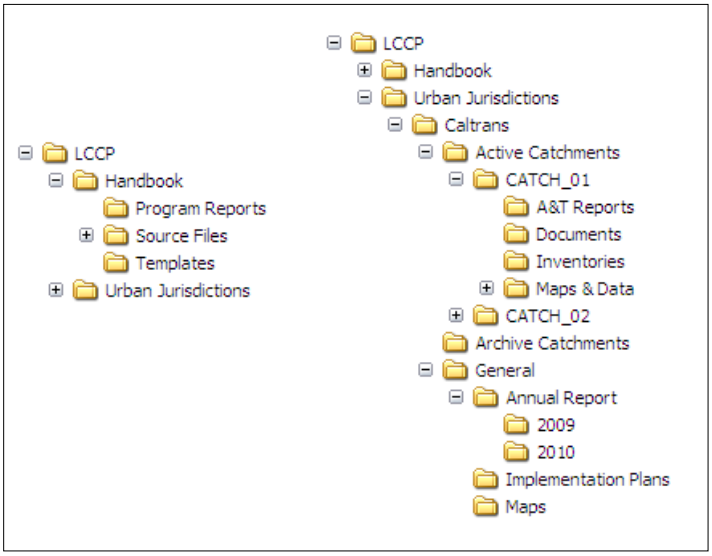

Figure FST.1: Digital file folder structure template

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The appendices to the Lake Tahoe Crediting Program Handbook provide additional information that may be helpful to urban jurisdiction stormwater managers, regulators and service providers who will be involved in details of implementing the Crediting Program.

- Appendix A complements Chapter 1. It contains a step-by-step example for developing a load reduction estimate and catchment credit schedules.
- Appendix B complements Chapter 2, providing a step-by-step example for developing the Credit Declaration Section of an annual stormwater report and awarding credits.
- Appendix C presents the technical framework for relating load reduction estimates to condition assessment inspections results and defines the Crediting Program credit award method. Appendix C is useful for those developing load reduction estimates and implementation plans, but it is not required for understanding the mechanics of how to complete the primary processes to receive credit for implementing pollutant controls.

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PURPOSE OF EXAMPLE

This example follows the steps described in Chapter 1 of the Lake Clarity Crediting Program Handbook (Handbook) to develop a load reduction estimate and establish a Catchment Credit Schedule (CCS). It illustrates how to apply the CCS Technical Guidance and Instructions (CCS Technical Guidance) to complete a CCS. It also describes typical interactions between an urban jurisdiction and a regulator. This example concludes with a description of how to register a catchment in the Accounting and Tracking Tool.

SITUATION & OVERVIEW

This example follows a hypothetical county stormwater manager, Pat, from the point of the initial development of a CCS for a typical urban catchment, Tahoe County Catchment 1. Catchment 1 includes single-family residential, multi-family residential and commercial areas as well as a network of secondary roads and a small portion of highway (see Attachment A.3). Tahoe County received funding through the Environmental Improvement Program (EIP) in 2010 to design a water quality improvement project.

Pat began the Storm Water Quality Improvement Committee (SWQIC) Project Delivery Process (PDP) in 2010. Pat used the Pollutant Load Reduction Model (PLRM) to evaluate alternatives as part of the Formulating and Evaluating Alternatives (FEA) process. Maximizing load reduction was one of several goals that guided the evaluation of alternatives and discussions with the project Technical Advisory Committee (TAC). The TAC included active engagement from a Lahontan Regional Water Quality Control Board staff person, Chris.

A 1.0 GAIN INITIAL ENDORSEMENT

In 2011 the TAC agreed to a preferred alternative, and in January 2012 completed a load reduction estimate based on the preferred alternative. Pat included an expectation of implementing normal county road sweeping activities and a high degree of private property BMP implementation (71% BMP Certificates and 3% Source Control Certificates) in the load reduction estimate using PLRM.

Pat reviewed the initial load reduction estimates with Chris and gained initial endorsement that the project could generate approximately 50 credits, based on planned pollutant controls and maintenance activities. Chris suggested that Pat engage Caltrans to explore opportunities to partner in increasing sweeping effectiveness in the lower portion of the catchment to increase the credit potential from the catchment.

The project was constructed during the 2012 field season. During this time:

- Pat engaged Caltrans maintenance managers and found they were looking for opportunities to partner with the counties to gain credit for using their advanced sweepers. Together they developed a partnership agreement and an abrasive application and sweeping plan for the lower portion of Tahoe County Catchment 1.
- Pat realized that expectations for residential BMP implementation were overly optimistic. As of completion of construction on September 29, 2012, residential BMP implementation had reached 47% and the overall private property BMP implementation had reached 60%. While Pat expected continued implementation during 2013, 62% BMP certificates and 2% source control certificates seemed to be reasonable assumptions for future implementation rates.
- In August of 2012, Tahoe County supervisors approved a new ordinance to restrict off-pavement parking. Pat expected this to reduce the amount of road shoulder soil disturbance significantly.

Pat needed to revise the initial load reduction estimate to reflect these and other construction related changes during the development of the catchment credit schedule.

A 1.1 ESTIMATE LOAD REDUCTIONS & DRAFT CATCHMENT CREDIT SCHEDULE

On September 22, 2012, Pat opened the CCS Template from the Tools Section of the Handbook and completed CCS Section A: Correspondence & Catchment Credit Schedule Summary portion I. General Catchment Information Summary as shown in Attachment 1: Catchment Credit Schedule.

ORGANIZING THE CCS AND SUPPORTING MATERIALS

The CCS and supporting materials are included as attachments to this Appendix and should are referred to in the text throughout this example.

- **Attachment A.1:** Final CCS for Tahoe County Catchment 1
- **Attachment A.2:** CCS Memo for Tahoe County Catchment 1
- **Attachment A.3:** Catchment Delineation Map for Tahoe County Catchment 1
- **Attachment A.4:** Treatment BMP Inventory Map
- **Attachment A.5:** Treatment BMP Inventory Table
- **Attachment A.6:** Roads Inventory Map
- **Attachment A.7:** Roads Inventory Table
- **Attachment A.8:** Baseline Treatment BMP Inventory Table
- **Attachment A.9:** Issue Resolution Punchlist
- **Attachment A.10:** Urban Catchment Credit Schedule Report

A 1.1.1 ▪ DELINEATE CATCHMENT

Pat used the subwatershed delineation from the Existing Conditions Analysis Memorandum (ECAM) to determine Catchment 1's urban catchment boundary following Section B: Catchment Delineation of the CCS Technical Guidance (Attachment 1). Because the outfall from Catchment 1 goes directly into Lake Tahoe, Pat accepted the default value of 100% for catchment connectivity. Attachment A.2 shows the resulting boundary of Catchment 1.

A 1.1.2 ▪ SUMMARIZE CATCHMENT IMPLEMENTATION PLAN

Pat used the information developed with the preferred alternative, in addition to information from Tahoe County's Roadway Maintenance Plan and Treatment BMP Maintenance Plan, to develop the Implementation Plan Summary as per Section C: Implementation Plan Summary of the CCS Technical Guidance.

LOAD REDUCTION STRATEGY

Pat summarized the load reduction strategy based on the extensive knowledge of Catchment 1 gained through the FEA process and while running PLRM for the post-project scenario. Pat completed portion I. Define Load Reduction Strategy of Section C of the CCS as shown in Attachment 1.

TREATMENT BMP MAINTENANCE & INSPECTION PLAN SUMMARIES

Pat used the preferred alternative design plans to develop the Treatment BMP Inventory Map, shown in Attachment A.4, and to complete columns A through D of the Treatment BMP Inventory Table as shown in Attachment A.4. The CCS Memo, Attachment A.2, addresses the use of a new substrate layering technique that is expected to maintain high infiltration rates. This is reflected in the expected loading estimate and treatment BMP inventory table.

Pat referred to the Tahoe County Treatment BMP Maintenance Plan document for details related to the typical maintenance and inspection practices for Tahoe County treatment BMPs and summarized the planned maintenance and inspection activities in the Treatment BMP Maintenance Plan Summary and Treatment BMP Inspection Plan Summary sections of portion II. Treatment BMP Implementation Summary or CCS Section C as shown in Attachment 1.

ROADS IMPLEMENTATION PLAN SUMMARY

From the PLRM analyses of the preferred alternative, Pat knew that Catchment 1 was broken into two distinct modeling drainage catchments (MDCs). The upper portion of the urban catchment with the outfall to the dry basin was labeled MDC A, and the lower portion of the urban catchment with the outfall directly to the lake was labeled MDC B. Pat developed the Road Inventory Map shown in Attachment A.6 and completed columns A through E of the Roads Inventory Summary Table shown in Attachment A.7.

Pat referred to the Tahoe County Roadway Maintenance Plan document for details about the typical maintenance and inspection practices for Tahoe County roads for and summarized the planned maintenance and inspection activities in the Roads Maintenance Plan Summary and Roads Inspection Plan Summary sections of portion III. Roads Operation Implementation Summary of CCS Section C as shown in Attachment 1.

PRIVATE PROPERTY BMP IMPLEMENTATION SUMMARY

Pat completed portion IV. Private Property BMP Implementation Summary of CCS Section C as shown in Attachment 1, using percentages that reflected the current BMP implementation percentages.

OTHER POLLUTANT CONTROL STRATEGIES IMPLEMENTATION SUMMARY

Pat include a description of the expect benefits from the county's new parking ordinance in the CCS memo, Attachment A.2. The memo also includes a definition of the expected changes related to the parking ordinance that will be used as the basis for comparing actual to observed conditions.

A 1.1.3 ▪ ESTIMATE EXPECTED LOADING

Pat began the expected loading estimate using the PLRM preferred alternative scenario decided upon during discussions with the TAC. While all of the treatment BMPs were included in this preferred alternative scenario, Pat had to update some of the parameters to reflect the additional design work completed following the selection of the preferred alternative. Pat used the default design parameters whenever they were provided by PLRM. Pat also took a more detailed look at the assumed road maintenance practices included in the scenario. Pat used the results of the expected loading scenario to complete Section D: Expected Loading Estimate of the CCS as shown in Attachment 1.

Pat also used these results to complete the Treatment BMP and Road Inventory Tables begun in Step 1.1.2 (see Table A.1 and Table A.2). Pat used PLRM to run a scenario that completely eliminated the dry basin at the bottom of the upper catchment. The result was a 35-percent increase in loading over the scenario with the dry basin. This led Pat to indicate that the dry basin was "essential" and that all other treatment BMPs and source controls included in the inventory were "key." Pat did not include the drop inlets (DI) and sediment traps (ST) in the inventory because Pat does not expect any one DI or ST to result in more than a two-percent load reduction of fine sediment particles with diameter less than 16 μm, total nitrogen (TN) or total phosphorus (TP). Pat does, however, understand that the DIs and STs are important to facilitate maintenance, ensure proper conveyance to prevent flooding, and ensure that the downstream dry basin does not rapidly degrade and require frequent maintenance.

A 1.1.4 ▪ ESTIMATE BASELINE LOADING

Pat created an existing conditions PLRM scenario in 2010, during the development of the ECAM. Pat did not, however, have a baseline scenario that reflected the development in Catchment 1 as of 2004.

Pat knew that, between 2004 and 2011, no water quality improvement project had been completed in Catchment 1. Pat had driven and walked the catchment several times during the project design process and knew that several new homes had been built and one commercial property had been renovated in recent history. Pat searched county records and found that twelve new homes were built. A back-of-the-envelope calculation showed that this increased the single-family residential (SFR) percent coverage by 2% from baseline. Thus, Pat decreased the baseline SFR percent coverage by 2% from the value used in the expected loading scenario. Pat discussed the commercial property re-development with county and TRPA permitting staff and looked at the project file, determining that 25,000 square feet of coverage had been eliminated in 2007. This reduced the percent coverage of the Commercial/Institutional/Communications/Utilities (CICU) land use by 2% from baseline. Thus, Pat increased the percent impervious for CICU by 2% for the baseline scenario. No roads had been constructed or decommissioned since 2004 and no significant road shoulder upgrades had been completed since 2004.

Using this information Pat developed the Baseline Treatment BMP Inventory Table (Attachment A.8). Pat used the standard baseline modeling parameters provided in Section E of the CCS Technical Guidance and Instructions to develop the baseline loading estimate. The results, as completed in CCS Section E: Baseline Loading Estimate, are shown in Attachment 1.

A 1.1.5 ▪ DETERMINE CATCHMENT CREDIT SCHEDULE AMOUNT & DURATION

Pat used the results of the expected loading and baseline loading estimates to determine the mass loading estimates for fine sediment, TN and TP. Pat then used Equation 0.3 to convert from fine sediment mass to number of fine particles, and Equation 0.2 to calculate the associated amount of credit. Because long-lived treatment BMPs are the primary load reduction strategy for Tahoe County Catchment 1, Pat selected a 15-year CCS duration. Draft CCSs do not have an establishment date, so Pat left this field blank. Attachment 1 shows the resulting CCS Section F: Catchment Credit Schedule Amount & Duration.

A 1.1.6 ▪ COMPILE DOCUMENTATION & SUBMIT FOR REVIEW

Pat used the information from CCS Sections B through F to complete the remaining information in CCS Section A. Pat completed the documentation checklist at the end of CCS Section A, item 14. Supporting Materials Checklist and Filenames.

Pat used the file structure defined in the Crediting Program File Structure Tool to organize all relevant files and posted the folder to the Tahoe County file on the TMDL Management System workspace. On November 29, 2012, Pat sent Chris an email notifying him that all documents were posted, and delivered a copy of all printed materials. Pat made a special request for a rapid review and scheduled the verification field visit and meeting for December 4, to discuss the Draft Final CCS and supporting materials.

A 1.2 VERIFY LOAD REDUCTION ESTIMATE & CATCHMENT CREDIT SCHEDULE

Chris had visited the site during construction and was familiar with the constructed treatment BMPs; however, Chris shared Pat's desire to complete the verification meeting before snow obscured the road shoulders. So, Chris dedicated December 3, 2012 to completing a thorough review of the CCS and supporting materials.

A 1.2.1 ▪ REVIEW DRAFT FINAL DOCUMENTS

Chris identified several issues and questions, and developed an Issue Resolution Punchlist (IRP). Attachment A.9 shows the completed IRP, including both the questions and issues identified by Chris in this step and the resolutions and responses from Pat following Step 1.4.2.

A 1.2.2 ▪ VERIFY ACTIONS, IMPLEMENTATION PLANS & LOADING ESTIMATE

Pat and Chris toured Tahoe County Catchment 1 on the morning of December 4, 2012. Chris verified that the treatment BMPs were installed as listed in the Treatment BMP Inventory Table, with the exception noted in the IRP. They encountered a Caltrans sweeper sweeping the secondary road in the lower portion of the catchment following the previous week's storm. Pat and Chris also looked at road shoulder conditions and discussed the assumptions related to the parking ordinance implementation plan.

Chris and Pat met back at the Tahoe County office in the afternoon. They determined that the high infiltration rate used for the dry basin was justified, and discussed the Other Pollutant Control Implementation Plan from CCS Section E and the associated CCS Memo section. They discussed the parking ordinance inspection plan and the proper way to model the benefits from the ordinance. Attachment A.8 shows the responses to the questions and issues raised.

At the conclusion of the meeting, both Chris and Pat signed the IRP stating that as soon as the resolutions identified in the IRP are completed, the CCS and supporting documentation would be accepted.

A 1.2.3 ▪ SUBMIT CATCHMENT CREDIT SCHEDULE & SUPPORTING MATERIALS

Pat updated the CCS and related materials as shown in the strikethrough and bold areas of the related attachments. Pat had the County Engineer review the materials and sign the signature field in CCS Section A, and filled in the establishment date, establishment year credit amount and final year of credit schedule.

Pat used the file structure defined in the Crediting Program File Structure Tool to organize all relevant files and posted the folder to the Tahoe County folder on the TMDL Management System workspace. On December 22, 2012, Pat sent Chris an email to indicate that all documents were posted, and delivered a printed copy of all necessary materials. This set the establishment date of December 22, 2012 for the CCS.

A 1.2.4 ▪ VERIFY CATCHMENT CREDIT SCHEDULE

Chris checked to make sure that all items defined in the IRP were changed as described. Chris checked that all materials were present and asked an intern to check that all modeling parameters were accurately reflected in the Inventory Tables and Maps. Chris had no issues or questions, and sent Pat a confirmation email on December 24, 2012

A 1.3 REGISTER CATCHMENT

Pat made the time to finish the adjustments to the CCS and supporting materials before the end of the year, in order to ensure the establishment date would be in December of 2012.

A 1.3.1 ▪ REGISTER CATCHMENT IN ACCOUNTING & TRACKING TOOL

With the Final CCS in hand, on December 31, 2012, Pat logged into the Accounting and Tracking Tool and followed the catchment registration instructions. Pat was sure to note that all Treatment BMP Expected Condition Scores were a three, as guided by the Catchment Credit Schedule Technical Guidance documentation.

Pat uploaded the necessary fields from the Treatment BMP and Roads Inventory Tables and filled out the other portions of the Urban Catchment Credit Schedule Registration Form. After saving the Urban Catchment Credit Schedule Registration Form, Pat printed the Tahoe County Catchment 1 Credit Schedule Report, provided in Attachment A.8.

A 1.6 ACCEPT FINAL CATCHMENT CREDIT SCHEDULE

Chris was not able to review the submitted materials and accept the final CCS until January 4, 2013. As per the CCS Technical Guidance, the establishment date remained December 22, 2012 despite the delay in Chris's review.

A 1.6.1 ▪ ACCEPT CATCHMENT CREDIT SCHEDULE, FILE MATERIALS & SEND CONFIRMATION

On January 4, 2013, Chris logged in to the Accounting and Tracking Tool and proceeded to the Urban Catchment Credit Schedules Acceptance Form. Chris generated the Urban Catchment Credit Schedule Report and checked that all entered fields matched the CCS. Chris went back to the acceptance form and checked the box accepting the Tahoe County Catchment 1 Credit Schedule for each year, as shown in Figure A.1.

Urban Catchment Credit Schedules to be Approved

Save and Close Form

Catchment	Registration Date	Year	Calculated Credits Per Year	Scheduled Credits	Approve Scheduled Credits	
TCC1	1/10/2012	2012	69	69	☑	View Urban Catchment Credit Schedule Report
TCC1	1/10/2012	2013	75	75	☑	View Urban Catchment Credit Schedule Report
TCC1	1/10/2012	2014	75	75	☑	View Urban Catchment Credit Schedule Report
TCC1	1/10/2012	2015	75	75	☑	View Urban Catchment Credit Schedule Report
TCC1	1/10/2012	2016	75	75	☑	View Urban Catchment Credit Schedule Report
TCC1	1/10/2012	2017	75	75	☑	View Urban Catchment Credit Schedule Report
TCC1	1/10/2012	2018	75	75	☑	View Urban Catchment Credit Schedule Report
TCC1	1/10/2012	2019	75	75	☑	View Urban Catchment Credit Schedule Report
TCC1	1/10/2012	2020	75	75	☑	View Urban Catchment Credit Schedule Report
TCC1	1/10/2012	2021	75	75	☑	View Urban Catchment Credit Schedule Report
TCC1	1/10/2012	2022	75	75	☑	View Urban Catchment Credit Schedule Report
TCC1	1/10/2012	2023	75	75	☑	View Urban Catchment Credit Schedule Report
TCC1	1/10/2012	2024	75	75	☑	View Urban Catchment Credit Schedule Report
TCC1	1/10/2012	2025	75	75	☑	View Urban Catchment Credit Schedule Report
TCC1	1/10/2012	2026	75	75	☑	View Urban Catchment Credit Schedule Report
TCC1	1/10/2012	2027	75	75	☑	View Urban Catchment Credit Schedule Report

Figure A.1: Acceptance of Tahoe County Catchment 1

Chris then signed the acceptance line of CCS Section A, scanned a copy of the page for Pat, and filed all materials. Chris then sent Pat an email with the attached signature page. The email stated that the CCS had been accepted and thanked Pat for his attentiveness, creativity and clarity.

CCS CATCHMENT CREDIT SCHEDULE

SECTION A: CORRESPONDENCE & CATCHMENT CREDIT SCHEDULE SUMMARY

The Correspondence & Catchment Credit Schedule Summary section is completed incrementally throughout the process of establishing a Catchment Credit Schedule (CCS), as defined in Chapter 1 of the Lake Clarity Crediting Handbook (Handbook). Subsequent sections of this template prompt users to complete the corresponding summary items here in Section A.

I. GENERAL CATCHMENT INFORMATION SUMMARY

1. CATCHMENT STATUS

Check the appropriate status and add date of previous approval if applicable

- ☒ NEW CATCHMENT
- ☐ REVISION
- ☐ EXTENSION

Date of previous approval

2. CATCHMENT ID

Provide the unique catchment ID & common name

Catchment ID: TCC1

Common Catchment Name: Tahoe County Catchment 1

3. PRIMARY JURISDICTION

Identify the primary urban jurisdiction and primary point of contact within the urban jurisdiction

- ☐ CALTRANS
- ☐ CSLT
- ☐ DOUGLAS
- ☐ EL DORADO
- ☐ NDOT
- ☐ PLACER
- ☐ WASHOE
- ☒ TAHOE COUNTY

Primary Contact: Pat Kuchman

Phone Number: 530-745-5555

E-mail Address: pkuchman@tahoecounty.gov

4. REGULATORY AGENCY

Identify the responsible regulatory agency and primary point of contact within the agency

- ☒ LRWQCB
- ☐ NDEP

Primary Contact: Chris Lawson

Phone Number: 530-542-5555

E-mail Address: clawson@waterboard.gov

II. CATCHMENT CREDIT SCHEDULE SUMMARY

5. BASIC CATCHMENT POLLUTANT CONTROL STRATEGY NARRATIVE

In the space provided, describe the basic strategies employed to reduce pollutant loading within the catchment

Basic Narrative

Road shoulder and conveyance infrastructure improvements prevent soil erosion and route stormwater to a dry basin that treats a large portion of the stormwater coming from the residential portion of the catchment. Aggressive sweeping of the roads in the lower portion of the catchment is also expected to achieve significant load reductions.

6. EFFECTIVE LOAD REDUCTION ESTIMATE

Note the load reduction estimate amounts from Section F

Fine sediment particles (#)	Fine sediment mass (kg)	Total nitrogen (kg)	Total phosphorous (kg)
75×10^{16}	6800	7	25

7. CREDIT POTENTIAL AMOUNT

Note the credit amount

75 CREDITS

8. ESTABLISHMENT DATE

Note the catchment establishment date from Section F for final CCS only

Establishment Date: 12/22/2012

9. FINAL YEAR

Note the final year of the CCS from Section F for final CCS only

Final Year: 2022

III. COORDINATION CHECKLIST

10. SUBMITTED FOR VERIFICATION REVIEW	Note the date submitted and urban jurisdiction staff person (Step 1.3)
Date Submitted 11/29/2012	Name of Staff Person Pat Kuchman

11. STATEMENT OF COMPLETENESS & APPROPRIATENESS	Representative from urban jurisdiction must certify the completeness of the CCS (Step 1.3)

I certify that the information contained in this Catchment Credit Schedule and the analyses related to this Catchment Credit Schedule are complete and appropriate.

Printed Name	Date
Pat Kuchman	11/26/2012

Signature

Pat Kuchman

12. VERIFIED BY REGULATOR	Regulator must certify the verification step is complete (Step 1.4)

I certify that the Verification Step is complete.

Printed Name	Date
Chris Lawson	12/4/2012

Signature

Chris Lawson

13. REGISTERED AND SUBMITTED FOR APPROVAL	Note the date that the catchment was registered in the Accounting and Tracking Database (Step 1.5)

Date

12/21/2012

14. SUPPORTING MATERIALS CHECKLIST AND FILENAMES	Confirm each file is included in the digital submission and provide the filename and save date	
Checklist	Filename	Save Date
☒ CCS FORM	TCC1 Draft CCS.doc	12/20/2012
☒ CCS MEMO (IF NECCESARY)	TCC1 Final CCS Memo.doc	12/21/2012
☒ CATCHMENT DELINEATION MAP FOR CATCHMENT 1	TCC1 Delineation.pdf	12/5/2011
☐ OVERALL CATCHMENT DELINEATION MAP	Current is on file with Water Board	12/12/2010
☒ TREATMENT BMP INVENTORY MAP	TCC1 Inventory.pdf	12/20/2012
☒ TREATMENT BMP INVENTORY TABLE	TCC1 Inventory Tables.xls - Treatment BMP tab	12/20/2012
☒ ROADS INVENTORY MAP	TCC1 Roads.pdf	1/7/2012
☒ ROADS INVENTORY TABLE	TCC1 Inventory Tables.xls - Roads tab	12/20/2012
☐ ROADS MAINTENANCE MAP(S) (NOT REQUIRED)	N/A	N/A
☒ BASELINE TREATMENT BMP INVENTORY TABLE	TCC1 Inventory Tables.xls - Baseline tab	1/9/2012
☒ ISSUE RESOLUTION PUNCHLIST(S) (ANY APPLICABLE)	TCC1 IRP1.doc	12/8/2012
☒ PLRM PROJECT FILE (DIGITAL FILE ONLY)	TCC1 Draft CCS Loads	12/17/2012
☐ AS-BUILT DRAWINGS AND EQUIPMENT SPECIFICATIONS (DIGITAL FILES ONLY)	N/A	N/A

SECTION B: CATCHMENT DELINEATION

Credits and load reductions are tracked for specific urban catchments. The same urban catchment area must be used in both baseline and expected loading estimates. In order to prevent double counting, no land area may be included in two urban catchments.

I. CATCHMENT CONNECTIVITY

1. CATCHMENT ID	Confirm the catchment ID and name	2. CATCHMENT DELINEATION MAP	Confirm the catchment delineation map is complete
☒ CATCHMENT ID IS PROPERLY LISTED IN A.1		☒ MAP FOLLOWS TECHNICAL GUIDANCE AND IS LISTED IN A.17	
3. OVERALL URBAN JURISDICTION CATCHMENT MAP	Confirm the overall catchment delineation map is complete	**4. CATCHMENT HISTORY**	Note any previous catchments that included a portion of this catchment
☒ MAP FOLLOWS TECHNICAL GUIDANCE AND IS LISTED IN A.17		Previous Catchment Name	Establishment Date
5. CATCHMENT AREA	Provide the total catchment area	**6. CATCHMENT CONNECTIVITY**	Provide the percent connectivity that will be used to modify the load reduction estimate
Total Area 185 acres		Percent Connectivity ☒ 100% ☐ OTHER ——%	
		☐ ADDITIONAL INFORMATION IS PROVIDED IN THE CCS MEMO CATCHMENT CONNECTIVITY SECTION	

SECTION C: IMPLEMENTATION PLAN SUMMARY

The Implementation Plan Summary defines the expected conditions for treatment BMPs, roads, private property BMPs, and other pollutant control strategies based on the urban jurisdiction's planned operations, maintenance and program implementation activities in the urban catchment. The Implementation Plan Summary may pull information from multiple sources and ideally relies upon one or more broader implementation plans used by the urban jurisdictions.

I. DEFINE LOAD REDUCTION STRATEGY

1. TREATMENT BMPS	Check the most appropriate description	2. ROAD OPERATIONS	Check the most appropriate description
☒ PRIMARY ☐ SECONDARY ☐ TERTIARY ☐ NONE		☐ PRIMARY ☒ SECONDARY ☐ TERTIARY ☐ NONE	
3. PRIVATE PARCEL BMPS	Check the most appropriate description	**4. OTHER POLLUTANT CONTROL STRATEGY**	Check the most appropriate description
☐ PRIMARY ☐ SECONDARY ☒ TERTIARY ☐ NONE		☐ PRIMARY ☐ SECONDARY ☐ TERTIARY ☒ NONE	

II. TREATMENT BMP IMPLEMENTATION SUMMARY

5. TREATMENT BMP INVENTORY TABLE	Confirm the table is complete	6. TREATMENT BMP INVENTORY MAP	Confirm the map is complete
☒ TABLE FOLLOWS TECHNICAL GUIDANCE AND IS LISTED IN A.17		☒ MAP FOLLOWS TECHNICAL GUIDANCE AND IS LISTED IN A.17	

7. TREATMENT BMP MAINTENANCE PLAN SUMMARY

In the space provided, summarize planned treatment BMP maintenance actions for the overall catchment (reference implementation planning documents if applicable)

See the Tahoe County BMP Maintenance Plan 2010 for a description of the typical maintenance practices implemented by the county to maintain BMPs and conveyance infrastructure. Typical practices include early summer maintenance of all basins, infiltration features and conveyance infrastructure that are deemed necessary to maintain based on inspection results. Maintenance is performed by county staff using vactor trucks, shovels and occasionally heavy equipment such as backhoes when required.

8. TREATMENT BMP INSPECTION PLAN SUMMARY

In the space provided, summarize planned treatment BMP inspection actions for the overall catchment (reference implementation planning documents if applicable)

See the Tahoe County BMP Maintenance Plan 2010 for a description of the typical inspection practices implemented by the county to maintain BMPs and conveyance infrastructure. Typical practices include county maintenance personnel performing annual inspections in the late spring to determine maintenance priorities. The county intends to maintain all treatment BMPs with conditions scores lower than 3 and will maintain additional BMPs as resources are available.

9. ADDITIONAL TREATMENT BMP IMPLEMENTATION INFORMATION

Indicate whether additional information is provided in the CCS memo to adequately describe the treatment BMPs within the catchment

☐ ADDITIONAL INFORMATION IS PROVIDED IN THE CCS MEMO TREATEMENT BMP IMPLEMENTATION SUMMARY SECTION

III. ROADS OPERATION IMPLEMENTATION SUMMARY

10. ROAD INVENTORY TABLE	Confirm the table is complete	11. ROADS INVENTORY MAP	Confirm the map is complete
☒ TABLE FOLLOWS TECHNICAL GUIDANCE AND IS LISTED IN A.17		☒ MAP FOLLOWS TECHNICAL GUIDANCE AND IS LISTED IN A.17	

12. ROADS MAINTENANCE PLAN SUMMARY	In the space provided, summarize planned road maintenance actions for the overall catchment (reference implementation planning documents if applicable)

See the Tahoe County Roadway Maintenance Plan 2011 for a description of the typical traction abrasive application and sweeping practices for different types of roads that will be used in the upper portion of the catchment. The typical county abrasive application practices moderate the amount of abrasives applied to protect safety and water quality and we run a tandem type sweeper on an occasional basis, usually three or four times per year in various seasons. The county is partnering with CalTrans to implement an aggressive roads sweeping program on all roads in the lower portion of the catchment. This will include using a dustless sweeper weekly in the winter and monthly in the summer and fall.

13. ROADS MAINTENANCE MAP(S)	Confirm road maintenance maps
☒ ROAD MAINTENANCE MAPS ARE PROPERLY IN A.17 (NOT REQUIRED)	

14. ROADS INSPECTION PLAN SUMMARY	In the space provided, summarize planned road inspection actions for the overall catchment (reference implementation planning documents if applicable)

See the Tahoe County Road Maintenance Plan 2011 for a description of the typical road inspection practices. We inspect once during summer and once during winter conditions, both before and after sweeping. This is used to develop average conditions. If maintenance staff notice problematic sediment build-up on a road surface they coordinate to send a sweeper to the site when it is next in the vicinity. In the lower watershed we will develop an operations-to-conditions relationship during 3 inspection periods during the year.

15. ADDITIONAL ROAD IMPLEMENTATION INFORMATION	Indicate whether additional information is provided in the CCS memo to adequately describe the roads within the catchment
☐ ADDITIONAL INFORMATION IS PROVIDED IN THE CCS MEMO ROADS IMPLEMENTATION SUMMARY SECTION	

IV. PRIVATE PROPERTY BMP IMPLEMENTATION SUMMARY

16. PRIVATE PROPERTY BMP INVENTORY		In the space provided, note the total number of developed single-family residential (SFR) parcels and the number of SFR parcels with BMP and source control certificates. Also, note the total area of multi-family residential (MFR) and commercial properties (CICU) and the area with BMP and source control certificates. Provide the percentage area with BMP and source control certificates that should be used as the expected value.			
Total Area of SFR (acres)	Total # of SFR	Total # of SFR w/ BMP Cert.	Total % of SFR w/BMP Cert.	Total # of SFR w/ SC Cert.	Total % of SFR w/ SC Cert.
100	200	100	50%	4	3%
Total area of MFR (acres)	Area of MFR with BMP Certificates (acres)	Total Area of CICU (acres)		Area of CICU with BMP Certificates (acres)	
20	16	30		28	
Expected percentage of area with BMP certificates		**Expected percentage of area with source control certificates**			
62%		2%			

17. URBAN JURISDICTION PRIVATE PROPERTY BMP PROGRAM SUMMARY	In the space provided, describe any planned variations from the general private property BMP program for this urban catchment (reference implementation planning documents if applicable)

18. PRIVATE PROPTERY BMP INSPECTION PLAN SUMMARY	In the space provided, identify the data sources supporting these private property BMP calculations (reference implementation planning documents if applicable)

The county maintains a map of private properties with BMP certificates that is updated on an annual basis with data acquired from TRPA BMP Program Managers. The county performs a simple count of single-family residential properties with BMPs and applies the fraction of homes to the overall single-family residential land use area. The county performs a map area analysis to determine the percent area of multi-family and commercial property BMPs.

19. ADDITIONAL PRIVATE PROPERTY BMP INFORMATION	Indicate whether additional information is provided in the CCS memo to adequately describe the private property BMP implementation efforts in the catchment

☐ ADDITIONAL INFORMATION IS PROVIDED IN THE CCS MEMO PRIVATE PROPERTY BMP IMPLEMENTATION SUMMARY SECTION

V. OTHER POLLUTANT CONTROL STRATEGIES IMPLEMENTATION SUMMARY

20. OTHER POLLUTANT CONTROL PROGRAM SUMMARY	If other pollutant control strategies are implemented in the urban catchment, indicate that they are described in the CCS memo

☒ ADDITIONAL INFORMATION IS PROVIDED IN THE CCS MEMO OTHER POLLUTANT CONTROL STRATEGIES SECTION

SECTION D: EXPECTED LOADING ESTIMATE

The expected loading estimate reflects annual average loading assuming treatment BMPs, roads, private property BMPs and other pollutant controls are maintained and operated to achieve the expected conditions defined in the Implementation Plan Summary.

I. EXPECTED LOADING ESTIMATE

1. LOAD ESTIMATION METHOD	Select the method used to estimate the expected and baseline loading for the catchment
☒ POLLUTANT LOAD REDUCTION MODEL (PLRM) V1.0 ☐ OTHER (DESCRIPTION IS INCLUDED IN CCS MEMO)	Name and version (If you selected Other)
2. EXPECTED LOADING PARAMETERS, ASSUMPTIONS & DATASETS	Check yes if any parameter values, assumptions or datasets used deviate from default values or recommendations
☐ YES ☒ NO (only defaults used)	☒ ADDITIONAL INFORMATION IS PROVIDED IN THE CCS MEMO LOAD ESTIMATION APPROACH AND ASSUMPTIONS SECTION

If Yes, please explain

The infiltration rate for DB01 used was 3 inches based on the layered gravel and sand bed materials used to maintain high infiltration rates.

3. EXPECTED LOADING PROJECT FILE	Confirm that the expected loading estimate scenario is included	4. EXPECTED LOAD	Provide the expected loads for fine sediment, nitrogen and phosphorus
☒ THE EXPECTED LOADING ESTIMATE SCENARIO IS INCLUDED IN THE LOAD ESTIMATION PROJECT FILE AND IS LISTED IN A.17		Fine sediment mass (kg) 2700	Fine sediment particles (#) 30×10^{16}
		Total nitrogen (kg) 4	Total phosphorus (kg) 10

SECTION E: BASELINE LOADING ESTIMATE

The urban catchment baseline loading estimate sets the reference point for determining load reductions.

I. BASELINE LOADING ESTIMATE

1. BASELINE INVENTORY TABLE	Confirm baseline inventory table	2. BASELINE INFRASTRUCTURE MAP	Confirm baseline infrastructure map
☒ TABLE FOLLOWS TECHNICAL GUIDANCE AND IS LISTED IN A.17		☒ MAP FOLLOWS TECHNICAL GUIDANCE AND IS LISTED IN A.17	
3. CHANGES SINCE 2004		Summarize any changes to treatment BMPs since 2004	

DB01 existed as a small, local Dry Basin. The EIP project expanded the drainage area flowing to the basin. 12 new SFR parcels were developed, increasing the percentage of pervious SFR by 2%. Also, there was a 10,000 square foot of impervious coverage reduction in commercial, reducing CICU coverage.

☐ ADDITIONAL INFORMATION IS PROVIDED IN THE CCS MEMO BASELINE CONDITIONS SECTION	
4. BASELINE LOADING PARAMETERS, ASSUMPTIONS & DATASETS	Indicate if any parameter values, assumptions or datasets used deviate from default values or recommendations
☐ YES ☒ NO	☐ ADDITIONAL INFORMATION IS PROVIDED IN THE CCS MEMO BASELINE CONDITIONS SECTION

If Yes, please explain

5. BASELINE LOAD ESTIMATE		Provide the baseline loads for fine sediment, nitrogen and phosphorus	
Fine sediment mass (kg) 9500	Fine sediment particles (#) 105×10^{16}	Total nitrogen (kg) 11	Total phosphorus (kg) 35

SECTION F: CATCHMENT CREDIT SCHEDULE AMOUNT & DURATION

The final determination of the appropriate CCS credit potential amount and duration is made by the regulator in consultation with the urban jurisdiction. The urban jurisdiction proposes the CCS credit potential amount based on the load reduction estimate, and the duration based on the primary and secondary pollutant control strategies.

I. LOAD REDUCTION ESTIMATE & CATCHMENT CREDIT SCHEDULE AMOUNT

1. LOAD REDUCTION ESTIMATE		Note the load reduction estimate amounts
Fine sediment mass (kg)	Total phosphorus (kg)	Total nitrogen (kg)
6800	25	7

2. FINE SEDIMENT PARTICLE NUMBER CONVERSION	Using Equation 0.3, convert the fine sediment mass to number of fine sediment particles	3. CATCHMENT CONNECTIVITY	From item B.5
Fine sediment particles (#)		Percent Connectivity	
75×10^{16}		100 %	

4. EFFECTIVE LOAD REDUCTION ESTIMATE		Multiply the vaues in items F.1 and F.2 by F.3	
Fine sediment mass (kg)	Fine sediment particles (#)	Total phosphorous (kg)	Total nitrogen (kg)
6800	75×10^{16}	25	7

5. CREDIT AMOUNT CALCULATION	Using equation 0.2 calculate the credit amount

75 CREDITS

II. CREDIT SCHEDULE DURATION

6. CREDIT SCHEDULE DURATION	Indicate the catchment credit schedule duration	7. DURATION RATIONALE	Briefly explain the rationale for the selected duration
☐ 5 YEARS ☒ 10 YEARS ☐ 15 YEARS ☐ OTHER (SPECIFY) _____YEARS		Explanation The primary pollutant control strategy is long-lived treatment BMPs. The primary pollutant control strategies include both long-lived treatment BMPs and ongoing road operation practices.	

III. ESTABLISHMENT SUMMARY

8. ESTABLISHMENT DATE	Note the date that the CCS is submitted to the regulator	9. ESTABLISHMENT YEAR CREDIT POTENTIAL	Note the appropriate establishment year percentage and amount
Date		Percentage	Credit Amount
12/22/2012		92%	69

10. FINAL YEAR OF CREDIT SCHEDULE	Note the appropriate final year of the credit schedule
Final Year	
2022	

11. ADDITIONAL EXPECTED CCS AMOUNT AND DURATION INFORMATION	Indicate whether additional information is provided in the CCS memo to adequately describe the private property BMP implementation efforts in the catchment
☐ ADDITIONAL INFORMATION IS PROVIDED IN THE CCS MEMO CCS AMOUNT AND DURATION SECTION	

Tahoe County

Memo

To: Chris Lawson

From: Pat Kuchman

Date: 9/15/2012

Re: Tahoe County Catchment 1 Final CCS Additional Discussion Points

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Parking/Road Shoulder Inspection Plan

The Tahoe County Supervisors passed ordinance 2012-11 in August 2012 that establishes fines for parking off pavement. The Supervisors also allocated resources to county communications staff to provide community outreach and promote understanding of the importance to protect soils in neighborhoods.

As a result the county expects to see a noticeable decrease in road shoulder soil disturbance. This is reflected in the expected loading estimate by increasing the percent of road shoulder protected from 50%, which is the amount with curb and gutter, to 70%.

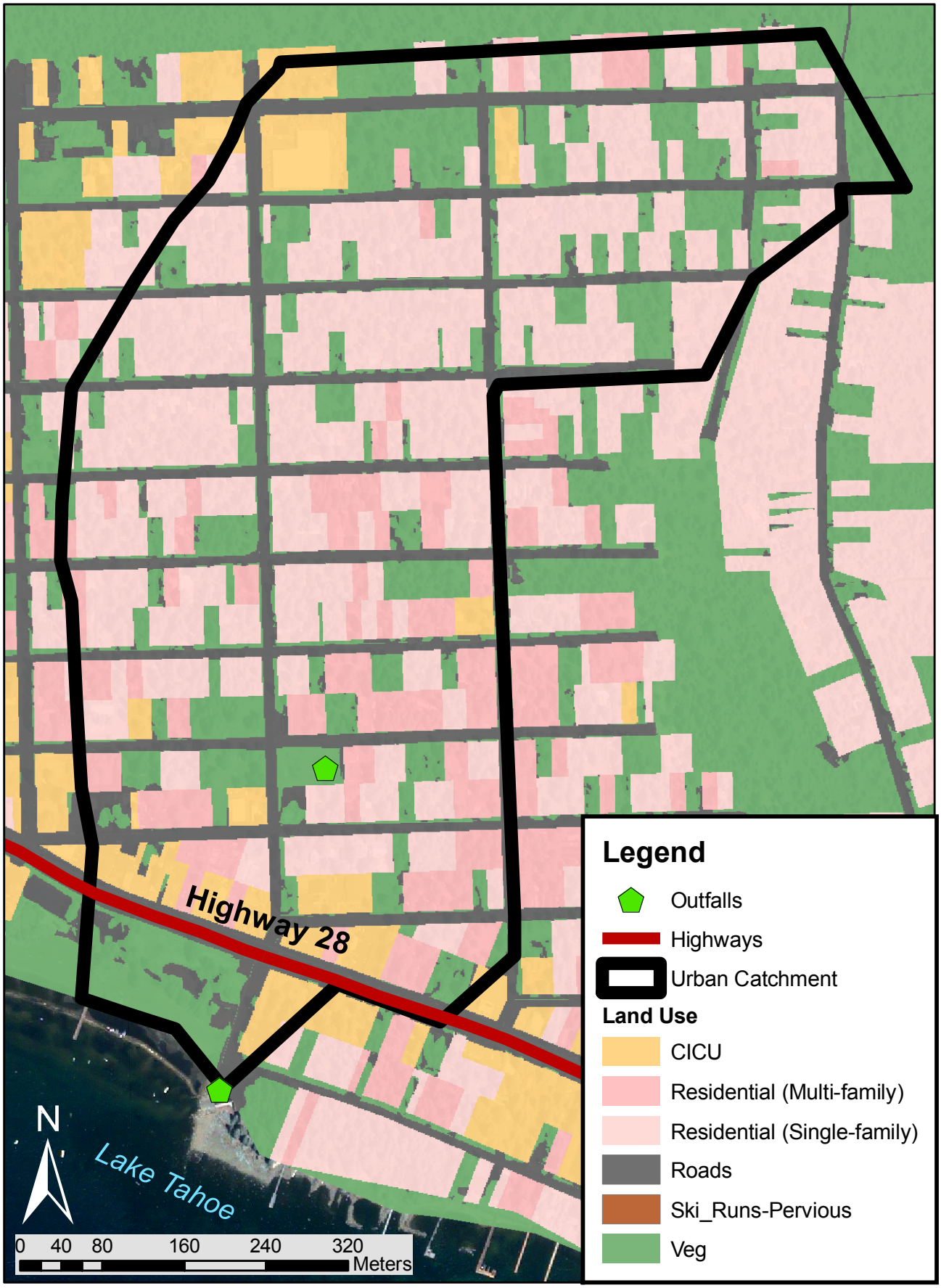
We expect to see a measurable reduction in road shoulder disturbance as a result of outreach and enforcement of the parking ordinance in this catchment. A survey in the summer of 2012, showed that 60% of un-curbed and un-protected road shoulders in single and multi-family residential neighborhoods showed visible signs of disturbance from off-pavement parking or other activities. County staff will conduct annual driving surveys to inspect at least 25% of the un-protected road shoulders within the catchment. Table 1 summarizes our condition scores that will result from this other pollutant control strategy.

1	2	3	4	5
60% disturbance	45% disturbance	30% disturbance	15% disturbance	0% disturbance

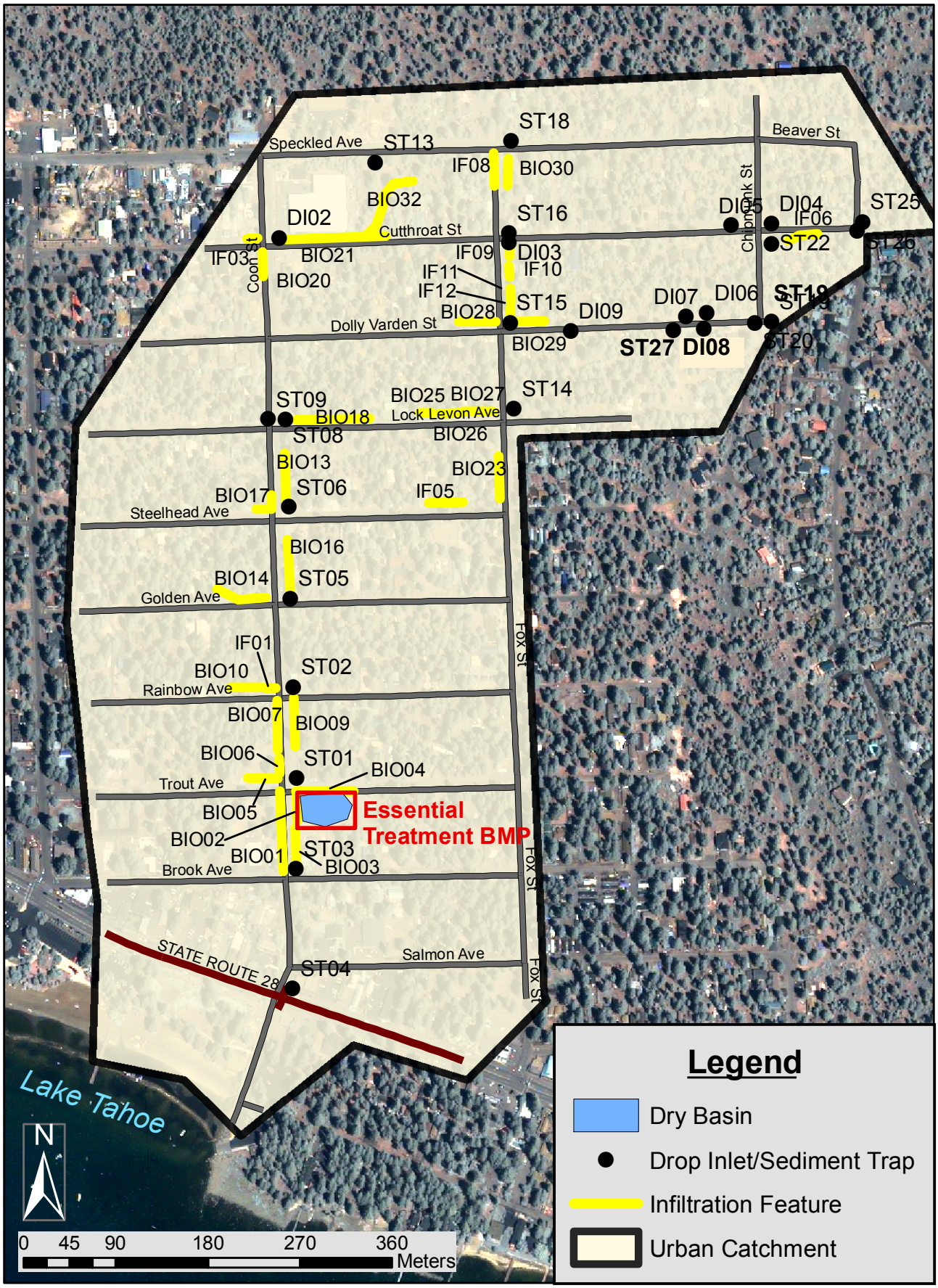
This parking ordinance is considered of key water quality importance. The expected condition is 30% road shoulder soil disturbance, which is related to a condition score of 3.

The expected loading estimate includes a high infiltration rate for the large dry basin (DB01) that treats runoff from the upper residential area of the catchment. The contractor used a substrate layering technique that has been shown to be effective at maintaining high infiltration rates over time with moderate maintenance. Because of the importance of this particular treatment BMP within Catchment 1, the county is committed to frequent inspections and, if necessary, maintenance in order to maintain its performance.

Delineation and Outfalls



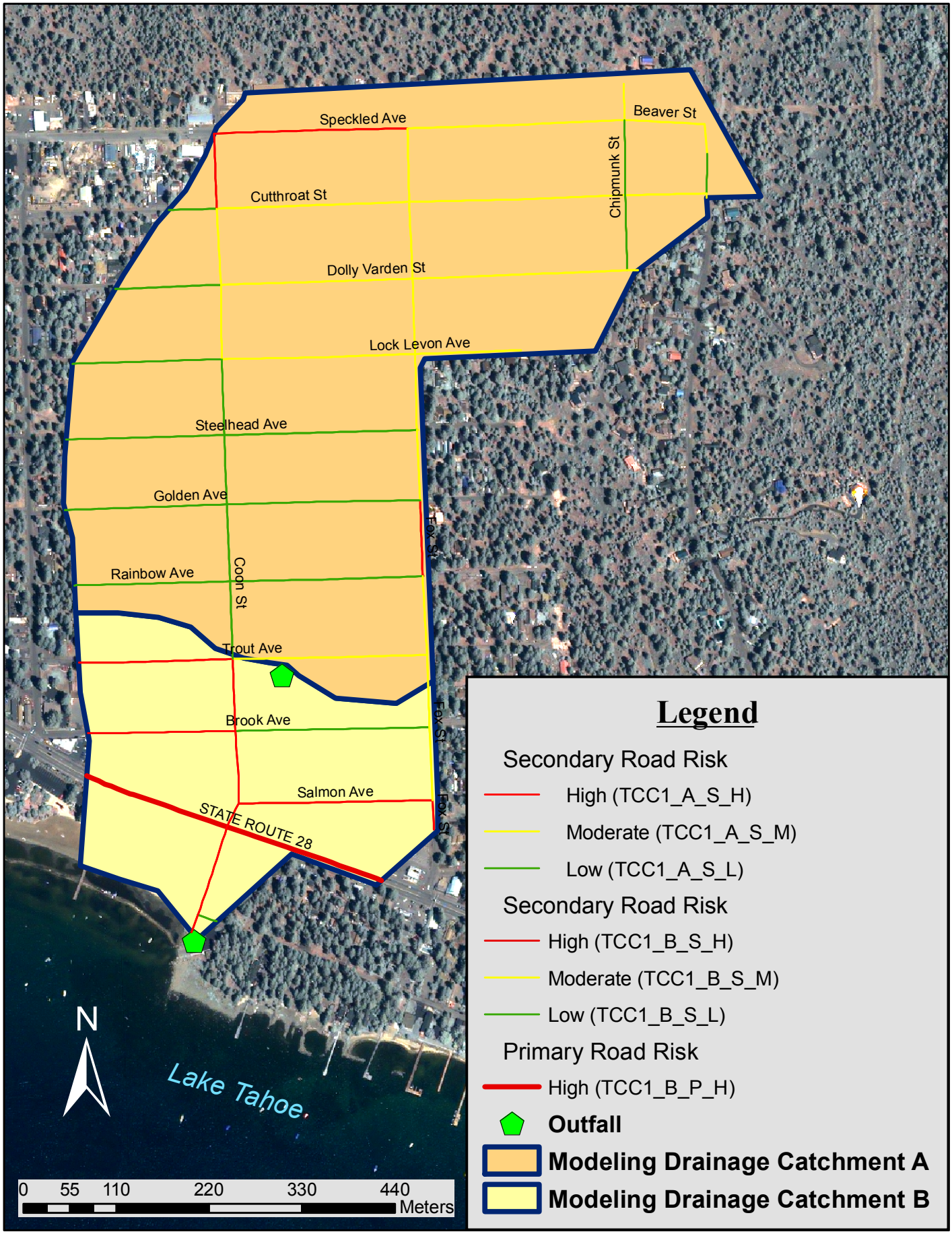
Treatment BMP Inventory Map



	A	B	C	D	E	F	G	H	I	J	K	L
1	**BMP_ID**	**BMP_Type**	**Planned Maintenance**	**Inspection Frequency & Timing**	**Water Quality Importance**	**Notes**	**BMP RAM Observation #1**	**Observation #1 Benchmark Value**	**Observation #1 Threshold Value**	**Observation #1 Expected Condition Value**	**Observation #1 Related PLRM Parameter**	**Observation #1 Related PLRM Value**
2	*BMP_ID*	*BMP_Type*	*Brief Description*	*Brief Description*	*Key or Essential*	*Text for reviewers/future reference (as necessary)*	*OBS_x*	*# or time*	*# or time*	*#*	*Parameter Name*	*#*
3	TCC1_DB01	Dry Basin	Sediment removal with backhoe as needed	Annual in Spring	Essential	Primary water quality treatment feature	Infiltration	5.0 in/hr	0.5 in/hr	2.0 in/hr	Infiltration Rate	2.0 in/hr
4	TCC1_DB02	Dry Basin	Sediment removal with backhoe as needed	Annual in Spring	Key		Infiltration	3.2 in/hr	.2 in/hr	1.2 in/hr	Infiltration Rate	1.2 in/hr
5	TCC1_IB01	Infiltration Basin	Sediment removal with backhoe as needed	Annual in Spring	Key		Infiltration	3.2 in/hr	.2 in/hr	1.2 in/hr	Infiltration Rate	1.2 in/hr
6	TCC1_IF01	Infiltration Feature	Sediment removal with backhoe as needed	Annual in Spring	Key		Runoff	No Runoff	Runoff	No Runoff	Pervious Dispersion Area	% area included in pervious dispersion area (not calculated for each unique feature)
7	TCC1_IF10	Infiltration Feature	Sediment removal with backhoe as needed	Annual in Spring	Key		Runoff	No Runoff	Runoff	No Runoff	Pervious Dispersion Area	% area included in pervious dispersion area (not calculated for each unique feature)
8	TCC1_IF12	Infiltration Feature	Sediment removal with backhoe as needed	Annual in Spring	Key		Runoff	No Runoff	Runoff	No Runoff	Pervious Dispersion Area	% area included in pervious dispersion area (not calculated for each unique feature)
9	TCC1_IF11	Infiltration Feature	Sediment removal with backhoe as needed	Annual in Spring	Key		Runoff	No Runoff	Runoff	No Runoff	Pervious Dispersion Area	% area included in pervious dispersion area (not calculated for each unique feature)
10	TCC1_BIO23	Biofilter	Sediment removal with backhoe as needed	Annual in Spring	Key		Veg Cover	100%	50%	83%	None	None
11	TCC1_BIO30	Biofilter	Sediment removal with backhoe as needed	Annual in Spring	Key		Veg Cover	100%	50%	83%	None	None
12	TCC1_BIO31	Biofilter	Sediment removal with backhoe as needed	Annual in Spring	Key		Veg Cover	100%	50%	83%	None	None
13	TCC1_BIO02	Biofilter	Sediment removal with backhoe as needed	Annual in Spring	Key		Veg Cover	100%	50%	83%	None	None
14	TCC1_BIO04	Biofilter	Sediment removal with backhoe as needed	Annual in Spring	Key	None	None	None	None	None	None	None

	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z
1	**BMP_ID**	**BMP_Type**	**BMP RAM Observation #2**	**Observation #2 Benchmark Value**	**Observation #2 Threshold Value**	**Observation #2 Expected Condition Value**	**Observation #2 Related PLRM Parameter**	**Observation #2 Related PLRM Value**	**BMP RAM Observation #3**	**Observation #3 Benchmark Value**	**Observation #3 Threshold Value**	**Observation #3 Expected Condition Value**	**Observation #3 Related PLRM Parameter**	**Observation #3 Related PLRM Value**
2	*BMP_ID*	*BMP_Type*	*OBS_x*	*# or time*	*# or time*	*#*	*Parameter Name*	*#*	*OBS_x*	*# or time*	*# or time*	*#*	*Parameter Name*	*#*
3	TCC1_DB01	Dry Basin	Material Accumulation/ Depth	0 ft	-2.0 ft	-1.3 ft	Water Quality Volume	3450	Veg Cover	0%	20%	13%	None	None
4	TCC1_DB02	Dry Basin	Material Accumulation/ Depth	0 ft	-1.0 ft	-0.7 ft	Water Quality Volume	715	Veg Cover	0%	20%	13%	None	None
5	TCC1_IB01	Infiltration Basin	Veg Cover	0%	20%	13%	None	None						
6	TCC1_IF01	Infiltration Feature	Veg Cover	0%	10%	7%	None	None						
7	TCC1_IF10	Infiltration Feature	Veg Cover	0%	10%	7%	None	None						
8	TCC1_IF12	Infiltration Feature	Veg Cover	0%	10%	7%	None	None						
9	TCC1_IF11	Infiltration Feature	Veg Cover	0%	10%	7%	None	None						
10	TCC1_BIO23	Biofilter	Runoff	No Runoff	Runoff	No Runoff	Pervious Dispersion Area	% area included in pervious dispersion area (not calculated for each unique feature)						
11	TCC1_BIO30	Biofilter	Runoff	No Runoff	Runoff	No Runoff	Pervious Dispersion Area	% area included in pervious dispersion area (not calculated for each unique feature)						
12	TCC1_BIO31	Biofilter	Runoff	No Runoff	Runoff	No Runoff	Pervious Dispersion Area	% area included in pervious dispersion area (not calculated for each unique feature)						
13	TCC1_BIO02	Biofilter	Runoff	No Runoff	Runoff	No Runoff	Pervious Dispersion Area	% area included in pervious dispersion area (not calculated for each unique feature)						
14	TCC1_BIO04	Biofilter	Runoff	No Runoff	Runoff	No Runoff	Pervious Dispersion Area	% area included in pervious dispersion area (not calculated for each unique feature)						

Roads Inventory Map



	A	B	C	D	E	F	G	H
1	**Road_Group_ID**	**Abrasive Application Plan**	**Sweeping Plan**	**Other Source Control Plans**	**Inspection Frequency & Timing**	**Expected Condition Score**	**Water Quality Importance**	**Notes**
2	*Urban Catchment ID_Modeling Drainage Catchment ID_Road Type_Road Risk*	*Brief Description*	*Brief Description*	*Other Source Control Brief Description*	*Planned timing & frequency of inspections*	*# from 0.5-5*	*Key or Essential*	*As necessary for reviewers/future reference*
3	TCC1_A_S_H	Moderate Abrasive Control See Road Map - Mixed Frequency	*Tandem - ~4x per year*	Parking Ordinance	2x per year	2.0	Key	
4	TCC1_A_S_M	Moderate Abrasive Control See Road Map - Mixed Frequency	*Tandem - ~4x per year*	Parking Ordinance	2x per year	3.0	Key	
5	TCC1_A_S_L	Moderate Abrasive Control See Road Map - Mixed Frequency	*Tandem - ~2x per year*	Parking Ordinance	2x per year	4.0	Key	
6	TCC1_B_S_H	Moderate Abrasive Control Frequent	Dustless - 2x per month winter & Monthly summer	Parking Ordinance	2x per year	2.6	Key	
7	TCC1_B_S_M	Moderate Abrasive Control Frequent	Dustless - 2x per month winter & Monthly summer	Parking Ordinance	2x per year	3.6	Key	
8	TCC1_B_S_L	Moderate Abrasive Control Frequent	Dustless - 2x per month winter & Monthly summer	Parking Ordinance	2x per year	4.6	Key	
9	TCC1_B_P_H	Advanced Abrasive Control Frequent	Dustless - 2x per month winter & Monthly summer	Parking Ordinance	4x per year	1.9	Key	Operated according to Caltrans normal practices

	A	B	C	D	E	F
1	**BMP_ID**	**BMP_Type**	**Baseline & Expected**	**PLRM Baseline Parameter**	**PLRM Expected Parameter**	**Expec_v_Base Parameters**
2	*BMP_ID*	*BMP_Type*	*BMP_BASEOP*	*#, time, depth (assume RAM Score 2 equivalent)*	*#, time, depth*	*Text explaining the rationale for changes between expected and baseline parameter values that are not the obvious result of improved maintenance.*
3	TCC1_DB01	Dry Basin	Yes	Infiltration Rate, Water Quality Volume	0.4 in/hr, 700 CF	This basin is re-engineered and expanded considerably from its baseline condition
4	TCC1_BIO02	Biofilter	Yes	Dispersion areas in-place before EIP Project	Part of % dispersion areas	While these features are being re-habilitated during the EIP project, they were present and moderately function as of 2004
5	TCC1_BIO04	Biofilter	Yes	Dispersion areas in-place before EIP Project	Part of % dispersion areas	While these features are being re-habilitated during the EIP project, they were present and moderately function as of 2004

IRP ISSUE RESOLUTION PUNCHLIST

LCCP

Water Boards | TAHOE REGIONAL PLANNING AGENCY | ndep NEVADA DIVISION OF ENVIRONMENTAL PROTECTION protecting the future for generations

SECTION A: GENERAL INFORMATION

INSTRUCTIONS: Provide the information requested below. If more room is needed, include a memo as an attachment to this form and indicate the memo name below. For additional information, see the Issue Resolution Punchlist – Descriptions & Instructions.

1. RELEVANT CATCHMENT ID OR ANNUAL REPORT

Identify the specific item being reviewed

Catchment ID or Document Title

Tahoe County Catchment 1: Draft Final CCS

2. BRIEF DESCRIPTION OF SITUATION

Provide relevant information

Identify Topic Context

- ☒ New Catchment Credit Schedule
- ☐ Revision of Existing Catchment Credit Schedule
- ☐ Annual Report
- ☐ Other

For Credit Schedules, define the stage of review

- ☒ Step 1.2: Verify
- ☐ Step 1.4: Approve

Briefly describe the situation

Specific items to resolve to finalize CCS.

Attachment name (If necessary)

3. URBAN JURISDICTION CONTACT INFORMATION

Identify primary contact and appropriate contact information

- ☐ Caltrans
- ☐ CSLT
- ☐ Douglas
- ☐ El Dorado
- ☐ NDOT
- ☐ Placer
- ☐ Washoe
- ☒ Tahoe County

Name: Pat Kuchman

Phone: 530-745-5555

E-Mail: pkuchman@tahoecounty.gov

4. REGULATORY AGENCY CONTACT INFORMATION

Identify primary contact and appropriate contact information

- ☒ LRWQCB
- ☐ NDEP

Name: Chris Lawson

Phone: 530-542-5555

E-Mail: clawson@waterboard.gov

5. INITIATION DATE

Report the date of the initial transmittal

Date: 12/03/2012

6. STATEMENT OF RESOLUTION

Review the following statement and sign your acknowledgment

☐ ***All issues have been resolved to the degree necessary to proceed.***

Signature of urban jurisdiction representative	Signature of regulator representative
PK	CL
Date: 12/22/09	Date: 12/24/09

SECTION B:ISSUE IDENTIFICATION & RESOLUTION

INSTRUCTIONS: Provide the information requested below. If more room is needed, **include a memo as an attachment to this form and indicate the memo name below.** For additional information, see the Issue Resolution Punchlist – Descriptions & Instructions.

1. ISSUE NUMBER, TITLE AND TYPE

Issue #: 1 | Issue Title: DB01 Infiltration Rate

☒ Question ☐ Issue ☐ Change request ☐ Other

2. ISSUE INITIALLY IDENTIFIED BY

Name

Chris Lawson

3. ISSUE QUESTION OR ISSUE DESCRIPTION

Clearly describe the question or issue

The infiltration rate for DB01 seems unrealistically high even noting that a special substrate is being used. Is the county committed to maintaining this high infiltration rate?

4. ISSUE QUESTION OR ISSUE RESOLUTION

Briefly describe the answer or resolution

The County is prepared to maintain the basin as frequently as necessary to achieve this water quality banefit.

5. RESOLUTION SIGN-OFF

Review the following statement & INITIAL your acknowledgment

☒ ***This issue has been resolved to the degree necessary to proceed.***

Urban Jurisdiction representative Initials	Date	Regulator representative initials	Date
PK	12/04/2012	CL	12/04/2012

1. ISSUE NUMBER, TITLE AND TYPE

Issue #: _____ | **Issue Title**: _____

☒ Question ☒ Issue ☒ Change request ☐ Other

2. ISSUE INITIALLY IDENTIFIED BY

Name

Chris Lawson

3. ISSUE QUESTION OR ISSUE DESCRIPTION

Clearly describe the question or issue

The 15 year CCS duration is inappropriate given the importance sweeping is playing in the load reduction estimate. This should be changed to either 5 or 10 years. Further, should any of the road groups be considered essential?

4. ISSUE QUESTION OR ISSUE RESOLUTION

Briefly describe the answer or resolution

After discussion a 10 year credit schedule seemed appropriate based on the secondary importance of the road practices to the overall load reduction. This change will be made before submitting the final CCS. No particular road group approaches the level of essential.

5. RESOLUTION SIGN-OFF

Review the following statement & initial your acknowledgment

☒ ***This issue has been resolved to the degree necessary to proceed.***

Urban Jurisdiction representative Initials	Date	Regulator representative initials	Date
PK	12/04/2012	CL	12/04/2012

TCC1
Credit Schedule Report

Catchment	TCC1
Registration Date	12/21/2012
Jurisdiction	Tahoe County, NV

Catchment Registration Information

Establishment Date	12/22/2012
Credit Schedule Duration	10
Final Year of Credit Schedule	2022

Catchment is:	Active
As of:	12/21/2012
Registration Status	
Submitted	Accepted

Load Reduction Estimate Calculations

Method	PLRM v1.0
Date	1/10/2012

Fine Sediment Particles (kg/year)	6,800
Total Nitrogen (kg/year)	7
Total Phosphorous (kg/year)	25

FSP (# x 10^16 /year):	7.48
Calculated Credit per Year:	77
Establishment Year Credit:	69

Load Reduction Strategy

Treatment BMPs:	Roads:	Private Parcels:	Other:
Primary	Secondary	Tertiary	None

Treatment BMPs

Treatment BMP ID	Type	Expected Annual Condition	WQ Importance
TCC1_DB02	Dry Basin	3	Key
TCC1_DB01	Dry Basin	3	Essential
TCC1_IB01	Infiltration Basin	3	Key
TCC1_BIO04	Biofilter	3	Key
TCC1_BIO02	Biofilter	3	Key

Catchment	TCC1
Registration Date	12/21/2012
Jurisdiction	Tahoe County, NV

Roads

Road Group ID	Type	Risk	Expected Annual Condition	WQ Importance
TCC1_A_S_H	Secondary	High	2	Key
TCC1_A_S_L	Secondary	Low	4	Key
TCC1_A_S_M	Secondary	Moderate	3	Key
TCC1_B_P_H	Primary	High	1.9	Key
TCC1_B_S_H	Secondary	High	2.6	Key
TCC1_B_S_L	Secondary	Low	4.6	Key
TCC1_B_S_M	Secondary	Moderate	3.6	Key

Private Parcels

WQ Importance	Key
% SC Certified	3%
% BMP Certified	50%

Other Pollutant Control Strategy Name: WQ Importance:

Describe here.

Catchment Credit Distribution

Year	Scheduled Credit	Declared Credit	CalTrans	City of South Lake Tahoe	Douglas County	El Dorado County	NDOT	Placer County	Tahoe County
2012	**69**	**69**	0	0	0	0	0	0	69
2013	**75**		0	0	0	0	0	0	75
2014	**75**		0	0	0	0	0	0	75
2015	**75**		0	0	0	0	0	0	75
2016	**75**		0	0	0	0	0	0	75
2017	**75**		0	0	0	0	0	0	75
2018	**75**		0	0	0	0	0	0	75
2019	**75**		0	0	0	0	0	0	75
2020	**75**		0	0	0	0	0	0	75
2021	**75**		0	0	0	0	0	0	75
2022	**75**		0	0	0	0	0	0	75

PURPOSE OF EXAMPLE

This example follows the steps described in Chapter 2 of the Lake Clarity Crediting Program Handbook (Handbook) to develop the Credit Declaration Section of an annual stormwater report (ASR). It illustrates how an urban jurisdiction uses the TMDL Accounting and Tracking Tool (Accounting and Tracking Tool) and the ASR Credit Declaration Section Template. This example also describes how a regulator uses the Accounting and Tracking Tool to perform the steps in Chapter 2 related to awarding credits.

SITUATION & OVERVIEW

This example follows a hypothetical county stormwater manager, Pat, through the process of 1) ensuring condition inspections are performed, used to direct maintenance activities, and stored in the Accounting and Tracking Tool, and 2) developing the Credit Declaration Section of the ASR using the Accounting and Tracking Tool to declare credits related to specific Catchment Credit Schedules (CCSs) and to generate urban jurisdiction summaries andreports.

This example also follows a hypothetical regulator, Chris, through the annual process of 1) performing validation inspections, 2) comparing self-inspection results to validation inspection results in the Accounting and Tracking Tool, and 3) awarding credits based on ASRs from urban jurisdictions.

B 2.1 INSPECT

Pat begins the 2013 reporting year on October 1, 2012, by updating the previous year's inspection schedule and staffing assignments.

B 2.1.1 ▪ DEFINE INSPECTION NEEDS

Pat generated three inspection lists: (1) conveyance infrastructure and treatment best management practices (BMPs) requiring depth measurements and runoff tests only, (2) treatment BMPs requiring infiltration and other more time-consuming measurements, and (3) roadways and road shoulders. The Tahoe County BMP database includes fields to assist Pat in filtering the database for each inspection type. Pat prioritized the inspection lists using the following screening criteria:

- Treatment BMPs in the five catchments with active CCSs
- Treatment BMPs that provide important water quality treatment in catchments not yet registered
- Treatment BMPs and conveyance infrastructure with a history of requiring frequent maintenance
- Treatment BMPs and conveyance infrastructure that were not maintained in 2012, but were approaching maintenance thresholds
- Roads and road shoulders in catchments with active CCSs

The Tahoe County inspection practices have evolved to send two types of crews. The first type of crew comprises two full-time or returning seasonal county maintenance personnel. These crews go into the field with a vactor truck and hand tools to inspect and, if necessary, immediately maintain conveyance infrastructure and treatment BMPs on the first inspection list.

The second type of crew comprises college interns who are brought on in May and trained to use condition assessment methods that require infiltration measurements and other more time-consuming measurements. These crews inspect the treatment BMPs on the second inspection list.

The roadway and road shoulder inspections are split between the two types of crews. Summer inspections are performed by the intern crews, and fall, winter and spring inspections are performed by maintenance personnel.

Pat provides each type of crew with inspection inventory tables and maps, as well as all the necessary equipment and data loggers necessary to perform the inspections and record results.

B 2.1.2 ▪ PERFORM INSPECTIONS

During the winter, spring and fall of 2013, county maintenance personnel performed roadway inspections in the registered catchments and provided Pat with the results. During May and June, the intern crews performed treatment BMP and road and road shoulder inspections.

B 2.1.3 ▪ RECORD INSPECTION RESULTS & DEFINE MAINTENANCE PRIORITIES

At the end of June, Pat compiled all BMP inspection information from the intern crews and entered the results in the Tahoe County BMP database. Pat prioritized maintenance based on equipment type before making assignments for county maintenance personnel. Pat had these assignments ready and equipment scheduled for the maintenance personnel once they completed the conveyance infrastructure inspections and maintenance.

When the summer road and road shoulder inspections were performed in mid-July, Pat compiled all road inspections for the year and analyzed how effective county road abrasive application and sweeping practices had been in maintaining expected conditions.

B 2.2 MAINTAIN, OPERATE & ADMINSTER POLLUTANT CONTROLS

Pat partnered the intern crews with the maintenance staff during the maintenance of basins and other equipment-intensive maintenance activities.

B 2.2.1 ▪ PERFORM MAINTENANCE, IMPLEMENT PROGRAMS & RE-INSPECT

While the maintenance crews performed maintenance using heavy equipment, the intern crews performed the summer road and road shoulder inspections in the vicinity near the maintenance crews. As soon as the maintenance crews completed maintenance of a basin, the intern crews came in to re-inspect the treatment BMPs to determine if additional maintenance would be necessary to the desired state. When necessary, the maintenance crews performed additional maintenance and the intern crews re-inspected the treatment BMPs.

Pat held a review meeting and training with county maintenance personnel to gain input on inspection and maintenance practices and to address shortcomings in road sweeping practices based on issues identified from the analysis of road data. Chris also met with county outreach and enforcement staff to encourage them to increase their efforts to implement the parking ordinance in neighborhoods with identified road shoulder impacts.

B 2.2.2 ▪ LOG ACTIVITIES & RECORD RESULTS

At the beginning of each day, the crews downloaded the previous day's inspection results and maintenance activities from hand-held field devices to the Tahoe County BMP database.

B 2.3 VALIDATE CONDITIONS

On October 5, 2012, Chris held a meeting with regulatory and funding partner agencies to coordinate and schedule validation-inspections for the year upcoming year.

B 2.3.1 ▪ SELECT VALIDATION INSPECTION POINTS & GATHER MATERIALS

During the coordination meeting, the funding agency staff chose to inspect treatment BMPs funded by their agencies. They wanted to use this information both to determine if contractual maintenance requirements were being met and to provide information to validate county self-inspection results. The regulatory agency staff led the road and road shoulder validation inspection efforts.

Chris's intern used the Accounting and Tracking Tool to identify and compile summary inventory tables and maps with information related to treatment BMPs, roads, and road shoulders of interest from registered

catchments with active CCSs. These tables were distributed to the regulatory and funding partners performing condition assessment inspections.

B 2.3.2 ▪ PERFORM VALIDATION-INSPECTIONS

Each regulatory and funding partner agency sent trained staff and interns into the field at appropriate times throughout the year to perform validation-inspections. Road inspections occurred after at least two weeks of no significant precipitation, providing the municipal and department of transportation (DOT) maintenance personnel ample time to perform any planned maintenance following precipitation events. Treatment BMP inspections were scheduled for September and October to gather information on conditions heading into the following water year to be used to validate self-inspection results from the spring and summer.

B 2.3.3 ▪ RECORD & SUBMIT RESULTS

Throughout the year, Chris's intern checked with regulatory and funding partners to assist and ensure that inspection results were routinely uploaded to the Accounting and Tracking Tool. In October of 2013, Chris held another coordination meeting that included a review of the past twelve months of inspection results to ensure all data had been submitted and correctly entered into the Accounting and Tracking Tool.

B 2.4 REPORT

On November 11, 2013, Pat began the process of developing the ASR.

B 2.4.1 ▪ COMPILE DATA & UPDATE ACCOUNTING AND TRACKING TOOL

Pat exported all relevant data for catchments with active CCSs from the Tahoe County BMP database and Roads database. Pat logged into the Accounting and Tracking Tool and uploaded the data.

B 2.4.2 ▪ RUN REPORTS & REVIEW RESULTS

Pat generated the Tahoe County Annual Credit Summary from the Accounting and Tracking Tool, and noticed that the calculated credit for Catchment 5 was zero. After checking the inspection results, Pat discovered that the re-inspection results were not entered properly. Pat tracked down the original information, corrected the error, and worked with Chris to correct the data entry error in the Accounting and Tracking Tool. Pat was then able to create the Tahoe County Annual Credit Summary included in Attachment B.1.

Pat then ran each of the individual CCS reports for 2013 and checked the inspection data and calculated credits. Attachment B.2 is an example CCS Report for Tahoe County Catchment 1.

B 2.4.3 ▪ DEVELOP CREDIT DECLARATION SECTION NARRATIVE & COMPILE ANNUAL STORMWATER REPORT

At the end of November, Pat met with county staff and discussed maintenance, program implementation and capital improvement program progress, plans and issues. Pat used this information to develop the draft Credit Declaration Section of the ASR as described in the Annual Stormwater Report - Credit Declaration Section Template and circulated to staff for additional input. After incorporating input and gathering information from Tahoe County stormwater managers responsible for various sections of the ASR, Pat finalized the ASR.

B 2.4.4 ▪ REVIEW AND SUBMIT ANNUAL STORMWATER REPORT

On December 9, 2013, Pat developed the ASR file folder structure as defined in the File Structure Template of the Handbook. Pat uploaded the folder to the TMDL Workspace and sent a hard copy of the full report to Chris.

B 2.5 AWARD CREDITS

Chris received four ASRs from the California urban jurisdictions in early December. However, before reviewing the reports Chris compared self-inspection to validation inspection results.

B 2.5.1 ▪ REVIEW INSPECTION RESULTS

Chris compared the self-inspection and validation-inspection results that had been entered in the Accounting and Tracking Tool. After identifying the comparable inspection information, Chris developed a Tahoe County Inspection Comparison Summary. While many of the validation-inspection results were lower than the self-inspection results, more than ten percent were higher. Chris did not see the need to consider disputing credit declarations, but did include this as an issue to discuss in the Issue Resolution Punchlist (IRP).

B 2.5.2 ▪ REVIEW SUBMITTED ANNUAL REPORTS & CREDIT DECLARATIONS

Chris reviewed the Tahoe County ASR on December 19 and 20, 2013. While the report provided valuable information to improve the Crediting Program, added to the importance of certain areas for scientific investigation and monitoring, and was nearly complete, Pat had not reported the results from the parking ordinance (see Appendix A for description related to the parking ordinance in Tahoe County Catchment 1). Chris added this item, as well as a few other questions related to the Tahoe County 2013 ASR, to the IRP.

B 2.5.3 ▪ DISCUSS RESULTS

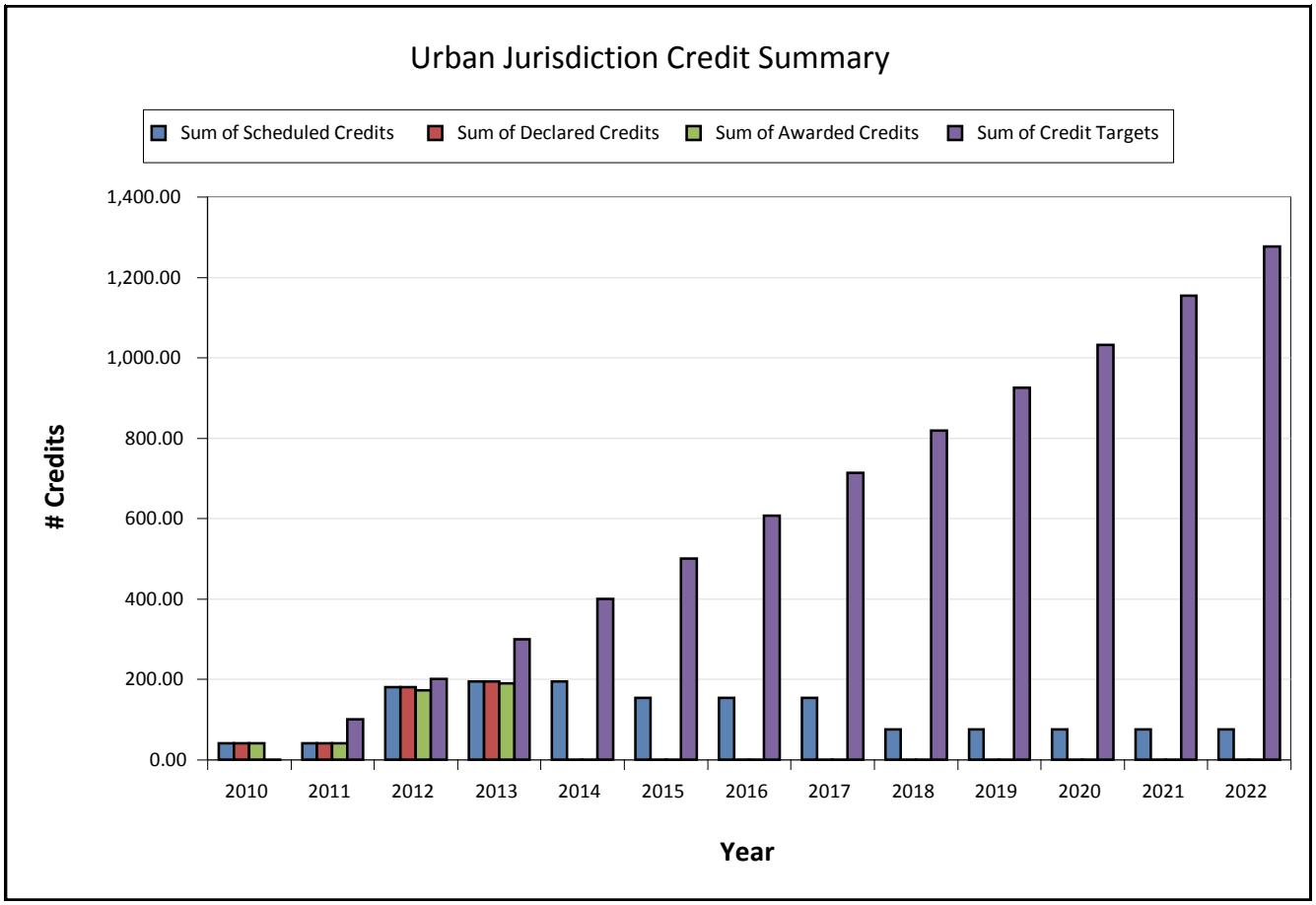
On January 16, 2014, Pat and Chris met and discussed the items on the IRP as well as the program improvement and scientific investigation items identified in the Tahoe County ASR Credit Declaration Section. Pat was surprised that the parking ordinance results were overlooked and on January 23 Chris sent an errata memo that documented the success of the parking ordinance implementation and inspection results.

To address the discrepancies between the self-inspection and validation-inspection results, Chris and Pat decided to hold a joint condition assessment training with all trained inspectors in April (weather permitting) to review maintenance practices.

B 2.5.4 ▪ AWARD CREDITS

In January, Chris met with each of the other California urban jurisdictions to review their ASRs and on February 3, 2014 opened the Accounting and Tracking Tool to award credits for each CCS.

Tahoe County Credit Summary



2013

Credit Summary Statistics

Credit Target #:	300	% of Declared Credits Awarded:	98%
# of Scheduled Credits:	194	**% of Credit Target Achieved:**	**63%**
# of Declared Credits:	194		
# of Awarded Credits:	**190**		
# of Clarity Challenge Credits:	1,724	**% to Clarity Challenge Awarded:**	**11%**

2013 Tahoe County

Catchment Credit and Load Reduction Summary

Catchment ID	Status	Sched Credits	Declared Credits	% Sched Declared	Awarded Credits	% Sched Awarded	Load Reductions			
							FSP (# x 10^16)	FSP (kg)	TN (kg)	TP (kg)
TCC1	Awarded	75	75	100%	75	100%	7	6,800	7	25
TCC2	Awarded	41	41	100%	41	100%	4	3,700	1	1
TCC5	Awarded	78	78	100%	74	95%	7	6,745	1	0
Totals		**194**	**194**		**190**		**19**	**17,245**	**9**	**26**

TCC1
Credit Schedule Report

Catchment	TCC1
Registration Date	12/21/2012
Jurisdiction	Tahoe County

Catchment Registration Information

Establishment Date	12/22/2012
Credit Schedule Duration	10
Final Year of Credit Schedule	2022

Catchment is:	Active
As of:	12/23/2013
Registration Status	
Submitted	Accepted

Load Reduction Estimate Calculations

Method	PLRM v1.0
Date	1/10/2012

Fine Sediment Particles (kg/year)	6,800
Total Nitrogen (kg/year)	7
Total Phosphorous (kg/year)	25

FSP (# x 10^16 /year):	7.48
Calculated Credit per Year:	75
Establishment Year Credit:	69

Load Reduction Strategy

Treatment BMPs:	Roads:	Private Parcels:	Other:
Primary	Secondary	Tertiary	None

Treatment BMPs

Treatment BMP ID	Type	Expected Annual Condition	WQ Importance
TCC1_DB02	Dry Basin	3	Key
TCC1_DB01	Dry Basin	3	Essential
TCC1_IB01	Infiltration Basin	3	Key
TCC1_BIO04	Biofilter	3	Key
TCC1_BIO02	Biofilter	3	Key

Catchment	TCC1
Registration Date	12/21/2012
Jurisdiction	Tahoe County

Roads

Road Group ID	Type	Risk	Expected Annual Condition	WQ Importance
TCC1_A_S_H	Secondary	High	2	Key
TCC1_A_S_L	Secondary	Low	4	Key
TCC1_A_S_M	Secondary	Moderate	3	Key
TCC1_B_P_H	Primary	High	1.9	Key
TCC1_B_S_H	Secondary	High	2.6	Key
TCC1_B_S_L	Secondary	Low	4.6	Key
TCC1_B_S_M	Secondary	Moderate	3.6	Key

Private Parcels

WQ Importance	Key
% SC Certified	3%
% BMP Certified	50%

Other Pollutant Control Strategy

Name:	WQ Importance:

Catchment Credit Distribution

Year	Scheduled Credit	Declared Credit	CalTrans	City of South Lake Tahoe	Douglas County	El Dorado County	NDOT	Placer County	Tahoe County
2012	**69**	**69**	0	0	0	0	0	0	69
2013	**75**	**75**	0	0	0	0	0	0	75
2014	**75**		0	0	0	0	0	0	75
2015	**75**		0	0	0	0	0	0	75
2016	**75**		0	0	0	0	0	0	75
2017	**75**		0	0	0	0	0	0	75
2018	**75**		0	0	0	0	0	0	75
2019	**75**		0	0	0	0	0	0	75
2020	**75**		0	0	0	0	0	0	75
2021	**75**		0	0	0	0	0	0	75
2022	**75**		0	0	0	0	0	0	75

PURPOSE

The Crediting Program credit award method aligns design of effective water quality improvement projects and implementation plans with ongoing maintenance and program implementation. This appendix describes the Crediting Program framework for awarding credits by comparing actual conditions to expected conditions used in expected loading estimates. Section C.1 provides a conceptual overview of this process. Section C.2 describes how condition assessments are used to define expected conditions and determine actual conditions. Section C.3 defines the mathematical operations used to determine credit awards. Section C.4 identifies topics requiring adaptive management to improve on the credit award method so that it can more directly and accurately relate to actual load reductions.

It is not necessary for most Crediting Program participants to understand the details of the credit award method. However, it is critical for technical staff developing implementation plans and load reduction estimates to understand the relationship between load reduction estimates, condition assessments and credit awards.

C 1 CREDIT AWARD CONCEPTUAL OVERVIEW

Credits are awarded for effective, ongoing implementation of pollutant controls in urban catchments. The credit potential for a catchment is determined by comparing loading estimates for baseline conditions to loading estimates for expected conditions. The credit award method assumes a relationship between loading and observable conditions. The credit award method defines a technique to award credits based on the comparison of expected conditions – as defined in catchment credit schedules – to actual conditions – as determined through self-inspection results. This section describes the general concepts related to the credit award method.

Acceptable load estimation methods integrate the combined effect from pollutant controls within a catchment. Figure C.1 shows a schematic of the relationship between pollutant controls and loading.

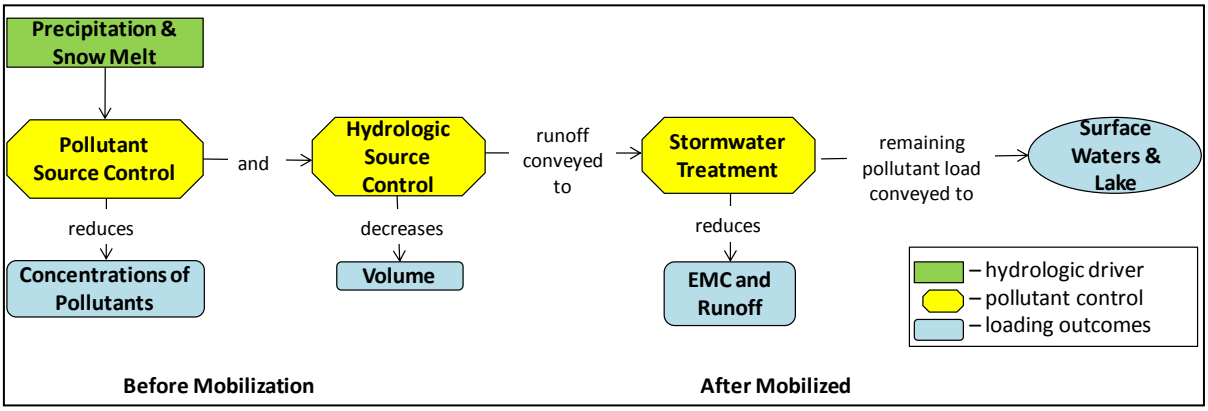


Figure C.1: Pollutant controls influence on pollutant loading – Showing the general relationship between pollutant source controls, hydrologic source controls, stormwater treatment and resulting pollutant loading.

The magnitude of load reduction from pollutant controls varies depending on several factors, including, but not limited to, the actual condition of the pollutant controls and the setting of the pollutant controls within a catchment. Figure C.2 shows the relationship between maintenance and conditions for three scenarios used to determine credit potential and credit awards for an urban catchment. Figure C.3 shows the relationship between the conditions of land use, infrastructure and treatment BMPs within an urban catchment and loading for these three scenarios. Figures C.2 and C.3 together define:

A: Baseline loading – Typical 2004 maintenance and program implementation practices are used to approximate baseline conditions of urban lands, infrastructure and treatment BMPs in place in 2004. Baseline conditions of 2004 land use, infrastructure and treatment BMPs are used to estimate baseline loading from a catchment.

B: Expected loading – Maintenance and program implementation plans anticipate variability based on meteorological events and human impacts to project expected conditions. Expected conditions

of current urban lands, infrastructure and treatment BMPs are used to estimate the expected loading from a catchment.

C: Actual Loading – Actual maintenance and program implementation is performed in response to meteorological events and human impacts. The combined influence of these factors results in actual conditions. Actual conditions of current land uses, infrastructure and treatment BMPs in a catchment result in the actual loading from a catchment.

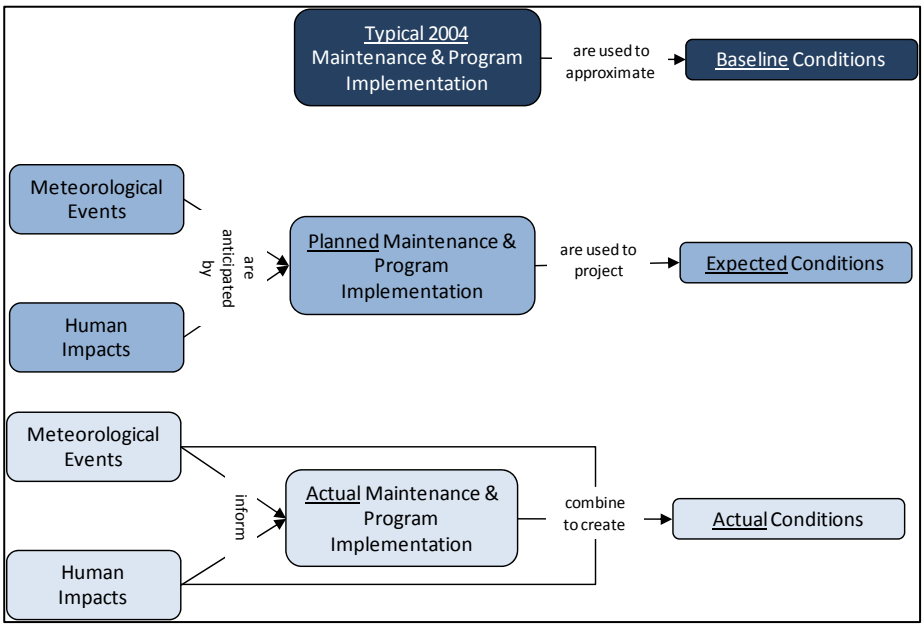


Figure C.2: Maintenance and program implementation relationships to baseline, expected and actual conditions – showing how meteorological events and human impacts relate to maintenance and program implementation plans and decisions.

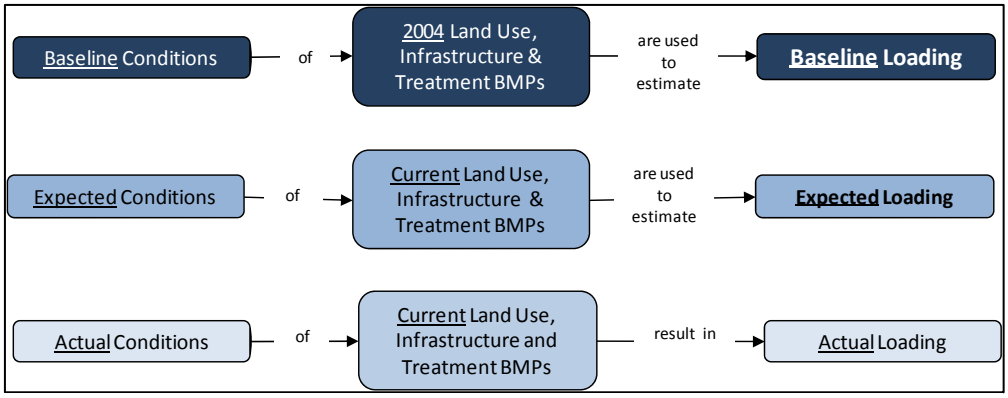


Figure C.3: Relationship between baseline, expected and actual conditions and baseline, expected and actual loading.

C 1.1 ▪ CREDIT POTENTIAL

The credit potential for a catchment is determined by a load reduction estimate. Load reduction is the difference between estimated baseline loading and estimated expected loading from an urban catchment. Figure C.4 combines these scenarios showing that:

- Baseline conditions of land use, infrastructure and treatment BMPs in place in 2004 are used to estimate baseline loading.
- Expected conditions of land use, infrastructure and treatment BMPs currently in place are used to estimate expected loading.

- Baseline loading and expected loading are compared to determine the load reduction estimate.
- The load reduction estimate is the basis for the credit potential for the catchment.

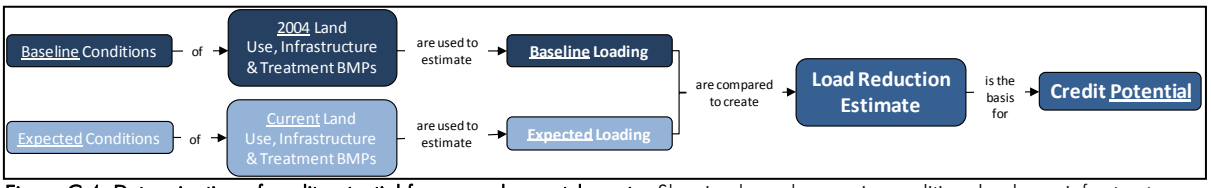


Figure C.4: Determination of credit potential from an urban catchment – Showing how changes in condition, land use, infrastructure and treatment BMPs result in different loading estimates between baseline and expected loading scenarios. This difference defines the load reduction estimate, which is the basis for determining credit potential.

C 1.2 ▪ CREDIT AWARDS

Credit awards are intended to reflect the difference between expected loading and actual loading. However, because loading is difficult to measure and model, conditions are used as a practical proxy to infer actual loading with respect to expected loading. Figure C.5 shows that credit awards are determined by comparing actual conditions to expected conditions. This comparison is related to the difference between actual loading and expected loading.

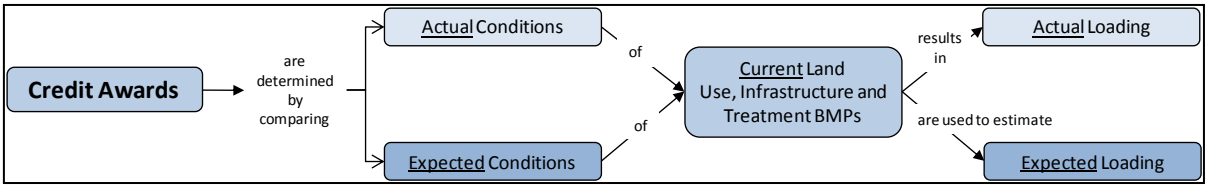


Figure C.5: Credit award relationship to conditions and loading estimates – While the expected loading estimate is used to determine credit potential, the comparison of actual to expected conditions is used as a practical proxy to determine credit awards.

When actual conditions in a given year are near-to or better-than expected conditions, the actual loading from the catchment is likely the same or less than the expected loading. This is grounds for awarding the full credit potential amount for that year. If the actual conditions are worse than expected conditions, the actual loading is likely to be higher than the expected loading. This is cause to award less than the full credit potential amount.

This credit award approach integrates the static features of a catchment with dynamic conditions in a manner that allows stormwater managers to make practical decisions to put available maintenance and program implementation resources to their best use. Current land use, infrastructure and treatment BMPs are static on a year-to-year basis, and significant changes are reflected in updated expected loading estimates. Actual conditions may vary between years and within a year, depending on maintenance and implementation of pollutant controls, weather, human impacts, and other factors. Ongoing maintenance and program implementation decisions are the result of daily operational decisions made by urban jurisdiction stormwater managers and maintenance personnel informed by their detailed knowledge of needs. By focusing on the actual conditions present during each year, instead of rote adherence to static maintenance plans, the Crediting Program enables stormwater managers and maintenance personnel to determine when and how to maintain the condition of pollutant controls in the most cost-effective manner possible. This respects the professional judgment of stormwater managers while ensuring that the most important pollutant controls are effectively maintained.

In the absence of condition assessments, regulations generally employ checklists derived from static implementation plans to determine compliance. These checklists assume that performing an action results in a water quality improvement. For example, a maintenance plan that calls for monthly sweeping of roads would be determined successful if a sweeper passed over a street within a month, independent of the road conditions before and after sweeping. By focusing instead on conditions, maintenance personnel can determine that sweeping may be required three times within a month following abrasive applications and high-traffic periods, and every other month during periods with little sediment producing activity. This enables available resources to be targeted to effectively implement pollutant controls and achieve load reductions.

C 2 CONDITION ASSESSMENTS & CONDITION SCORES

Condition assessment inspection results determine actual conditions and provide the basis for understanding whether maintenance or additional program implementation effort is required to achieve near-to or better-than expected conditions. Acceptable condition assessment methods measure specific attributes related to pollutant loading potential or pollutant fate and transport processes. The condition of any one pollutant control may require several different types of observations to determine its overall condition.

Condition assessment observations differ based on the type of pollutant control and the underlying processes related to pollutant loading potential or the ability for treatment BMPs to reduce loading. In order to compare different types of observations relevant to different pollutant controls, all condition assessment results are translated into a 0-through-5 scale. When multiple observations are necessary to determine the condition of a pollutant control, each observation is converted to the 0-through-5 scale and then a weighted average of all condition assessments is used to determine the overall condition score for the pollutant control.

The condition scoring scale is defined such that the higher the score, the lower the resulting pollutant loading. Thus, a 5 indicates that a treatment BMP is expected to effectively reduce pollutant loads and a 1 indicates it is ineffective at reducing pollutant loads. Similarly, a 5 indicates a relatively low pollutant loading potential for a roadway and a 1 indicates a relatively high pollutant loading potential from a road.

The following sections describe condition assessment methods and approaches for treatment BMPs, roads, private property BMPs, and other pollutant control strategies. Section C.3 defines the mathematical operations for using the condition assessment inspection results to determine the amount of credit to award for a catchment.

C 2.1 ▪ TREATMENT BMP CONDITION ASSESSMENTS

The BMP Maintenance Rapid Assessment Methodology (BMP RAM) defines protocols to determine the condition of treatment BMPs. The BMP RAM Technical Document and User's Manual describes the specific procedures to:

- Determine the applicable observations for different types of treatment BMPs.
- Determine benchmark values that represent the best achievable observation values.
- Select threshold values that represent the point at which a treatment BMP is no longer functioning acceptably.
- Determine the relative weighting of individual observation results to arrive at a treatment BMP RAM score for each treatment BMP type.

Figure C.6 illustrates the relationship between observation results, observation scores, and the overall treatment BMP condition score for a dry basin. The remainder of this section describes how the Crediting Program uses observation scores to inform expected loading estimates and how inspection results are used to determine actual conditions in a year.

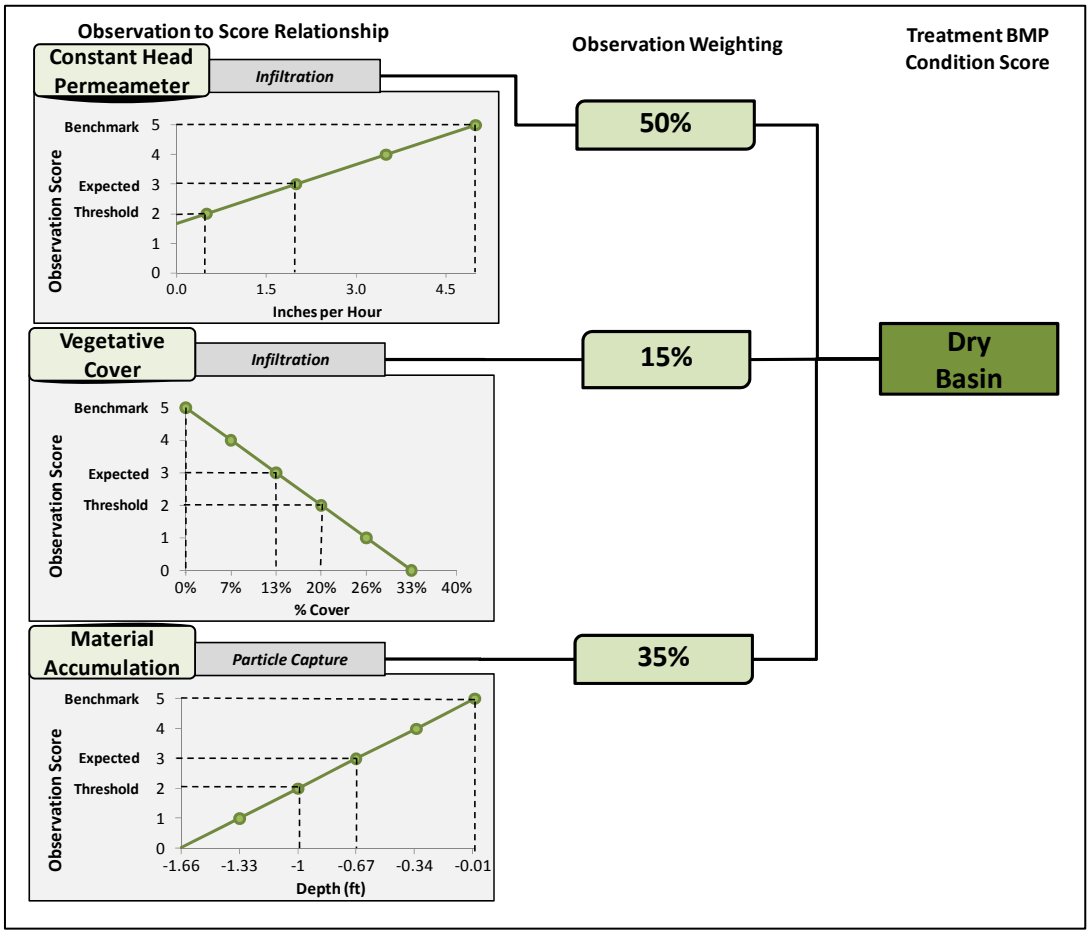


Figure C.6: Relationship between observation values, observation scores and the treatment BMP condition score – for a hypothetical dry basin.

EXPECTED CONDITIONS & EXPECTED LOADING ESTIMATE MODELING PARAMETERS FOR TREATMENT BMPS

Stormwater managers determine the expected values for treatment BMPs in relationship to benchmark and threshold values. The following describes the operations to determine expected values:

- As described in the BMP RAM, benchmark values are generally determined by performing observations immediately following the installation or maintenance of a treatment BMP. Benchmark values are intended to be the best achievable observation values and define the observation score of 5. For example, the material accumulation observation in Figure C.6 shows depth of 0.0 feet is equal to the benchmark observation value of 5.
- Threshold values are selected by stormwater managers on the basis of desired maintenance frequency and desired load reduction for the treatment BMP. The BMP RAM provides default values for thresholds, however, threshold values may be changed by the user. Threshold values are intended to be the point at which the treatment BMP is no longer in acceptable condition; this defines the observation score of 2. For example, the material accumulation observation in Figure C.6 shows a depth of -1.0 feet is equal to the threshold observation value of 2.
- The Crediting Program defines the expected condition of a treatment BMP with an observation value equivalent to an observation score of 3. The expected condition is the lowest expected average condition score for a treatment BMP and is used as the basis for selecting modeling parameters for treatment BMPs when calculating the expected loading estimate. For example, the material accumulation observation in Figure C.6 shows a depth of -0.7 feet is equal to the expected observation value of 3.

The expected values are used to determine the appropriate modeling parameters to include in expected loading estimates. Thus, for the example provided in Figure C.6, the water quality volume used by the Pollutant Load Reduction Model (PLRM) should be equal to the volume when 1.3 feet of material has accumulated in the dry basin. By using expected values, the expected loading estimate is intended to reflect the expected load reduction from a treatment BMP. In contrast, the use of design or optimal values would reflect better-than-expected actual conditions and would likely result in overestimation of actual load reductions.

The benchmark, threshold and expected observation values, as well as the related modeling parameters, are recorded in the Treatment BMP Inventory Table of the applicable catchment credit schedule. The relationship between observation values and modeling parameters requires professional judgment on the part of the modeler, and the regulator reviews the modeling parameters to ensure reasonable estimates are used. The need for scientific investigation to better understand the relationship between observation values and modeling parameters is addressed in Section C.4.

DETERMINATION OF ACTUAL CONDITIONS FOR TREATMENT BMPS

The Crediting Program assumes that, in general, the late spring condition of a treatment BMP is representative of the actual condition for the year unless maintenance is performed. The BMP RAM recommends performing field observations in the late spring, which provides the urban jurisdiction time to schedule and perform necessary maintenance before fall weather events complicate maintenance procedures. Degradation of a treatment BMP generally indicates that it is effectively capturing pollutants, thus some degradation is an expected and even desirable result of treating runoff. The TMDL load duration curves show that a majority stormwater runoff and loading occurs during the spring snowmelt period. Because the change in condition from fall to spring is expected to be greater than the change from spring to fall, the late spring condition is generally a conservative average.

In some situations, site conditions or particular types of summer and fall runoff events may result in more rapid condition changes and necessitate more frequent inspections. These situations are addressed in specific catchment credit schedules and an appropriate inspection and averaging method is agreed upon by the stormwater manager and regulator.

If maintenance is performed, the treatment BMP is re-inspected and the two condition scores are averaged to determine the actual condition score for the year. Averaging condition scores provides an incentive for stormwater managers to invest in maintenance to maintain treatment BMPs at near-to or better-than expected conditions in order to be awarded credit. It also recognizes that higher-than-expected conditions in the fall of one year result in better-than-expected load reduction during the winter and spring of the next year.

Table C.1 uses the observation scoring and weighting values shown in Figure C.6 to illustrate the determination of actual conditions in a year when the dry basin is maintained. The late spring weighted average of the observation scores for the dry basin yields a treatment BMP score of 2.2. The dry basin is re-inspected following maintenance in the summer and the resulting treatment BMP score is 4.8. The actual condition is the average of 2.2 and 4.8, which is 3.5. Conveyance is also evaluated for each treatment BMP. If conveyance problems are observed, the treatment BMP receives a score of 2, regardless of the other observation results.

								Pre-Maintenance			*Post-Maintenance*			
Treatment BMP	Observation	Observation Weighting	Benchmark Value (5 score)	Expected Value (3 score)	Threshold Value (2 score)	Observation Score Equation	Observation Unit	Observation Value	Observation Score	BMP Condition Score	Observation Value	Observation Score	BMP Condition Score	Actual Condition
Dry Basin	Constant Head Permeameter	50%	5.0	2.0	0.5	= 1.5 x - 2.5	in/hr	3.0	1.9	2.2	4.4	4.6	4.8	**3.5**
	Vegetative Cover	15%	0%	13%	20%	= -15 x + 5	% of area	12.7%	3.1		0%	5.0		
	Material Accumulation	35%	0.0	-0.7	-1.0	= 3 x + 5	feet	-0.9	2.3		0.0	5.0		

Table C.1: Calculation of actual condition of a hypothetical treatment BMP – showing the operations performed by the BMP RAM database to determine the condition of a dry basin using inspection results, and the operation performed by the Accounting and Tracking Tool to determine the actual condition for the year.

The condition scoring equations shown in Table C.1 are defined by the BMP RAM using the benchmark and threshold values determined by the stormwater manager. The calculations shown in Table C.1 are performed by the BMP RAM database. The Accounting and Tracking Tool averages inspection results for a given year.

C 2.2 ▪ ROAD CONDITION ASSESSMENTS

The PLRM generates a condition score for each road group. The PLRM Model Development Documentation describes the method for determining road condition scores. The Road RAM defines protocols to determine actual road condition scores.[19]

Road condition scores are related to the pollutant loading potential from individual road segments. A condition score of 5 indicates a low pollutant loading potential and score of 0.5 indicates a high pollutant loading potential. Similar to treatment BMPs, the Crediting Program uses road condition scores to define expected conditions used in expected loading estimates and actual conditions as the basis for annual credit awards. However, while the BMP RAM develops a unique condition scoring equation for each treatment BMP and the Crediting Program uses the values of a condition score of 3 as the expected conditions, the Road RAM and PLRM define a consistent scale from 0 to 5 for all roads. Therefore, the expected condition for each road group is unique. As per the PLRM road condition score determination method, expected conditions for primary high-risk roads are in the range of 0.5 to 2.0 and expected conditions for secondary low-risk roads are in the range of 3.0 to 5.0.

EXPECTED CONDITIONS & EXPECTED LOADING ESTIMATE MODELING PARAMETERS FOR ROADS

As described in the PLRM Model Development Documentation, the PLRM determines road condition scores on the basis of:

- road risk (a function of slope, traffic density and adjacent land use)
- planned abrasive application practices
- planned sweeping practices
- road shoulder protection and stabilization

The resulting road condition score for each road group is provided as an output from the PLRM load estimation scenario. The expected condition for each road group in a catchment is the PLRM output from the expected loading estimate scenario.

DETERMINATION OF ACTUAL CONDITIONS FOR ROADS

Road conditions can change rapidly and are expected to change throughout the year. Road conditions generally have relatively low scores following abrasive applications, and generally have relatively high scores following effective sweeping. Therefore, the determination of actual condition must average across many different scenarios throughout the year. The increase in understanding from frequent inspection results, however, must be balanced by the practical aspects of staffing constraints. While some staff time performing inspections can improve the effectiveness of maintenance efforts, spending significant amounts of staff time performing inspections can exhaust the necessary resources to perform the maintenance.

The PLRM road condition approach reflects some expectation of variability. By defining condition score ranges for different types of roads (primary and secondary) and different road risks, roads likely to receive heavy abrasive applications have a higher pollutant potential than roads where abrasive applications are less likely, even if the same types of abrasives are applied and the same sweeping practices are implemented.

Stormwater managers develop a road condition inspection approach for either each catchment or the overall urban jurisdiction and work with regulators to gain acceptance. Practical condition assessment approaches are likely to rely upon operations-to-conditions relationships, as described in Section C of the Catchment Credit Schedule Technical Guidance. Road inspection plans define a representative number of road segments covering each road group with some duplicate inspections for certain road group types.

[19] As of September 2009, a Road RAM is under development. This method is expected to be the standard road assessment method and will inform the appropriate timing for performing both self-inspections and validation inspections. This appendix will be updated to reflect this method once it is complete.

Road inspections plans also define the frequency and time of year of inspections. In general, inspections occur both before runoff events and after sweeping.

With an understanding of the conditions before and after sweeping and the frequency of sweeping, an average actual condition score can be estimated. Until a more robust averaging approach is developed, the actual condition score for a road group is the average of all observations for roads within the road group. The need for scientific investigation to better understand the relationship between observation values and modeling inputs, and between observation values and average actual conditions, is addressed in Section C.4.

The expected road condition score for each road group is recorded in the Road Inventory Table of the catchment credit schedule. The Accounting and Tracking Tool averages road inspection scores for each road group to determine actual conditions.

C 2.3 ▪ PRIVATE PROPERTY BMP CONDITION ASSESSMENTS

This section defines the condition assessment method for private property BMPs used by the Crediting Program. The expected percents of private property BMPs certificates and source control certificates in a catchment are defined and recorded in the catchment credit schedule and used in the expected loading estimate. The private property BMP condition score is based on the sum of scores from properties with BMP or Source Control certificates.

Using an analogous approach to the condition scoring mechanism for treatment BMPs, the expected percent private property BMP implementation defines the condition score value of 3. Other condition scores use the expected percent implementation and are set at 10-percent increases or decreases above and below the expected percent. Equation C.1 defines the observation-to-condition scoring equation. Figure C.7 illustrates this relationship for a hypothetical catchment with an expected 50 percent of properties awarded either BMP or Source Control certificates.

Equation C.1: Private Property BMP Condition Score Equation
Based on the sum of private properties with either BMP or Source Control certificates in a catchment

Private Property BMP Condition Score = 3 + 10* ((Actual % - Expected %) / Expected %)

The Private Property BMP Condition Score can be a maximum of 5 and a minimum of 0

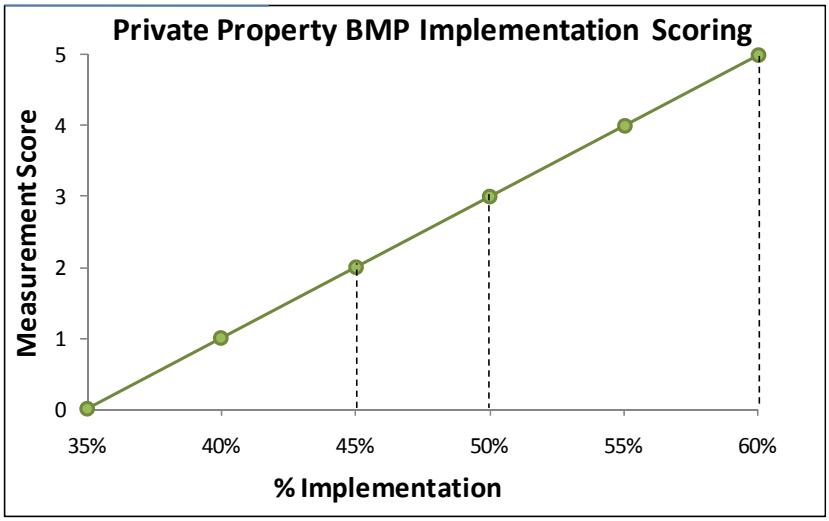


Figure C.7: Illustration of the Private Property BMP Condition Score Relationship – for a hypothetical catchment with 50 percent of private properties with either BMP or Source Control certificates.

Private property BMP databases are checked annually and the percent implementation is entered into the Accounting and Tracking Tool. The Accounting and Tracking Tool performs the condition score calculation. See Section C of the Catchment Credit Schedule for specific technical guidance on determining the percent of area with BMP or Source Control certificates.

C 2.4 ▪ OTHER POLLUTANT CONTROL STRATEGIES

Urban jurisdiction stormwater managers define condition assessment criteria and inspection methods in the Other Pollutant Control section of any catchment credit schedule that includes load reduction resulting from pollutant controls other than treatment BMPs, road maintenance operations and private property BMPs. Other pollutant controls can include implementation of municipal programs, ordinances and educational campaigns, as well as other actions performed that result in observable changes and expected pollutant load reductions.

Other pollutant control strategies must be reflected in the expected loading estimate to contribute to the credit potential for the catchment. This may be done by modifying default parameters for concentrations, by adjusting the percent of road shoulder protection, or using many other techniques. The manner in which other pollutant control strategies are included in loading estimates is clearly described in the catchment credit schedule memo, and is expected to be an area of review and discussion by regulators.

This section describes three potential approaches for defining condition assessments. These approaches are provided as starting points and are improved upon with information from the specific catchment setting, monitoring results, best professional judgment, literature, and modeling sensitivity analyses. The specific approach and observation definitions are described in the catchment credit schedule memo for any catchment where other pollutant controls contribute as a key or essential pollutant control.

Each year, the urban jurisdiction calculates the actual condition score for alternative pollutant control strategies implemented in each registered catchment and enters the results in the Accounting and Tracking Tool.

DEFINING OBSERVABLE NUMERIC CONDITIONS

The preferred condition assessment method is based on observable numeric conditions. The condition assessment can be modeled after the method described for private property BMPs, and must be accepted by the appropriate regulator as part of the catchment credit schedule verification and acceptance. This involves:

- Determining an expected observation value, which defines the 3 score.
- Establishing percent deviations from the expected value to determine the scores above and below the 3 value.
- Defining weighting factors for each observation score, when multiple observations are related to the determination of overall condition of a pollutant control. See the Treatment BMP discussion above for discussion of weighting observations to determine an overall condition score.

As an example, consider a municipal parking ordinance that is expected to result in fewer cars parked off pavement and reduced soil disturbance within a catchment. The observations may be equated to an estimated level of road shoulder protection in the expected loading estimate. Visual surveys of road shoulder disturbance may provide a sufficient indication to determine the equivalent road shoulder protection. The catchment credit schedule memo would define the specific observation methods and inspection frequency. If the expected observable percent road shoulder protection is 80 percent, the other scores can be set based on 8-percent changes from the expected percent. Thus, an observation of 87 percent would equate to a condition score of 3.9.

DEFINING DESCRIPTIVE CONDITIONS

When numeric observations are not possible to define or practical to inspect, a descriptive definition of condition may be defined. At a minimum, descriptions should be clearly stated for condition scores of 1, 3 and 5. The intermediate values can be used when actual conditions fall between these defined descriptions of conditions. The 3 value description is the expected condition that should be related to the modeling parameters used in the expected loading estimate. When descriptive conditions are used, inspection results are confined to either integer values or approximated to the nearest 0.5 of a value. The specific inspection

methods and frequency are defined in the catchment credit schedule memo, and accepted by the appropriate regulator as part of the catchment credit schedule verification and acceptance.

As an example, consider again a municipal parking ordinance that is expected to result in fewer cars parked off pavement and reduced soil disturbance within a catchment. The observations may be equated to an estimated level of road shoulder protection in the expected loading estimate. The catchment credit schedule memo could define the inspection approach and frequency as a driving survey of at least 50 percent of the roads in the catchment, at least 3 times per year during non-snow conditions. Table C.2 provides a hypothetical description of how visual surveys of parking behavior and road shoulder disturbance may be used to define conditions.

	1	3	5
Parking Practices	More than 1 vehicle observed parked off pavement per 0.1 miles	Not more than 1 vehicle observed parked off pavement per 0.2 miles	No cars observed parked off pavement
Shoulder Disturbance	Bare compacted soil with evidence of tire damage on parcels every 0.1 miles	Isolated soil disturbance including crushed vegetation or small areas of bare and compacted soils once every 0.2 miles	No soil disturbance of note

Table C.2: Illustration of a descriptive condition assessment definition – for a hypothetical municipal parking ordinance.

MAINTENANCE CHECKLISTS

If neither observable numeric conditions nor descriptive conditions are possible to define and practical to inspect, the urban jurisdiction may define an activity checklist that compares planned to actual activities. The checklist approach must describe how completion of implementation activities is likely to achieve expected conditions.

The checklist approach is not preferred because it focuses personnel on completing a list of rote activities, which reduces the urban jurisdiction's flexibility to innovate to most efficiently achieve expected conditions. For instance, it is more important to ensure that an infiltration basin is effectively infiltrating water than it is to know whether it has or has not been maintained within a year.

As an example, once again consider a municipal parking restriction ordinance that is expected to result in fewer cars parked off pavement and reduced soil disturbance within a catchment. Implementation activities may be equated to an estimated level of road should protection in the expected loading estimate. The catchment credit schedule memo could provide a detailed explanation of implementation activities, define the activity checklist and the rationale for how implementing the activities are likely to achieve expected conditions. Table C.3 provides a hypothetical activity checklist defining how implementation of the municipal ordinance may be used to define conditions.

	1	3	5
Education	No education effort in catchment	Flyers sent 2 times per year describing ordinance and rationale	Flyers sent 4 times per year and local classroom education reaching >25% of school-aged children in catchment
Enforcement	No warnings or tickets written	Monthly warnings and tickets to all vehicles parked off pavement	Weekly warnings and tickets checked at 4 different periods of the day to all vehicles parked off pavement
Community Engagement	No community engagement	Automated phone calls to households at least 1 time per year	Personal phone calls 2 times per year and representation at at least 2 community events, such as a fire safe council meeting or environmental faire within 1 mile of catchment

Table C.3: Illustration of an activity checklist condition assessment definition – for a hypothetical municipal parking ordinance.

C 3 CREDIT AWARD DETERMINATION

The credit award method defines a pragmatic numeric approach to determine credit awards for catchments. The credit award method defines criteria to determine if individual pollutant controls are performing acceptably in a year. It also defines how performance of individual pollutant controls is used to determine the overall credit award for a catchment. The credit award method is intended to provide a logical relationship to actual pollutant loading from a catchment while being relatively easy to understand and implement within the Accounting and Tracking Tool. It is also intended to ensure credit awards are environmentally protective while providing an ongoing incentive to achieve load reductions.

C 3.1 ▪ DETERMINATION OF INDIVIDUAL POLLUTANT CONTROL PERFORMANCE

An individual pollutant control is considered performing when the actual condition in a year is greater than or equal to the expected condition minus 0.5. Therefore, any treatment BMP with expected condition of 3.0 is considered performing when the actual condition is greater than or equal to 2.5. As described in Section C.2.2 above, the expected condition score for a road group is between 0.5 and 5.0 depending on the road type, risk and maintenance practices. A road group is considered performing each year the actual condition is greater than or equal to the expected condition minus 0.5. Equation C.2 is the formal definition of performing and non-performing pollutant controls.

EQUATION C.2: DEFINITION OF INDIVIDUAL POLLUTANT CONTROL PERFORMANCE AND NON-PERFORMANCE

Performing: $\textit{Actual condition} \geq \textit{Expected condition} - 0.5$

Non-performing: $\textit{Actual condition} < \textit{Expected condition} - 0.5$

The Accounting and Tracking Tool uses self-inspection results to perform the comparison between expected and actual conditions and determines if a pollutant control is performing each year.

C 3.2 ▪ DETERMINATION OF CATCHMENT CREDIT AWARD

The credit award method uses the determination of performance for individual pollutant controls within a catchment to determine the overall credit award for the catchment. The maximum credit award for a catchment is 100 percent of the credit potential amount defined in the catchment credit schedule,[20] and the minimum amount of credit award for a catchment is 0.

Pollutant controls identified as essential in a catchment credit schedule are treated independently from key pollutant controls. The urban jurisdiction identifies essential and key pollutant controls in the catchment credit schedule on the basis of the magnitude of load reduction expected from individual pollutant controls (see Section C of the Catchment Credit Schedule Technical Guidance and Instructions for a description of essential, key and supporting pollutant controls). By definition there can be no more than 4 essential pollutant controls within a catchment. If any one essential pollutant control is non-performing the credit award for the catchment is 0. This reflects the importance of maintaining essential pollutant controls at near-to or better-than expected conditions.

When all essential pollutant controls are performing, the percent of key pollutant controls performing is used to determine the credit award. Equation C.3 defines the percent key pollutant controls performing. Table C.4 defines the percent of the credit potential amount awarded using the percent key pollutant controls performing.

[20] Future iterations of the credit award method can include bonus credit for maintaining actual conditions better than expected conditions using the same numeric scoring approach.

EQUATION C.3: PERCENT KEY POLLUTANT CONTROLS PERFORMING WITHIN A CATCHMENT

% performing = # of key pollutant controls performing/total # of key pollutant controls

Percent Key Treatment BMPs Performing	100%	90% - 99%	75% - 89%	50% - 74%	<50%
Credit Award	100%	75%	50%	25%	0%

Table C.4: Credit award amount – based on the percent of key pollutant controls performing within a catchment, when all essential pollutant controls are performing.

The conditions of supporting pollutant controls and conveyance infrastructure are not directly used in the credit award method; however, the importance of proper conveyance is recognized by the BMP RAM use of conveyance observations for all treatment BMPs.

The Accounting and Tracking Tool performs these calculations to determine the catchment credit award percent and the credit award amount for each registered catchment.

C 3.3 ▪ ENVIRONMENTALLY PROTECTIVE

The credit award method is used in the determination of regulatory compliance, and is intended to be environmentally protective. Environmental protection is achieved through the credit award method and through the processes of regulators reviewing individual catchment awards.

The credit award method assumes essentially no load reduction from non-performing pollutant controls while some load reduction is likely achieved when treatment BMP conditions are between 1 and 2.5. Further, the reduction of credit award for non-performing pollutant controls is generally greater than the expected increase in loading expected if the pollutant control were not in place. For instance, by definition an essential pollutant control is expected to be responsible for at least 25 percent of the load reduction from a catchment; however, it is very rare that a single pollutant control is responsible for 100 percent of the load reduction from a catchment. The credit method is protective by assigning a 100-percent reduction in credit if any one essential treatment BMP is non-performing.

While it is possible for non-performing key pollutant controls to result credit awards that are greater than the resulting load reduction, this is expected to be rare and may be corrected during the regulatory review of annual credit awards. If multiple key pollutant controls are non-performing within a catchment, the regulator reviews the relative importance of the non-performing pollutant controls, as well as the actual conditions of the non-performing pollutant controls. If the actual conditions of non-performing pollutant controls are within 1.5 of the expected conditions, then some load reduction may be achieved from the pollutant controls. Further, unless multiple non-performing pollutant controls are expected to be responsible for more than 10 percent of the load reduction each, the credit award method reduction in credit is nearly always more protective than the expected increase in loading.

C 4 ADAPTIVE MANAGEMENT NEEDS RELATED TO CREDIT AWARD METHOD

The credit award method and the underlying load estimation and condition assessment methods are areas of particular need for adaptive management. They are expected to be improved through monitoring and research conducted through the Regional Stormwater Monitoring Program (RSWMP) and other applied science efforts. This section describes the conceptual relationship between effectiveness monitoring data and the RSWMP. It also identifies areas of the credit award method that require monitoring information to improve the credit award relationship to actual loading.

C 4.1 ▪ USE OF MONITORING RESULTS TO IMPROVE THE CREDITING PROGRAM

The Crediting Program combines several logical relationships to relate the expected magnitude of real load reductions to the ongoing implementation of pollutant controls. Expected loading estimates can be used as hypotheses to be tested. Further, evaluating the condition of pollutant controls during monitoring can expand the information about the catchment and can then be used to interpret monitoring results.

Actual loading can be approximated by targeted intensive stormwater monitoring conducted through RSWMP and other applied science efforts. Load reduction estimates can be improved by comparing loading estimates to actual loading. The sensitivity of condition assessments can also be tested through targeted monitoring of treatment BMPs, runoff from roads and overall catchment loading.

Figure C.8 shows that:

- Intensive stormwater monitoring determines actual loading resulting from actual conditions of land uses, infrastructure and treatment BMPs in a catchment.
- Load estimation methods can estimate loading using the same actual conditions of land uses, infrastructure and treatment BMPs in the catchment.
- Expected loading can be compared to actual loading to improve both load estimation and condition assessment methods.

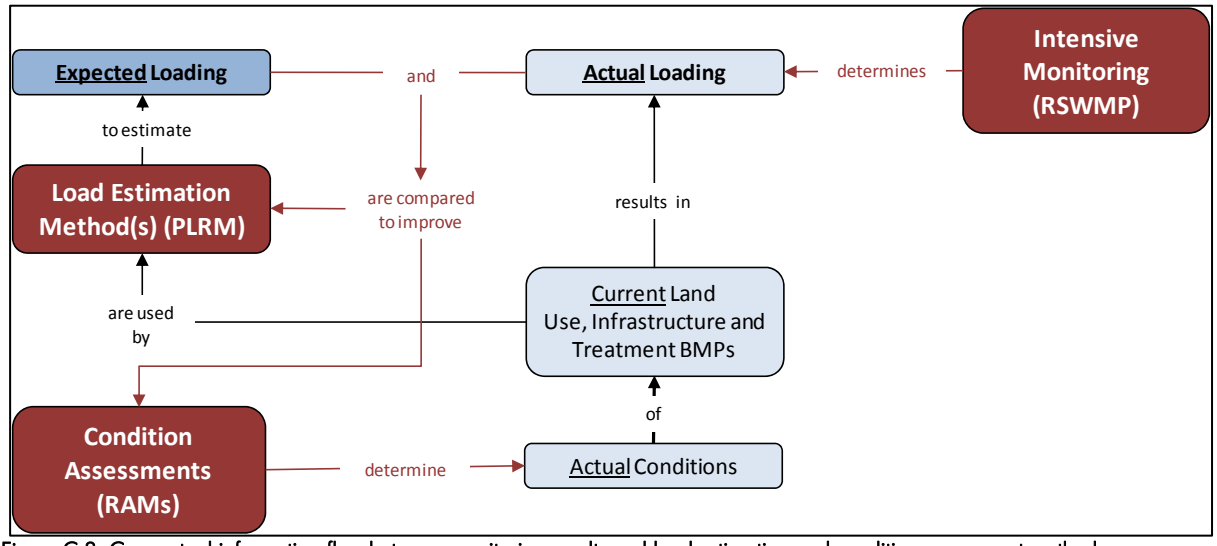


Figure C.8: Conceptual information flow between monitoring results and load estimation and condition assessment methods.

C 4.2 ▪ SPECIFIC QUESTIONS TO ADDRESS

The Crediting Program improvement process defined in Chapter 3 of the Handbook is designed to incorporate scientific findings from applied research and monitoring efforts on an annual basis. Three broad areas of potential adaptive management are described in Section 0.2 of the Handbook. Additional areas of identified need related to improving the relationship between credit awards and actual load reductions include, but are not limited to, the following:

- Relating load reduction modeling parameters to condition assessment observations.
- Calibrating the load reduction from individual treatment BMPs and roads to changes in condition scores, and improving the understanding of sensitivity between specific observations and loading.
- Determining a road condition score averaging algorithm that more accurately represents actual conditions related to pollutant loading from roads over varying conditions throughout a year.
- Developing a relationship between high condition scores and load reductions to support the incorporation of bonus credit into the credit award method.
- Refining the definition of water quality importance of pollutant controls to more precisely define the expected change in loading for non-performing pollutant controls.

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ACRONYMS & ABBREVIATIONS

BMP RAM	BMP Maintenance Rapid Assessment Methodology
BMP	best management practices
Caltrans	California Department of Transportation
CCS	Catchment Credit Schedule
CICU	Commercial/Institutional/Communications/Utilities
DOT	Department of Transportation
ECAM	existing conditions analysis memoranda
EDCO	El Dorado County
EIP	Environmental Improvement Program
EPA	U.S. Environmental Protection Agency
FEA	Formulating and Evaluating Alternatives
IRP	Issue Resolution Punchlist
MOA	Memoranda of Agreement
NDEP	Nevada Division of Environmental Protection
NDOT	Nevada Department of Transportation
NPDES	National Pollutant Discharge Elimination System
PDP	Project Delivery Process
PIR	Program Improvement Recommendation
PLRM	Pollutant Load Reduction Model
RAM	Rapid Assessment Methodology
RSWMP	Regional Stormwater Monitoring Program
SWMP	stormwater management plan
SWQIC	Storm Water Quality Improvement Committee
TAC	Technical Advisory Committee
TMDL	total maximum daily load
TN	total nitrogen
TP	total phosphorus
TRPA	Tahoe Regional Planning Agency
Water Board	Lahontan Regional Water Quality Control Board

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GLOSSARY

Accounting and Tracking Tool – See TMDL Accounting and Tracking Tool

Actual Condition – The average of the condition scores, from inspection results, for a pollutant control during a reporting year.

Baseline - The conditions present during the 2002-2004 period. This is the period used to inform the TMDL baseline loads. Infrastructure present within a catchment as of October 2004 is part of the baseline. Typical basin-wide conditions and practices as of this period, as defined in the Catchment Credit Schedule Technical Guidance and Instructions, are used in baseline loading estimates.

BMP RAM (Rapid Assessment Methodology) – The standard condition assessment tool, defining simple and repeatable field observations, to determine the actual condition of an urban stormwater treatment BMP.

Catchment – see urban catchment

Catchment Credit Schedule (CCS) – Documentation of the assumptions, calculations and agreed upon results related to defining the credit potential for a specific urban catchment.

Catchment Percent Connectivity – The percent of pollutant loading leaving an urban catchment that is assumed to reach Lake Tahoe. By default, all loading coming from an urban catchment is assumed to enter a surface waterbody leading to Lake Tahoe. If this is accurate for the urban catchment under consideration, no catchment connectivity analysis is required. In situations where an outfall delivers stormwater to a meadow or other natural filtration system, only a fraction of the load may reach a surface waterbody and the lake. The fraction of load delivered to the surface waterbody is applied to the final load reduction calculation as it applies to both baseline and expected conditions. Each outfall with less than 100 percent connectivity must be modeled as a unique urban catchment and have a unique CCS.

Clarity Challenge – An interim milestone to restore lake clarity to approximately 24 meters by reducing basin-wide loading of fine sediment particles by 32 percent. The ultimate lake clarity standard is 29.7 meters.

Condition Score – The numeric value, between 0 and 5, determined by comparing observation values to pre-determined benchmark (highest achievable) and threshold (no longer acceptable) values set by the urban jurisdictions. A condition score may be determined by one or more observation values according to a defined assessment method. See Table TT.1 for a list of the currently accepted standard condition assessment methods.

Credit Requirement – The number of credits, as defined in an NPDES Permit or MOA, that an urban jurisdiction must achieve in a year.

Expected Condition – The lowest expected average condition score for a treatment BMP, roadway or other pollutant control during a year. The expected condition and related observation values are used as the basis for selecting modeling parameters in the expected loading estimates. They are also the reference for determining annual credit awards.

Implementation Plan Summary – The brief descriptions and inventories of pollutant controls implemented in an urban catchment, including definition of expected conditions for treatment BMPs, roads, private property BMPs, and other pollutant control strategies based on the urban jurisdiction's planned operations, maintenance and program implementation activities in the urban catchment. The Implementation Plan Summary may pull information from multiple sources and ideally relies upon (one or multiple) broader implementation plans used by the urban jurisdictions. Because the Crediting Program focuses on actual conditions and not specific maintenance actions, the CCS Implementation Plan Summary focuses on defining expected conditions.

Lake Clarity Credit – The relationship between fine sediment particles, total phosphorus and total nitrogen (defined by Equation 0.1) that is used to translate load reduction into regulatory requirements.

Load – The quantity of pollutants delivered from an urban catchment.

Load Estimation Method – A calculation approach, including the associate data inputs and assumptions, that integrates the benefits of pollutant controls within an urban catchment and produces an average annual load estimate. See Table TT.1 for a list of currently accepted load estimation methods.

Load Reduction – The difference between the estimated average annual amount of pollutants entering Lake Tahoe under standard baseline conditions, and the estimated average annual amount of pollutants entering the lake under current conditions. All pollutant loading reaching a surface waterbody that flows to Lake Tahoe is assumed to enter the lake.

Load Reduction Estimate – An estimate of the average annual quantity of pollutants that will be prevented from leaving an urban catchment as a result of one or more pollutant controls.

Load Reduction Strategy – Describes the relative importance of each type of pollutant control strategy implemented in a specific urban catchment. This understanding informs Catchment Credit Schedule duration discussions, directs the attention of review of specific sections, and communicates the overall catchment approach to interested parties. The load reduction strategy is defined by the category of pollutant control—combining the benefit of all of the individual elements of each type of control. For instance, the combined load reduction resulting from all treatment BMPs is compared to the combined load reduction from all private property BMPs.

Memoranda of Agreement (MOA) – The documents signed by NDEP, and Washoe or Douglas Counties, that define credit requirements and reporting requirements in a manner consistent with the requirements related to the Crediting Program found in California NPDES permits.

Modeling Drainage Catchment – A unique area defined within a load estimation model that is fully contained within only one urban catchment. Any one area can be included in only one modeling drainage catchment for a specific loading estimate. See Appendix A Figure A.Z for an example map showing modeling drainage catchments within an urban planning catchment.

National Pollutant Discharge Elimination System (NPDES) permit – The permit program authorized by CWA section 402 that covers stormwater discharges from municipal separate storm sewer systems and defines pollutant control implementation and reporting requirements for urban jurisdictions.

Observation Value – The specific numeric value observed during a condition assessment inspection. Observation values are compared to benchmark and threshold values to determine actual condition scores.

Pollutant Control Strategies – Actions that reduce pollutant loads in stormwater transported downslope, including (1) treatment BMPs, (2) source controls on roads, (3) private property BMPs, and (4) other pollutant control actions, such as municipal ordinances and programs.

Pollutant Load Reduction Model (PLRM) – A standard load estimation method, which integrates loading achieved through combinations of source control practices and treatment BMPs in an urban catchment.

Private property BMPs – structural pollutant controls implemented to reduce or eliminate stormwater runoff from private parcels.

Road Condition – The relative risk to downslope water quality as a result of both pollutant generation and transport from a road.

Road Group – Uniquely identified group of roads within a modeling drainage catchment of the same type (primary or secondary) and risk (determined by slope, traffic density and surrounding land use).

Road RAM (Rapid Assessment Methodology) – The standard condition assessment method used to inspect and report actual conditions in comparison to the expected conditions that are used in load reduction estimations.

Road Risk – The theoretical pollutant loading from a road segment based on key physiographic and anthropogenic characteristics that are assumed to influence the relative stormwater quality downslope in the absence of pollutant source controls. A Road Risk map is provided with PLRM. The PRLM designation of road risk is based on three physiographic characteristics that are assumed to influence those potential sources: slope, traffic density, and adjacent land use.

Source Control – Measures that prevent the mobilization of pollutants from their original source.

Secchi disk – A circular disk used to measure water clarity.

Threshold standards – Regulatory targets defined in the Tahoe Regional Planning Agency (TRPA) Regional Plan document. These are the same as "environmental threshold carrying capacities" referenced in the TRPA compact.

Treatment BMPs – Structural BMPs that are construed to accept, attenuate and treat urban stormwater. Treatment BMPs are implemented to reduce pollutant loading in stormwater transported downslope by either retaining/removing pollutants and/or by reducing surface water volumes.

Total Maximum Daily Load (TMDL) – A regulatory determination of the maximum amount of a pollutant, or pollutants, that a waterbody can receive while still meeting water quality standards. The Lake Tahoe TMDL defines ultimate load allocations (which define load reduction requirements) and interim milestones for urban upland runoff, forest upland runoff, direct atmospheric deposition to the lake, and stream bank erosion for fine sediment particles, total phosphorus and total nitrogen.

TMDL Accounting and Tracking Tool – The central credit and load reduction database that stores information related to Catchment Credit Schedules and inspection results; and generates reports showing the credits awarded each year for specific catchments and urban jurisdictions. The TMDL Accounting and Tracking Tool also tracks and reports load reductions at all scales (from specific catchments to the overall basin).

Urban catchment – a contiguous area containing urban land uses with runoff draining to a surface waterbody.