

**ATTACHMENT E**  
**Compensatory Mitigation Guidance**  
**Rural Roads General Order**  
**Order Number R1-2024-0002**

**Impact types - temporary vs permanent**

Projects permitted under this Order shall be designed and implemented to avoid, minimize, or mitigate impacts to aquatic resources and the environment. Where impacts are determined to be unavoidable, mitigation measures can be required to compensate for the permanent loss of aquatic resources or to address temporary impacts.

**Temporary impacts** are a project's effects on aquatic resources or the environment which are typically short-term in nature and will be completely restored to pre-project condition at the same location through the implementation of best management practices (e.g., soils stabilization or replanting), or through passive restoration.

Many temporary impacts that result from rural road projects (e.g., temporary diversions, work within channels to upgrade culverts, hydrologically disconnecting roads and approaches, etc.) will typically not require a stand-alone restoration plan since channel functions will be restored as flow returns as part of project designs and implementation.

However, there may be unique circumstances in which the Regional Water Board will require a stand-alone restoration plan and monitoring to restore temporary impacts. For example, a restoration plan may be required to replace woody riparian vegetation that has to be cut or removed in order to conduct the project. For temporary impacts lasting more than 1-2 years or extended temporal loss of functions expected until recovery, additional mitigation may be required.

**Permanent impacts** are a project's effects on aquatic resources and functions that result in loss of resource area (filled) and/or long-term ecological function degradation within the aquatic resource that will never fully recover. Mitigation is required to offset these impacts and must meet the California Wetland Conservation Policy (W-59-93). Permanent impacts may require a Compensatory Mitigation Plan (with the exception of crossing upgrades to current standards). Consult with Regional Water Board staff and see below.

Below are some examples of typical temporary and permanent impacts to watercourse channels or riparian zones, that may result from road and watercourse crossing construction or reconstruction activities:

- **Temporary impact channel** - removal of a culvert, bridge or other type of crossing and replacement with an upgraded structure of the same length.
- **Temporary impact riparian** - removal of riparian plants in an area that can be replanted and restored over time.

- **Permanent impact channel** – construction of a new culvert, bridge, or other type of crossing structure where there is currently no crossing; or replacement of a sub-standard crossing that results in additional impacts to a natural stream channel.
- **Permanent impact riparian** - removal of riparian vegetation and replacement with a road or other feature that prevents or degrades riparian functions within that footprint.

### **Project alternatives analysis including impact avoidance and minimization measures**

Alternatives analysis - The purpose of an alternatives analysis (AA) is to identify the Least Environmentally Damaging Project Alternative (LEDPA). The AA should include a description of at least two viable alternatives to the proposed project and also a discussion/justification about why the proposed project is the LEDPA. The level of effort required for an AA shall be commensurate with the significance of impacts. Projects that meet the definition of an Ecological Restoration and Enhancement Project (EREP) or solely have temporary impacts, do not need to prepare an AA.

For example, typical RRGO project activities include culvert/crossing replacement or installation. For these types of projects that do not meet the definition of an EREP or have permanent impacts, AA discussion topics should include, but not be limited to:

- What other crossing types (at least two viable alternatives) were considered.
- Why the two alternatives were not selected.
- For new crossings, what other crossing locations were assessed.
- Why these alternative locations were not selected.
- Why the proposed project is the LEDPA. This should include an explanation, with justification, about why the proposed crossing type and location were selected over the two alternatives and a discussion about how permanent impacts to aquatic resources were avoided and/or minimized.
- Measures to minimize impacts to channel bed;
- Culverts placed in channel alignment and on stream gradient;
- Dry season work window and/or dewatering to minimize impacts to aquatic resources. If dewatering, must submit dewatering plan with application;
- Pollutant discharge prevention measures: Machinery working from outside the channel, if in-channel access is necessary prepare pollutant prevention plan;
- Sediment discharge minimization measures: Sediment and erosion control measures to be implemented during and after project to stabilize disturbed soil;
- Crossing failure minimization: Describe measures to prevent and minimize crossing failure such as critical dips, trash racks, etc.

## **Temporary impact restoration**

It is anticipated that temporary impacts from rural road projects may typically require only passive restoration unless Regional Water Board staff determine that some active efforts are warranted.

## **Permanent impact mitigation**

Upgrading a crossing to current standards that results in additional permanent impacts to a natural stream channel are considered self-mitigating by design. Crossing upgrades to the standards of this Order are considered an enhancement<sup>1</sup> to stream functions.

Compensatory mitigation for permanent impacts to a channel due to installation of new culvert, bridge, or other type of crossing structure should provide a substantive and direct ecological benefit and may include the following measures or considerations:

In channel:

- Removal of existing culvert or bridge of same length and restoring (daylighting) an open channel<sup>2</sup>;
- Improvement of channel of same length, which could include widening of existing crossing/culvert, embedding of new culvert, placing replacement culvert in channel alignment and on gradient<sup>1</sup>;
- Implement measures to ensure adequate fish passage, such as embed culverts below bed elevation or incorporate other design elements to improve fish passage<sup>1</sup>;
- Improvement of onsite existing riparian area at 2:1 area ratio<sup>2</sup>;
- Improvement of channel of same length, which could include placement of large woody material (LWM) or other in-channel improvements, channel bank improvements to reduce sediment discharges<sup>2</sup>; or
- Work with Regional Water Board staff to develop appropriate mitigation to offset impacts.

Wetlands or riparian areas:

- Unavoidable impacts that result in loss of area of wetlands or riparian vegetation requires the submittal of a mitigation plan. A mitigation plan describes actions to be taken to establish<sup>3</sup> or re-establish<sup>4</sup> wetlands or riparian vegetation of a greater area than those impacted;
- Unavoidable impacts that degrade wetland or riparian functions, but do not result in loss of area, require the submittal of a mitigation plan. A mitigation plan must describe actions to be taken to enhance<sup>1</sup> or rehabilitate<sup>2</sup> impacted wetland or riparian functions of a greater area than those impacted.

Mitigation type definition footnotes:

1. **Enhancement** means the manipulation of the physical, chemical, or biological characteristics of an aquatic resource to heighten, intensify, or improve a specific aquatic resource function(s). Enhancement results in the gain of selected aquatic resource function(s), but may also lead to a decline in other aquatic resource function(s). Enhancement does not result in a gain in aquatic resource area.
2. **Rehabilitation** means the manipulation of the physical, chemical, or biological characteristics of a site with the goal of repairing natural/historic functions to a degraded aquatic resource. Rehabilitation results in a gain in aquatic resource function, but does not result in a gain in aquatic resource area.
3. **Establishment (or Creation)** means the manipulation of the physical, chemical, or biological characteristics present to develop an aquatic resource that did not previously exist at the site. Establishment results in a gain of aquatic resource area and function.
4. **Re-establishment** means the manipulation of the physical, chemical, or biological characteristics of a site with the goal of returning natural/historic functions to a former aquatic resource. Reestablishment results in rebuilding a former aquatic resource and results in a gain in aquatic resource area and functions.