



# CASE STUDY

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**TREES FOREVER  
CITY OF DES MOINES, IA**

**REFORESTING DES MOINES  
CARBON PROGRAM**

# EXECUTIVE SUMMARY

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Trees Forever is partnering with the City of Des Moines to leverage third-party verified carbon credits for urban trees in Des Moines, IA.

## Background

Trees Forever is a nonprofit whose mission is to plant and care for trees and the environment by empowering people, building community, and promoting stewardship. Working collaboratively with communities across Iowa and Illinois, Trees Forever has planted more than 3.4 million trees and shrubs since their founding in 1989, primarily through community grants and with the support of over 7,000 volunteers.

## Reforestation Des Moines Carbon Program

In partnership with the City of Des Moines, Trees Forever launched the Reforestation Des Moines carbon program, planting 2,533 trees along streets and parks throughout the city as part of two carbon projects in 2019 and 2021.

The goal of the program is to increase tree equity throughout the city. The trees are planted and maintained by teenagers employed through Growing Futures, Trees Forever's youth workforce training program.

## Carbon Credit Opportunity

### New revenue for greater impact

By partnering with the City and registering projects every 1-2 years, Trees Forever has a new funding stream for tree planting and maintenance in Des Moines, IA. The revenue from credit sales flows back into more trees and greater impact.

## AT A GLANCE

### 2021 Project Details

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**Year Registered:** 2021

**Trees Planted:** 1,799

**Location:** Des Moines, IA

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**Project Credits:**

4,397 tons CO<sub>2</sub>

**Credits Issued at Initial Verification:**

440 tons CO<sub>2</sub>

**Remaining Credits Issued over 25-year Project Duration:**

3,957 tons CO<sub>2</sub>

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**Staff Time Estimate:** 150 hours

**Credits Sold to Date (2022):**

440 tons CO<sub>2</sub>

**Gross Revenue to Date (2022):**

\$14,960

**Average Price per Credit:** \$34

**Registry Fees:** \$3,495

**"Carbon crediting means greater funding to do more - more programs, more trees planted and more tree maintenance"**

**- Kiley Miller, President & CEO at Trees Forever**

# INTRODUCTION

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Urban regions are seeing the greatest tree canopy loss of any area in the conterminous United States, with 36 million trees lost annually in urban and community areas. Trees and forests in cities have acquired greater significance as “green infrastructure,” providing services such as stormwater reduction, carbon storage, energy savings, public health benefits, and air quality improvements.

City Forest Credits (CFC) is a national nonprofit carbon registry that serves one sector of carbon – the carbon stored in forests and trees in metropolitan areas in the United States. Through third-party-verified carbon crediting, CFC is providing a new way for private-sector dollars to finance reforestation projects that contribute to the health and well-being of people and the environment. CFC’s 26-year Tree Planting Protocol is for newly planted trees and is adapted to the unique circumstances of urban forestry.

**Municipalities and nonprofits can leverage urban forest carbon credits as a finance tool to plant and maintain trees.** In partnership with the City of Des Moines, Trees Forever employed carbon crediting to increase urban canopy and provide youth workforce training in Des Moines, IA.

# BACKGROUND

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# CHALLENGES

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Like other cities, Des Moines is struggling with problems such as urban heat, limited budgets for street tree maintenance, and inequitable distribution of tree canopy, particularly in historically redlined communities. Climate stress and pests like the Emerald Ash Borer are increasing the rate of tree loss. To top it off, finding qualified staff to address these complexities is difficult.



# OPPORTUNITY

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To tackle these multi-pronged challenges, Trees Forever and the City of Des Moines, with funding from Microsoft, partnered to launch two, mutually supporting programs: the Reforesting Des Moines carbon program and a youth workforce training program called Growing Futures. Through Growing Futures, teens learn valuable leadership, financial, and career skills, plant trees, and provide long-term care for trees. The trees are included in carbon projects registered under the City Forest Credits (CFC) Tree Planting Protocol.

Since 2019, Trees Forever has completed two verified carbon projects in Des Moines and has started their third carbon project. Trees Forever is under contract with the City to plant the trees as part of this carbon credit program.

## BENEFITS

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### **A new source of reforestation revenue**

The main benefit of carbon crediting for Trees Forever and the City has been as a new source of funding for tree planting and maintenance. Trees Forever has invested the revenue from the carbon sale back into the tree planting program to enable them to purchase, plant, and maintain more trees in Des Moines. Regularly registering projects in a carbon program creates a reliable income source to support their expanded programs.

### **Improving tree equity and creating green career pathways in Des Moines**

For the City, the carbon program supports progress towards the City's canopy goals, particularly in under-resourced and low-canopy neighborhoods. The Growing Futures program also creates a green career pipeline for youth in the Des Moines area – [check out this video](#) to hear about the benefits from the teens themselves.



### **CITY PERSPECTIVE: BENEFITS OF A NON-PROFIT PARTNER**

For cities with small to mid-sized urban forestry programs, partnering with a nonprofit can empower the city by extending its planting and tree care capacity. Nonprofits can also deliver social impact through innovative programs such as Growing Futures that combine tree planting goals with youth development.

In addition, the nonprofit partner can speak on behalf of the City, advocating to City Council and the Mayor for increased funding and engaging a broad audience of volunteers and community members around key issues. And because of their social impact mission, nonprofits can also frequently purchase trees at a lower cost than cities can!

# PROJECT SNAPSHOT

## Trees Planted

In the 2019 and 2021 projects, Trees Forever planted 734 trees and 1,799 trees, respectively, along streets and parks. The goal of both projects was to increase tree equity throughout the city, particularly in under-resourced neighborhoods.

## Urban Location

All trees were planted within the city limits of Des Moines.

## Ownership

Trees were planted on City-owned rights of way and parks. The City signed an Agreement to Transfer Credits granting ownership of project credits to Trees Forever.

## Additionality

Trees were not legally required to be planted. Trees were not planted on sites that were previously forested and then cleared of trees. The 25-year Project Duration is additional to and longer than any commitment made to non-credited trees. Trees are additional based on the Performance Standard Baseline (CFC Standard, Section 4.9) developed in adherence with the World Resources Institute Greenhouse Gas Protocol for Project Accounting.

## Effort and Due Diligence

About 80 hours of staff time were spent completing the initial crediting documentation for the 2019 project. Learning from that work, it took just half the time (40 hours) in 2021.

Future staff time will be needed for annual monitoring reports, as well as sampling, measurements, and reporting for future credit issuances. This work is estimated at 130 hours over the next 25 years.

## Approvals

Trees Forever met with their Board to obtain approval. Between the City and Trees Forever, approval from the City Council and the City's legal department was needed to start the partnership and sign the Agreement to Transfer Credits. Although this took leg work upfront, it has set the stage for multiple projects going forward.

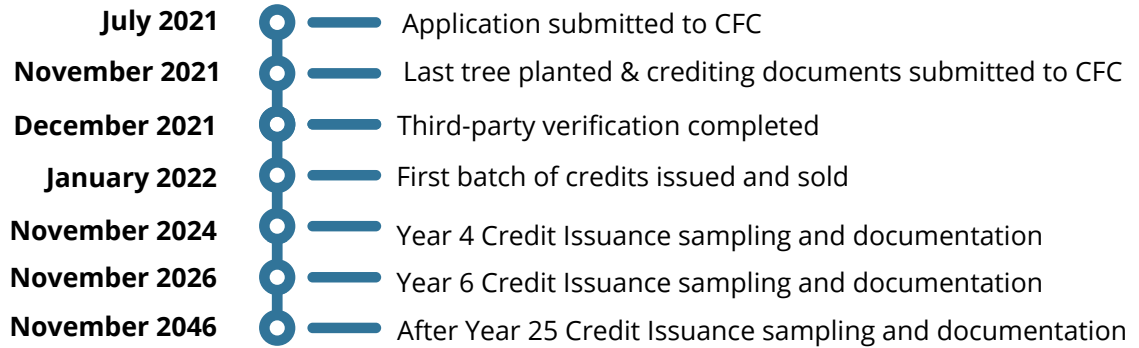


## CITY APPROVALS

Before granting approval, the City Council and legal team reflected on whether the City itself should lead the project. However, they realized that it would be difficult for the City to do the planning, documentation, and monitoring work that goes into a carbon project.

As the partner responsible to lead tree planting, Trees Forever was well positioned to also lead the carbon project. Trees Forever staff and volunteers could simultaneously gather data, provide on-going tree maintenance, sell carbon credits, and invest the revenue back into supporting the program.

## Timeline - 2021 Project




## Monitoring and Reporting

Trees Forever will maintain the trees through their Growing Futures program. Each tree is tracked based on a unique ID in the TreeKeeper inventory system. Trees Forever submits annual monitoring reports to CFC.

## Credit Issuance

Under the CFC Planting Protocol, forward (or ex-ante) credits are issued based on estimated carbon storage after 25 years. As a safeguard to ensure performance of the forward credits, CFC issues credits throughout the project duration: after initial project verification, at Years 4, 6, and after Year 25. At each credit issuance, Trees Forever will sample the trees to ensure tree growth and survival are in line with the estimated forecasts. Should a loss of trees occur due to neglect or willful harm, Trees Forever will be responsible for compensating or returning the reversed credits.



### 2021 Project Credits (tons CO<sub>2</sub>)

Credits Attributed to the Project	5,786
20% Mortality Deduction	1,157
5% Registry Reversal Pool	231
<b>Total Credits to be Issued to Project</b>	<b>4,397</b>
Credits Issued after Initial Verification (10%)	440
Credits issued at Year 4 (40%)	1,759
Credits issued at Year 6 (30%)	1,319
Credits issued after Year 25 (20%)	879


## Co-Benefits

Carbon projects like the Reforesting Des Moines plantings provide social, human health, and equity impacts that contribute towards the achievement of global targets such as the UN Sustainable Development Goals.

### 2021 Project Quantified Co-Benefits & Sustainable Development Goals

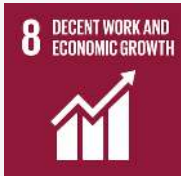
Rain interception	11,138 m <sup>3</sup> /yr	\$80,000/yr
Air Quality Improvements	0.34 t/yr	\$1,500/yr
Energy Savings	329,913 kWh/yr 4,710,988 kBtu/yr	\$157,000/yr

Annual co-benefits once trees reach age 25




**3** GOOD HEALTH AND WELL-BEING

Improve health and well-being for residents



**8** DECENT WORK AND ECONOMIC GROWTH

Youth workforce development



**10** REDUCED INEQUALITIES

Improve equitable distribution of tree canopy

# THE OUTCOME

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## Credit Sale

In 2021, 13 urban forest carbon projects pooled 31,000 credits into a national sale to a single buyer. The sale was managed by an independent broker.

Trees Forever participated in the national sale to lighten the administrative and organizational burden of finding a buyer and negotiating a sale, while still selling the credits at a competitive price. Through the sale, Trees Forever sold 440 credits at \$34/credit to Regen Network.

# TIPS FROM TREES FOREVER & THE CITY OF DES MOINES

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- **Partnerships between cities and nonprofits are strongest when there are shared goals and mutual benefits, so strive to be goal-oriented when shaping the partnership.** With the growing list of challenges that cities are facing, building strong coalitions, especially with nontraditional partners, is more important than ever.
- **Trust in the process and trust in your partners.** Don't be intimidated by the complexity of the process. Leverage the knowledge and expertise of your partners, CFC, and your Board to help you navigate the crediting process.
- **For cities, partnering with a nonprofit is a path forward for carbon crediting** if it isn't feasible for you to do the work of a carbon project yourselves.
- **For nonprofits partnering with a city, set up the initial Agreement to Transfer Credits in such a way as to allow multiple projects.** That will cut down on red tape and approvals for future projects.
- **It's important to provide multiple opportunities to educate staff and your board on carbon crediting and the benefits of a project to get buy-in.**



"The National Sale was a great experience, especially for selling our credits the first time. Having someone represent us was unbelievably helpful, and we had the confidence that they had our best interest in mind. It also gives us the confidence to take on future conversations ourselves"

**Leslie Berckes, (former)  
Director of Programs at  
Trees Forever**