Carbon Credits Information
Timing of Credits

The City Forest Credits (CFC) Program issues ex-post credits to preservation projects that are preserving at-risk forested stands in cities and towns. Under limited circumstances and with numerous safeguards, the CFC Program issues to planting projects ex-ante credits that convert to ex-post credits after final quantification of CO2(e) stored and both validation and verification.

Tree Preservation Protocol

The Preservation Protocol is an avoided emission or avoided conversion protocol, and the credits issued under it are ex post. CFC has a 40-year Preservation Protocol and a 100-year Preservation Protocol. The Protocol contains a detailed description of the requirements, including quantification. Here is a short summary of the key requirements. The Preservation Protocol Summary has more details. Credits are issued only when:

- a forested parcel of land is zoned for some non-forest use
- the trees on the parcel are not protected
- the trees face one of three risks of removal
    - the parcel is surrounded on its perimeter by more than 30% improved or developed uses; or
    - the land was sold or assessed within three years at greater than $10,000 per acre; or
    - an appraisal shows that the parcel when developed to its highest and best use would be greater than its value in forest
- the trees are protected by a recorded encumbrance for at least 40 years or 100 years (40-year protocol and 100-year protocol)
- CO_2 is quantified per a five-step process that contains deductions for land that would not have been converted out of forest had the property been developed and also for leakage (displaced development)
- The project is validated by CFC and receives third-party verification

Issuance of Credits to Project Operator
After validation and verification, the Registry issues credits to the Project Operator based on the Project Area size:

- 50 acres or less: all credits are issued after validation and verification
- Greater than 50 but less than 200 acres: credits are issued in the equivalent of 50 acres per year
- Greater than 200 acres: credits are issued in equal amounts over five years

In conformance with avoided conversion protocols in rural forestry, credits are issued after the biomass is protected via a recorded encumbrance protecting the trees. For these urban forest projects, issuance is phased or staged over 1 to 5 years at the equivalent of 50 aces of crediting per year.

This staged issuance reflects the likely staging of development over time if the project area were to have been developed. Urban land is under intense pressure to be cleared and graded as soon as permitted, so that land developers can "vest" their rights and install water, sewer, and other infrastructure. The 1-to-5-year staging period also reflects that city forest preservation parcels are relatively small by rural forest standards. The largest parcel credited to date is 132 acres. It is worth noting that a city park that is small by rural forest standards, and that would have been rejected as too small by a forest carbon developer before it became a park, becomes extraordinarily valuable to a city over time, as many examples such as Central Park in New York City and parks in global cities attest.

Additional growth over time must be quantified and verified before any credits can be issued for that additional growth. Also, 10% of all credits attributable to the project are retained by CFC for a program-wide Reversal or Buffer Pool for unavoidable reversals. Urban projects are not generally subject to wildfires, and they are geographically dispersed, so the risk of reversal is much less than in rural forest carbon projects. Moreover, each project is relatively small, with unavoidable reversals that can be covered by a program-wide Reversal Pool that holds 10% of all issued preservation project credits.

Please note:

- All Preservation credits are ex post and issued only after the biomass is protected.

Tree Planting Protocol

The Planting Protocol is an afforestation/reforestation protocol, adapted to the unique circumstances of urban forestry. Development of the Planting Protocol recognized that urban forestry and its potential carbon projects are different than virtually all other types of carbon projects:

- City forests are essentially public resources, producing benefits far beyond the specific piece of land upon which individual trees are planted and giving access to nature to millions of city residents
- New tree planting in urban areas is almost universally done by non-profit entities, cities or towns, quasi-governmental bodies like utilities, and private property owners
- Urban trees are not merchantable. They are not grown for harvest but for their social and environmental benefits, and they generate no revenue or profit
- Because urban forest projects take place in cities and towns, they are highly visible to the public and easily visited by carbon buyers. This contrasts with many rural forest carbon projects that are in more remote areas or in developing countries

The Planting Protocol, Planting Protocol Summary, Appendix A – Quantification Methods and Appendix B – Validation and Verification contain much more detail, but here is a very brief summary of key elements in the Planting Protocol:

- All credits represent trees planted
- Project Duration is 26 years

- Permanence is protected by the 26-year project duration requirement and by reversal mechanisms that require projects to compensate for voluntary reversals and a program-wide reversal pool of retained credits to cover involuntary reversals
- Additionality is protected by:

    - A legal requirements test (trees required by a law or ordinance cannot be credited
    - A performance standard baseline, program-wide, developed with data from peer-reviewed urban forest scientists and per the methodology set out in the foundational carbon protocol document the World Resources Institute/World Business Council for Sustainable Development Greenhouse Gas *Protocol for Project Accounting* (2008), which describes greenhouse gas ("GHG") project accounting principles
    - The 26-year project duration commitment. This imposes an additional maintenance obligation for crediting that is far beyond business-as-usual urban forest maintenance, which is often not at all or for the first several years of a tree's life

The Planting credits, unlike the Preservation Credits, are ex ante. They are based on forecasted carbon stored over 26 years and protected by mortality deductions up-front and staged issuance of credits after sampling. These Carbon Forward Removal Credits convert to ex post at Year 26.

Issuance of Ex Ante Carbon Forward Removal Credits that Convert to Ex Post at Year 26
Documented loss of tree cover across U.S. cities testifies to the lack of municipal funding for city forests. Urban forest planting projects cannot wait for 25 years to receive carbon revenue.

The CFC Protocol Drafting Group and City Forest Credits have been aware from the beginning that ex ante credits are disfavored due to a higher risk of intentional reversal and potential unsubstantiated claims to an offset. These risks are very real in most carbon projects, particularly those with for-profit owners or developers.

But ex ante crediting for city forests entails significantly less risk than rural forest carbon projects. The reason is simple but profound: city forests are planted for the sole purpose of providing social and environmental benefits through tree survival. They are not planted for harvest or profit. No city forest project owner will face the economic temptation partway through a project to cut the trees down to reap a harvest profit. No city forest project will increase a harvest rotation to earn credits.

Rural forest owners constantly weigh harvest revenues against carbon revenues, and there is a structural misalignment between the economic drive for tree removal for harvest and tree survival for carbon crediting. But with city forests, there are no harvests. Carbon is the only way to monetize the city trees. So, city forests are aligned with carbon crediting, and risks of ex ante crediting are reduced – both the projects and the crediting seek long-term survival of the trees and forest.

In addition to the reduced risk described above, the Protocol Drafting Group developed mechanisms to issue credits at five different times with mortality checks and third-party verification at each stage. Four of these are ex ante issuances, and the ex-ante credits convert, as quantified and verified at Year 26, into ex post credits after final quantification at Year 26.
The forecasted amount of CO2 stored during the project duration is the value from which CFC issues ex ante Carbon Forward Removal Credits™. To ensure performance of the credits, CFC issues credits at five times during the 26-year Project Duration:

- 10% of projected credits after planting
- 30% of projected credits at Year 4
- 30% of projected credits at Year 6
- 10% of projected credits at Year 14
- Remaining credits issued based on quantification of CO2e at Year 26

Here are the safeguards built into the planting credit issuance:

Year 1: after planting and deduction of 5% of projected credits for a Registry Reversal account, and third-party verification, CFC will issue 10% of projected credits. CO_2 storage over 26 years is projected by a methodology developed by Dr. E. Greg McPherson, who led the science team for the ARB protocol in 2011 and the CAR protocol in 2013. The methodology is described in detail in Appendix B of the Planting Protocol.

Year 4: after three full years of growth, projects must check mortality of trees via sampling or imaging. Then, after deductions for mortality and 5% of credits for the reversal account, and another third-party verification, CFC will issue credits for 30% of projected CO_2 storage over 26 years.

Year 6: after five full years of growth, projects must check mortality of trees via sampling or imaging. Then, after deductions for mortality and 5% of credits for the reversal account, and another third-party verification, CFC will issue credits for 30% of projected CO_2 storage over 26 years.

Year 14: after the thirteenth anniversary of the planting of the Last Project Tree in a project, validation, and third-party verification, CFC will issue 10% of total projected CO2e stored by Year 26, subject to data collection, sampling, measurement of sampled trees or canopy, and quantification projections conducted under CFC's quantification methodology used by that Project.

Year 26: after 25 years of growth, projects must conduct a full quantification of CO_2, including via sampling and DBH (for Single Trees planted in a dispersed manner, like street trees), or imaging (if a canopy generation project). After another third-party verification, CFC issues final project credits that "true-up" or reconcile forward or ex ante credits issued with the final quantification. All credits earned and verified are then marked as ex post credits.

Thus 20% of projected credits are held back until Year 26, incentivizing projects to maintain project trees. For all projects using the Single Tree and Cluster quantification methods, the projected credits are calculated with an up-front 20% mortality deduction taken before any credits are issued. A second quantification method used for larger-scale riparian plantings, where high mortality is expected, and the goal is generation of canopy and a forest ecosystem, no mortality deduction is used. These projects are assessed by canopy coverage, not individual tree survival.

Less than 10% of the total credits issued in 2021 by CFC are first-year ex ante planting credits. These will convert to ex post credits at Year 26, based on quantification of CO_2 at that time.