



Growing Futures Tree Planting, Youth Employment and Training, and Microsoft Employee Engagement - Des Moines, Iowa

Empowering people, strengthening our community, and caring for the environment is built into the DNA of Trees Forever. Growing Futures is a new, exciting opportunity that meets these core principles and will have significant impact on all who live in the Des Moines area. Employing youth to plant and care for our city's trees will grow the next generation of young people and a new generation of trees, side-by-side.

Add in the innovative work from City Forest Credits and the real, quantified environmental benefits delivered through our Growing Futures program, and we have the opportunity to make real and lasting change in our community. Microsoft and its Des Moines employees can be critical co-contributors to that change.

We believe that Growing Futures is the first program of its kind in the country, possibly the world, which brings together quantified environmental credits with the social and economic benefits of youth engagement and workforce training in an urban area and an exciting opportunity for all involved.

We are honored to present this proposal to Microsoft and greatly appreciate the company's visionary commitment to a sustainable future. We are eager to talk more so that we can grow a fruitful partnership and together show the way for other cities where Microsoft has a presence.

Within this Proposal

- In-depth information of the youth employment and leadership program, Growing Futures.
- Goals to be achieved: grow tree canopy, provide quantified environmental benefits, and employ youth to plant and care for the trees that will provide the quantified benefits.
- The projected, quantified environmental benefits to be certified by City Forest Credits
- Information about Trees Forever's work to deliver community education.
- How Microsoft will be recognized in media and how we can involve Microsoft employees
- Potential funding options.

About Trees Forever

Trees Forever is an Iowa-based non-profit with an overall goal to provide programs that connect people to the environment through the planting and care of trees, native landscaping, and other natural areas. Trees Forever's mission is: "To plant and care for trees and the environment by empowering people, building community, and promoting stewardship." Since its founding in 1989, Trees Forever has assisted volunteers in Iowa and Illinois to plant more than three million trees. Our programs involve an average

of 7,000 volunteers annually, who have contributed over one million hours of service to date. Since 1989 in the Des Moines metro area, Trees Forever has worked with volunteers and partners to plant over 8,500 trees made possible by the nearly 5,600 volunteers who contributed over 33,000 volunteer hours.

Growing Futures Program Details

Trees Forever is launching a youth leadership and employment program in Des Moines called Growing Futures to meet our ambitious “greening” goals. With partners, we will grow a more positive future for young people and a greener more beautiful city. Through Growing Futures, Trees Forever will recruit youth in multiple teams of 7-10 per team who will take on the needed work of caring for our natural world by planting, watering, and caring for the city’s trees, all while learning skills that will position them to be future leaders of our community.

The young people, ages 15-18, who participate will be paid \$10/hour and the young adult crew leaders, 18+, will be paid \$15/hour. The work they accomplish will lead to 600-1,000 new trees planted each year and approximately 4,400 trees cared for (watered, pruned, mulched) each week. The teams will participate in weekly enrichment activities that will further prepare them for life after this program such as resume writing, “green job” experiences, financial literacy training, teaming skills, and project management.

Growing Futures will have a powerful social and environmental impact because the program will prioritize underserved neighborhoods; neighborhoods that research shows already lack tree cover and are in need of dedicated resources. The City of Des Moines is committed as a financial sponsor and, along with Trees Forever, is excited about how Growing Futures will help grow Des Moines’ tree canopy and all while providing young employees with an opportunity learn about the world around them and the potential within themselves.

Trees Forever is excited about Growing Futures because we know the unique combination of caring for our city’s trees while employing youth, a segment of the Polk County population who face over 20% unemployment, will have far-reaching effects. Healthy trees reduce stormwater, clean the air, save energy, create beauty, and even provide us with mental and physical well-being. What an amazing opportunity to employ young people, and build the whole person through career readiness opportunities, so that our entire community reaps the benefits.

Growing Futures Goals

Through the Growing Futures program, Trees Forever has the goal to help grow Des Moines’ tree canopy by 3% in the next 30 years. To achieve this goal, an estimated 3,800 trees need to be planted each year. The employees of Growing Futures, and area volunteers, will plant a portion of these trees - at least 600 and up to 1,000 trees per year in the first couple of years - and care for at least 4,000 recently planted trees each week.

Trees Forever will conduct this project in compliance with the protocol developed by City Forest Credits, a non-profit organization based in Seattle. City Forest Credits has developed a Tree Planting Protocol

through the work of its national protocol drafting group of scientists and city forest professionals. The Protocol contains detailed requirements for eligibility, project duration, monitoring, and quantification and verification of rainfall interception, energy savings, air quality, and carbon benefits. City Forest Credits will verify Trees Forever’s compliance with the Protocol and issue City Forest Carbon+ Credits that include quantified and verified resource units of the above benefits. This process and the Credits give Microsoft the following benefits:

- Scientific quantification of the rainfall interception, energy savings, air quality, and CO2 storage
- Third-party verification by City Forest Credits of compliance with duration and monitoring requirements and quantification of the resource units
- Assurance that the project has the commitment and longevity to make it successful

Quantified Environmental Benefits for Microsoft and the City of Des Moines

If the project plants **600** trees per year, here are projected quantified benefits and avoided costs after Year 25 (left-hand column contains **annual** benefits after Year 25; two right-hand columns show **cumulative** benefits at Year 38.5 and 50)

Ecosystem Services	Annual Resource Units after Year 25	Resource Unit Totals at Year 38.5	Resource Unit Totals at Year 51
Rainfall Interception (m3/yr)	2,227.60	27,845.00	55,690.00
Air Quality* (t/yr)	0.08	0.96	1.91
Cooling (kWh/yr)	79,025.60	987,820.00	1,975,640.00
Heating (kBtu/yr)	1,110,008.02	13,875,100.25	27,750,200.50
CO2 Sequestration (tCO2/25yrs)	934.80	1,402.20	1,869.60

Ecosystem Services	Annual Value after Year 25	Total Value at Year 38.5	Total Value at Year 51
Rainfall Interception (m3/yr)	\$15,947.50	\$199,343.75	\$398,687.50
Air Quality* (t/yr)	\$346.13	\$4,326.63	\$8,653.25
Environmental Co-benefit Total	\$16,293.63	\$203,670.38	\$407,340.75
Cooling (kWh/yr)	\$5,998.04	\$74,975.50	\$149,951.00
Heating (kBtu/yr)	\$10,805.63	\$135,070.38	\$270,140.75
Energy Co-benefit Total	\$16,803.67	\$210,045.88	\$420,091.75
GRAND CO-BENEFIT TOTAL	\$33,097.30	\$413,716.25	\$827,432.50
CO2 Sequestration (tCO2/25yrs)	\$28,044.00	\$42,066.00	\$56,088.00
GRAND TOTAL	\$61,141.30	\$455,782.25	\$883,520.50

If the project plants **1,000** trees per year, here are projected quantified benefits and avoided costs after Year 25 (left-hand column contains **annual** benefits after Year 25; two right-hand columns show **cumulative** benefits at Year 38.5 and 50)

Ecosystem Services	Annual Resource Units after Year 25	Resource Unit Totals at Year 38.5	Resource Unit Totals at Year 51
Rainfall Interception (m3/yr)	3,709.64	46,370.50	92,741.00
Air Quality* (t/yr)	0.13	1.59	3.18
Cooling (kWh/yr)	131,628.69	1,645,358.63	3,290,717.25
Heating (kBtu/yr)	1,849,048.75	23,113,109.38	46,226,218.75
CO2 Sequestration (tCO2/25yrs)	1,556.90	2,335.35	3,113.80

Ecosystem Services	Annual Value after Year 25	Total Value at Year 38.5	Total Value at Year 51
Rainfall Interception (m3/yr)	\$26,557.54	\$331,969.25	\$663,938.50
Air Quality* (t/yr)	\$576.51	\$7,206.38	\$14,412.75
Environmental Co-benefit Total	\$27,134.05	\$339,175.63	\$678,351.25
Cooling (kWh/yr)	\$9,990.62	\$124,882.75	\$249,765.50
Heating (kBtu/yr)	\$17,999.99	\$224,999.88	\$449,999.75
Energy Co-benefit Total	\$27,990.61	\$349,882.63	\$699,765.25
CO-BENEFIT TOTAL	\$55,124.66	\$689,058.25	\$1,378,116.50
CO2 Sequestration (tCO2/25yrs)	\$46,707.00	\$70,060.50	\$93,414.00
GRAND TOTAL	\$101,831.66	\$759,118.75	\$1,471,530.50

**Air quality is measured using several different metrics including PM10, Ozone, Nitric Oxide, and VOCs. This number is an aggregate of the total tonnage of pollutants removed from the atmosphere. Spreadsheet tools are available to provide a more complete picture of pollutant reduction.*

*** Carbon credits are sold on the open carbon market, as such prices are not guaranteed unless previously agreed upon with the carbon buyer. Here we used \$30 per carbon credit which is directly between our low estimate of \$20 and our high estimate of \$40 for the value of the credits produced.*

Essential to achieving Carbon+ Credits, is the tree care – watering, mulching, and pruning – that the trees will receive through Growing Futures. Once a young tree is planted, it must receive two to three years of care in its establishment period. Without that care, we’ll waste precious resources and will not meet 3% canopy growth, carbon reduction, and the other environmental benefits. This is one reason we’re particularly excited about how Growing Futures will help Microsoft meet its goals to grow trees

for environmental benefits all while empowering the local community to do so. As our trees go in the ground, know that active care and monitoring of each tree will occur during the critical establishment years and ongoing for the required years of the City Forest Credit protocol.

An additional goal is to employ at least 20-30 young people per year in the first years of the program with a goal of increasing that number to 40+ young people in year 3 of the program. If the necessary funding is available, we can accelerate this model and employ more youth earlier in the process. The young employees of Growing Futures will be trained on both the technical skills needed to properly care for trees as well as broader life/job skills that will prepare them for future careers. The program will have a broad impact on the youth in our community, as these young people will:

- Engage with other youth of diverse backgrounds
- Develop leadership skills
- Gain soft job skills such as showing up to work on time and working on a team
- Engage in enrichment activities such as financial literacy, job shadow green careers, public speaking, and conflict resolution

Community Outreach and Education

In all the work Trees Forever does, education on the importance of trees and green space takes center stage. Whether through formal educational classes, field days at project sites, workshops, or bite-sized educational events before each tree planting, we know that when people know more about the world around them, they are empowered to take action.

In the Des Moines metro area, Trees Forever educates and engages volunteers through our TreeKeepers program, which has trained over 200 volunteers in the community. In partnership with the City of Des Moines, Trees Forever coordinates the nine-hour TreeKeepers volunteer training classes to provide classroom and hands-on training to volunteers in the areas of tree planting, tree maintenance, and urban forestry advocacy. Volunteers who complete the program are certified Trees Forever TreeKeepers and are asked to contribute 10 hours of volunteer service in their community each year. Because our TreeKeepers are highly trained and knowledgeable on tree care issues, they will be essential to helping mentor Growing Futures youth employees during tree planting and care events.

Microsoft's support of the TreeKeepers program would mean that we could educate and engage even more community volunteers and tree advocates who will be the "eyes and ears" for our community's trees. The trained and energized TreeKeeper volunteers will be "boots on the ground" to create a greener, more sustainable Des Moines metro. Each year, TreeKeepers take part in and lead multiple tree plantings and tree care events in area neighborhoods. These plantings attract a great deal of community attention from print news to social media. TreeKeepers has a successful track record that with Microsoft's support, can be expanded upon. We're eager to talk more with Microsoft to hear about your vision for community education.

Media and Communications

Trees Forever receives excellent media attention through print, radio, TV, and social media. Our media plan will include launching the Growing Futures program and periodic media attention focused on the work youth employees accomplish and partners supporting the work. Trees Forever Communications and Marketing Manager will provide a thorough media plan and ongoing support. We are happy to work with Microsoft on all media endeavors that can include raising the profile of our work together with:

- The local Des Moines community
- Microsoft's extensive stakeholder constituencies
- Sustainability and urban environmental practitioners and professionals across the U.S.
- The international field of urban forestry, and
- Microsoft's worldwide peers in corporate sustainability and community outreach

The very nature of Growing Futures – passenger vans and water trailers screen-printed with the Growing Futures logo (and potentially partner logos) traveling around the city – will be extremely visible to community members. Overall, this program will be a signature legacy for the Des Moines area and a meaningful way for Microsoft to engage with the community to deliver multiple benefits.

Involving Microsoft Employees

Trees Forever is excited about involving local Microsoft employees in the planning, planting, and care of trees and green space in Des Moines. Growing Futures youth employees will take on a great deal of the tree planting efforts, but TreeKeepers and other area volunteers, including Microsoft employees, will be critical to meeting our tree planting goals. We envision opportunities for Microsoft employees to work alongside community members to plant trees or we can work to organize tree planting events for employees only (in a service, team building style event).

If there are employees who are not physically able to plant trees or who like to engage in other ways, we'd welcome their expertise to increase our data and technological capacity for making tree planting decisions. As we grow the Growing Futures program, we would like to analyze the economic, social, and "green" data available to create maps and data sets that will help us better meet our community's needs. For example, we could utilize the existing tree inventory from the City of Des Moines to overlay with available health, income, or climate change data to target our plantings in areas most in need of trees. With that information at our fingertips, we know we will have a robust program that truly meets the needs of our community.

Engaging Microsoft employees with Growing Futures employees would also be a tremendous benefit for the young people involved and for Microsoft staff. Microsoft employees could host Growing Futures team employees for enrichment activities, teach some of the young leaders how to analyze the tree inventory data, and more. We know that interaction among Microsoft, Growing Futures employees, and Trees Forever will be impactful to all involved.



June 4, 2018

RE: City of Des Moines and Trees Forever Partnership

The City of Des Moines writes this letter in support of Trees Forever's Growing Futures program. Tentatively beginning in late 2018, Trees Forever and the City of Des Moines will enter into a formal, multi-year partnership. The city will support Trees Forever's efforts to plant more trees in Des Moines and its Growing Futures youth employment program in the amount of \$200,000 per year. The work we do together will help the city expand and grow its urban forest.

Growing the community's tree canopy is a shared vision for both the city and Trees Forever and we know that we can accomplish far more together than separately. Over the nearly 30 years of partnership, Trees Forever has been invaluable to the city and we highly respect the work they do. We know that our new model of partnership will be just as successful as every other initiative we have undertaken together.

We look forward to seeing the work we know Trees Forever can accomplish to grow our urban forest through volunteer-led plantings and the Growing Futures youth employment program. We encourage favorable review of this proposal.

Sincerely,

Jonathan A. Gano, P.E.
Public Works Director