



Genesee RiverWatch, Inc.

Carbon Neutral Policy - Construction Projects

Adopted February 9, 2021

Policy Statement

As a leading environmental organization in western New York, Genesee RiverWatch supports the Climate Leadership and Community Protection Act of 2020 (CLCPA) and will take tangible steps to help realize the Act's carbon reduction goals.

Accordingly, Genesee RiverWatch will seek a minimum of carbon neutrality in each of the construction projects that it initiates and implements, either solely or in partnership with others. In so doing, it will:

- Minimize the removal of carbon sequestering mature live trees used in the project;
- Minimize the release of carbon dioxide (e.g., burning of fuels) during the construction process; and
- Undertake specific and verifiable carbon offset activities which will result in zero net addition of carbon to the atmosphere over a ten-year period or less from the completion of a project. If feasible, offset activities that have the potential to enhance carbon sequestration above the breakeven level will be employed.

Policy Implementation Guidelines

1. This policy will apply to all construction projects, including those on the Genesee Main Stem and tributaries.
2. This policy will apply to all construction methods employed, including "rock rip-rap", "toe-wood" and other methods not yet employed as of the adoption of this policy.
3. Since trees are the most productive terrestrial vegetation able to absorb carbon and they have the greatest potential for keeping that carbon out of the atmosphere long term, GRW will strive to plant trees to offset carbon sequestration losses and carbon releases during construction. Offset projects utilizing trees have the further advantage of enhancing carbon sequestration long after this policy's ten-year horizon. Other vegetation, such as alfalfa, may be used but is not preferred.

4. Offset activities will be undertaken within, or immediately adjacent to, the Genesee River watershed.
5. Offset activities must be verifiable and permanent and represent new, additional sequestration of carbon that would not otherwise have occurred.
6. Offset activities must be designed in a manner that does not disproportionately harm disadvantaged communities.
7. Analysis of carbon sequestration losses, new carbon releases and carbon offset activities will be based on a model of each project and will be reviewed and agreed upon by the Operations Committee of GRW which will also ensure that the offsets are robust, credible, and verifiable.
8. During the planning stage of project development, GRW will ensure that post-construction offset activities are agreed upon, included in appropriate contracts wherever possible, and adequately funded to ensure that they are initiated and completed.
9. By sharing our experiences, Genesee RiverWatch will encourage others to adopt a carbon neutral policy.
10. A waiver in the carbon neutrality policy due to extenuating circumstances of a given project is allowable with approval of the GRW Board.

Policy Background

Climate change is a major and growing concern, not only in the United States, but across the entire planet. It is impacting the current generation and will increasingly affect future generations. Climate change, is in part, caused by the accumulation of greenhouse gases (such as carbon dioxide) in the atmosphere. According to NOAA, carbon dioxide levels today are higher than at any point in at least the past 800,000 years (409.8 parts per million in 2019 compared to 300 ppm 400,000 years ago). The addition of carbon dioxide into the atmosphere is not inconsequential. Global emissions from all human activities reached an all-time record of 45 billion tons in 2017 and continue to rise.

New York's New Mandate: Net Zero Emissions:

As a result of these elevated carbon emissions and their global impact on climate change, New York has enacted new legislation to reduce carbon emissions into the atmosphere. New York State's Climate Leadership and Community Protection Act (CLCPA) went into effect on January 1, 2020. The CLCPA commits New York to a 40% reduction of carbon emissions by 2030 and net-zero emissions by 2050. Highlights are as follows:

1. The CLCPA commits New York to reaching net zero greenhouse gas emissions. This mandate covers all sectors of the economy and includes electricity and fuels that are imported from other states.
2. The bill requires 40 percent emission reductions in absolute terms from 1990 levels by 2030 and 85 percent emissions reductions by 2050.

3. To reach the target of net zero emissions, the CLCPA allows for any remaining emissions beyond 85 percent to either be directly reduced or offset through projects that remove greenhouse gases from the atmosphere.
 - a. The offsets must be verifiable and permanent and represent new, additional reductions in emissions that would not otherwise have occurred. The only emissions that are eligible to be offset are those where it is technologically infeasible to reduce the emissions by other means.
 - b. The offset program must be designed in a manner that does not disproportionately harm disadvantaged communities.
 - c. To the greatest extent practicable, offset projects must be located within 25 miles of the source they are offsetting, ensuring that the benefits of offsetting emissions will be locally realized.
4. The Governor's climate goals under the Climate Leadership and Community Protection Act indicate that forest trees are a critically vital resource for reducing total emission levels through carbon sequestration. Forests are the most productive terrestrial vegetation able to absorb carbon from carbon dioxide, and they have the greatest potential for keeping that carbon out of the atmosphere long term.

The Importance of Trees in Carbon Sequestration

A greenhouse gas is a gas that absorbs and emits radiant energy within the thermal infrared range. The primary greenhouse gases in earth's atmosphere are water vapor (H₂O), carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), and ozone (O₃). Greenhouse gases cause the greenhouse effect and are a primary cause of global warming. Specifically, carbon dioxide molecules in the air absorb infrared radiation, warming the atmosphere and creating a carbon dioxide blanket in our atmosphere which prevents the radiation of heat.

Carbon sequestration is the process by which atmospheric carbon dioxide is taken up by trees, grasses, and other plants through photosynthesis and stored as carbon in biomass (trunks, branches, foliage, and roots) and soils. Forests are carbon sinks and play a major role in the carbon cycle within the earth's atmosphere. Carbon absorption ceases when trees are cut down, allowing the greenhouse gas carbon dioxide to build up in the atmosphere. The greater the number of trees removed, the greater the buildup of carbon dioxide in the atmosphere. Thus, cutting down large numbers of trees is a concern as it contributes to the warming of the earth.

The Concern: How should Genesee RiverWatch respond?

Genesee RiverWatch has encouraged "toe-wood" construction as a technique to stabilize eroding streambanks. For example, the Chamberlain Project originally proposed cutting ~120 mature trees to be the foundation for "toe wood" construction rather than the "rock rip-rap" construction used in previous RiverWatch projects. The "toe wood" construction approach

should stabilize streambanks, add aquatic habitat, and provide streambank protection where it is needed. The “rock rip-rap” approach provides stability and streambank protection but lacks aquatic habitat development and may be less aesthetically desirable. However, the removal of 120 mature trees required for the “toe wood” construction represents ~90 tons of carbon that will not be removed from the atmosphere over a 10-year period. Thus, GRW is implementing a project that will increase the amount of a greenhouse gas directly implicated in causing global climate change. Carbon sequestration by trees is an ecosystem service impacted by “toe-wood” construction. Even “rip-rap” construction during the construction period contributes large amounts of carbon dioxide to the atmosphere via fossil fuel burning due to excavators, trucks hauling rocks, etc. In view of the global warming crisis and the enactment of the NYS Climate Leadership and Community Protection Act, is it justifiable to support “toe wood” and “rip-rap” construction without mitigation? Rip-rap construction has no effect on greenhouse gases after the first year of the project is completed. Toe wood’s carbon impact continues indefinitely unless some concrete action is undertaken to replace sequestration losses.

Recommendation

As a leading environmental organization in our region, Genesee RiverWatch should set an example of climate responsibility. Therefore, it is recommended that the Carbon Neutrality Policy be adopted for all future streambank restoration projects.