Attachment E: Evaluation Methodology

Preface

The Roads Evaluation Methodology Report (Evaluation Methodology) was developed by the Sonoma Resource Conservation District under contract with the North Coast Water Board.

Part X of the California Salmonid Stream Habitat Restoration Manual constitutes Appendix A to the Evaluation Methodology. Part X is available through the State Water Resources Control Board's Surface Water Ambient Monitoring Program webpage (https://www.waterboards.ca.gov/water_issues/programs/swamp/docs/cwt/guidance/5211.pdf).

Contact North Coast Water Board staff at RB1-Gualala@waterboards.ca.gov for assistance accessing this document.

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Roads Evaluation Methodology Report

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Introduction

The Gualala River Watershed is a historically underserved watershed that drains approximately 298 square miles along the coast of southern Mendocino and northern Sonoma counties. The legacy of past land use changes and practices since European colonization, as well as emerging impacts from current practices and climate change, affect the health of the watershed and the sustainability of surrounding communities.

This report was contracted to Sonoma Resource Conservation District (SRCD) to provide technical support to the North Coast Regional Water Quality Control Board (NCRWQCB) in its development of components of the Gualala Total Maximum Daily Load (TMDL) Action Plan Implementation Program. It is the final of four technical reports developed to support this effort. A component of the contract is to provide landowners in the Gualala River Watershed with road assessments to address erosion and sediment delivery to watercourses and to develop supporting road management plans.

The Roads Evaluation Methodology is a technical, non-regulatory resource that is available to landowners and land management agencies. It will be used to guide NCRWQCB contract-funded road assessments on properties within the watershed. It does not impose or alter any regulatory requirements. Rather, it is intended to be a tool available to support informed decision-making for land management and water quality protection within the watershed.

Purpose

The purpose of this document is to formally adopt *Part X: Upslope Erosion Inventory and Sediment Control Guidance* of the California Salmonid Stream Habitat Restoration Manual as the official methodology for the free, NCRWQCB contract-funded road and watercourse crossing evaluations in the Gualala River Watershed. *Part X,* developed by the California Department of Fish and Wildlife, is commonly used for rural road assessments throughout the state and serves as the basis for this methodology.

Specifically, the methodology outlined in this report will guide NCRWQCB contractors tasked with conducting road assessments for landowners in an effort to mitigate issues related to road erosion and sedimentation.

The evaluation methodology has been designed such that evaluators can adequately describe the current conditions of hydrologically connected road lengths, existing and potential sediment discharge sites, falling or improperly designed watercourse crossings, and upslope and downslope conditions. The objective is to create a road erosion inventory that will inform a detailed, prioritized road erosion prevention and erosion control plan to protect and improve habitat for coho salmon and other salmonids, and support other beneficial uses.

Part X describes methods and techniques used by watershed restoration specialists. These represent only a starting point for project design and implementation. They are not a surrogate for, nor should they be used in lieu of, a project design that has been developed and implemented according to the unique physical and biological characteristics of the site-specific landscape. The techniques and methods described in this manual are not a surrogate for acquiring the services of appropriate professionals, including but not limited to licensed Professional Engineers or licensed Professional Geologists, where such expertise is called for by the Business and Professions Code section 6700 et seq. (Professional Engineers Act) and/or section 7800 et seq. (Geologist and Geophysicist Act).

Coordination with the Technical Advisory Committee (TAC)

A draft of this report was shared with the Technical Advisory Committee (TAC) on June 3rd, 2026 and members were invited to submit comments, questions, and concerns. Feedback from this advisory group was incorporated into this report.

Summary of Part X

Part X: *Upslope Erosion Inventory and Sedimental Control Guidance* of the California Salmonid Habitat Restoration Manual provides a standardized approach for identifying, quantifying, and prioritizing sediment sources that affect stream habitat. The document focuses on evaluating sediment originating from roads, stream crossings, gullies, landslides, hillslopes, and stream banks, with the goal of reducing human-caused sediment delivery to streams. Rather than documenting erosion solely as a record of past impacts, *Part X* is designed to identify locations that may contribute sediment in the future and to develop restoration strategies that can reduce those risks. The inventory process supports watershed assessment, restoration planning, project prioritization, and implementation by providing consistent methods for estimating sediment production, delivery, and treatment costs.

The inventory process begins with watershed reconnaissance, review of existing information, aerial photograph interpretation, and field training. Inventory crews are instructed to evaluate erosion features based on their likelihood of producing sediment, their connection to stream channels, and their potential for treatment. Roads and stream crossings receive particular attention because they are common sources of management-related sediment and can generate large sediment inputs when drainage structures fail. Inventory data are collected in a manner that allows sites to be compared across a watershed and prioritized according to expected sediment reduction benefits and implementation costs.

The Upslope Inventory Data Form is used to document sediment sources located outside the active stream channel. Typical inventory sites include roads, stream crossings, gullies, landslides, fill failures, ditch erosion, and other hillslope features. The form begins with general site information such as location, watershed, road name or identifier, inventory personnel, and survey date. Crews then identify the site type and complete the sections applicable to that feature. Depending on the site, the form may include stream crossing measurements, landslide characteristics, road drainage information, erosion dimensions, and sediment delivery estimates.

A primary objective of the Upslope Inventory Data Form is to estimate future erosion and sediment delivery. Field crews measure site dimensions and assess the volume of material that could be mobilized if the site were to fail or continue eroding. They also estimate the proportion of sediment likely to reach a stream channel. Stream crossings receive additional evaluation because culvert failures and stream diversions can produce substantial sediment inputs. At these sites, crews collect measurements necessary to estimate excavation volumes, future erosion volumes, and treatment requirements. Site sketches accompany the inventory form and are used to document roads, streams, culverts, drainage features, springs, slope breaks, erosion features, and other conditions that influence site performance.

The Upslope Inventory Data Form also includes a treatment section where crews develop restoration recommendations and estimate implementation requirements. Treatment prescriptions are intended to

address the source of erosion and may include drainage improvements, culvert replacement, stream crossing excavation, installation of critical dips, road decommissioning, outsloping, berm removal, erosion control measures, or slope stabilization. Treatment descriptions should provide sufficient detail to support project planning, cost estimation, and future implementation. For complex or deep-seated landslides, *Part X* recommends consultation with qualified geotechnical professionals before developing sediment estimates or treatment prescriptions.

Throughout *Part X*, emphasis is placed on consistent field methods, careful measurement, accurate mapping, and thorough documentation. The inventory forms provide a framework for estimating future sediment production, evaluating sediment delivery pathways, documenting site conditions, and developing restoration treatments that can be prioritized across a watershed. The resulting information serves as the foundation for sediment reduction projects and long-term watershed restoration planning. *Part X* has been adopted as the Gualala Roads Evaluation Methodology and can be found in Appendix A.