

RECREATION, LIBRARIES AND AUTHORITIES COMMITTEE

12-0547R

RESOLUTION AUTHORIZING APPLICATION FOR AND ACCEPTANCE OF A \$38,000 MINNESOTA POLLUTION CONTROL AGENCY GRANT FOR THE CITY'S BUILDING DULUTH'S COMMUNITY RESILIENCY THROUGH URBAN TREES PROGRAM.

CITY PROPOSAL:

RESOLVED, that the proper city officials are authorized to apply for and accept a grant from the Minnesota pollution control agency (MPCA) in the amount of \$38,000.00 and to execute a grant contract, substantially the same as that on file in the office of the city clerk as Public Document No. _____, for the purpose of building Duluth's community resiliency through urban trees program, funds to be deposited in Fund 205-130-1220-4210-01 (Parks, Community Resources, Parks Capital, Pass through Federal Grants Capital).

Approved:



Department Director

Approved for presentation to council:



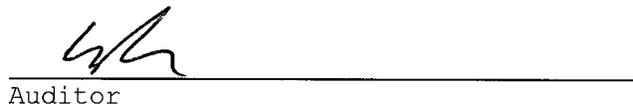
Chief Administrative Officer

Approved as to form:



Attorney

Approved:



Auditor

PARKS KB slw 10/15/2012

STATEMENT OF PURPOSE: This resolution authorizes the application and acceptance by the proper city officials of a grant from Minnesota pollution control agency (MPCA) for the purpose of building Duluth's community resiliency through urban trees program. The MPCA approached the city to collaborate on this program. The program will identify local vulnerabilities to climate change impacts in the city and will increase the city's resilience through urban forestry followed by implantation of several strategic actions.

Among other goals, MPCA seeks to gain knowledge and experience in the area of climate change adaption that can be shared with other communities in the Lake Superior Basin and beyond. MPCA also endeavors to interact more formally with a broad range of Duluth stakeholders to support community resilience. This project will also build MPCA's experience and capabilities to encourage communities to leverage volunteers in meeting climate change and other environmental challenges.

This Grant Contract is between the State of Minnesota, acting through its Commissioner of the **MINNESOTA POLLUTION CONTROL AGENCY** ("State" or "MPCA"), 520 Lafayette Road North, St. Paul, MN 55155, and the **CITY OF DULUTH** ("GRANTEE") 411 West 1st Street, Duluth, MN 55802.

Recitals

1. Under Minnesota Statute § 116.03, subd. 2, the State is empowered to enter into this grant.
2. The State is in need of the City of Duluth to provide Building Community Climate Change Resiliency through Urban Trees in Duluth.
3. The Grantee represents that it is duly qualified and agrees to perform all services described in this grant contract to the satisfaction of the State. Pursuant to Minnesota Statutes §16B.98 Subdivision 1, the Grantee agrees to minimize administrative costs as a condition of this grant.

Grant Contract

1 Term of Grant Contract

1.1 **Effective date:** October 15, 2012, or the date the State obtains all required signatures under Minnesota Statutes §16C.05, subdivision 2, whichever is later.

The Grantee must not begin work under this grant contract until this contract is fully executed and the Grantee has been notified by the State's Authorized Representative to begin the work.

1.2 **Expiration date:** *September 30, 2014*, or until all obligations have been satisfactorily fulfilled, whichever occurs first.

1.3 **Survival of Terms.** The following clauses survive the expiration or cancellation of this grant contract: 8. Liability; 9. State Audits; 10. Government Data Practices and Intellectual Property; 12. Publicity and Endorsement; 13. Governing Law, Jurisdiction, and Venue; and 15. Data Disclosure.

2 Grantee's Duties

The Grantee, who is not a state employee, will:

- A. The Grantee, who is not a state employee, will conduct the Project as specified by the duties described in **ATTACHMENT A**, which is attached and incorporated into this Grant Contract. The Grantee will have the option of submitting all required reports electronically or by mail.
- B. By entering into this Grant Contract, the Grantee certifies that it shall comply; and including the conditions of **ATTACHMENT B** to this Grant Contract. **ATTACHMENT B** is incorporated herein and is an integral and enforceable part of this Grant Contract. The Grantee is responsible for compliance with all federal requirements imposed on these funds and accepts full financial responsibility for any requirements imposed by the Grantee's failure to comply with federal requirements.

3 Time

The Grantee must comply with all the time requirements described in this grant contract. In the performance of this grant contract, time is of the essence.

4 Consideration and Payment

4.1 **Consideration.** The State will pay for all services performed by the Grantee under this grant contract as follows:

(a) Compensation. The Grantee will be paid according to the breakdown of costs contained in the budget section of **ATTACHMENT A** and Reporting Requirements in this Grant Contract in **ATTACHMENT B**.

(b) Travel Expenses. Reimbursement for travel and subsistence expenses actually and necessarily incurred by the Grantee as a result of this grant contract will not exceed \$ 0.00; provided that the Grantee will be reimbursed for travel and subsistence expenses in the same manner and in no greater amount than provided in the current "Commissioner's Plan" promulgated by the Commissioner of Minnesota Management and Budget (MMB). The Grantee will not be reimbursed for travel and subsistence expenses incurred outside Minnesota unless it has received the State's prior written approval for out of state travel. Minnesota will be considered the home state for determining whether travel is out of state.

(c) Total Obligation. The total obligation of the State for all compensation and reimbursements to the Grantee under this grant contract will not exceed \$38,000.00 (Thirty Eight Thousand Dollars and Zero Cents).

4.2. Payment

(a) Invoices. The State will promptly pay the Grantee after the Grantee presents an itemized invoice for the services actually performed and the State's Authorized Representative accepts the invoiced services. Invoices must be submitted timely and according to the following schedule: **Monthly**

(b) Federal funds. (Where applicable, if blank this section does not apply) Payments under this grant contract will be made from federal funds obtained by the State through a Great Lakes Regional Initiatives grant Number GL00E050302 authorized by the Consolidated Appropriations Act of 2012, Public Law 112-74, CFDA number 66.469. The Grantee is responsible for compliance with all federal requirements imposed on these funds and accepts full financial responsibility for any requirements imposed by the Grantee's failure to comply with federal requirements.

5 Conditions of Payment

All services provided by the Grantee under this grant contract must be performed to the State's satisfaction, as determined at the sole discretion of the State's Authorized Representative and in accordance with all applicable federal, state, and local laws, ordinances, rules, and regulations. The Grantee will not receive payment for work found by the State to be unsatisfactory or performed in violation of federal, state, or local law.

6 Authorized Representative

The State's Authorized Representative is **Paul Moss**, 520 Lafayette Road North, St. Paul, MN 55155, 651-757-2586, paul.moss@state.mn.us or his successor, and has the responsibility to monitor the Grantee's performance and the authority to accept the services provided under this grant contract. If the services are satisfactory, the State's Authorized Representative will certify acceptance on each invoice submitted for payment.

The Grantee's Authorized Representative is **Judy Gibbs**, 411 W. 1st Street, Duluth, MN 55802, 218-269-4712, jgibbs@duluthmn.gov. If the Grantee's Authorized Representative changes at any time during this grant contract, the Grantee must immediately notify the State.

7 Assignment, Amendments, Waiver, and Grant Contract Complete

7.1 Assignment. The Grantee shall neither assign nor transfer any rights or obligations under this grant contract without the prior written consent of the State, approved by the same parties who executed and approved this grant contract, or their successors in office. .

7.2 Amendments. Any amendments to this grant contract must be in writing and will not be effective until it has been executed and approved by the same parties who executed and approved the original grant contract, or their successors in office.

7.3 Waiver. If the State fails to enforce any provision of this grant contract, that failure does not waive the provision or the State's right to enforce it.

7.4 Grant Contract Complete. This grant contract contains all negotiations and agreements between the State

and the Grantee. No other understanding regarding this grant contract, whether written or oral, may be used to bind either party.

8 Liability

The Grantee must indemnify, save, and hold the State, its agents, and employees harmless from any claims or causes of action, including attorney's fees incurred by the State, arising from the performance of this grant contract by the Grantee or the Grantee's agents or employees. This clause will not be construed to bar any legal remedies the Grantee may have for the State's failure to fulfill its obligations under this grant contract.

9 State Audits

Under Minn. Stat. §16B.98, Subd.8, the Grantee's books, records, documents, and accounting procedures and practices of the Grantee or other party relevant to this grant agreement or transaction are subject to examination by the State and/or the State Auditor or Legislative Auditor, as appropriate, for a minimum of six years from the end of this grant agreement, receipt and approval of all final reports, or the required period of time to satisfy all state and program retention requirements, whichever is later.

10 Government Data Practices and Intellectual Property

10.1. **Government Data Practices.** The Grantee and State must comply with the Minnesota Government Data Practices Act, Minn. Stat. Ch. 13, as it applies to all data provided by the State under this grant contract, and as it applies to all data created, collected, received, stored, used, maintained, or disseminated by the Grantee under this grant contract. The civil remedies of Minn. Stat. § 13.08 apply to the release of the data referred to in this clause by either the Grantee or the State.

If the Grantee receives a request to release the data referred to in this Clause, the Grantee must immediately notify the State. The State will give the Grantee instructions concerning the release of the data to the requesting party before the data is released. The Grantee's response to the request shall comply with applicable law.

10.2. **Intellectual Property Rights**

All rights, title, and interest to all intellectual property rights, including all copyrights, patents, trade secrets, trademarks, and service marks in the WORKS and DOCUMENTS *created and paid for under this Grant Contract*, shall be jointly owned by the GRANTEE and the STATE. WORKS shall mean all inventions, improvements, or discoveries (whether or not patentable), databases, computer programs, reports, notes, studies, photographs, negatives, designs, drawings, specifications, materials, tapes or disks, conceived, reduced to practice, created, or originated by the GRANTEE, its employees and subcontractors, either individually or jointly with others, in the performance of this Grant Contract. "DOCUMENTS" shall mean the originals of any databases, computer programs, reports, notes, studies, photographs, negatives, designs, drawings, specifications, materials, tapes, disks, or other materials, whether intangible or electronic forms, prepared by the GRANTEE, its employees, or subcontractors, in the performance of this Grant Contract. The ownership interests of the STATE and the GRANTEE in the WORKS and DOCUMENTS shall be equal. The party's ownership interest in the WORKS and DOCUMENTS shall not be reduced by any royalties or revenues received from the sale of the products or the licensing or other activities arising from the use of the WORKS and DOCUMENTS. Each party hereto shall, at the request of the other, execute all papers and perform all other acts necessary to transfer or record the appropriate ownership interests in the WORKS and DOCUMENTS.

11 Workers' Compensation

The Grantee certifies that it is in compliance with Minn. Stat. § 176.181, subd. 2, pertaining to workers' compensation insurance coverage. The Grantee's employees and agents will not be considered State

employees. Any claims that may arise under the Minnesota Workers' Compensation Act on behalf of these employees and any claims made by any third party as a consequence of any act or omission on the part of these employees are in no way the State's obligation or responsibility.

12 Publicity and Endorsement

12.1 **Publicity.** Any publicity regarding the subject matter of this grant contract must identify the State as the sponsoring agency and must not be released without prior written approval from the State's Authorized Representative. For purposes of this provision, publicity includes notices, informational pamphlets, press releases, research, reports, signs, and similar public notices prepared by or for the Grantee individually or jointly with others, or any subcontractors, with respect to the program, publications, or services provided resulting from this grant contract.

12.2 **Endorsement.** The Grantee must not claim that the State endorses its products or services.

13 Governing Law, Jurisdiction, and Venue

Minnesota law, without regard to its choice-of-law provisions, governs this grant contract. Venue for all legal proceedings out of this grant contract, or its breach, must be in the appropriate state or federal court with competent jurisdiction in Ramsey County, Minnesota.

14 Termination

14.1 **Termination by the State.** The State may immediately terminate this grant contract with or without cause, upon 30 days' written notice to the Grantee. Upon termination, the Grantee will be entitled to payment, determined on a pro rata basis, for services satisfactorily performed.

14.2 **Termination for Cause.** The State may immediately terminate this grant contract if the State finds that there has been a failure to comply with the provisions of this grant contract, that reasonable progress has not been made or that the purposes for which the funds were granted have not been or will not be fulfilled. The State may take action to protect the interests of the State of Minnesota, including the refusal to disburse additional funds and requiring the return of all or part of the funds already disbursed.

15 Data Disclosure

Under Minn. Stat. § 270C.65, Subd. 3, and other applicable law, the Grantee consents to disclosure of its social security number, federal employer tax identification number, and/or Minnesota tax identification number, already provided to the State, to federal and state tax agencies and state personnel involved in the payment of state obligations. These identification numbers may be used in the enforcement of federal and state tax laws which could result in action requiring the Grantee to file state tax returns and pay delinquent state tax liabilities, if any.

STATE OF MINNESOTA
GRANT CONTRACT

SWIFT Contract No. 54229

1. STATE ENCUMBRANCE VERIFICATION

Individual certifies that funds have been encumbered as required by Minn. Stat. " 16A.15 and 16C.05.

Signed: _____

Date: _____

3. MINNESOTA POLLUTION CONTROL AGENCY

By: _____
(with delegated authority)

Title: Assistant Chief Financial Officer

Date: _____

SWIFT Contract ID: 54229

PO No : 3000005661

2. CITY OF DULUTH

The Grantee certifies that the appropriate person(s) have executed the grant contract on behalf of the Grantee as required by applicable articles, bylaws, resolutions, or ordinances.

By: _____

Title: _____

Date: _____

By: _____

Title: _____

Date: _____



Minnesota Pollution Control Agency

520 Lafayette Road North
St. Paul, MN 55155-4194

Project Work Plan

Doc Type: Contract

MPCA Use Only	
Swift #:	54229
CR #:	6123

Project Title: Building Duluth's Community Resiliency through Urban Trees

1. Project Summary:

Organization: City of Duluth
Contractor contact name: Judy Gibbs
Title: Trees, Trails, and Volunteer Coordinator
Address: 411 W. 1st Street (Duluth City Hall)
 Duluth, MN 55802
Phone: 218-269-4712
Fax: N/A
E-mail: jgibbs@duluthmn.gov

MPCA contact(s):

MPCA project manager: Paul Moss
Title: Sustainable Communities Team
Address: 520 Lafayette Rd.
 St. Paul, MN 55155
Phone: 651-757-2586
Fax: 651-215-0246
E-mail: paul.moss@state.mn.us

Project start/End dates: October 15, 2012 – September 30, 2014

Total project cost: \$38,000

2. Statement of Problems, Opportunities, and Existing Conditions

Background

This project is a collaborative effort between the MPCA and the City of Duluth in an effort to increase climate change resilience in Duluth.

Over the past several years, the Minnesota Pollution Control Agency (MPCA) has increasingly recognized the important link between urban trees and stormwater quantity and quality, air quality, walkability and bikeability of communities, as well as energy conservation. This is, in part, a result of experience gained through urban forestry work undertaken by members of the MPCA's Minnesota GreenCorps – an AmeriCorps program with approximately 28 members serving one year full time positions focused on priority state environmental issues.

MPCA has placed urban forestry Minnesota GreenCorps members with the City of Duluth in 2009 – 2010, 2011 – 2012 and 2012 – 2013 helping to support key needs of inventorying urban trees and community outreach.

Valuable insights and experience were also gained in 2008-10 by MPCA through GLNPO support in assisting three northeast Minnesota communities on climate change and energy related projects. The City of Duluth was a proactive and productive partner in this endeavor, resulting in sustained activities in this community. This project again leverages US EPA support to further address projected impacts of climate change in the city of Duluth.

The project also builds on the Minnesota Legislature's recent substantial funding of Minimal Impact Design Standards (MIDS) – a set of low impact development (LID) stormwater best practices that mimics natural hydrology. Using MIDS, stormwater is managed on site and the rate and volume of pre-development stormwater reaching receiving waters is unchanged. One important finding through MIDS development is the critical role of urban trees. See <http://www.pca.state.mn.us/veiza8e> for more information about MIDS.

MPCA approached the City of Duluth and other project participants to collaborate on this proposed project. Among other goals, MPCA seeks to gain knowledge and experience in the area of climate change adaptation that can be shared with other communities in the Lake Superior Basin and beyond. MPCA also endeavors to interact more formally with a broad range of Duluth stakeholders to support community resilience. This project will also build MPCA's experience and capabilities to encourage communities to leverage volunteers in meeting climate change and other environmental challenges.

City of Duluth

The City of Duluth, like most cities, has lost many of its trees planted along streets and boulevards to Dutch Elm Disease. Duluth replaced many of those trees with Green Ash. Now, ash make up about 20% of the overall boulevard trees, as well as lining the 44 named streams (16 of which are trout streams) and 129 parks that exist throughout the city. For many years, the city was unable to fund the planting of new boulevard and park trees. Duluth faces the threat not only of losing many of its trees to invasive pests, but to climate change. It is predicted that the white spruce so prevalent in the region now will migrate far northward into Canada. (See references such as http://www.ccfm.org/pdf/TreeSpecies_web_e.pdf) Duluth's forest is currently within the transition zone of the boreal forest and the big woods forest, but this is anticipated to change in the future.

Duluth has recently included in the *Duluth – City Operations Energy Action Plan 2011 – 2015* an objective to “accelerate tree planting by 200 additional trees per year near City owned buildings to promote shade in the summer and to provide tree-stand wind breaks by June 30, 2012.” These planned trees have not yet been planted. Buildings selected for planting will be those with the longest remaining useful life (so that these buildings will still be in use when trees reach the size and height to provide shade for energy savings and wind breaks).

In addition to the *City Operations Energy Action Plan*, Duluth also has a number of other ongoing efforts related to energy and climate change which relate more to climate change mitigation, rather than adaptation. These include a pending Community-wide Energy Action Plan, Duluth's participation in the Climate Communities program, and Duluth's ongoing efforts through Cities for Climate Protection. During the last quarter of 2012, the City's Energy Coordinator will lead best practice activities for Duluth's entrance into the Minnesota GreenStep Cities challenge program. Opportunities exist to integrate climate change adaptation into these efforts, particularly for the pending Community-wide Energy Action Plan.

On June 19 – June 20, 2012, Duluth experienced very heavy rainfall resulting in serious flooding in the city. According to the Minnesota State Climatology Office (see also http://climate.umn.edu/doc/journal/duluth_flooding_120620.htm) “The most damaging flood in Duluth's history began when heavy rains fell over already saturated ground, making the situation worse. At the Duluth National Weather Service the rainfall total on June 19th was 4.14 inches, with the two day total of 7.24 inches. The record one day total rainfall for Duluth is 5.20 inches on July 21, 1909.” This tree planting project is focused on the City of Duluth in part because of the damage from the June 2012 flooding.

The City of Duluth's involvement in this project will come from staff in their various program areas, including forestry, stormwater, energy and planning.

Additional Project Participants

Other project participants include Minnesota Sea Grant, the Minnesota Department of Natural Resources, and the Duluth-Superior Metropolitan Interstate Council. They will be collaborating with the MPCA and the City of Duluth in conjunction with their ongoing work that is directly related to this proposed project. This partnership will not only strengthen this project, but help build longer lasting partnerships related to climate change adaptation.

Minnesota Sea Grant is providing climate change adaptation education and information to Lake Superior Coastal Communities, which will assist them in planning and preparing for a changed climate. It is their job to stay on top of the “state of climate science” in relation to the Great Lakes in order to provide communities with information to help them make informed decisions. Minnesota Sea Grant also has the means to introduce the City of Duluth to tools that can be used to assess climate change vulnerabilities and to incorporate climate change planning elements into existing plans. Minnesota Sea Grant was also awarded a Minnesota GreenCorps member to assist in their program, and that person will as lobe working in collaboration with the City of Duluth during 2012 – 2013.

The Minnesota Department of Natural Resources has been providing technical assistance to the City of Duluth, which is a potential “Gateway City” for Emerald Ash Borer, and this project will build on their ongoing work. The Duluth-Superior Metropolitan Interstate Council actively works to promote non-motorized transportation in this area, and recognizes the importance of shade trees for increasing comfort of users of bike and walking trails, as well as more broadly for pedestrians.

Project Overview

In the light of growing climate change adaptation challenges faced by Lake Superior communities, trees are a critical but under-recognized component to building community resilience while advancing other environmental goals. This project will identify local vulnerabilities to climate change impacts in the City of Duluth and will assess associated risks, with a focus on Duluth's trees on city-owned land. Project activities will increase Duluth's resilience through urban forestry planning, followed by implementation of several strategic actions.

The proposed project's scope targets climate change impacts on priority City-owned land and near City buildings. Highlights of anticipated project outputs include:

- a characterization of the state of strategically important urban tree populations in Duluth, targeting critical city-owned areas
- updating of tree-related information in City of Duluth planning documents
- integrating urban tree approaches into non-motorized dimensions of regional transportation improvement efforts
- involving volunteers and community members in planting over six hundred trees.

Planned project outcomes will include:

- reduced stormwater runoff associated with heavy storms
- reduced overall urban heat load in summer
- added windbreaks for spring and fall storm events
- promotion of shade and comfort on community bike and walking trails, and designated street bicycle routes
- protection of city stream and Lake Superior water quality
- reduced energy use due to planting trees near City of Duluth-owned buildings, and
- increased public understanding and involvement regarding projected climate change impacts and the need for adaptation strategies.

This project relates closely to objectives in the US EPA's GLRI Action Plan, which recognizes climate change as a new and emerging problem. Planting trees of appropriate and adaptive species will increase the resiliency of the broader Great Lakes ecosystems. Helping to create a more resilient urban ecosystem in Duluth will help to buffer the impacts of climate change. The proposed project also relates to EPA Strategic Plan Subobjective 2.2.4 in that it will help to improve the health of the Great Lakes. Urban trees benefit water quality through helping to intercept and slow down stormwater, by filtering contaminants through their roots, and through many other environmental benefits discussed in this application.

Relevance of trees to climate change adaptation

Urban trees were selected as a focus area because of the positive contribution that trees have in helping communities to better adapt to climate change, as well as their place in community green infrastructure. It is both unfortunate and alarming that urban forests in Minnesota and elsewhere are under significant stress. As the climate warms, and as invasive species such as Emerald Ash Borer and Asian Long-horned Beetle move into urban forests, the effect on people will be much greater if there isn't planning for the urban forest of the future.

Climate change impacts that can be ameliorated by trees include:

- Increased thunderstorm intensity and flooding events

Urban development in Duluth has profoundly changed the natural shape of stream beds, and in many cases, they are in artificial beds (culverts, etc.). This exacerbates the nature and seriousness of flood and drought events by changing volume, velocity and flow direction. Trees help to reduce the impact of precipitation events by storing rainwater on leaves and bark as well as intercepting it before it hits the ground.

Trees also contribute leaves toward building a layer of organic matter on top of the ground which can increase percolation of rainfall into the soil. By slowing runoff, trees can help to recharge groundwater and reduce flooding into surface water or stormwater treatment infrastructure. Reduced entry of runoff into stormwater management infrastructure can also save communities money, in that it can allow existing infrastructure to remain sufficient rather than to require adding more stormwater treatment capacity. Tree roots can also bind soil to help prevent soil erosion under flooding conditions.

- Increased periods of drought

Because trees increase organic matter in soil, this increases the soil's ability to absorb and hold water, and can make the land resources more resistant to the impacts of drought. The shading effects of well-established urban forests often lessen the overall local impacts of drought conditions.

- Extreme heat events and need for more electricity use

In summer months, urban trees strategically placed near buildings have a cooling effect through the impact of shade, as well as transpiration from the trees. The result is lower energy use and reduced need for electric power, which in turn may add more heat into the environment. Planned presence of trees also can increase the ability for individuals to enjoy outdoor recreation or engage in non-motorized commuting during heat waves. Trees also provide habitat for native birds, animals, and insects that may be under stress from climate change effects.

- Heat island effect

The urban heat island effect is well documented in cities where oppressive heat is made worse by deteriorating urban climate. Planning for the increased intensity of this phenomenon is a tangible action to lessen the impacts and enhance the quality of life. Nighttime temperatures are warming, raising dew points and decreasing thermal comfort of people. Trees provide thermal reduction by evaporative cooling. Also, during periods of heat stress, there is evidence that urban forests provide a feeling of psychological wellness. In some studies large numbers of trees and urban parks can reduce local air temperature by .5° to 5°C.

- Greater wind speeds

Trees serve as windbreaks, and can help to reduce the impact of winds on structures, especially as it relates to heating and cooling needs.

- Lack of shade/respice zones to support "mode shift"

Residents who wish to use non-motorized means of commuting to work, schools and to run errands need the shading and windbreaks that a robust urban forest provides. Numerous national studies have documented the importance of trees in promoting walkable and bikeable urban communities.

- Need to adapt urban tree species mix to address changing climate

The species mix of urban trees needs to change to adapt to a longer growing season and warmer weather. Trees from lower latitudes need to be introduced into northern urban forests to prepare for projected climate changes. One likely impact of climatic changes is more frequent and longer periods of drought. It is predicted that in the coming decades, northern Minnesota's climate will mimic that of the central Great Plains (see <http://www.dnr.state.mn.us/volunteer/janfeb01/warming.html>). As such, it is imperative that appropriate tree species are planted today that can reach maturity and live in longer, hotter and drier summers.

- Risks to water quality

Trees filter stormwater and can prevent or reduce contamination of surface and ground water resources. Impurities in precipitation and runoff are captured by soil surrounded and bound by trees. Tree canopies themselves also provide a filtration function. Soil erosion is also reduced by preventing the impact of raindrops on barren surfaces. Studies have shown that sustainable urban drainage systems involving trees are more cost effective than traditional drainage solutions as they cost less to 'construct' and maintain.

- Risks to air quality

Urban trees help filter urban air and remove pollutants, and can improve air quality that may be otherwise compromised due to climate change impacts. Additionally, by lowering air temperatures through transpiration, ozone production is reduced (ozone is partially temperature dependent). Trees provide a surface area for capture of particulate matter between 2 and 12 times the area of land they cover. Studies have shown that street trees have been associated with a lower prevalence of asthma in children, even after adjusting for potential confounding factors.

Many resources cite the importance of trees in addressing community environmental challenges including stormwater runoff. Some of the points above are adapted from "How Trees Can Retain Stormwater Runoff", Tree City USA Bulletin No. 55):

<http://1.usa.gov/LHXcTL> Some content above was also adapted from "Adapting to Climate Change in Minnesota", published by MPCA in August 2010: <http://www.pca.state.mn.us/index.php/view-document.html?gid=15414>

Finally, another driver for focusing on urban trees is the importance and value of community involvement. Social marketing principles emphasize the importance for individuals concerned with or interested in impacts of climate change to be able to take concrete specific actions.

Tree planting is something most individuals can and like to do. Tree related activities are easy to communicate to residents, and are easily understandable by the general public. Many community members are interested in participating in tree planting and other related activities. Also, recruiting volunteers for tree planting events creates great partnering opportunities for different types of community organizations.

Role of community volunteers in Duluth

The City of Duluth will utilize volunteers in a number of capacities in this project through the Minnesota Tree Care Advisor (TCA) program. The TCA program is coordinated by the University of Minnesota. According to the TCA web site at <http://www.mntca.org/> this program, founded in 1993, aids in the development of environmental stewards through education and promoting volunteerism. TCAs receive their initial training through what is called "Core Course", a total of 36 hours of education and hands on training.

The City of Duluth plans to create the following groups of Tree Care Advisor (TCA) volunteers, which will be active in this project:

Community Outreach Volunteers. This program has already been developed and piloted in the Hibbing and Crookston areas. The goal was to train and support community members who would be available to present short (20 minutes or less) programs to the public. The stimulus for this was the fact that there's so much incorrect information circulating that there is a need for another vehicle to get the best information out at the local level. These volunteers will be given the up-to-date, research-based information about trees, and will be trained to present this information in a variety of ways: a standardized Power Point presentation; more active learning "games" that can be used at county fairs or farmers' markets; classroom activities; and cable-access opportunities. (This would be a new program for the City of Duluth and would involve its local public access community television.)

Citizen Pruners. This is modeled after a successful program in New York City (<http://www.treesny.org/citizenpruner>). This program would be offered to TCAs who have completed the initial core training (30 classroom hours) as a specialty that would enable them to work in their communities. These individuals would be charged with pruning newly planted/young trees, specifically for the following: removal of dead branches, removal of suckers/watersprouts that are within 6-7 feet of the ground, removal of low branches that are causing pedestrian conflicts, and removal of any staking wires that have been left on the trees and could result in girdling of the trees. In other communities where this program has been adopted, a protocol is developed for "certifying" these volunteers, reporting their activities and locating where they stage the prunings for prompt pick-up. Citizen Pruners are issued pruning shears and folding, tri-cut saws, safety vests, identification cards, clip boards and data sheets. Technical support would be provided by the TCA program coordinators. (This program is currently inactive in the City of Duluth, but has been active in the past.)

Tree Health Monitors. Several communities around the country are utilizing volunteers as extra sets of eyes to monitor the health and condition of newly planted trees through their establishment years, e.g., San Francisco. See http://www.fs.fed.us/psw/programs/uesd/uep/products/cufr_90.pdf for more on this approach. This additional training would include recognizing symptoms of declining health, drought stress, mechanical injury to trees, die-back, girdling, stem girdling roots, loss of cambium/decay, thinning crowns, stunted growth and obviously, death. These volunteers would serve only in their communities, be assigned neighborhoods or quadrants of a community, trained in recording and submitting data to the community and working with the public as a representative of the community. Volunteers would be issued tree health monitoring field guides, safety vests, identification cards, clip boards, and data sheets. Technical support would be provided by the TCA program coordinators. (This would be a new program for the City of Duluth.)

Community Tree Inventory Volunteers. Advanced training for these volunteers would be similar to the training conducted for several years around the state: tree identification, measuring trees (diameter at breast height - d.b.h., canopy spread), condition rating, working with the public, and entering data. These volunteers would be confined to working only in their own communities with their city and the department/s that are responsible for tree care. Volunteers would be supplied with safety vests, identification cards, clip boards and data sheets, d.b.h. tapes and longer tapes if crown width was part of the data collection, and an extensive field manual on tree identification, condition rating and measuring trees. Technical support would be provided by the TCA program coordinators. (This is currently a program at the City of Duluth.)

Citizen Tree Waterers. This program would involve volunteers who would monitor drought and watering schedules of newly planted trees in their neighborhood boulevards and parks. Specifically, they would be responsible for the first season of watering, providing neighbors with information on watering, installing or distributing watering bags where

property owners are willing or in parks, record keeping of watering frequency, record keeping of tree health and survival, reporting to the city department/s responsible for the care of trees. Volunteers would be provided with or have access to safety vests, identification cards, watering information for the public, watering bags, watering buckets and carts. Technical support would be provided by the TCA program coordinators. (This would be a new program at the City of Duluth.)

Invasive Species: These volunteers would continue the Buckthorn Brigade, and the work of the Duluth StreamCorps to plant native trees in areas where invasive species have been removed to prevent the establishment of invasives in the newly opened niche. (These activities have been implemented by the City of Duluth, but not in an organized and ongoing manner.) The City of Duluth is currently seeking two college interns in biology and GIS to carry out initial program tasks during the fall of 2012.

Community-Based Focus and Environmental Justice Impacts:

As the key Minnesota city in the Lake Superior Basin and in a zone of national ecological importance, Duluth also contains a significant percentage of low-income people. According to the *City of Duluth 2011 Housing Indicator Report* (released April 24, 2012), 22.2% of the population was living below poverty level in 2010, as compared with a statewide poverty rate of 11.6%. According to a 2007 Community Impact Report referenced in the 2011 Housing Indicator Report, the poverty rate in Duluth for American Indians is 49% and for African Americans is 19.5%. Based upon the studies done about the positive effects of trees on people, a large group of people stand to benefit, as the area with the fewest trees is the area where it is the lowest income. Trees will be planted to benefit both low income areas of Duluth as well as areas of significant environmental benefit.

Trees will be planted on public lands with access to all. This project will include outreach to volunteers through the ReLeaf Duluth Tree planting program, which includes citizen volunteers who teach tree inventory and tree health, who prune trees, who plant trees and teach about invasive species. Thousands of hours a year are donated by volunteers from all ages and all walks of life.

The social effects of trees on humans are well documented. Although not to be measured as a result of this project, the following outcomes can be expected, based upon numerous studies done in Washington and Indiana:

- On average, there are approximately 3,800 crime victims per 100,000 population in the U.S. each year. Among minor crimes, there is less graffiti, vandalism, and littering in outdoor spaces with natural landscapes than in comparable plant-less spaces
- Public housing residents with nearby trees and natural landscapes reported 25% fewer acts of domestic aggression and violence
- Public housing buildings with greater amounts of vegetation had 52% fewer total crimes, 48% fewer property crimes, and 56% fewer violent crimes than buildings with low amounts of vegetation
- Studies of residential neighborhoods found that property crimes were less frequent when there were trees in the right-of-way, and more abundant vegetation around a house
- In a study of community policing innovations, there was a 20% overall decrease in calls to police from the parts of town that received location-specific treatments. Cleaning up vacant lots was one of the most effective treatment strategies, and
- Vegetation can be managed to create a reassuring environment, reduce fear, and increase citizen surveillance and defensible space. Principles of Crime Prevention Through Environmental Design (CPTED) suggest how to achieve safer places.*

*source: Wolf, K.L. 2010. Crime and Fear - A Literature Review. In: Green Cities: Good Health (www.greenhealth.washington.edu). College of the Environment, University of Washington.

3. Goals, Objectives, Tasks, and Subtasks

Goal: The project will support strategic planting of over 600 trees on City of Duluth owned property, with the goal of increasing Duluth's resilience to climate change through the benefits of planted trees and involvement of community volunteers.

Objective 1: Assessment of urban trees on City of Duluth properties

Task A: Inventory existing urban trees on city land near city buildings and along bikeways and corridors utilizing City staff and volunteers.

Responsible Party: City of Duluth staff, Volunteers

Task B: Identify gaps and challenges related to climate change for Duluth's urban trees.

Responsible Party: City of Duluth staff

Objective 1 Timeline: October 2012 – June 2013

Objective 1 Cost: \$0 (tasks completed by grantee using existing resources)

Objective 1 Deliverables: Urban trees are inventoried on City land, and gaps, challenges and opportunities related to climate change are identified for Duluth's urban trees.

Objective 2: Plan for implementation of tree planting to address climate change challenges

Task A: Consult regularly with other project participants through the Duluth Tree Commission and otherwise.

Responsible Party: City of Duluth staff

Task B: Use i-Tree software to quantify ecosystem services by Duluth urban trees on City property based on data collected during the tree inventory.

Responsible Party: City of Duluth staff

Task C: Estimate actual and projected shade value and stormwater management value of Duluth urban trees on City of Duluth property.

Responsible Party: City of Duluth staff

Task D: Integrate information collected in tasks above into Duluth Tree Master Plan as appropriate.

Responsible Party: City of Duluth staff, Duluth Tree Commission

Task E: Develop protocol/methodology for sampling of tree canopy to be carried out annually.

Responsible Party: City of Duluth staff

Task F: Identify additional action steps to address climate change challenges through tree planting.

Responsible Party: City of Duluth staff

Objective 2 Timeline: October 2012 – September 2014

Objective 2 Cost: \$0 (tasks completed by grantee using existing resources)

Objective 2 Deliverables: Value is calculated for shade and stormwater management value of Duluth urban trees. Priorities are identified for planting trees to address climate change challenges. Duluth Master Tree Plan is updated as appropriate.

Objective 3: Engage community members in project activities, including as volunteers.

Task A: Involve Duluth volunteers in tree planting through ReLeaf Duluth citizen tree program, and Tree Care Advisor programs (Tree Health Monitors and Citizen Tree Waterers).

Responsible Party: City of Duluth staff

Task B: Engage in community outreach to Duluth residents regarding climate change adaptation and importance of trees to strengthen community resilience through Tree Care Advisor Community Outreach Volunteers program.

Responsible Party: City of Duluth staff

Task C: Increase project visibility by securing earned media, presentation, and web newsletter content.

Responsible Party: City of Duluth staff

Objective 3 Timeline: May 2013 – September 2014

Objective 3 Cost: \$2,585 (materials for educational purposes)

Objective 3 Deliverables: Community members are educated about climate change adaptation, and are involved in project activities.

Objective 4: Plant trees in City owned locations and maintain existing urban trees in City owned locations

Task A: Install 620 trees in prepared gravel bed in preparation for later planting.

Responsible Party: City of Duluth staff

Task B: Carry out volunteer-supported tree planting and maintenance actions in City owned locations.

Responsible Party: City of Duluth staff

Objective 4 Timeline: April 2013 – September 2014

Objective 4 Cost: \$35,415

Objective 4 Deliverables: 620 trees are planted on Duluth City owned land by volunteers. Volunteers water and maintain planted trees.

Objective 5: Project reporting and preparation of case study

Task A: Prepare semi-annual narrative and expenditure reports to be submitted on February 1 and August 1 each reporting year.

Responsible Party: City of Duluth staff

Task B: Prepare case study for distribution to other communities.

Responsible Party: City of Duluth staff

Task C: Prepare final project report, including description of efforts made to include tree-related content in Duluth planning documents.

Responsible Party: City of Duluth staff

Objective 5 Timeline: February 2013 – September 2014

Objective 5 Cost: \$0 (tasks completed by grantee using existing resources)

Objective 5 Deliverables: Case study and final project report are prepared. Semi-annual narrative and expenditure reports are submitted February 1 and August 1 of each reporting year.

4. Measurable Outcomes

Outputs from this project will include:

- Direct implementation of adaptation actions through planting over six hundred trees leading to reduced local vulnerabilities, and preservation and enhancement of the community's ecological resources and environmental infrastructure
- Energy use reductions resulting from planting trees strategically near Duluth municipal buildings

- Greater awareness of climate change adaptation by Duluth, and
- Serve as an example of one community taking action to address impacts of climate change.

Outcomes of the project will include:

- Increased capacity of a Great Lakes community to incorporate information on climate change impacts to urban trees into their planning and decision making
- Decrease of overall vulnerability of a Great Lakes community to climate change impacts
- Reduction of climate-related risks of increased nonpoint source loadings from Duluth tributaries, and
- Increase in ecosystem resilience, thereby improving the capabilities of the Duluth-area ecosystem to adapt to changes in climate.

Measurement activities in the project will include:

- Documentation of numbers and locations of individual trees planted
- Numbers of individuals involved in tree planting and other project activities, and
- Estimated energy savings due to tree planting near City of Duluth-owned facilities.

5. Gantt chart - see attached

6. Project Budget - see attached

Federal **Administrative** Conditions for All Grant and Contract Recipients**I. GENERAL FEDERAL STATUTORY REQUIREMENTS****A. General Provisions**

Subrecipients that are non-profit or for profit organizations are subject to the regulations under 40 CFR Part 30, "Uniform Administrative Requirements for Grants and Agreements with Institutions of Higher Education, Hospitals and Other Non-profit Organizations." State and local government subrecipients are subject to the regulations under 40 CFR Part 31, "Uniform Administrative Requirements for Grants and Cooperative Agreements to State and Local Governments."

- B.** The subrecipient shall comply with the **Intergovernmental Personnel Act** of 1970 (42 U.S.C. §4728-4763) relating to prescribed standards for merit systems for programs funded under one of the 19 statutes or regulations specified in Appendix A of Office of Personnel Management (OPM's) Standards for a Merit System of Personnel Administration (5 C.F.R. 900, Subpart F).
- C.** The subrecipient shall comply with all Federal statutes relating to **nondiscrimination**. These include but are not limited to: 1) Title VI and Title VII of the Civil Rights Act of 1964 (P.L. 88-352) which prohibits discrimination on the basis of race, color, national origin, religion and sex discrimination in employment; 2) the Americans with Disabilities Act which prohibits discrimination in employment and in services provided by State and local governments, businesses and non-profit agencies; 3) Title IX of the Education Amendments of 1972; as amended (20 U.S.C. §1681-1683 and 1685-1686), which prohibits discrimination on the basis of sex; 4) Section 504 of the Rehabilitation Act of 1973, as amended (29 U.S.C. §794), which prohibits discrimination on the basis of handicaps; 5) the Age Discrimination Act of 1975, as amended (42 U.S.C. §6101-6107), which prohibits discrimination on the basis of age; 6) the Drug Abuse Office and Treatment Act of 1972 (P.L. 92-255), as amended, relating to nondiscrimination on the basis of drug abuse; 7) the Comprehensive Alcohol Abuse and Alcoholism Prevention, Treatment and Rehabilitation Act of 1970 (P.L. 91-616), as amended, relating to nondiscrimination on the basis of alcohol abuse or alcoholism; 8) §§523 and 527 of the Public Health Service Act of 1912 (42 U.S.C. 290 dd-3 and 290 ee-3), as amended, relating to confidentiality of alcohol and drug abuse patient records; and 9) the Fair Housing Act which prohibits discrimination based on race, color, national origin, age, family status and disability, as well as any other applicable civil rights laws..
- D.** The subrecipient shall comply, or has already complied, with the requirements of Titles II and III of the **Uniform Relocation Assistance and Real Property Acquisition Policies Act** of 1970 (P.L. 91-646, 84 Stat 1894, 42 USC 4601), as amended by the Surface Transportation and Uniform Relocation Assistance Act of 1987 (PL 100-17, 101 Stat 246-255, 42 USC 4601 note) as set forth in 49 CFR Part 24, which provide for fair and equitable treatment of persons displaced or whose property is acquired as a result of Federal or federally assisted programs. These requirements apply to all interests in real property acquired for project purposes regardless of Federal participation in purchases.
- E.** The subrecipient shall comply, as applicable, with provisions of the **Hatch Act** (5 U.S.C. §§1501-1508, and 7324-7328) which limit the political activities of employees whose principal employment activities are funded in whole or in part with Federal funds.

F. The subrecipient shall comply, if applicable, with flood insurance purchase requirements of Section 102(a) of the **Flood Disaster Protection Act** of 1973 (P.L. 93-234) which requires Contractors in a special flood hazard area to participate in the program and to purchase flood insurance if the total cost of insurable construction and acquisition is \$10,000 or more.

G. Environmental Standards

The subrecipient shall comply pursuant to the following;

1. Recycling and Waste Prevention - In accordance with the polices set forth in EPA Order 1000.25 and Executive Order 13423, Strengthening Federal Environmental, Energy and Transportation Management (January 24, 2007) and or 40 CFR 30.16, the recipient agrees to use recycled paper and double sided printing for all reports which are prepared as a part of this agreement and delivered to EPA. This requirement does not apply to reports prepared on forms supplied by EPA, or to Standard Forms, which are printed on recycled paper and are available through the General Services Administration.
 2. National Environmental Policy Act of 1969 - institution of environmental quality control measures under the National Environmental Policy Act of 1969 (P.L. 91-190) and Executive Order (EO) 11514
 3. Notification Of Violating Facilities pursuant to EO 11738
 4. Protection of Wetlands pursuant to EO 11990
 5. Evaluation Of Flood Hazards In Floodplains in accordance with EO 11988
 6. Assurance of project consistency with the approved State Management Program Developed under the Coastal Zone Management Act of 1972 (16 U.S.C. §§1451 et. seq.)
 7. Conformity of Federal actions to State (Clean Air) Implementation Plans under Section 176(c) of the Clean Air Act of 1955, as amended (42 U.S.C. §§7401 et. seq.)
 8. Protection of Underground Sources of Drinking Water under the Safe Drinking Water Act of 1974, as amended (P.L. 93-523)
 9. Protection of Endangered Species under the Endangered Species Act of 1973, as amended, (P.L. 93-205).
- H. Shall comply with the **Wild and Scenic Rivers Act** of 1968 (16 U.S.C. §§1271 et. seq.) related to protecting components or potential components of the national wild and scenic rivers system.
- I. Shall assist the Environmental Protection Agency in assuring compliance with Section 106 of the **National Historic Preservation Act** of 1966, as amended (16 U.S.C. 470), EO11593 (identification and protection of historic properties), and the Archaeological and Historic Preservation Act of 1974 (16 U.S.C. 469a-1 et. seq.).
- J. Shall comply with **Hotel-Motel Fire Safety** requirements pursuant to 40 CFR 30 18, if applicable, and 15 USC 2225a, the recipient agrees to ensure that all space for conferences, meetings, conventions, or training seminars funded in whole or in part with federal funds complies with the protection and control guidelines of the Hotel and Motel Fire Safety Act (PL 101-391, as amended). Recipients may search the Hotel-Motel National Master List at <http://www.usfa.dhs.gov/applications/hotel/> to see if property is in compliance or to find other information about the Act.
- K. Shall comply with all applicable requirements of all other Federal laws, executive orders, regulations and policies governing this program.

II. PROCUREMENT REQUIREMENTS

A. General Procurement Requirements

Procurement for goods and services are subject to federal requirements contained in 40 CFR §31.36, which states in part:

(b) Procurement standards. (1) Grantees and subgrantees will use their own procurement procedures which reflect applicable State and local laws and regulations, provided that the procurements conform to applicable federal law, the standards identified in this section, and if applicable, §31.38 (the Indian Self Determination Act); and

(c) Competition. (1) All procurement transactions will be conducted in a manner providing full and open competition consistent with the standards of §31.36.

B. Utilization Of Disadvantaged Business Enterprises (formerly Small, Minority and Women's Business Enterprises)

General Compliance, 40 CFR, Part 33 – The Grantee agrees to comply with the requirements of EPA's Program for the Utilization Disadvantaged Business Enterprises (DBE) in procurement this agreement.

Six Good Faith Efforts, 40 CFR, Part 33, Subpart C – Pursuant to 40 CFR, Section 33.301, the Recipient agrees to make the following good faith efforts whenever procuring construction, equipment, services and supplies under this agreement, and to ensure that sub-recipients and prime contractors also comply. Records documenting compliance with the six good faith efforts shall be retained. These efforts include the following activities:

1. Ensure Disadvantaged Business Enterprises (DBEs, include MWE/WBEs) are made aware of contracting opportunities to the fullest extent practicable through outreach and recruitment activities. For Indian Tribal, State and local Government recipients, this will include placing DBEs on solicitation lists and soliciting them whenever they are potential sources.
2. Make information on forthcoming opportunities available to DBEs and arrange time frames for contracts and establish delivery schedules, where the requirements permit, in a way that encourages and facilitates participation by DBEs in the competitive process. This includes, whenever possible, posting solicitations for bids or proposals for a minimum of 30 calendar days before the bid or proposal closing date.
3. Consider in the contracting process whether firms competing for large contracts could subcontract with DBEs. For Indian Tribal, State and local Government recipients, this will include dividing total requirements when economically feasible into smaller tasks or quantities to permit maximum participation by DBEs in the competitive process.
4. Encourage contracting with a consortium of DBEs when a contract is too large for one of these firms to handle individually.
5. Use the services and assistance of the Small Business Administration (SBA) and the Minority Business Development Agency of the U.S. Department of Commerce.
6. If the prime contractor awards subcontracts, require the prime contractor to take the steps in paragraphs (1.) through (5) of this section.

Contract Administration Provisions - The recipient agrees to comply with the contract administration provisions of 40 CFR, Section 33 302.

C. Small Business in Rural Areas - By accepting this Agreement, the Recipient agrees to comply with Section 129 of Public Law 100-590, the Small Business Administration Reauthorization and Amendment Act of 1988. If the Subrecipient awards a subcontract under this assistance agreement, the Subrecipient shall utilize the following affirmative steps relative to Small Business in Rural Areas (SBRAs):

1. Placing SBRAs on solicitation lists;
2. Ensuring that SBRAs are solicited whenever they are potential sources;
3. Dividing total requirements, when economically feasible, into small tasks or quantities to permit maximum participation by SBRAs;
4. Establishing delivery schedules, where the requirements of work will permit, which would encourage participation by SBRAs; and
5. Using the services of the Small Business Administration and the Minority Business Development Agency of the U.S. Department of Commerce, as appropriate.

Requiring the subrecipient, if it awards subcontracts, to take the affirmative steps in part 1 through 5 of this condition.

D. Suspension and Debarment - Recipient shall fully comply with Subpart C of 2 CFR Part 180 and 2 CFR Part 1532, entitled "Responsibilities of Participants Regarding Transactions (Doing Business with Other Persons)." Recipient is responsible for ensuring that any lower tier covered transaction as described in Subpart B of 2 CFR Part 180 and 2 CFR Part 1532, entitled "Covered Transactions," includes a term or condition requiring compliance with Subpart C. Recipient is responsible for further requiring the inclusion of a similar term or condition in any subsequent lower tier covered transactions. Recipient acknowledges that failing to disclose the information as required at 2 CFR 180.335 may result in the delay or negation of this assistance agreement, or pursuance of legal remedies, including suspension and debarment. Recipient may access the Excluded Parties List System at <https://www.epls.gov/>. This term and condition supersedes EPA Form 5700-49, "Certification Regarding Debarment, Suspension, and Other Responsibility Matters."

E. American-Made Equipment and Products - To the greatest extent practicable, all equipment and products purchased with the Federal funds at all tiers should be American-made. [Sepia's Annual Appropriations Act, P.L. 108-7, Div. K, Title IV, §409; 117 Stat. 524.]

F. Procurement of Recycled Products - In accordance with Section 6002 of the Resource Conservation and Recovery Act (RCRA) (42 U.S.C. 6962) any State agency or agency of a political subdivision of a State which is using appropriated Federal funds shall comply with the requirements set forth. Regulations issued under RCRA Section 6002 apply to any acquisition of an item where the purchase price exceeds \$10,000 or where the quantity of such items acquired in the course of the preceding fiscal year was \$10,000 or more. RCRA Section 6002 requires that preference be given in procurement programs to the purchase of specific products containing recycled materials identified in guidelines developed by EPA. These guidelines are listed in 40 CFR 247.

III. COST ELIGIBILITY

A. Allowable Costs - Allowable costs shall be determined in accordance with OMB Circular A-21 (Educational Institutions), A-87 (State, local, or Tribal Unit), or A-122 (Nonprofit Organizations). Applicable cost principles for for-profit organizations are provided in 48 CFR 31.22. Contractor shall

reimburse the State for any amounts which the State is required to pay EPA because EPA disallows costs of the Contract on the basis of an EPA audit or other review. [40 CFR 31.51.]

- B. Lobbying And Litigation** - All Recipients No grant funds awarded under this agreement may be used to engage in lobbying of the Federal Government or in litigation against the United States unless authorized under existing law. The recipient shall abide by its respective OMB Circular (A-21, A-87, or A-122), which prohibits the use of federal grant funds for litigation against the United States or for lobbying or other political activities.

Restrictions On Lobbying (Subrecipients >\$100,000) - The recipient agrees to comply with Title 40 CFR Part 34, *New Restrictions on Lobbying*. The recipient shall include the language of this provision in award documents for all subawards exceeding \$100,000, and require that subrecipients submit certification and disclosure forms accordingly.

In accordance with the Byrd Anti-Lobbying Amendment, any recipient who makes a prohibited expenditure under Title 40 CFR Part 34 or fails to file the required certification or lobbying forms shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such expenditure.

- C. Management Fees** - Management fees or similar charges in excess of the direct costs and approved indirect rates are not allowable. The term "management fees or similar charges" refers to expenses added to the direct costs in order to accumulate and reserve funds for ongoing business expenses, unforeseen liabilities, or for other similar costs which are not allowable under this assistance agreement. Management fees or similar charges may not be used to improve or expand the project funded under this agreement, except to the extent authorized as a direct cost of carrying out the scope of work.
- D. Payment to Consultants** - EPA participation in the salary rate (excluding overhead) paid to individual consultants retained by subrecipients or their contractors or subcontractors, shall be limited to the maximum daily rate for a Level IV of the Executive Schedule (formerly GS-18), to be adjusted annually. This limit applies to consultation services of designated individuals with specialized skills who are paid at a daily or hourly rate. As of January 1, 2012, the limit is \$596.00 per day and \$74.50 per hour. This rate does not include transportation and subsistence costs for travel performed (the recipient will pay these in accordance with their normal travel reimbursement practices).

Subagreements with firms for services which are awarded using the procurement requirements in 40 CFR 30 or 31, as applicable, are not affected by this limitation unless the terms of the contract provide the recipient with responsibility for the selection, direction, and control of the individuals who will be providing services under the contract at an hourly or daily rate of compensation. See 40 CFR 31.36(j) or 30.27(b).

- E. Food and Refreshments** – Unless the event(s) are specified in the approved workplan, the recipient agrees to obtain prior approval from EPA for the use of grant funds for light refreshments and/or meals served at meetings, conferences, training workshops and outreach activities. The recipient must send requests for approval to the MPCA designated project manager and include:
- (1) An estimated budget and description for the light refreshments, meals and/or beverages to be served at the event(s).
 - (2) A description of the purpose, agenda, location, length and timing for the event;

(3) An estimated number of participants in the event and a description of their roles.

Recipients may address questions about whether costs for light refreshments and meals for the events are allowable, to the MPCA designated project manager; however the EPA Project Officer, EPA Award Official or EPA Grant Management Officer will make final determinations on allowability.

NOTE: U.S. General Services Administration regulations define light refreshments for morning, afternoon or evening breaks to include, but not be limited to, coffee, tea, milk, juice, soft drinks, donuts, bagels, fruit, pretzels, cookies, chips or muffins. (41 CFR 301-74.11)

IV. PUBLICITY AND COPYRIGHT

A. Copyright - In accordance with 40 CFR 31.34 for State, local, and Indian Tribal Governments or 40 CFR 30.36 for other recipients, EPA has the right to reproduce, publish, use, and authorize others to use copyrighted works or other data developed under this assistance agreement for Federal purposes.

Examples of a Federal purpose include but are not limited to: (1) Use by EPA and other Federal employees for official Government purposes; (2) Use by Federal contractors performing specific tasks for the Government; (3) Publication in EPA documents provided the document does not disclose trade secrets and the work is properly attributed to the recipient through citation or otherwise; (4) Reproduction of documents for inclusion in Federal depositories; (5) Use by State, Tribal and local Governments that carry out delegated Federal environments programs as "co-regulators" or act as official partners with EPA to carry out a national environmental program within their jurisdiction; and (6) Limited use by other grantees to carry out Federal grants provided the use is consistent with the terms of EPA's authorization to the other grantee to use the copyrighted works or other data.

Under Item 6, the grantee acknowledges that EPA may authorize another grantee(s) to use the copyrighted works or other data developed under this grant as a result of:

1. the selection of another grantee by EPA to perform a project that will involve the use of the copyrighted works or other data or;
2. termination or expiration of this agreement

In addition, EPA may authorize another grantee to use copyrighted works or other data developed with Agency funds provided under this grant to perform another grant when such use promotes efficient and effective use of Federal grant funds.

B. Patents and Inventions - Rights to inventions made under this assistance agreement are subject to federal patent and licensing regulations, which are codified at Title 37 CFR Part 401.

Pursuant to the Bayh-Dole Act (set forth in Title 35 USC Sections 200-212), EPA retains the right to a worldwide, nonexclusive, irrevocable, paid license to practice the invention elected by the managing and operating contractor, as defined in the Act. To streamline the invention reporting process and to facilitate compliance with the laws mandated by the Bayh-Dole Act, the recipient shall utilize the Interagency Edison extramural invention reporting system at <http://iEdison.gov>. Annual utilization reports shall be submitted through the system. As required by 35 USC Sections 200-212, a single common Internet web form will soon be available on the iEdison website. Thereafter, the recipient must use the web form to submit the summary report of inventions prior to the close-out of the assistance agreement.

In accordance with Executive Order 12618, government owned and operated laboratories can enter into cooperative research and development agreements with other federal laboratories, state and local governments, universities, and the private sector; and license, assign, or waive rights to intellectual property "developed by the laboratory either under such cooperative research or development agreements and from within individual laboratories."

V. REPORTING AND ACCESS TO RECORDS

- A. Single Audit Reporting Requirements - Audit And Access To Records (Subrecipients >\$100,000)** In accordance with OMB Circular A-133, which implements the single Audit Act, the recipient hereby agrees to obtain a single audit from an independent auditor if it expends \$500,000 or more in total Federal funds in any fiscal year, within nine months after the end of a recipient's fiscal year or 30 days after receiving the report from the auditor, the recipient shall submit a copy of the SF-SAC and a Single Audit Report Package.

The recipient MUST submit a copy of the SF-SAC and a Single Audit Report Package, using the Federal Audit Clearinghouse's Internet Data Entry System. Complete information on how to accomplish the 2008 and beyond Single Audit Submissions is available on the Federal Audit Clearinghouse Web site: <http://harvester.census.gov/fac/>

- B. Access to Records -** The subrecipient (grantee or subcontractor) shall permit access by the EPA, the Comptroller General of the United States, or any of their duly authorized representatives to any books, documents, papers, and records of the Grantee or Contractor which are directly pertinent to the Agreement for the purpose of making audits, examinations, excerpts, and transcripts. This provision applies to Subcontractors at any tier for their pertinent books, documents, papers, and records.

VI. REQUIREMENT FOR DATA UNIVERSAL NUMBERING SYSTEM (DUNS) NUMBERS

- A. Data Universal Numbering System (DUNS) number –** A DUNS number is the nine-digit number established and assigned by Dun and Bradstreet, Inc. (D&B) to uniquely identify business entities. A DUNS number may be obtained from D&B by telephone (currently 866-705-5711) or the Internet (currently at <http://fedgov.dnb.com/webform>).
- B.** The MPCA may not make a subaward to a recipient unless they have provided its DUNS number.

VII. REPORTING OF TOTAL COMPENSATION OF EXECUTIVES

- A. Applicability -** Unless you are exempt as provided below, you shall report the names and total compensation of each of your organization's five most highly compensated executives for the preceding completed fiscal year if the following conditions apply:
1. In the preceding fiscal year, your organization received—
 - a. **80 percent or more of its annual gross revenues** from Federal procurement contracts, subcontracts, awards or subawards and other Federal financial assistance subject to the Transparency Act, as defined at 2 CFR 170.320; and
 - b. **\$25,000,000 or more in annual gross revenues** from Federal procurement contracts, subcontracts, awards or subawards and other Federal financial assistance subject to the Transparency Act ; and
 - c. **The public does not have access to information** about the compensation of the executives through periodic reports filed under Section 13(a) or 15(d) of the Securities Exchange Act of 1934 (15 U.S.C. 78m(a), 78o(d) or Section 6104 of the internal Revenue Code of 1986. (To determine if the public has access to the compensation information, see the U.S. Security and

Exchange Commission total compensation filings at
<http://www.sec.gov/answers/excomp.htm>).

B. Reporting Requirements

1. **Names of executives.** Report the names of the organization's five most highly compensated executives. Executive means officers, managing partners, or any other employees in management positions.
2. **Total compensation** means the cash and noncash dollar value earned by the executive during the organization's preceding fiscal year and includes the following (for more information, see 17 CFR 229.402(c)(2):
 - a. *Salary and bonuses;*
 - b. *Awards of stock, stock options, and stock appreciation rights.* Use the dollar amount recognized for financial statement reporting purposes with respect to the fiscal year in accordance with the Statement of Financial Accounting Standards No. 123 (Revised 2004)(FAS 123R);
 Shared Based Payments.
 - c. *Earnings for services under non-equity incentive plans.* This does not include group life, health, hospitalization or medical reimbursement plans that do not discriminate in favor of executives, and are available generally to all salaried employees;
 - d. *Change in pension value.* This is the change in present value of defined benefit and actuarial pension plans;
 - e. *Above-market earnings on deferred compensation which is not tax-qualified, and*
 - f. *Other compensation, if the aggregate value of all such other compensation (e.g. severance, termination payments, value of life insurance paid on behalf of the employee, perquisites or property) for the executive exceeds \$10,000.*
3. **Where and when to report** - You must report your executive total compensation described above to the MPCA within 30 days of the final grant/contract execution date.
4. **Exemptions** - If, in the previous tax year, your organization had gross income from all sources under \$300,000, you are exempt from the requirements to report.

VIII. TRAFFICKING VICTIMS PROTECTION ACT

Section 106(g) of the Trafficking Victims Protection Act of 2000, as amended (22 U.S.C. 7104(g)) requires the MPCA to include the statement below.

Prohibition Statement – You, as the recipient, your employees, subrecipients under this award, and subrecipients' employees may not engage in severe forms of trafficking in persons during the period of time that the award is in effect; procure a commercial sex act during the period of time that the award is in effect; or use forced labor in the performance of the award or subawards under the award.

Violation of this subpart is cause for termination of this award in addition to other remedies for noncompliance that may be used.

IX. FALSE CLAIM

Subrecipients must promptly refer to EPA's Inspector General any credible evidence that a principal, employee, agent, sub-grantee contractor, subcontractor, loan recipient, or other person has submitted a false claim under the False Claims Act or has committed a criminal or civil violation of laws pertaining to fraud, conflict of interest, bribery, gratuity, or similar misconduct involving funds provided under this grant or sub-grants awarded by the grantee.

	Materials							Totals (Extended)
	Trees (620) - 1 - 1.5 inch caliper, 6 - 10 feet tall, bare root	Materials for Gravel Bed	Watering bags (620)	Pruning Shears for volunteers (25)	Folding Pruning Saws for volunteers (25)	Volunteer T-shirts (50)	Materials for educational purposes	
	\$30.00	\$1,790.00	\$20.00	\$50.00	\$35.00	\$10.00	\$2,585.00	
Planting of urban trees on City of Duluth properties								
Planting urban trees on city land near city buildings and along bikeways and corridors utilizing City								
and challenges related to climate change for Duluth's urban trees								
	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Implementation of tree planting to address climate change challenges								
Partner with other project participants through the Duluth Tree Commission and otherwise								
Software to quantify ecosystem services by Duluth urban trees on City property based on data base inventory.								
Assess current and projected shade value and stormwater management value of Duluth urban trees on City								
Information collected in tasks above into Duluth Tree Master Plan as appropriate.								
Protocol/methodology for sampling of tree canopy to be carried out annually								
Identify key action steps to address climate change challenges through tree planting.								
	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Community members in project activities, including as volunteers								
Recruit and train volunteers in tree planting through ReLeaf Duluth citizen tree program, and Tree Care Advisor (Monitors and Citizen Tree Waterers)								
Community outreach to Duluth residents regarding climate change adaptation and importance of community resilience through Tree Care Advisor Community Outreach Volunteers program							\$2,585.00	\$2,585.00
Increase project visibility by securing earned media, presentation, and web newsletter content.								
	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$2,585.00	\$2,585.00
Planting and maintenance of trees in City owned locations and maintain existing trees in City owned locations								
Plant trees in prepared gravel bed in preparation for later planting.	\$18,600.00	\$1,790.00	\$12,400.00					\$32,790.00
Volunteer-supported tree planting and maintenance actions in City owned locations				\$1,250.00	\$875.00	\$500.00		\$2,625.00
	\$18,600.00	\$1,790.00	\$12,400.00	\$1,250.00	\$875.00	\$500.00	\$0.00	\$35,415.00
Reporting and preparation of case study								
Prepare annual narrative and expenditure reports to be submitted on February 1 and August 1 each								\$0.00
Prepare case study for distribution to other communities.								\$0.00
Prepare project report, including description of efforts made to include tree-related content in Duluth								\$0.00
	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
	\$18,600.00	\$1,790.00	\$12,400.00	\$1,250.00	\$875.00	\$500.00	\$2,585.00	\$38,000.00

PROJECT NAME: Building Duluth's Community Resiliency through Urban Trees

	Year 2012												Year 2013												Year 2014											
	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A				

Assessment of urban trees on City of Duluth properties

existing urban trees on city land near city buildings and along sidewalks utilizing City staff and volunteers.
 gaps and challenges related to climate change for Duluth's

X	X	X											X	X	X	X	X	X														
X	X	X											X	X	X	X	X	X														

Plan for implementation of tree planting to address climate change challenges

otherwise
 use software to quantify ecosystem services by Duluth urban community based on data collected during the tree inventory.
 actual and projected shade value and stormwater management plan trees on City of Duluth property
 information collected in tasks above into Duluth Tree Master Plan.
 protocol/methodology for sampling of tree canopy to be carried out.
 additional action steps to address climate change challenges including:

X	X	X											X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
X	X	X											X	X	X	X	X	X	X	X	X	X	X	X								
X	X	X											X	X	X	X	X	X	X	X	X	X	X	X								
X	X	X											X	X	X	X	X	X	X	X	X	X	X	X								
X	X	X											X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

Engage community members in project activities, including as volunteers.

Duluth volunteers in tree planting through ReLeaf Duluth citizen Tree Care Advisor programs (Tree Health Monitors and Citizen Tree Care Advisors)
 community outreach to Duluth residents regarding climate change and importance of trees to strengthen community resilience
 Advisor Community Outreach Volunteers program
 project visibility by securing earned media, presentation, and report.

													X	X	X	X	X	X	X	X					X	X	X	X	X	X	X	X
													X	X	X	X	X	X	X	X					X	X	X	X	X	X	X	X
													X	X	X	X	X	X	X	X					X	X	X	X	X	X	X	X

Plant trees in City owned locations and maintain existing urban trees in City owned locations

Plant trees in prepared gravel bed in preparation for later planting.
 volunteer-supported tree planting and maintenance actions in parks and streets.

													X												X							
													X	X	X	X	X	X	X	X					X	X	X	X	X	X	X	X

Project reporting and preparation of case study.

Quarterly semi-annual narrative and expenditure reports to be submitted by August 1 each reporting year.
 Case study for distribution to other communities.
 Final project report, including description of efforts made to date and content in Duluth planning documents.

													X												X															