

OVERVIEW

For projects that involve new culvert construction, extension, or replacement within a perennial or intermittent stream, the Ecologist must address dewatering impacts associated with temporary stream diversions, as well as mitigation requirements, when applicable, in the Ecology report and Section 404 permit application. Please note, the procedures described in this toolkit do not apply to bridge activities.

STREAM DIVERSION METHODS

There are three types of temporary stream diversion methods used on GDOT projects: pumping, berm, and channel diversion. These methods are typically applied in the following ways:

1. Pumping diversions – single barrel culverts proposed for extension or replacement.
2. Berm diversions – multi-barrel culverts proposed for extension.
3. Channel diversions – new and replacement culverts, regardless of barrels (restricted to a drainage area that is less than 1 square mile).

Diagram 1, located at the end of this document, was developed by GDOT Design Policy and Support and provides a schematic, as well as a description of each diversion method. Please note, Diagram 1 is for informational purposes only and should not be included in any Ecology report or permit application.

REGULATIONS AND GUIDANCE

US Army Corps of Engineers (USACE) Regional Conditions

The 2021-2022 Nationwide Permit Regional Conditions published February 2022 by the USACE Savannah District include Regional Condition C.10., which addresses temporary stream diversions installed in perennial streams. This condition requires that stream diversions be designed to ensure aquatic life passage is maintained to the maximum extent practicable. The condition also requires that a restoration plan be included in the permit application to demonstrate that the affected reach of the stream channel is returned to preexisting conditions after the stream diversion has been removed.

USACE Standard Operating Procedure (SOP) for Compensatory Mitigation

The SOP for Compensatory Mitigation (Version 2.0), published October 2021 by the USACE Savannah District, includes requirements for temporary dewatering impacts associated with temporary stream diversions on culverts in either perennial or intermittent streams. The mitigation threshold for temporary dewatering is a duration of 60 days or greater. Anything less than 60 days would not require mitigation. Dewatering impacts with a duration of 60 to 90 days would be considered “temporary” and impacts with a duration of greater than 90 days but less than 1 year would be considered “short-term” for the purposes of compensatory mitigation. Please note, if a stream diversion is needed for 1 year or greater, it would be considered “permanent” and the impact type should be “discharge of fill”. The images below show the options when selecting impact type and duration in the USACE Qualitative Worksheet for Stream Impacts V2.0.

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Stream Diversion

Dewatering (Stream and Pump Diversions) – Short Term/Temporary
Discharge of Dredge Material Discharge of Fill (Including Culverts) Primary Morphological Alteration ----- Choose Secondary Adverse Impact Hydrologic Alteration - Impound Secondary Morphological Alteration
Dewatering (Stream and Pump Diversions) – Short Term/Temporary

Temporary – Less than (or equal to) 90 Days
Choose Duration Permanent/Reoccurring Short Term – Less than 1 Year
Temporary – Less than (or equal to) 90 Days

GDOT Guidance

GDOT will meet the requirement for a restoration plan via a plan note located in the General Notes (Series 4). Design is responsible for including the plan note, however, it is the Ecologist’s responsibility to verify its inclusion in the General Notes. The note calls for dewatering activities to be completed in less than 60 days. In cases where a stream diversion is required for 60 days or greater, concurrence from the State Construction Engineer will be required and the plan note table (see below) shall be completed by Design with information provided by the District Construction Engineer at Preliminary Field Plan Review (PFPR). These responsibilities are described in a GDOT Interoffice Memo issued by the State Design Policy Engineer on February 1, 2022.

The plan note shall state:

Temporary diversion methods (e.g., pumping, berm, channel, etc.) used to install structures in perennial and intermittent streams, except as notes in the table below, shall be in place less than 60 days to minimize impacts to aquatic life passage. Fill material required for temporary diversions shall be non-erodible and shall be removed in its entirety upon completion of the diversion.

Upon completion of any stream diversion that requires alteration of the stream bed or bank, the affected reach shall be restored to pre-project elevations, widths, and contours or such that the morphology of the impacted stream reach mimics the adjacent upstream and downstream reach. Additionally, disturbed stream banks shall be stabilized and revegetated.

STREAM DIVERSION DURATION EXCEPTIONS			
DIVERSIONS OF LESS THAN 60 DAYS ARE NOT LISTED IN THIS TABLE			
RESOURCE ID	ALIGNMENT/RDWY	STRUCTURE NO.	DURATION
PS# OR IS#			≥60days ≤90days OR >90days <365days OR ≥365days

COMMUNICATION MILESTONES

There are three communication milestones associated with stream diversions with which the Ecologist should be involved.

Avoidance and Minimization Measures Meeting (A3M)

During the A3M, the Ecologist shall discuss with Design if there will be new culvert construction, replacement, or extension within a perennial or intermittent stream for the proposed project. If so, the project team shall discuss the requirement for the plan note regarding stream diversions in the General Notes. Please note, the duration of a temporary stream diversion will not be determined at this time, however, the project team should be made aware that this information will be required for the permit application.

Preliminary Field Plan Review (PFPR)

During PFPR, the Ecologist, Design, and District Construction are responsible for discussing any temporary stream diversions that require 60 days or greater to complete. All stream diversion durations 60 days or greater shall be approved by the State Construction Engineer, and the plan note table should be modified accordingly. It is the responsibility of the District Construction Engineer or their designee to provide information on durations at PFPR. However, the Ecologist shall be prepared to ask for this information if it is not provided. In addition, the Ecologist shall ensure the plan note regarding stream diversions is included in General Notes.

Final Field Plan Review (FFPR)

During FFPR, the Ecologist shall confirm with District Construction that the durations of each temporary stream diversion remain unchanged since PFPR. In addition, the Ecologist shall review and confirm that the plan note regarding stream diversions is included in the General Notes and that the plan note table is correctly filled out.

DOCUMENTATION

Mainline Plans (Series 13)

Temporary dewatering impacts shall be measured and highlighted on Mainline Plans (Series 13). The dewatering impact shall extend up to 50 linear feet on either side of the proposed culvert structure OR up to the required right-of-way (ROW) or easement line, whichever is less. In the event of overlapping impact types (e.g., permanent discharge of fill from riprap placement and temporary dewatering) on the same stream segment, the impact is only reported once for that segment using the most adverse impact (e.g., permanent discharge of fill from riprap placement). The dewatering impact shall be color coded on plan sheets and shall include a corresponding legend that identifies the impact type the color reflects. A callout box pointing to the impact shall also state the linear feet and area for the temporary dewatering impact. See examples below.

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Stream Diversion

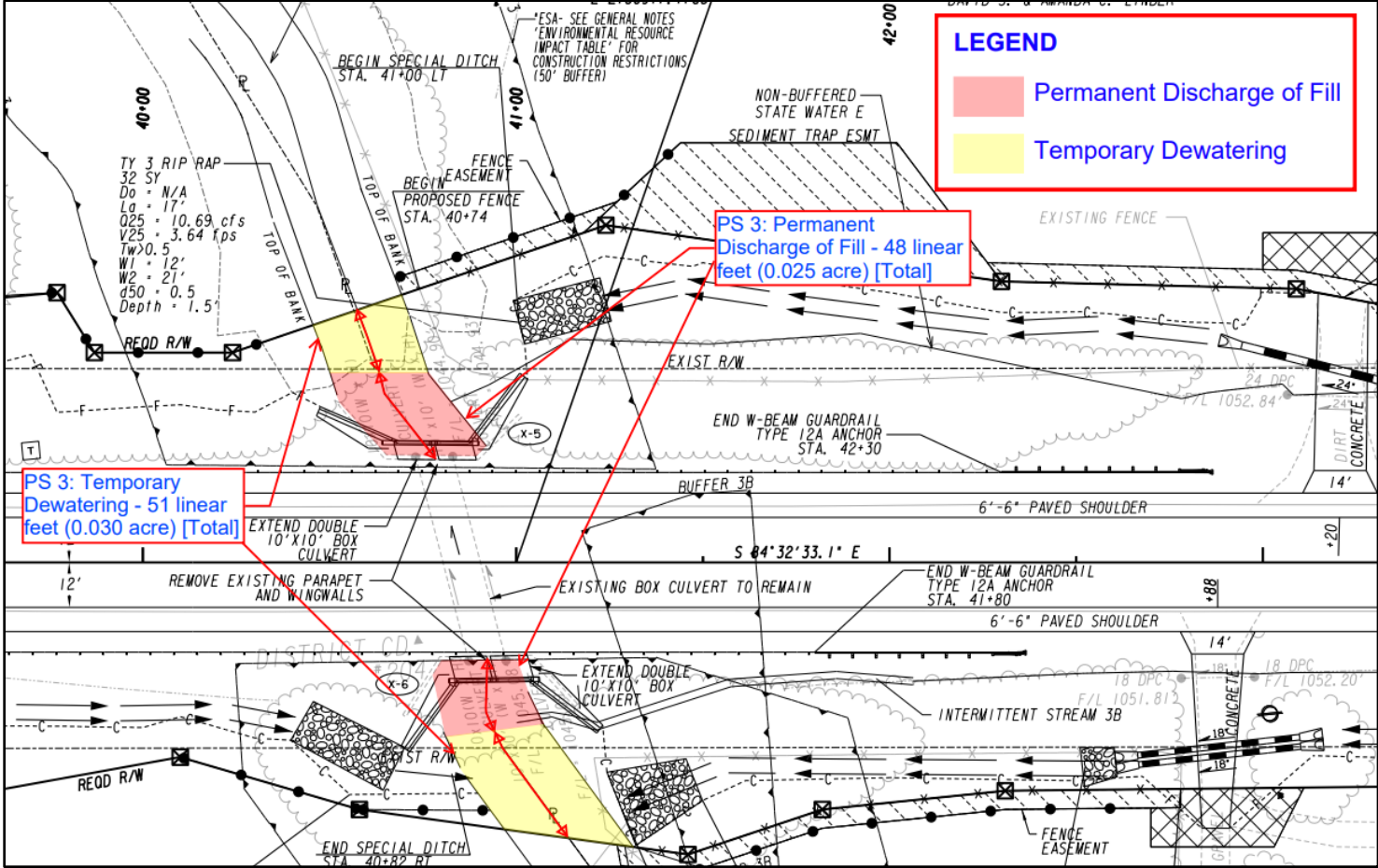


Figure 1 – This is an example of a culvert extension and shows a temporary dewatering impact on both sides of the proposed extension measuring up to the required ROW limit. Please note, the impact should be measured up to the required ROW limit and not to the orange barrier fence. The label indicating 51 linear feet of dewatering impacts refers to the combined length on both sides of the culvert extension. In this scenario, the distance from the end of the wingwalls to the required ROW limit is less than 50 feet on both sides of the culvert.

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Stream Diversion

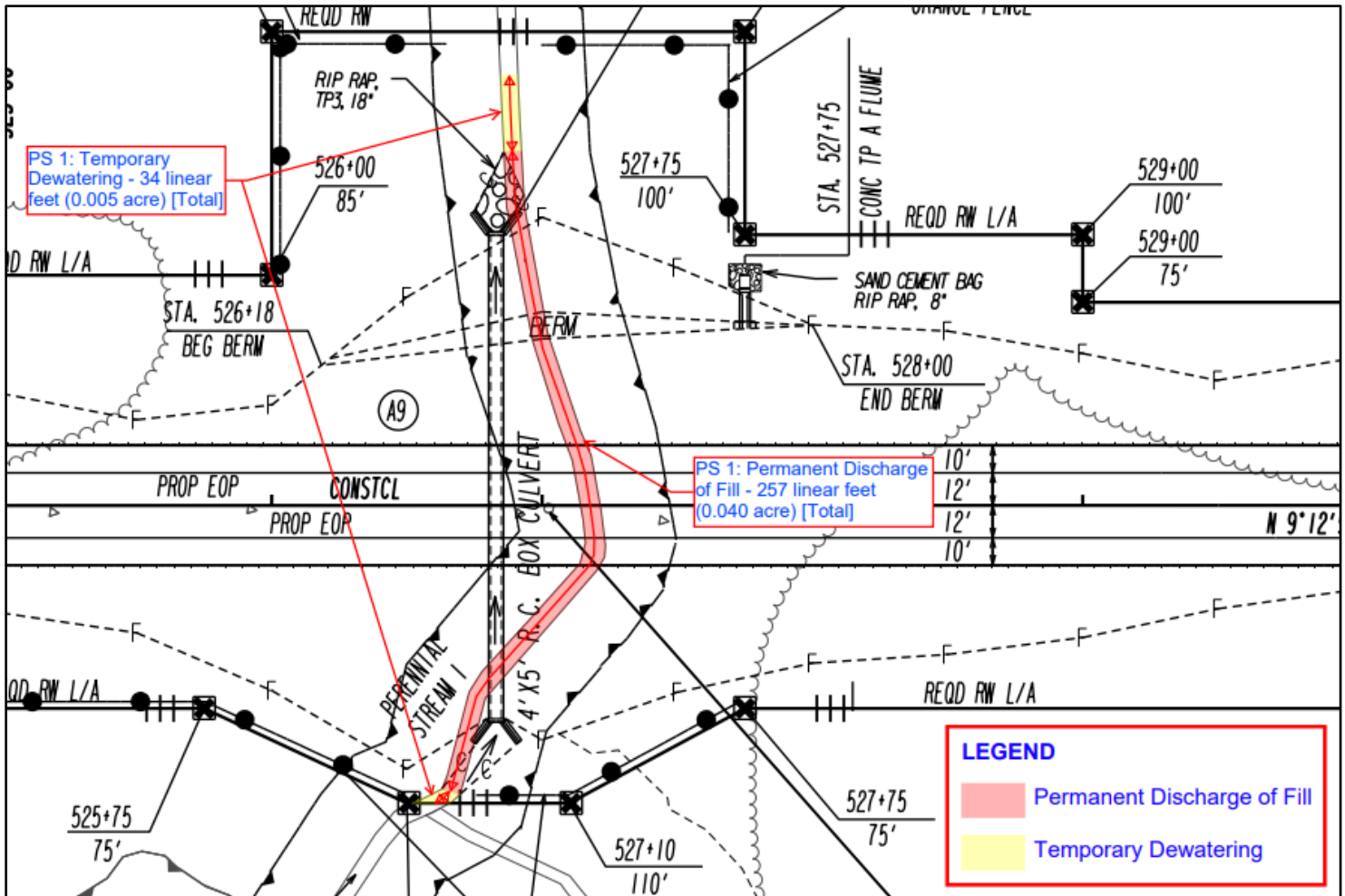


Figure 2 – This is an example of new culvert construction. The temporary dewatering impacts on both sides of the culvert are highlighted beginning where the permanent impact ends rather than at the culvert structure to only report the most adverse impact. In this scenario, permanent discharge of fill from riprap placement overlaps with the temporary dewatering impact on the proposed culvert outlet side. On the proposed inlet side, permanent impacts from cut limits overlap with the temporary dewatering impact. The temporary dewatering impact on the outlet side extends 50 feet from the proposed culvert wingwalls and does not reach the required ROW limit. The temporary dewatering impact on the inlet side of the proposed culvert extends to the required ROW limit, which is less than 50 feet.

Ecology Resource Survey and Assessment of Effects Report (ERS-AOER)

Temporary dewatering impacts shall be included in the following sections of the ERS-AOER: Jurisdictional Waters overview table, individual stream tables (Section III.H. Jurisdictional Waters of the U.S.), and the Jurisdictional Stream Summary Impact Table (Section IV. Permit and Mitigation).

At the time of the ERS-AOER submittal, the duration of the stream diversion will not be known. Therefore, the Ecologist shall use the default duration of less than 60 days and shall label the Impact/Length(Area)/Duration cell in the individual stream table as “dewatering/XX LF (X.XXX ac)/temporary (<60 days)”. The Ecologist shall label the impact type as “temporary dewatering” in both the Impact Activity cell in the individual stream table, as well as the Jurisdictional Stream Summary Impact Table. In the event a more adverse impact type overlaps entirely with the length of the temporary dewatering impact, the Impact Activity cell shall include the temporary

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Stream Diversion

dewatering impact. However, the impact length/area of the dewatering impact should not be included in the Impact/Length(Area)/Duration cell or the Jurisdictional Stream Summary Impact Table.

Temporary dewatering impacts shall be shown on the Mainline Plans included with the ERS-AOER submittal.

Addendum

When drafting the addendum, the Ecologist shall review the stream diversion durations based on the plan note table in the General Notes and revise, as needed. If it was determined at PFPR that the duration would be 60 days or greater, the Ecologist shall update the individual stream table and the Jurisdictional Stream Summary Impact Table. In addition, mitigation for temporary dewatering should be accounted for in the Agency Coordination overview table and the Permit and Mitigation Summary Table (Section IV. Permit and Mitigation). If mitigation is required, the most recent version of the USACE Qualitative Worksheet(s) for Stream Impacts shall be completed at this time and included in Appendix IV: Permit and Mitigation.

Temporary dewatering impacts shown on the Mainline Plans should be confirmed and updated, if applicable. At this time, the plan sheet (i.e., General Notes) containing the plan note regarding stream diversions shall be included with the addendum submittal.

Permit Application

Temporary dewatering impacts for perennial and intermittent streams for new culvert construction, replacement and extension shall be included in the project impact table of the permit application form. Temporary dewatering impacts shall be included on Mainline Plans attached to the permit application. In addition, the plan sheet containing the plan note regarding stream diversions shall be included. If mitigation is required, the most recent version of the USACE Qualitative Worksheet(s) for Stream Impacts shall be included.

The following narrative shall be provided in the supplemental information section of the permit application for all proposed culverts that will need a stream diversion:

The streams listed in the below table have proposed culvert activities and would be temporarily diverted within the project limits. Fill material required for temporary stream diversions shall be non-erodible and shall be removed in its entirety upon completion of the diversion. Upon completion of the diversion, the affected reaches of the streams shall be restored to pre-project elevations, widths, and contours or such that the morphology of the impacted stream reach mimics the adjacent upstream and downstream reaches.

Resource Name	Impact Length (Area)	Duration
PS or IS X	XX LF (X.XXX ac)	<i>Select one of the following:</i> < 60 days (temporary) ≤ 90 days (temporary) < 1 year (short-term) ≥ 1 year (permanent)

OTHER CONSIDERATIONS

Protected Species

This toolkit focuses on Section 404 impacts associated with temporary dewatering impacts. However, temporary stream diversions can impact aquatic species and potential effects should be considered when evaluating project impacts to protected aquatic species where culvert work is proposed.

Fish and Wildlife Coordination Act (FWCA)

A stream diversion would not contribute to the threshold for FWCA coordination unless the duration for a stream diversion would be one year or greater, whereupon it would be considered a permanent discharge of fill.

State Protected Buffers

Impacts associated with a stream diversion would be included in the 50-foot roadway drainage structure exemption area associated with the proposed culvert work and would be exempt from a buffer variance.

TOOLKIT REVISION HISTORY

Revision Description	Relevant Sections	Revision Date
Initial Publication	All	05/02/2022

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Stream Diversion

Diagram 1 – Stream Diversion Methods

