Streamflow Rehabilitation Assistance Program (StRAP)

Standard Operating Procedures

v2 April 2025

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Purpose

§ 139-65. Streamflow Rehabilitation Assistance Program (StRAP). The purpose of the Program shall be to assist an eligible grantee in protecting and restoring the integrity of drainage infrastructure through routine maintenance to existing streams and drainage ways by removing blockages caused by accumulated debris or sediment, stabilization and restoration of streams and streambanks, and for rehabilitation or improvement of small watershed structural projects constructed pursuant to the Watershed Protection and Flood Prevention Act of 1954, as amended. Project engineering, permitting, and administrative costs are eligible for payment through the Program. Program funds may also be used to provide nonfederal match for related disaster recovery activities funded by the federal government.

Project Scope

StRAP funds are intended to support projects that restore and protect drainage infrastructure of both natural streams and small watershed structural projects to prevent future flooding, restore streams, and reduce risks to life and property. StRAP funds may be used to provide nonfederal match for related disaster recovery activities funded by the federal government. StRAP eligible projects fall into 5 categories:

- Stream Debris Removal
- Sediment Removal
- Streambank Stabilization
- Stream Restoration
- PL 566 Small Watershed Project Rehabilitation

Eligible Grant Recipients

- A Soil and Water Conservation District.
- A political subdivision, including a city, a county, a water or sewer authority established under Chapter 162A of the General Statutes, a metropolitan or county water or sewer district established under Chapter 162A of the General Statutes, a county service district established under Chapter 153A of the General Statutes, a municipal service district established under Chapter 160A of the General Statutes, a sanitary district established under Chapter 130A of the General Statutes, and a drainage district established under Chapter 156 of the General Statutes.
- A nonprofit organization.

Program Resources

StRAP website: https://www.ncagr.gov/divisions/soil-water-conservation/programs-initiatives/strap
All required StRAP forms and reports, as well as guidance documents, are available on the Tools for Grantees page: https://www.ncagr.gov/divisions/soil-water-conservation/programs-initiatives/strap/tools-grantees

Reporting Requirements

StRAP grant recipients are required to follow the listed reporting requirements for the life of the contract.

1. **Quarterly Reports**
    a. Quarterly reports must be submitted on or before the last day of January, April, July, and October, covering the preceding quarter of the calendar year. For example, the

April report will cover all project activity completed in the 1st quarter of the year (January-March).

b. Quarterly reports must be submitted until the project is completed and the final report is submitted.
c. Use form *Attachment G- Quarterly Progress Report*
d. A budget report must be submitted with each quarterly report. This is not a specific StRAP form, and is instead a printout of whatever software the grantee uses to track their project finances.

2. **50% Progress Report**
    a. This report will provide detailed information on the contracts that have been approved and executed for the project
    b. This report requires the grantee to show 50% of contract funds being encumbered by contracts. If 50% of contract funds are not encumbered by the due date, the Soil & Water Conservation Commission may request that the grantee provide additional documentation to explain any delays associated with the project.
    c. Use *Attachment F- 50% Progress Report* as the report form.
    d. Report due date depends on funding round.
        i. 2022 Contracts: due by end of business hours on February 28, 2023.
        ii. 2024 Contracts: due by end of business hours on August 29, 2025.
3. **Final Report**
    a. A final report must be submitted within 60 days of the expiration or close-out of the StRAP contract. Unless otherwise agreed upon, StRAP contracts will expire on the date listed below.
        i. 2022 Contracts: December 31, 2024.
        ii. 2024 Contracts: December 31, 2026.
    b. The final report must be accompanied by a final budget report and a final request for payment (if applicable).
    c. Use form *Attachment G- Quarterly Progress Report*.

Failure to submit reports will delay action on submitted invoices. Requests for payment will not be reimbursed until any overdue reports are submitted.

Payment Provisions

StRAP is a reimbursement program, and grant recipients must submit a request for payment (RFP) after work is completed on a stream segment.

Request for Payment

Requests will be made using *Attachment H- Request for Payment Form***.** Upon submission of a complete RFP by the Division of Soil & Water Conservation (DSWC), payment shall be made within the time period stated in contract (30 days for 2022 contracts, 60 days for 2024 contracts).

- RFPs can only be submitted for sections of work that have been completed. Streams can be broken into multiple segments so that each section can be inspected and reimbursed once work is completed on that segment.
- RFPs must be signed by a DSWC inspector before they can be submitted.
    - If a RFP has not been signed but the relevant stream segment(s) has been inspected, and an inspection report has been submitted, the StRAP Manager or Admin Assistant may sign the RFP in lieu of an inspector.

    - RFPs that only list administrative expenses do not need to be signed by a DSWC inspector.
        - StRAP Manager or Admin Assistant will sign these RFPs.
- Each grant recipient should submit RFPs no more than monthly.
- Each RFP should be accompanied by invoices or receipts documenting the expenses listed on the RFP.

Technical and Administrative Assistance

Up to 15% of total reimbursed expenditures for each grant can be used to reimburse technical assistance and administrative expenses for the project. At least 85% of reimbursed project funds must be spent on documented on-the-ground project work.

- Documented engineering or permitting costs are considered project expenses, and do not count towards the 15% administrative limit.
- Equipment purchased directly by the grant recipient, rather than the contractor, may be eligible for this Technical/Administrative Assistance.
    - Equipment with a value of $500 or more must be tracked through the project. At the end of the project, all applicable equipment must have either its location documented, or be noted as lost/destroyed.
        - Use form *Attachment J- Equipment Log*
    - For equipment with a value of $5,000 or more, please contact the StRAP office before including this equipment in an RFP.
- Staff salary and benefits may be eligible for reimbursement, depending on the grant cycle.
    - 2022 StRAP contracts:
        - Any salary, benefits, and operating expenses that would normally have been paid by the grantee are not eligible for reimbursement.
        - Salaries for new staff hired to work on the StRAP project may be reimbursed, but salaries for existing staff cannot be reimbursed
    - 2024 StRAP contracts:
        - Staff salary and benefits for both new staff and existing staff are eligible for reimbursement.
    - For reimbursement of eligible salaries, the RFP must include attached documentation of the staff hours, such as time sheets and/or other documentation of the work the staff completed for the StRAP project.
        - Use form *Attachment K- Time Log*

Permit Requirements

StRAP grantees shall be responsible for obtaining necessary landowner authorization for site access and all permits needed to complete the planned work.

Permits

Grant recipients must contact:

- Local floodplain manager, who can provide guidance on the National Flood Insurance Program and requirements for a Floodplain Development Permit.

It is recommending each grantee also contact the following organizations for further guidance on whether additional permits are necessary:

- NC Division of Water Resources
- US Army Corps of Engineers
- NC Wildlife Resources Commission
- NC Division of Coastal Management
- Other organizations, as necessary

Landowner Permissions

Much of the work funded by StRAP grants will be done on privately owned land. Grantees should secure permission from all landowners before work begins. StRAP funds cannot be used to reimburse any project costs associated with land rights or land access. If a landowner chooses to charge the grantee for access to their land, these costs to the grantee cannot be reimbursed.

Selecting Stream debris for Removal

Large woody debris (trees, branches, beaver dams, log jams, etc.) that poses a risk to property/infrastructure, streamflow, or stream health should be removed from the stream channel. Debris that does not meet these criteria should be left in the stream as part of the stream habitat and to help maintain natural stream characteristics.

- Debris should be considered for removal when it has a clear impact, including:
    - Debris accumulating on bridges, utility lines, buildings, etc. crossing or next to the stream.
    - Debris accumulating on culverts, embankments, or other areas where human activity has created constrictions in the stream/floodplain that will be exacerbated by debris.
    - Blockages that impede water flow and cause upstream flooding.
    - Debris that redirects the current and causes erosion that damages stream banks.
    - Logjams that may collapse in future storms and create downstream flashfloods.
- Debris that is not currently causing issues (as listed above), but is likely to do so in the near future, should be removed, including:
    - Logs that span or jut into the channel and catch floating debris, creating new blockages in the future.
    - Free floating logs/branches that will catch on, and add to, blockages.
- Standing trees at risk of falling into the stream can be removed if the tree 1) is dead or severely undercut, 2) leans more than 30 degrees toward the channel, and 3) appears likely to fall into the channel in the next year.
- Debris that is not affecting stream flow, or whose removal would damage the streambed or banks, should be left in place.
    - Do not remove stumps or root balls from the streambank.
    - Do not remove debris that is embedded in the streambed or bank. Cut off branches or sections that jut out, but leave any embedded sections of the log in place.
    - Do not remove standing trees and vegetation from the floodplain except where needed for site access, or if tree is at imminent risk of falling into the stream.
- Only debris within the stream channel (from top of bank to top of bank) should be removed.
    - EX: if a log in the floodplain juts into the channel, it should be cut at the top of bank. The portion of log within the channel should be removed, and the portion in the floodplain should be left in place.

- If artificial debris (wooden construction material, collapsed bridges, etc.) is contributing to blockages in the stream, it can be removed from the stream and disposed outside of the floodplain.

Debris Removal and Processing

§ 139-65. Streamflow Rehabilitation Assistance Program, the authorizing legislation for StRAP, states that *"The Commission shall ensure that debris removed from streams with funds provided under this Article are either removed from the 100-year floodplain or processed in such a manner that the debris would not pose a risk of blockage or significant impairment of normal streamflow during a subsequent flood event."*

All debris removed from streams should be processed so that it will not be washed back into the stream by future floods where it will create future blockages or streamflow impairments. The Soil & Water Conservation Commission has approved the following methods for processing debris after it has been removed from the stream channel:

1. Removal from the 100-year Floodplain
2. Chipping/mulching
3. Burning
4. Cabling/Strapping
5. Use in approved bank stabilization practices

- If the stream does not have a mapped 100-year floodplain, as identified on FEMA's National Flood Hazard Layer map, debris should be placed at least 30' back from the top of the bank. No other processing is needed.
    - The grantee is responsible for providing documentation to inspectors that no 100-year floodplain exists.

1. Removal from the floodplain

- Debris removed from the stream can be hauled away from the 100-year floodplain, as identified on FEMA's National Flood Hazard Layer map
- Example hauling locations include: removal to a landfill (grantees should confirm that the landfill accepts woody debris), another property, or section of the property outside of a 100-year floodplain.
    - Grantee should secure permission from the owner of the disposal location.
- All artificial debris (such as construction materials) should be removed from the 100-year floodplain if practical.

2. Chipping/Mulching Debris

- Debris can be chipped and wood chips left on site.
- Wood chips can be placed on the floodplain starting at the top of the bank. Wood chips should not be placed below the top of the bank in the stream channel or blocking drainages from the floodplain into the stream.
- Wood chips left in the flood plain should be spread in a thin layer to avoid inhibiting plant growth (no more than 3 inches deep).

3. Burning Debris

- Debris can be burned on site. The grantee/contractor is responsible for obtaining and possessing a valid burn permit (if applicable) and for following any laws or statutes related to burning.
- Any large debris that does not burn completely should be further processed.

4. Cabling/Strapping

This practice consists of removing debris from the stream and tying it to a live tree or other anchor point in the 100-year flood plain so the debris will not wash back into the stream in future flood events.

- The entire log(s) should be moved at least 30' back from the top of the streambank before it is tied down.
- **Live Trees**- Logs and debris may be strapped/tied to live trees or other anchor points. Fatal damage to live trees should be avoided. Wedging logs against the live tree before the cable/strap is attached will help ensure the attached log is as immobile as possible.
    - Leave slack in the loop around the live tree, and between the live tree and the log, to prevent girdling.
- **Strapping Material**: A variety of rope or strap options can be used for tying woody debris. Material with a break strength of approximately 1,700 pounds or higher should be used.
    - 1/4 inch braided nylon rope is a common example of an appropriate rope.
    - Biodegradable ropes are preferred but not required.
- Debris can be anchored individually or in groups. If groups of logs & branches are anchored together, the whole bundle should be tied securely (either wrapping rope around each piece of debris in the bundle, or securely tightening multiple loops of rope around the entire bundle).
    - When practical, making pieces of debris at least 6 feet long will minimize the risk of logs coming loose from a bundle.
- Woody debris cabled/strapped within the floodplain should be anchored in such a way that it will not significantly affect the flow capacity of the floodplain. Securing logs parallel to the direction of the stream flow can help reduce flood flow impediment. Multiple logs/piles should be spaced apart to avoid forming a berm in the floodplain.

5. Use in approved bank stabilization practices

Woody debris pulled from the stream can be used in streambank stabilization or stream restoration projects in the following circumstances:

- Debris removed from the stream can be incorporated into streambank stabilization or stream restoration practices when an approved engineering design calls for it.
    - Example practices where large woody debris could be used are woody toe protection, brush toe protection, branch packing, log vanes, or sills.
- The planned use of logs should be outlined in the site's engineering design.
    - A copy of the engineering design should be sent to StRAP staff before work begins.
- Debris can be used on projects on the same site, or if needed transported to other sites.

<u>Streambank Stabilization & Stream Restoration</u>

StRAP distinguishes between these 2 practices based on whether work is done on the streambank only (streambank stabilization), or the streambank AND in the stream channel (stream restoration):

- **Streambank Stabilization**- repairs and shapes damaged streambanks to repair erosion, prevent further erosion, and reconnect the stream to the floodplain

    - Focuses on earthmoving/grading to reshape banks to a stable grade (such as a 3:1 slope).
        - Does NOT incorporate in-stream structures (j-hooks, step pools, etc.) or changes to the stream's channel.
        - May include toe protection (placement of stone, logs, or other materials at only the base of the streambank to prevent erosion).
    - Hard Structural Practices (ex: concrete bulkheads or lining the full bank in riprap) should not be used.
- **Stream Restoration**- involves use of in-stream structures (cross vanes, j-hooks, etc.) or the manipulation of the channel (recreating meanders, changing channel width, etc.) to recreate natural channel function and form.
    - Often includes streambank stabilization (in addition to work within the stream channel).
- Vegetation should be re-established on all stabilization/restoration sites once work is completed to control erosion and re-establish riparian habitat.
- A design plan is required for all streambank stabilization & stream restoration projects.
    - Design should be prepared by someone with appropriate qualifications (such as an engineer or staff with relevant Job Approval Authority through NRCS or DSWC).
    - A copy of the design should be submitted to StRAP staff before work begins.
- Avoid over-excavating channels. Construct channels to the dimensions of a natural, stable width for the site.
- Do not straighten streams.

Inspections

All completed work must be inspected by a designated DSWC inspector before an RFP can be submitted.

Inspection Process:

- To schedule an inspection, grantees should contact Patty Gabriel at (919) 751-0976 x 5609 and Patricia.Gabriel@usda.gov
- The Request for Payment form should be completed before the inspection so the StRAP inspector can sign the form during the inspection, certifying that all work was completed before a payment is issued.
- DSWC inspectors will review work on the site for compliance with StRAP guidance and the requirements outlined in this document.
    - If inspected work does not fulfill program requirements, the issues must be corrected before a request for payment will be processed. Inspectors will notify the grantee of what issues need to be corrected before the site is completed to program standards.