

Community Partners for Clean Streams

Application for Mini-Grant, April 2020

1. Contact Information

Organization: Thurston Nature Center (TNC): TNC is a Community Partner for Clean Streams

Phone Number: 734-548-0629

Number of Employees: TNC consists solely of volunteers; includes two active Rain Garden Stewards.

Address: Thurston Elementary School, 2300 Prairie St., Ann Arbor, MI 48105

Grant coordinator: Elizabeth Morehead, Thurston Nature Center Committee Chair

Email: eliza2cor57@yahoo.com

Phone Number: 734-548-0629

2. Project Name: Thurston Nature Center's Remediation Rain Garden, proposed to solve standing water in the Transitional Zone between existing Butterfly Hummingbird Rain Gardens' trellis area and TNC woodland. [see addendum 1: site location].

3. Installing this Rain Garden encompasses three project types:

- Maintaining Landscapes [PRIMARY]
- Site Design and Construction
- Education

4. Amount Requested: \$1200.00

5. Goals of the Project and Action Items Addressed

Emphasis on Project Type: Maintaining Landscapes: This project will convert 710 square feet of wet, degraded turf grass into a Rain Garden, with a 190 square feet built-up berm. This berm will serve as a raised walkway for accessible pedestrian circulation, and to create an elevated buffer to help contain the Rain Garden basin.

The goals of this TNC Rain Garden are to achieve the overall mission of the CPCS program:

- 1) improve water quality
- 2) prevent pollution
- 3) expand waste reduction
- 4) recycling efforts

Maintaining Landscapes: This new TNC Rain Garden promotes clean water initiatives, and functions to remediate the current standing water problems, which include: preventing further erosion, reducing flooding, and providing improvements for water and air quality. Also, it will interconnect existing TNC ecosystems, to create a more viable and verdant landscape. The design improves water quality in more than one way: soaks up standing water and assists to absorb overflow in the very nearby trellis area [of the Butterfly-Hummingbird Rain Gardens], uses plant selections that are phytoremediating (absorb pollutants and slows ground water uptake), and creates an eco-friendly habitat for healthy bacteria (filter for animal waste). This new Rain Garden also supports the Thurston Nature Center's ongoing ethics of people as stewards of the land. This design seeks to assist TNC to work in harmony with Mother Nature's environment, that is frequently enjoyed both passively and actively by visitors. The plant selection takes into account existing variables of sun, wind, slope, existing creatures and flora. All plants in this RG Plant List are Michigan Natives, thus, more resilient and naturally will have stronger and deeper root systems once established [see addendum 2a-d: plant list & site design]. This plant selection is primarily deer resistant, and attracts frogs, toads, birds, butterflies, hummingbirds, and dragonflies.

Also, an inherent benefit is of Education: The new Rain Garden and raised walkway will promote more pedestrian activity, linking TNC endeavors. This new site expansion encourages more activity and participation throughout TNC's landscape.

Project Timeline, Leaders, Experts, Ongoing Maintenance.

Planting list order is placed, and deposit made to **Wildtype** by TNC, with plants anticipated in the last week of May.

The Principal Participants are: 1. Cathleen Adams, a technical expert: has a Masters in Landscape Architecture, Graduate Certification in Historic Preservation and Regionalism from University of New Mexico, and a Bachelors in Landscape Architecture from MSU; also, currently participates as a Certified Master Rain Gardener (first year's RG Steward work was at TNC and continues, with this project), and recently Cathleen received certification as a Michigan Conservation Steward. 2. Sandra Breck, a Certified Master Rain Gardener, with four into five years of volunteering as a Steward at TNC, and a Certified Organic Composter. 3. Mary Schaefer-Manthey, a teacher at Thurston School, a valued educational bridge between TNC and Thurston Elementary: she coordinates TNC Project opportunities which involve the students.

6. Materials and Labor

Materials: 1. Sod cutter [rental] 2. Compost 3. Flags and strings [demarcation/ grid-out of planting areas to follow design zones] 4. New native plants 5. Mulch 6. Water 7. Extra sod, from the existing site, set aside to help reinforce the berm as needed.

Labor: I. Cut sod from the proposed RG site & remove to relocate on-site. II. Sod strips used to create the elevated berm/pathway [runs NE to SW, around this Proposed RG]. III. Compost application. IV. Demarcation of zones for plantings V. Plantings put in VI. Watering, and VII. ongoing Stewardship of this new RG site. **Labor to be completed by volunteers:** RG Steward Principals, extended recruits of RG & Conservation Stewards, TNC Committee volunteers, TNC enthusiasts, and neighborhood families.

Budget and Volunteer Time:

See attached native plants estimate. [see addendum 3: from **Wildtype**].

Estimates for funds for sod cutter, compost, mulch and delivery costs. [see addendum 4: estimates].

Estimate of volunteer time to create this proposed new TNC Rain Garden: 1. Sod removal: 2-4 people, approximately 7 hours. 2. Shaping RG elevations with compost, leveling, and demarcation: 2-4 people, roughly 4 hours. 3. Creating the path/berm from sod: 2-4 people, 4 hours. 4. Planting out: 2-4 people, 4 hours. Thus, weather depending, this work can be completed over approximately four work days.

Cathleen provided many site design hours, illuminated in addendums 1-4. Cathleen and Sandra will spend 10-30 hours laying out the site [weather and volunteer dependent], & ongoing will spend at least 2 hours/week maintaining both the new extension and the existing nearby Butterfly and Hummingbird Rain Gardens for 2020, spring through wintering over. TNC Stewards will monitor and maintain this new site and surroundings for three years, with maintenance as needed: mindful care-tending is important particularly in these initial years, while Rain Garden perennials establish.

7. Signature of Thurston Nature Center Chair, Elizabeth Morehead:

Cathleen Adams, April 14, 2020:

Cathleen Adams

addendum 1: site location



Thurston Nature Center is located in Ann Arbor MI 48105, North of Plymouth Rd, East of Nixon Rd, West of Green Rd: essentially bound by Thurston Elementary to the South and Clague Middle School to the NW.



↑ Historic Plant Cover

Background

- 18 acres total, 7 acre pond.
- Pond formed with berm to make retention pond when area was built up in 1960's. Headwaters of Miller Creek.
- MI-DNR dedicated TNC as a Conservation Education Reserve in 1968.



addendum 2a-d: plant list & site design

2.a : plant list :

RAIN GARDEN PLANT LIST for Thurston Nature Center TNC. source: Wildtype native plants • c. adams 2020

abrv.	Scientific Name	Common Name	Bloom Color	Height	Blooms	Plant Space	Comments	Zone
AC	<i>Asarum canadense</i>	Wild Ginger	maroon	1'	May	12" o.c.	nice gc, pt sun	B/C : moist/dry
AM	<i>Anemone multifida</i>	Red Anemone	red	1'	June	12" o.c.	nice border	B/C : moist/dry
BL	<i>Baptisia lactea</i>	Cream Wild Indigo	cream	3'-5'	June-July	24" o.c.	attractive	B/C : moist/dry
CB	<i>Chelone glabra</i>	Turtlehead	white	2'-5'	July-Sept	18" o.c.	nice, pt sun	A/B: wet, moist
CS	<i>Carex spicata</i>	Common Fox Sedge	green	2'	May	18" o.c.	nice in mass	A/B: wet, moist
CV	<i>Carex vulpinoidea</i>	Brown Fox Sedge	green, tan	2-3'	July-Sept	18" o.c.	nice in mass	A-C : wet,m,dry
EP	<i>Echinacea pallida</i>	Pale Purple Cnflwr	pale purple	3'-4'	June-Aug	18" o.c.	nice in mass	B/C : moist/dry
ES	<i>Eragrostis spectabilis</i>	Purple Love Grass	green	1'-2'	July-Sept	18" o.c.	FC/ mass	B/C : moist/dry
GF	<i>Geum fragarioides</i>	Barren Strawberry	yellow	.5'-1'	April-May	12" o.c.	ground C	B/C : moist/dry
GM	<i>Geranium maculatum</i>	Wild Geranium	pink	1'-2'	May-June	12" o.c.	ground C	B/C : moist/dry
GT	<i>Geum triflorum</i>	Prairie Smoke	pink	.5'-1'	May-June	12" o.c.	ground C	B/C : moist/dry
IV	<i>Iris virginica</i>	S. Blue Flag Iris	blue	2-3'	May-July	24" o.c.	nice texture	A/B: wet, moist
LC	<i>Lobelia Cardinalis</i>	Cardinal Flower/Red L	red	2'-4'	July-Aug	18" o.c.	nice texture	A/B: wet, moist
LS	<i>Liatris scariosa</i>	Northern Blazing Star	purple/pink	3'-4'	July	10" o.c.	nice in mass	B/C : moist/dry
LSI	<i>Lobelia siphilitica</i>	Blue Lobelia	blue-purple	1'-3'	July-Sept	12" o.c.	nice texture	A/B: wet, moist
OC	<i>Onoclea sensibilis</i>	Sensitive Fern	green	1'-2'	n/a	12" o.c.	nice texture	A/B: wet, moist
PV	<i>Pycnanthemum virginianum</i>	Mountain-Mint	white	2'-4'	July-Sept	12" o.c.	nice texture	B/C : moist/dry
RH	<i>Ranunculus hispidus</i>	Swamp Buttercup	yellow	1'-2'	May	12" o.c.	attractive	A/B: wet, moist
RHU	<i>Ruellia humilis</i>	Wild Petunia	lt lavender	1'-2'	June-Aug	12" o.c.	attractive	B/C : moist/dry
VH	<i>Verbena hastata</i>	Blue Vervain	purple	3'-5'	June-Aug	12" o.c.	attractive	B/C : moist/dry

2.b plants

RAIN GARDEN PLANT LIST zone A & B : wet & moist

zone A : wet

Common Fox Sedge
Carex spicata

Swamp Buttercup
Ranunculus hispidus

Blue Flag Iris
Iris virginica

Sensitive Fern
Onoclea sensibilis

White Turtlehead
Cleome glabra

Blue Vervain
Verbena hastata

Cardinal Flower
Lobelia Cardinalis
zone A & B.
wet & moist

Northern Blazing Star
Liatris scariosa

Brown Fox Sedge
Carex vulpinoidea
zones A, B & C

Mountain-Mint
Pycnanthemum virginianum

Blue Lobelia
Lobelia siphilitica

2.b plants

Rain Garden Plants zones B & C; moist & dry

Prairie Smoke



Geum triflorum

Wild Ginger



Asarum canadense

Wild Geranium



Geranium maculatum

Red Anemone



Anemone multifida

Pale Purple Coneflower



Echinacea pallida

Wild Petunia



Ruellia humilis

**particularly C; dry
Cream Wild Indigo**



Baptisia lactea

Barren Strawberry



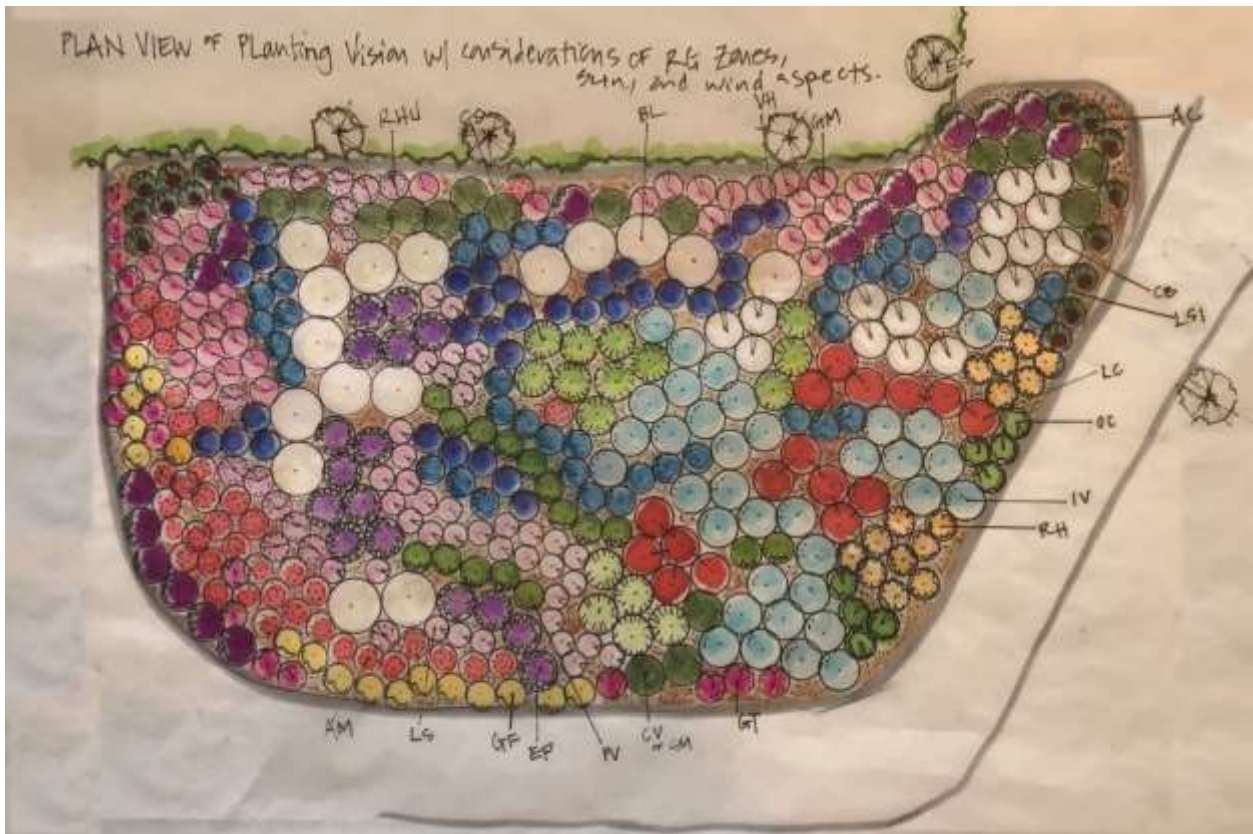
Geum fragnoides

Purple Love Grass



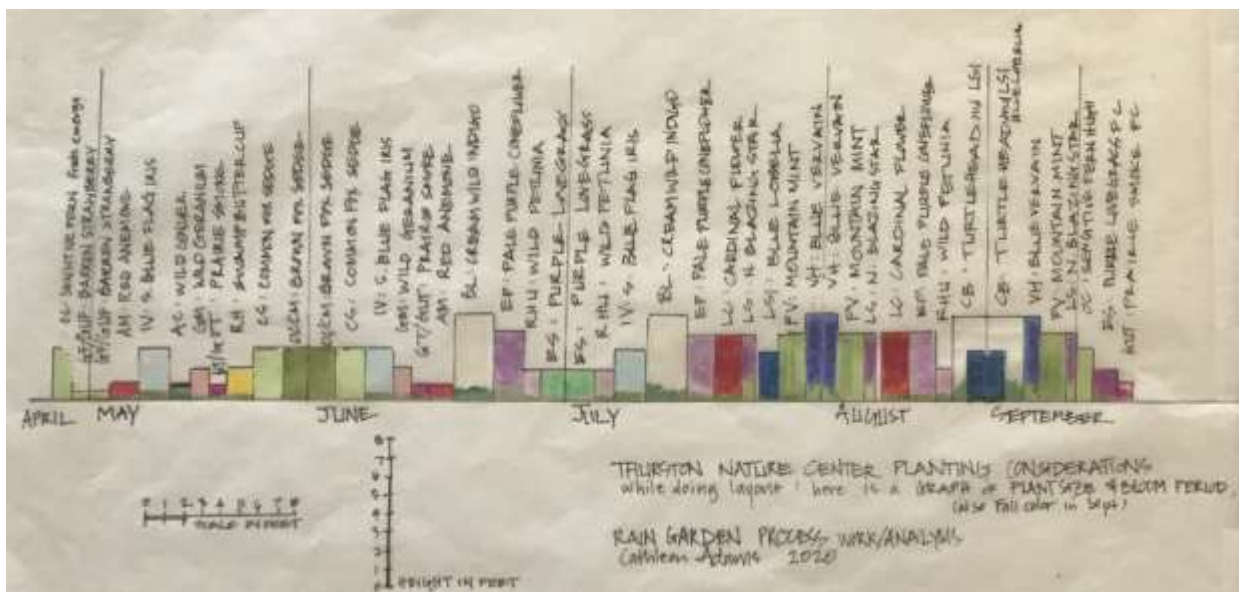
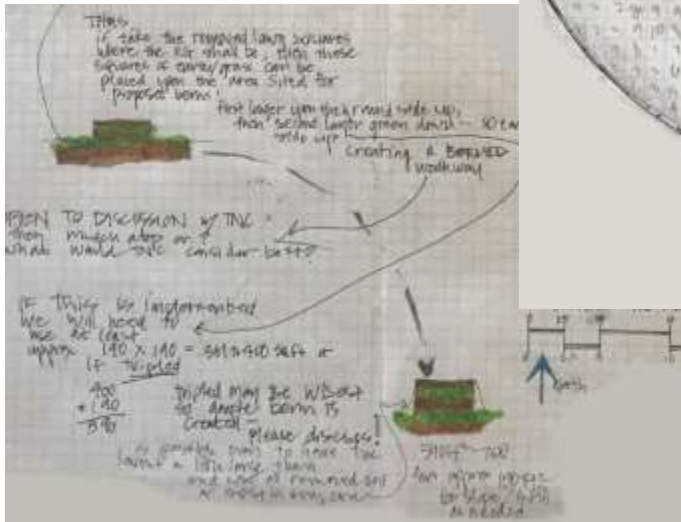
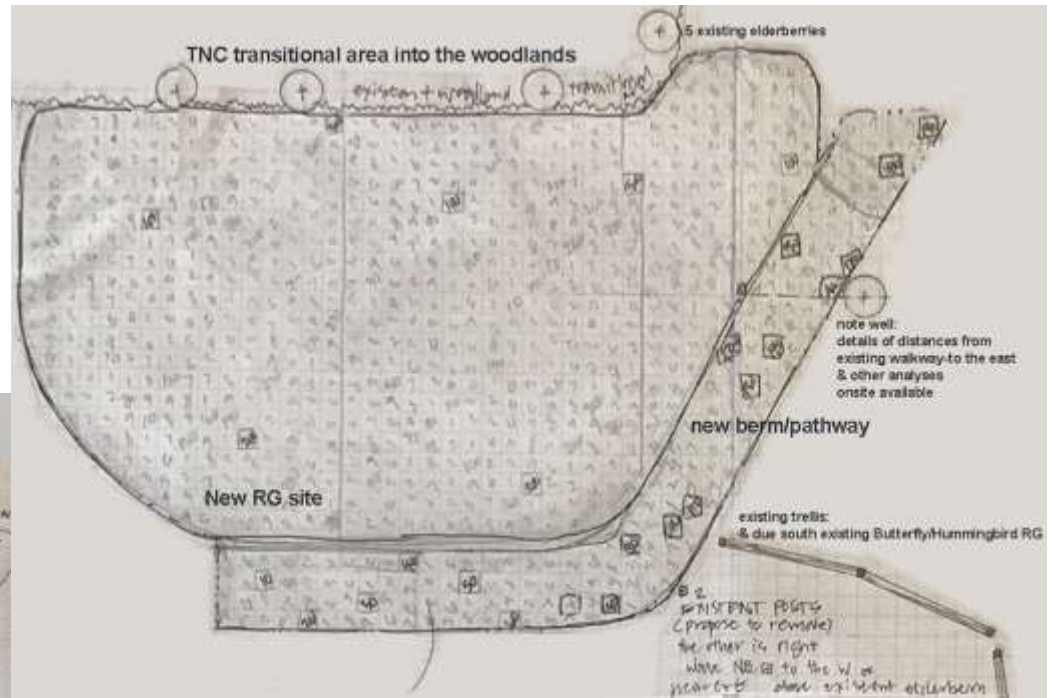
Ergrostis spectabilis

2.c site design



addendum 2a-d: plant list & site design

2.d site design details



addendum 3: plant estimate from WILDTYPE

wildtype native plants • ecological services

Estimate

900 N Every Rd. Mason, MI 48854
Ph: (517) 244-1140 wildtypeplants.com

Sq Ft: 20.0 Estimate # FM6345

Bill To:

Thurston PTO/ Thurston Nature Center 2300 Prairie Street Ann Arbor MI 48105	
Project Name	Cathleen Adams
Flag	Brown Code

This estimate is subject to the following restrictions:

- * A 25% non-refundable deposit is required to assure availability and price. Or a purchase order.
- * Delivery is not included.
- * Quoted price is guaranteed for 90 days from the day of the estimate.
- * This is an estimate NOT an order. All plants subject to availability when order is confirmed.

SALESPRSN	PO NO.	ORIG DATE	PICKUP DATE	INVOICE DATE	TERMS	PG.
Bill		2/14/20	5/26/20			1
DESCRIPTION				QTY	PRICE	EXTENDED
REVISED 2/21/20						
Anemone multifida - Red Anemone - 38-cell plug flat				1	60.80	\$60.80
Asarum canadense - Wild Ginger - 32-tray 2 pot				.5	94.40	\$47.20
Baptisia lactea (Baptisia alba) - White Wild Indigo - 32-tray 2 pot				.5	94.40	\$47.20
Chelone glabra - Turtlehead - 32-tray 2 pot				.5	43.20	\$21.60
Echinacea pallida - Pale Purple Coneflower - NOT A MI GENOTYPE - 32-tray 2 pot				.5	43.20	\$21.60
Geranium maculatum - Wild Geranium - 38-cell plug flat				1	76.00	\$76.00
Geum fragarioides - Barren-strawberry - 32-tray 2 pot				.5	94.40	\$47.20
Geum triflorum - Prairie Smoke - 32-tray 2 pot				.5	94.40	\$47.20
Iris virginica - Southern Blue Flag - 38-cell plug flat				1	49.40	\$49.40
Liatris scariosa - Northern Blazing Star - 38-cell plug flat				1	49.40	\$49.40
Lobelia cardinalis - Cardinal Flower - 32-tray 2 pot				.5	43.20	\$21.60
Lobelia siphilitica - Blue Lobelia - 38-cell plug flat				1	49.40	\$49.40
Pycnanthemum virginianum - Mountain-Mint - 32-tray 2 pot				.5	43.20	\$21.60
Ranunculus hispidus - Swamp Buttercup - 38-cell plug flat				.5	49.40	\$24.70
Ruellia humilis - Wild Petunia - 32-tray 2 pot				.5	73.60	\$36.80
Verbena hastata - Blue Vervain - 38-cell plug flat				1	43.70	\$43.70
Onoclea sensibilis - Sensitive Fern - gallon				8	10.25	\$82.00
Carex stipata - Sedge - 32-tray 2 pot				.5	43.20	\$21.60
Carex vulpinoidea - Fox Sedge - 32-tray 2 pot				.5	43.20	\$21.60
Eragrostis spectabilis - Purple Love Grass - 32-tray 2 pot				.5	43.20	\$21.60
25% Deposit Requested to confirm \$208.33					0.00	\$0.00
Delivery - billed at \$85/ hour portal to portal - 2.5 hour delivery				2.5	85.00	\$212.50

SALESPRSN	PO NO.	ORIG DATE	PICKUP DATE	INVOICE DATE	TERMS	PG.
Bill		2/14/20	5/26/20			2
DESCRIPTION				QTY	PRICE	EXTENDED
					SALE AMT.	\$1,024.70
					SALES TAX	
					INVOICE TOTAL	\$1,024.70
					DEPOSIT	
					PAYMENT/S	
					BALANCE	\$1,024.70

**addendum 4: estimates
materials and delivery costs**

Estimates for funds for 1). sod cutter, 2). compost, mulch, 3). plants and 4). delivery costs.

1). sod cutter: estimates from Carpenter Brothers Hardware/rental

2753 Plymouth Rd, Ann Arbor MI 48105 734-663-2111

minimum rental is four hours at \$70, \$80 for four to eight hours, \$120 for 24 hours. This equipment is gas powered- gas cost estimate at \$5, so this rental total putting at = \$125.00

With the site being 710 sq. feet, sod being wet, so it likely being heavy, and if done during this COVID distancing period: wise anticipation it will take the 24-hr. rental, for at most two-people working at safe distancing- and hopefully we can rotate two people groups with volunteers. From the description of the berm/pathway building from these sod strips- this project of removal, plopping and wheel-barrowing over to place to create berm- anticipate be more than eight hours- thus, estimate the \$125. This equipment is gas powered- gas cost estimate at \$5, so this rental total amount at = \$125.00, * sales tax not included- hope to be exempt.

2). compost, mulch: there seems to be compost available on TNC site.

Cost estimate for mulch: The site being 710 sq. ft = approximately 3.5 cubic yard if covering .1 inch, pricing for mulch at Lowe's for pick up order, Natural Cedar Mulch in 3 cu. Ft bags for \$4.98 each. This Rain Garden mulch use area is 710 sq feet, at 1" deep, is 59.17 cu. feet, or approximately 60 cu. feet; thus, to cover this Rain Garden, using 20 bags, \$4.98 x 20 = \$99.60. *

3). plants and 4). delivery costs. estimates from WILDTYPE as seen in addendum 4 = their total for the plants and delivery is shown as \$1,024.70.

THUS, the GRAND TOTAL being asked for in this grant application is the adding up and approximating of all these addendum 4 estimates = $\$125 + 99.60 + \$1,024.70 = 1,249.53$, thus, \$1,200.00 is requested.

All gratitude for your time and consideration of this application.