

PROJECT TITLE: Experiential Environmental Education for Urban Youth
PROJECT MANAGER: Mary L. Karius
AFFILIATION: Hennepin County Environmental Services
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FUNDING SOURCE: Environment and Natural Resources Trust Fund
LEGAL CITATION: M.L. 2011, First Special Session, Chp. 2, Art.3, Sec. 2, Subd. 08c

APPROPRIATION AMOUNT: \$200,000.00

Overall Project Outcome and Results

In 2011, Hennepin County Environmental Services was awarded \$200,000 from the Environment and Natural Resources Trust Fund for the *UrbanWatch* program. The goal of this program was to implement outdoor experiential environmental education in Minneapolis schools and communities that have traditionally been lacking in environmental programs. *UrbanWatch* brought a collective of proven curricula, activities, and tools to empower teachers and at-risk students to explore, monitor, and protect environmental resources.

The county partnered with five community organizations - Beez Kneez, Environmental Justice Advocates of Minnesota, Minnesota Internship Center High School, Phyllis Wheatley Community Center, and the Renewables Research and Policy Institute - to provide hands-on outdoor environmental activities to youth living in the near north side of Minneapolis.

The county partnered with the University of Minnesota Extension and the Beez Kneez to host the "Schoolyard Garden Sustainability and Support Teacher Workshop" held in March 2014. Working in conjunction with STEM coordinators and the Farm to School coordinator from Minneapolis Public Schools, the workshop provided curriculum instruction and educational resources to educators on how to maximize the potential of schoolyard gardens within the classroom.

The program increased youth's knowledge and skills regarding ecology, agriculture, water resources, and biological diversity in their own neighborhoods. These experiences equipped students and community members with the information necessary for healthier communities, a greater sense of stewardship, and increased appreciation for their natural world.

Project Results Use and Dissemination

- More than five hundred and fifty youth have been directly engaged.
- More than twenty organizations, schools, businesses, and faith communities partnered in this program.
- Eight gardens established
- Two beehives established
- Two public art installations completed
- One toolshed built using compressed earth block construction.
- Two aquaponics labs established in schools

- 7 Master gardeners paired with schools and their gardens
- Pollinator curriculum written and published for grades K-12
- 25 unique classes and outings implemented for youth
- More than 10 newsletters distributed highlighting program successes
- More than 30 presentations to students, staff, and community members developed and given.
- Resources for 30 teachers/schools established for garden classrooms
- 14 Teachers attended garden workshop
- 465 students reached through workshop, 3140-7340 youth hours spent in gardens spring 2014



Environment and Natural Resources Trust Fund (ENRTF) M.L. 2011 Work Plan

Date of Status Update: October 9, 2014
Date of Next Status Update: Final
Date of Work Plan Approval: 9/27/2011
Project Completion Date: 8/15/2014 **Is this an amendment request?** No

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Project Manager: Mary Karius

Affiliation: Hennepin County - Environmental Services

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Web Address: <http://www.hennepin.us>

Location:

Counties Impacted: Hennepin

Ecological Section Impacted: Minnesota and Northeast Iowa Morainal (222M)

Total ENRTF Project Budget:	ENRTF Appropriation \$:	\$200,000.00
	<u>Amount Spent \$:</u>	<u>\$188,351.92</u>
	Balance \$:	\$11,648.08

Legal Citation: M.L. 2011, First Special Session, Chp. 2, Art.3, Sec. 2, Subd. 08c

Appropriation Language:

\$200,000 the first year is from the trust fund to the commissioner of natural resources for an agreement with Hennepin County in cooperation with community partners to initiate new environmental education programs targeting inner-city youth that provide hands-on, experiential outdoor learning opportunities. This appropriation is available until June 30, 2014, by which time the project must be completed and final products delivered.

I. PROJECT TITLE: Experiential Environmental Education for Urban Youth.

II. PROJECT SUMMARY: Hennepin County will develop a new program called UrbanWatch that will focus on teachers and students in the urban core of Minneapolis, to implement and support environmental education in schools and communities that have traditionally been lacking in environmental programs. Hennepin County will equip students in North Minneapolis with the information necessary for healthier communities, a greater sense of stewardship, and increased appreciation for their natural world.

This program will focus in two areas, training teachers in existing environmental education curriculum and supporting outdoor educational activities as a hands-on experience. UrbanWatch will bring a collective of proven curricula and tools to empower teachers and at-risk students to explore, monitor, enhance, and protect environmental resources. It will increase their knowledge and skills regarding ecology, agriculture, water resources, and biological diversity in their own neighborhoods. These experiences will equip students and community members with the information necessary for healthier communities, a greater sense of stewardship, and increased appreciation for their natural world.

Through a grant program, Hennepin County will assist schools, community groups, nonprofit organizations, and churches to apply for funds to implement a new outdoor educational project. This project may include gardening, biological monitoring, field research and field trips. Hennepin County will administer all funds and work directly with community partners to insure program success. Focus of this program is the youth of North Minneapolis.

III. PROJECT STATUS UPDATES:

Project Status as of January 2012:

In October of 2011 Hennepin County released a Request For Proposals (attached) to solicit applications from organizations in North Minneapolis to work directly with youth in environmental education and outreach. Eighteen proposals were received. A team of reviewers was established in December 2011, they are: Mary Karius, HCES; Bill English, private citizen; Julie Nielson, North Point Health and Wellness Center; Adel Mosley, Pillsbury Communities; Alisa Reckinger, HCES; Ellen Sones, HCES; Betsy Wieland, UM Extension; April Rust, MN DNR; Anita Urvina, HCES. The committee met February 2, 2012 and developed a list of 5 projects recommended for funding. The recommendations move on to a committee of Mary Karius, Environmentalist; Joel Settles, Supervising Environmentalist; Rosemary Lavin, Assistant Director; Carl Michaud, Director. The Department Director will consult with Richard Johnson, County Administrator.

Recruitment began in January for the Teacher Academy to be held in the summer of 2012. Contracts with both workshop providers are in the development stages. Specific, targeted recruitment to North Minneapolis principals and teachers is ongoing. A teacher information workshop will be held February 22 to share details with all interested in registering.

Project Status as of January 2013:

Activity 1 Teacher Academy workshops will be moved to year 2 or 2013. The Project Manager began several meetings with Minneapolis School District staff that coordinate the STEM (Science, Technology, Engineering, and Math) program, in the spring of 2012. After several conversations it became clear that there was too much competition from other organizations and summer workshops to get the turnout and participation we were hoping for. It was therefore decided to move the Teacher Academy workshops to the summer of 2013. During the fall and winter of 2012 collaboration between the County and the School District will continue. Efforts will be made to correlate the workshop material into the District annual planning. The Teacher Academy workshops will include new curriculum instruction from the University of Minnesota Extension. We currently have a written agreement from Extension Educator Susan DeBlied, who specializes in community food systems. She co-authored Schoolyard Garden 101 curriculum for schools and is now organizing a training series for it here in Minnesota. The curriculum can be found at <http://umaine.edu/hancock/programs/school-garden-101/>. Ms. DeBlied will serve as the primary instructor for the workshops. In conjunction, we are working with the Master Gardener program to partner schools with Master Gardeners to help ensure success in schoolyard gardens. Erin Rupp from the Beez Kneez LLC will serve as project coordinator for the Academy and be responsible for all recruitment, networking,

establishing relationships with external partners and working directly with Minneapolis School District. All Extension staff time will be an in-kind contribution. Project partners are currently developing workshop details, signing up network partners and recruiting pilot schools. We will build upon work completed in Activity 2 by Beez Kneez LLC of creating curriculum for K-6 by expanding that to include all grades up to 12.

AMENDMENT APPROVED by LCCMR staff January 7, 2014

Include the language “field trips” to the Grants-Equipment/Tools/Supplies row to read Grants-Equipment Field Trips /Tools/Supplies within the workplan and approved budget. This change will assist in facilitating reimbursement.

AMENDMENT APPROVED by LCCMR staff January 7, 2014

Due to staff changes and project complications with original partners (DNR and UM Extension SEE program) a change in Activity 1: Teachers Academy will be managed by staff from Beez Kneez, LLC. The workshop date has been set as January 23, 2014 and will focus on teachers and educators who have existing gardens at their school or organization. Emphasis will be placed on Department of Agriculture and University of Minnesota Extension curriculum. We are coordinating with Minneapolis Public Schools STEM program and the Nutrition Department as well as UM Master Gardener program to provide hands-on learning and support starting in January 2014 and continuing into 2014 and 2015 with intention to sustain this activity.

Project Status as of January 2014:

Activity 1 has been postponed to March due to district cancellation. The workshop will move ahead as planned. Activity 2, three of the five grantees have completed their projects and have submitted all necessary financial documentation. Staff is working closely with the Environmental Justice Advocates to reconcile their financial commitment to provide budget updates as well as program summaries. One group has outstanding receipts that are needed to complete disbursement of funds. The final reporting of program details will be a group effort to maximize effectiveness and impact.

Project Status as of June 2014:

Overall Project Outcome and Results

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IV. PROJECT ACTIVITIES AND OUTCOMES:

ACTIVITY 1: Hennepin County Teacher Academy

Description: In many north Minneapolis public schools, teachers struggle with limited resources and a lack of supplies for environmental science instruction. This Teacher Academy will provide curriculum instruction for K-12 public school teachers in water resources, ecology and agriculture. In combination with curriculum, teachers will be eligible for funds to implement projects into their classroom and/or school. The curricula that will be offered are: Project Wet and MinnAqua from the Minnesota Department of Natural Resources; Schoolyard Ecology Explorations from UM Extension. Hennepin County will rely on its successful and established relationship with many Minneapolis public schools to offer and implement these curricula. Staff assistance is available for teachers throughout grant term and is at the cost of Hennepin County.

Summary Budget Information for Activity 1:

ENRTF Budget: \$54,000.00
Amount Spent: \$42,605.97
Balance: \$11,394.03

Activity Completion Date: March 2013

Outcome	Completion Date	Budget
1. YEAR 1: Cost of 30 teachers trained in DNR and UM SEE curriculum (15 with DNR at a cost of \$218.00 per = \$3270. 15 with UM at a cost of \$557 per = \$8361); These 30 teachers will directly impact an estimated 600 students in classrooms each year. This cost includes all materials for each teacher and instructor costs.	September 1, 2012	\$11,631
2. YEAR 1: Funds to implement DNR curriculum into classroom including monitoring equipment, resource materials (\$250 per teacher)	June 30, 2014	\$3750
3. YEAR 1: Funds to implement UM Extension SEE curriculum into classroom; including gardening supplies, plant materials, tools; \$800 per school.	June 30, 2014	\$12,000
4. Hennepin County staff assists with curriculum implementation at cost of Hennepin County.	June 30, 2014	- \$0 -
5. YEAR 2: Cost of 30 teachers trained in DNR and UM SEE curriculum (15 with DNR at a cost of \$218.00 per = \$3270. 15 with UM at a cost of \$557 per = \$8361); These 30 teachers will directly impact an estimated 600 students in classrooms each year. This cost includes all materials for each teacher and instructor costs. TOTAL: \$23,262	September 1, 2013	\$11,631
6. YEAR 2: Funds to implement DNR curriculum into classroom	June 30, 2014	\$3750

including monitoring equipment, resource materials (\$250 per teacher) TOTAL: \$7,500		
7. YEAR 2: Funds to implement UM Extension SEE curriculum into classroom; including gardening supplies, plant materials, tools; \$800 per school. TOTAL: \$24,000	June 30, 2014	\$12,000
8. Hennepin County staff assists with Curriculum implementation at cost of Hennepin County	June 30, 2014	-\$0-

Activity Status as of January 2012.

Discussions began with Minnesota Department of Natural Resources (Project WET and MinnAqua) and University of Minnesota Extension (SEE) staff to develop and organize two training sessions in the summer of 2012. We are planning on holding SEE workshops for educators of K-6 in 2012 and DNR workshops for grades 7-12. In 2013, SEE workshops will be held for grades 7-12 and DNR educators of K-6. Recruitment was begun by calling all schools in North Minneapolis and sending out informational emails.

Activity Status as of June 2012:

Planning will continue in earnest during the school year of 2012 and 2013. Both the MN DNR and UM Extension staff are in agreement that summer of 2013 will be more successful with ample planning and recruitment.

Activity Status as of July 2013:

Discussions are ongoing regarding content changes and partnerships with STEM, MPLS District Nutrition Department, Farm to Home, UM Extension and Master Gardeners.

Activity Status as of January 2014:

The workshop scheduled for January 23, 2014 was postponed due to cancellation of school in the Minneapolis School District. Workshop sponsors and presenters have rescheduled the workshop for March 26, 2014. Twenty two educators are registered and fifteen more are on the waiting list. The workshop will occur at the same location, the Minneapolis Public Schools Nutrition Center and the same key partners are involved. This workshop will serve as curriculum instruction as well as a means to partner schools and teachers with mentors in the Master Gardener program from the University of Minnesota Extension. Six Master Gardeners have committed to participate and three more are showing interest. Minneapolis School District is also sending staff to attend. The STEM Curriculum Director for K-5 will be attending as well as two Indigent Education Directors.

Project Objectives and Goals (from application)

Over the last few years, schoolyard gardens have become a focus for ways to incorporate experiential education into classrooms. Goals for use of these gardens often include improving nutrition and providing urban youth with a connection to hands-on experiences involving nature. Several schools have installed gardens on their grounds but often find it difficult to properly maintain and reach the potential of gardens.

The Teacher Academy (also called Schoolyard Garden Sustainability and Support) as a part of the LCCMR project is a collaboration between Hennepin County, University of Minnesota Extension, Beez Kneez LLC and Minneapolis Public Schools. Our focus was to build school culture around the garden and establish best practices for successful garden maintenance. Partner schools in attendance are in the planning stages of a school garden (with administrative support), or have established gardens will be specifically selected for pilot sites.

We presented curriculum that will directly address how to run a successful garden. Appropriate best practices were taught and instituted with the assistance of the volunteers from the University of Minnesota Master Gardeners program. The goal is to work with teachers to promote active use of gardens to develop their competence and confidence in outdoor education and increase their use of the garden in their curriculum. Focus will be placed on how to best utilize existing space. With the completion of the training teachers worked with Master Gardeners to transition two lessons previously taught inside to be taught outside. Beez Kneez staff and Extension staff worked closely with Master Gardeners and teachers throughout Spring 2014 to successfully transition these lessons. Evaluations were developed by Extension staff and instituted throughout the project.

Table 1 : Objectives and Goals

Objective	Goal	Deliverables
Train teachers in appropriate curriculum and best management practices	Increase knowledge of 20 teachers	14 teachers attended the workshop.
Train Master Gardeners in best tools for youth instruction; partner with teachers	10 Master Gardeners trained and paired with schools/teachers	7 Master Gardener trained and paired with schools/ teachers
Work with teachers to transition lesson plans for garden application	2 lessons per teacher = 40 lessons total equating to 800-1600 youth hours spent in gardens.	465 students reached, 3140-7340 youth hours spent in gardens spring 2014. See section 2c.
Develop and implement specialized evaluations	To measure # lessons transitioned and taught; # youth reached by efforts; # hours spent within schoolyard garden	See attachment A for evaluation and results
Increase youth involvement and use of gardens	40% increase in use of schoolyard gardens	See section 2c.

Deliverables

In order to build school culture around use, we devised:

1. A way to reach teachers
2. Build their capacity and confidence in teaching outside with the goal of more students outside
3. Connect them to existing resources:
 - a. Curriculum
 - b. Twin Cities and national garden resources including Master Gardeners
 - c. Their broader school communities and each other.

1. We reached teachers. The Teacher Academy filled a need and was popular.

The Twin Cities has a vibrant urban agriculture community and a wealth of education organizations connecting youth to healthy foods and gardens, both in and out of the classroom. As such, existing resources, like Schoolyard Garden 101 and the University of Minnesota Monarch Lab support starting school gardens. We designed this workshop to meet a previously unfilled need- how to build support around school gardens once they're established. We were successful in meeting this new need.

Our original workshop date was set for January 23rd. We opened registration a few days before winter break without much advertising, and posted to the district list serves and email on January 9, after teachers were back from winter break. Within a day, 18 teachers had registered. Within three days, registration was full and the waiting list had 15 people on it. We went into January 23rd with 23 teachers registered and 20 more on the waiting list. We also received 15+ requests from support staff, parents and out of district teachers interested in attending the workshop. School was cancelled on January 23 due to extreme cold; please see troubleshooting for narrative about snow day workshop postponement and teacher participation. On our rescheduled date, we served 14 teachers.

2. We built schoolyard garden sustainability in Minneapolis Public Schools.

2a. Teachers were inspired by the workshop and transitioned their curriculum to be taught outdoors.

Of the 11 teachers who responded to our evaluation or were interviewed as part of our consulting visits, all responded that the workshop met expectations, was inspiring, and, when asked on the day of the workshop, responded that they were 'very likely' to use the content learned to confidently transition their lessons to outside.

All participants DID transition at least two lessons to be taught outside. Eleven teachers transitioned MORE THAN two lessons, with some teachers teaching outdoors every day for a few weeks, and others committing every Tuesday for the spring. From a few teachers: “The workshop helped us teach these lessons because it allowed us time to think and collaborate about the lessons and having the students work on a community garden at the school.” “I saw the connectedness of gardens, insects, community and more. I was encouraged by all the ideas of stations in the garden.”

To summarize the evaluation, all eleven participants responded yes, definitely or yes, a little bit to the following questions. We did not receive any negative answers to these.

- Are you confident in your ability to transition two lessons from your classroom to outdoors this spring?
- Did this workshop address the challenges you face in using your garden?
- Do you feel more prepared to take your students outside after the workshop?
- Do you feel better prepared to address time challenges when teaching outside after the workshop?
- Do you feel better prepared to work with large groups of students outside (25-30 students?)
- Do you feel better prepared to translate standards based lessons taught in your classroom to lessons taught in the garden?

Constructive criticism was given on resource delivery timeline. Suggestions were made on content to focus on in the future, including content covered by existing teacher workshops like Schoolyard Garden 101.

2c. This transitioned curriculum resulted in more students in the garden. The number of students reached will continue grow.

Each of the teachers we trained through the workshop transitioned two or more of their classroom lessons to be taught outdoors, in their gardens. That’s 315 students this year learning in the garden. In teacher evaluations, 10 of our 14 participant teachers taught outside for at least 10 hours this spring, for 2840 contact hours.

Teachers from 6 of the 8 schools represented (12 of 14 teachers) worked with their grade level team in the garden—meaning that 1-3 ADDITIONAL classrooms of students did outdoor work this spring. Our workshop resulted in an additional 25-75 students and 50-750 contact hours per school, a total of 150-450 students for 300-4500 contact hours above our participant teachers alone. Teachers have already demonstrated their excitement and inspiration around school gardens and teaching outside and are bringing this excitement to others in their schools.

In total, we reached 465-765 students this year, for a total of 3140-7340 contact hours outside.

With the successes participant teachers and their grade level colleagues had with students in the garden this year, and the resources we have provided for the school, teachers are inspired to connect others directly to the garden and their work. Almost all (12 of 14) of our participant teachers are working toward incorporating more of their school next year for an additional projected increase of 1-2 classrooms per school, 300-600 students and 600-1200 contact hours of student time spent outside. We reached these numbers from what we heard from teachers directly and are optimistic that the reach of our workshop will continue to increase annually.

2d. School support for gardens increased.

School and district administrative support of school gardens increased. We heard strong support from administrators at 3 of the 8 schools we worked with. We are offering school specific workshops at two of these schools next school year. We also saw administrative support for the gardens and garden work that came out of the workshop at the district level, with personal congratulations on school garden expansion at Susan B. Anthony from Superintendent Bernadeia Johnson, and ongoing collaboration with the Indian Education Department and MPS Culinary and Nutrition Services.

Administrative support went hand in hand with garden expansion. Of the 8 schools represented, 7 have expanded, replanted, or re-imagined their outdoor learning spaces post workshop. This physical expansion comes from the inspiration and support teachers had after attending the workshop, which spread to school and district administration. We see this expansion as a means to even more student contact hours in the garden.

3. Through this workshop, we built connections to foster lasting gardens.

Connecting more teachers to the garden, and building connections both within a school community and between the school and existing garden resources were critical strategies in achieving our workshop goals. We were successful in this- of the 14 teachers who attended the workshop, 11 sent evaluations, and of those 11, all of them spoke of the value of connecting with other teachers and resources like the Master Gardeners.

3a. Master gardeners were able to support teachers. We created a new way for Master Gardeners to connect with teachers.

Seven Hennepin County Master Gardeners (HCMGs) volunteers attended the workshop as participants, and were paired with participant teachers as consultants for spring 2014. HCMGs served as critical resources for many teachers, as resources for plant and garden knowledge, brainstorming support, and, in some cases, resources for how to work with students in the garden. 8 of the 11 evaluations we received mention the relationship with the Master Gardeners when answering the open-ended question: “What did you think was the most useful part of the workshop?” The relationship between teacher and HCMG proved pivotal in the expansion of school’s gardens, as seen with both Jenny Lind and Anthony Middle School. See case studies for more description.

3b. We connected teachers to Twin Cities garden resources and with each other.

As detailed above, the built in time we had in the workshop day for sharing resources and connecting with each other proved critical to our broader goals of reaching more students with outdoor and garden educational experiences. Teachers have reached out to others in their school, including their grade level team, other teachers, and administration, and built excitement and support around their garden. We offered a small extension to our workshop day to connect teachers to existing school garden organizations.

4. We will sustain the workshop.

While initial funding for this teacher workshop was just for the daylong workshop, with the positive response we’ve received from the Minneapolis Public School district and overwhelming interest from teachers outside the district, The Beez Kneez will be continuing to offer Schoolyard Garden Sustainability and Support to interested schools and districts. With Hennepin County Environmental Services support, we’ve developed a sustainability plan for this workshop, and are planning on tripling the number of teachers served by the Schoolyard Garden Sustainability and Support workshop next year.

As of May 31, 2014, workshops were scheduled with two schools in Minneapolis, and are in communication with the department of Indian Education at MPS about how to sustain our workshop in the district long term. One of our 2014-15 workshops is with Jenny Lind Elementary School, in North Minneapolis, and we will be other interested Northside schools, including Riverbend Education Center, Elizabeth Hall International Elementary, Nelly Stone Johnson Elementary, Lucy Craft Laney Community School, and Patrick Henry High School. The other is with Northrop Elementary.

As an extension, the Beez Kneez is working with MPS to establish hives at district schools. While a long conversation, we are working with the district toward beehives at schools in 2015 or 2016 summer. We are getting closer to establishing hives at Minneapolis Public Schools, and will need equipment to keep bees in safely. Beekeeping equipment builds our capacity as the Beez Kneez to be able to better serve these interested teachers and is necessary in order to keep hives in the city according to permits.

Case Studies

Northrop: Northrop Urban Environmental School, at 4315 31st Ave. South has a school garden both on school grounds and has a few plots in a community garden two blocks away. Students from at least two grades use the garden, and the principal is a large garden advocate.

After attending the workshop, 2nd and 5th grade teachers returned to Northrop and made the commitment to extended garden work. Second grade had weekly garden visits with their class (and the other 2nd grade classroom) and used the stations (see photos) to direct weekly student work outside. The fifth grade classroom developed their study of pollinators to extend to garden pollinator observations and a letter writing campaign on behalf of pollinators (extending the role of the garden into literacy and social studies.)

During school year 2014-15, we will be adapting our 1 day workshop to 4 half days and will be working with all Northrop teachers to expand their curriculum connections to the garden and everyone's overall use of the garden. The principal has strong interest in seeing the garden sustain after he leaves, and is passionate about connecting all classrooms to garden and outdoor work. Our workshops will be focused on grade level connections to outdoor garden work.

Susan B. Anthony: Susan B. Anthony Middle School at 5757 Irving Avenue has had a garden for several years- a small wildflower garden near the front door of the school, which, from teacher and administrator report, has not been used by students since almost its inception. Teacher Dan Magnuson was mobilized by our workshop. He connecting with teachers and administration in his school after the workshop and garnered support internally for a relocation and expansion of the garden suggested by his Hennepin County Master Gardener consultant. He approached a local restaurant in his neighborhood, Pizzeria Lola, and secured a donation from them for an expansion of their garden. Despite weather related delays in that pushed the garden build days till after the school year, over 10 of Dan's students showed up to help prep the soil, build raised beds, and plant their Anthony Pizza Garden. Dan is excited about connecting his students to entrepreneurship activities in marketing and selling produce to Pizzeria Lola, and other teachers in the school are looking forward to engaging their students in outdoor garden work beginning in the 2014-15 school year. Garden's website here: http://anthony.mpls.k12.mn.us/the_pizza_garden.html and a time lapse video of it's creation <https://www.youtube.com/watch?v=WTNpgPgAgYw&feature=youtu.be>

Jenny Lind Elementary School: Four of our fourteen teachers were from Jenny Lind Elementary School at 5025 Bryant Avenue in North Minneapolis. Jenny Lind didn't have a working school garden before this spring; they had strong administrative support and the budget for expanding the outdoor work that participant teachers were doing to a garden. 3 other teachers from Jenny Lind were on the waitlist for the workshop.

The four teachers who attended came with their grade level team and worked together as the early elementary cohort to plant a garden with their students in raised beds. Their Master Gardener volunteer provided critical advice. Teachers are very excited to expand this work to upper elementary and, with the resources provided through our workshop, are already connecting with their broader school community. We will be working with Jenny Lind during the second semester of the 2014-15 school year to offer a school specific version of our workshop onsite. We are working to open this workshop to other North Minneapolis schools.

Troubleshooting

The Schoolyard Garden Sustainability and Support teacher workshop was scheduled to run January 23, 2014. On January 22nd at 8pm, school was cancelled the next day due to extreme cold, which required us to postpone the workshop until March 26, 2014. Unfortunately, many registered teachers in January had scheduling conflicts in March. Additionally, in between January and March the Minneapolis Public Schools changed their online professional development registration system, limited the access our district liaison had our workshop registration and altering the waitlist such that registrants from the waitlist were not being automatically moved up as teachers with scheduling conflicts unregistered.

Despite having 23 interested and registered participants for the Jan 23 workshop, a waiting list of 20 MPS teachers and 15+ out of district requests for the workshop, the logistics of our reschedule and the registration system change meant we only had 14 teachers day of. This number is not representative of interest in the workshop or overall workshop success, rather logistical constraints symptomatic of a large district and a snow day. We provided resource lists and presentations to all teachers on the waiting list.

RESULT 2: Growing Futures

Description: The Growing Futures project will focus resources on students in North Minneapolis by providing opportunities to plan, develop, and implement outdoor activities in their communities. Through Growing Futures, students and community residents will experience the concepts of environmental science, community participation, business, math and health in a hands-on environment. Hennepin County will initiate a grant program for organizations in North Minneapolis to apply for resources to support and implement environmental programs. Hennepin County staff has developed a Request For Proposals (see Attachment) to be distributed to

schools, community organizations, nonprofits and church groups throughout North Minneapolis. Hennepin staff will assist all eligible groups in applying for these funds. We will be asking for awards up to \$25,000 per organization but expect a mixture of applications from \$1,000 to \$25,000 per organization. It is expected that up to 50 organizations will apply and between 6 and 20 grants will be made. All grants will be on a reimbursement basis. Hennepin County staff from Environmental Services, Human Services and Public Health as well as staff from UM Extension and a private citizen will serve on the award committee to determine grant disbursement. Hennepin County will work with all applicants who chose to apply for this funding. All proposals submitted will be public information and the award committee will be cleared of any conflict of interest.

Summary Budget Information for Activity 2:

ENRTF Budget: \$146,000.00
Amount Spent: \$ 145,745.95
Balance: \$254.05

Activity Completion Date: March 2013

Outcome	Completion Date	Budget
1. Distribute RFP, review applications, awards announced	January 2012	-\$0-
2. Contracts established, work plans reviewed and approved	March 2012	-\$0-
3. Between 6 and 20 grants will be awarded through an RFP; work begins on all grant projects; technical assistance available.	March 2014	\$144,517.00
4. Final reports and products completed	June 2014	\$143,811.86

Activity Status as of January 2012.

Proposals were reviewed and funding recommendations sent to Department of Environmental Services Administration. Pending review of County Administration and County Board members successful grantees will be notified.

Activity Status as of June 2012:

Five groups were chosen by the panel for funding. The organizations are:
 Beez Kneez - \$17,000
 Environmental Justice Advocates of Minnesota - \$49,917
 Minnesota Internship Center High School - \$16,600
 Phyllis Wheatley Community Center - \$45,000
 The Renewables Research and Policy Institute - \$16,000

60% of each award was made available up front to all grantees upon completion of a satisfactory workplan and budget. 20% of the grant will be made available at the half-way point of the project and the remaining 20% at the conclusion of the project with a satisfactory final report. As of July 24, 2012 Hennepin County has not submitted receipts for reimbursement.

Project partners have been designated technical experts from Hennepin County Environmental Services to assist them with landscape design, installation and maintenance; garden design and installation; aquaponics project design and installation. Bi-monthly meetings are in place for all partners and the Project Manager to promote collaboration and project success.

Group Summaries as of July 24, 2012

Beez Kneez

We've established two hives with McKinley CSA which are doing great. Dana's held 4 sessions of the Flower Team, a group that started out with 5 youth from McKinley neighborhood that has grown by about 4 kids a week. Last bee class we had 12. They're ages 8-13, I think. We've held two beekeeping classes with them so far, one on the basics of beekeeping, honeybee biology and why we keep bees the way we do, and one on pollination, and why flowers want to attract bees and other pollinators. Both classes included time in suits doing work inside our two hives; I've attached some pictures (with more coming.) We also built some hive bodies, and are working

on a mural for the bee fence. The kids were pretty excited to be in the hives, and have some plans for choreographed bee dances in bee suits and will be tabling with us at Mill City market in August (date to come) to talk more about their program and bees. One of the best quotes, by a 4th grader (I think) when in a bee suit holding a frame of bees, when asked how he was, "I'm okay. No, I'm great! I think I was made to be this environment! "Dana has done a lot of recruiting for the Flower Team but was most successful after the first bee class and the students started recruiting others.

Environmental Justice Advocates of Minnesota

We started our food module in June focusing on sustainable agriculture with an emphasis on biodiversity, soil health, and the importance of soil organic matter in reducing and mitigating impacts of climate change. We've had 12-13 participants consistently. They meet Tuesdays and Thursdays. Most of our work to date has occurred in the Black Storytellers community garden on 1600 Plymouth Ave N. Key activities have included: planting seed and transplants, garden maintenance, compost making, research and selection of native plants to promote attract beneficial insects and pollinators, and journaling. Youth have participated in a number of field trips including: Chalchuitlique Youth Environmental Summit, Science Museum exhibit "Our Changing World", 10-acre farm in Webster, MN (being managed by North Minneapolis Hmong and African American growers, and Outback Nursery). Next week participants will be planting transplants in the Black Storytellers community garden and starting native plants that will be used in other projects. They will explore the soil foodweb and learn how to make aerobic compost tea. They will also begin food and nutrition class focused on processing and preparing traditional, culturally important foods.

Minnesota Internship Center High School

Due to site issues once the school lost its primary location, the project is undergoing alterations. YEA Corps will be taking the lead in the project while maintaining focus on the MNIC audience. Zachary Robinson with YEA will be leading the project and provided an update: I met with Mike Tuma, and confirmed that YEA will now be the project Manager. Mike will still be involved on the project. We are working from scratch to develop the project that is the right fit for Hennepin County/the grant mandate, and also the right fit for MNIC/Unity. The Chair of our Board of Directors - Tammie Follett is getting back to me with a date to meet at the end of July/early August as we discussed at our meeting at Unity on 6/20. Currently, I have engaged our intern team to co-design and conceptualize the project along with YEA operations team of experts. Our interns are a mix of college grads and undergrads from Macalester, St. Thomas, the U of M, St. Mary's, and one from Harvard. We are looking at a sustainable production model involving aquaponics and mushroom growing, to launch with an integration phase involving the students in the fall.

Phyllis Wheatley Community Center

- We completed our spring evening Go Green (introductory environmental) course with 4 consistent participants. The class was 8 weeks and the students met for 1.5 hours twice/week.
- We also completed a spring evening Active Chefs (introductory cooking, nutrition, fitness and garden) course with 12 consistent participants. The class was 8 weeks and the students met for 1.4 hours twice/week.
- Both Heritage Park and Phyllis Wheatley designed and planted two neighborhood Youth Community Gardens. We are working with Master Gardeners, maintaining the garden over the summer, and using the produce to teach cooking and nutrition lessons. We have also installed rain barrels at both sites.
- We completed our spring evening Teen Earth Corps (teen introductory environmental and career prep) course with 10 participants and 4 of them qualified for and were awarded the \$50 stipends.
- We hired two neighborhood teens from our Teen Earth Corps to be our year-long assistants.
- Our Environmental Explorer's Summer program began June 25th and runs Monday-Friday from 12-4pm until Aug. 17th. We have 4 content specialists teaching (Environmental Science, Green Careers and Entrepreneurship, Eco-art, and Active Chefs) daily. We have 40 K-3rd students registered at Heritage Park and 36 4-7th grade students registered at Phyllis Wheatley.
- Both Heritage Park and Phyllis Wheatley have 5 additional StepUp teens each from the northside that are working for our Environmental Explorer's program this summer.
- We will be holding an Environmental STEM Family Fair in partnership with the workforce center for parents and summer participants from 5-7pm on July 19th. This will be our first of 5 Parent Engagement events.

Our budget has been finalized. We were awarded an additional \$10,000 from Sheltering Arms for our summer program, we did not end up applying for money from the Carolyn Foundation because a different PWCC program was, and McKnight/United Way is not offering transportation money this summer.

Renewables and Research Policy Institute

North High School after school learning program - AQUASOL system. The project has as its primary stakeholders; the Minnesota Public Schools (MPS), North High School Community Education (NHSCE), the Renewables Research & Policy Institute (RRPI), Hennepin County Environmental services, Eureka recycling (RE subprogram support). Additional support is provided by the state of Minnesota, Hennepin County, Minnesota (Henn Co), Minnesota Clean Energy Resource Teams (MN-Cert) with peripheral support from RRPI engineering and the Minnesota Horticultural Society.

The first phase of the program provided for the cultivation of the inner courtyard beds totaling approximately 1125 square feet (sq. ft.). Two smaller beds have been sterilized in preparation for fall as art/flower beds. Another 225 sq ft presently contains perennial flower beds that will be maintained. Of the total 1400 sq ft, 225 sq ft bed is dedicated to the early childhood kids. Although the courtyard planting project of spring – fall of 2011 was a huge success and admiration for the entire school body, the little children of the Teen Age Pregnancy Prevention Program (TAPPP) showed extreme interest in gardens. This year, championed by their caregivers and with RRPI consultative support the bed is thriving. It bears the greatest variety of vegetables (so there's maximum) exposure at this early age. The TAPPP program bed was propagated late fall as there is no early childhood (EC) programming during summer break. Summer maintenance of the straw bedded garden, an anticipation of EC fall utility, is by the school nurse, the older Step-Up Youth program and RRPI assistants. The summer Step-Up program kids will subsequently yield, August 5th, to the very welcome youth employees (two or more employment slots) from Emerge organization, anticipated Sweetie-Pie interface as well as ongoing RRPI management.

Technical aspects of the design and programming (modeling) for the indoor aquaponics laboratory sub-project are complete. Completion of construction will be by September 5th, 2012. The lab will run dry equipment test runs through the first two weeks of October while simultaneously conditioning the system's water. Plants and animals will be inserted by the kids latest January 2013. Winter semester is the intended target date for the initial introduction of the Aquasol to the general population of NHS Students. Presently, RRPI personnel is commencing with the cleaning and debugging of the room. Painting is also being considered for the facility. Although a 110 gallon capacity system is budgeted for the sub-system RRPI will append its resources to bring the total flow volume to 200 fluid gallons. Outdoor watering has been extremely challenging; the warmest June in 30+ years. The heat also has modified the Renewables Research and Policy Institute's methodology. We have reduced the projected outdoor children participation/programming time from extensive summer exposure to longer outdoor times in the fall months.

Activity Status as of July 2013:

Beez Kneez LLC

Total Award: \$17,000

Amount distributed as of July 1, 2013: \$13,305.95

Projected end date: April 30, 2014

Narrative update:

The Beez Kneez and McKinley CSA taught together this spring at Elizabeth Hall Elementary. We worked with 3 classes of 2nd graders, talking about bees, pollination and our food system. Of the 60+ students we worked with 74% have an increased knowledge of bees and pollination after our classes, as determined by pre and post-tests. One reason that this number isn't higher is that we were unable, due to unforeseen circumstances, to have our 2nd visit with the 2nd graders be a field trip to McKinley and our beehives. We instead brought an

observation hive to their school, and while we did get to see a working colony, the immersive experience of being in a bee suit working a hive was lost.

We have started our summer programming with the McKinley Flower Team and have 9 returning youth from last summer participating, with about 11-15 total youth (number varies week to week). We started on 6/27. Programming is similar to last year and is building to accommodate the large number of returning youth with experience beekeeping. These youth are taking more of a leadership role in the hives and we'll be doing more advanced beekeeping work with them this year.

We will be working with the youth 5 more times (including the Pollinator party tomorrow) and will be bringing them to the Beez Kneez honey house to extract some honey from our hives. They will also be spokespeople for the Beez Kneez at the 3rd annual Pollinator Party tomorrow, July 25.

One of our most engaged students this year is a younger sibling of a returning student. Her father called Dana, the McKinley coordinator, the morning of our first class in the hive to ask if Kiera was old enough to come this year. Dana said no, not yet, and her father said: 'well, Kiera woke me up this morning to tell me that today was bee class.' Dana said she could come. She had pretty amazing questions and observations.

Environmental Justice Advocates of Minnesota

Total Award: \$49,917.00

Amount distributed as of July 1, 2013: \$49,917.00

Projected end date: September 2013

Narrative update: The Executive Director Michael Neumann left EJAM in February. I am currently working with Louis Alemayehu to produce an update and detail future work. UPDATE: as of December 19, 2013 I am working directly with the EJAM Board on project status and all budget matters. Currently there is no staff at EJAM to complete this work.

Minnesota Internship Center School

Total Award: \$16,600

Amount distributed as of July 1, 2013: \$13,280.00

Projected end date: April 30, 2014

Narrative update pdf: MNIC_YEA (see attached pdf)

Phyllis Wheatley Community Center

Total Award: \$45,000.00

Amount distributed as of July 1, 2013: \$36,000.00

Projected end date: July 1, 2013

Narrative update:

Environmental Explorer's

120 unduplicated youth (K-12th grade)

150 unduplicated parents/community members attended environmental explorer's events.

37 Volunteers. 1269 Volunteer Hours.

10 Step-Up teens and 2 Teen Assistants employees for summer program

2012-2013 Environmental Classes

- Go Green Intro Class- 8 Week environmental education class for 4-8th grade youth. 4/30-6/21
- Active Chefs Intro Class- 8 Week gardening introduction class for 4-8th grade youth. 4/30-6/21
- TEC (Teen Earth Corps) – 6 Week environmental ed. and career prep class for teens. Two teens who completed the class were hired for the summer. 5/2-6/6
- Environmental Explorers Summer Program- 8 Week multidisciplinary summer program for K-8th youth focusing on environmental science, eco-art, green careers and entrepreneurship, active chefs (gardening/nutrition), and weekly field trips. 6/25-8/17

- Environmental STEM Fair- Family engagement night for families of the summer program with break-out sessions and environmental agencies from around the Twin Cities. 7/19
- Teen Outdoor Day trip- Teen summer appreciation and outdoor day. 8/15
- Final Summer Celebration- Garden Harvest and youth presentations on the summer. 8/17
- Family Outdoor Adventure- K-3 youth and parents' outdoor field trip. 8/18
- Overnight Environmental Adventure- 4-8th grade youth went camping in Two Harbors, MN and were educated and guided by a Environmental Learning Center Naturalist. 8/18-8/19
- State Fair Presentations- Youth presented self-identified environmental projects to 4-H judges at the state fair. 9/1
- Go Green Family Edition- 5 Week Environmental Education class for parents and families with break-out sessions on Our Natural World, Green Cleaners, Preserving Fresh Produce, Future Careers, and Re-Use-Re-Art. 9/19-10/24
- CSI (Community Science Investigation) – 10 Week student lead class for 4th-8th graders about identifying and researching environmental issues in the neighborhood. 9/24-12/6
- Active Chefs- 10 week in-depth cooking class utilizing produce and learning about preserving from the garden for 4th-8th graders. 9/24-12/6
- Driven to Discover Birding Club- 10 week class for 4th- 8th grade girls where youth are citizen scientist utilizing scientific inquiry to study birds in the neighborhood. 9/24-12/6
- Fall Family Celebration- Garden Harvest and youth presentations from fall classes. 12/6
- Driven to Discover Birding Presentation- The Birding Club presented their projects at the University of Minnesota's insect fair. 12/7-12/8
- Neighborhood Eco-Art Club- 10 week student lead class for 4th-8th graders about a community service public art piece showcasing a neighborhood environmental issue 1/26-4/22
- Eco Graphic Design- 10 week student lead class for 4th-8th graders about a community service public poster showcasing a neighborhood environmental issue 1/26-4/22
- Active Chefs- 10 week in-depth cooking class utilizing produce and learning about preserving from the garden for 4th-8th graders. 1/26-4/22
- *Environmental Science Hour- Weekly drop-in science hour as a part of homework help for K-7th students. 9/24-5/20
- *Neighborhood Earth Day Celebration Presentations by youth and unveiling of public art piece 4/22
- *Garden Extravaganza- Youth and Adult Community Garden members prep garden for summer with master gardeners. 5/1-5/31
- Overnight Environmental Adventure- Teens who will be employed for the summer will be camping in Two Harbors, MN, educated and guided by a Environmental Learning Center Naturalist. 6/17-6/19

*Current programming

Success Story

Our biggest success this year is the retention of youth in programming and their ability to get their parents involved in neighborhood environmental issues. We have seen a noticeable difference in youth's value of the environment. Youth have taken ownership in educating the neighborhood about the environment and representing the neighborhood at presentations for State Fair and University of Minnesota Driven to Discover Insect Fair.

Renewables Research and Policy Institute

Total Award: \$16,000.00

Total distributed as of July 1, 2013: \$12,563.96

Projected end date: April 30, 2014

At North Community High School (NHS), the Renewables Research & Policy Institute (RRPI) along with its term partner, the MN Horticultural Society, prepped, repaired and augmented 2 of 4 old beds and added two (actually the bulbs (1 bed) were inserted last fall so really one was added whilst the bulbs will be, hopefully, augmented in fall).

Two vegetable beds were sparsely propagated retaining adequate space for an incoming Green Team. The Team consists of the school Nurse - Beverly, Project Sweetie-pie, long time north-side gardener, Nardal who also represents the Northside Resident Redevelopment Council (NRRC). The youth consist a group of summer school and Minneapolis Step-Up children.

For its part (as per the LCCMR project proposal), activities within the grow room have been RRPI's direct operations i.e. this year the focus has been to finish the aquaponics system and its day school insertion. The mechanical system has been completed and conditioned as it is. It will have plants, medium and animals added and be ready for fall semester. Community activities i.e. showings will commence mid - August; we are currently awaiting live shipments. Science teachers have also been informed and RRPI in concordance with NHS intends introductory sessions prior to their use.

The courtyard is not and was not expected to perform at the level RRPI attained with the kids last year as our methods are intensively scientific, well monitored and were well funded for 2011 and 2012. Actually, the performance as assessed by RRPI is dismal. This can be attributable to various causes i.e. Mechanical tilling (never used nor intended in 3 previous years) leading to perturbed vertical layers from mulch downwards, that were carefully constructed with enhanced mychorizzal zones, absence of new compost or new nutrients addition, no additional protective mulching, removal of sub surface irrigation channels (probably to effect non recommended deep till)

I would personally take the Renewables Research & Policy Institute back in for the rest of the summer for damage control (where possible), my intuition is this season will remain abysmal; RRPI (needs) can use extra funding for kids to maintain hydration as well as protective mulching through August. Alternatively, I'd have to keep fingers crossed for a new aspiration of kids from programs in the neighborhood/community organizations that intend continuous maintenance.

NOTE: Elizabeth Wieland is listed as a technical resource on this LCCMR project and is working closely with RRPI to ensure success.

Activity Status as of January 2014

(The following updates have been provided by the program managers unless otherwise noted)

Beez Kneez, LLC.

Total Award: \$17,000

Name two groups you collaborated with on your LCCMR project, and include a sentence description about the collaboration.

The Beez Kneez LLC collaborated with McKinley Community CSA and with Elizabeth Hall Elementary over the course of this project. We've partnered with McKinley Community CSA, an urban farm run by the McKinley Neighborhood Organization, to establish two beehives onsite at 3300 Lyndale N and provide educational programming annually to the McKinley Flower Team, a group of 10-15 youth ages 10-14. We also worked with 60 2nd grade students at Elizabeth Hall International Elementary for two lessons, aligning our honeybee curriculum with the second grade themes: how the world works (inquiry into the natural world and human interactions with the natural world) and life cycles.

- **# of youth reached through your project, plus any additional demographic information (age, race, ethnicity of youth reached)—as of 10/31/13**

We taught five classes with 10-15 youth in summer 2012, with a visit to the hive included in each class. We've taught 6 lessons with the same group (10-15 youth, 75% the same youth as year one) in summer 2013. We also taught two lessons with 60 Elizabeth Hall second graders this spring, April and May, 2013. I'm tracking down demographic information.

- **Any pre/post test or survey results**

100% of our McKinley Flower team youth felt more comfortable around bees than they were at the beginning of last year and had increased knowledge of honeybees and their role in pollination.

Over 75% of them returned to work with us for a second summer.

74% of Elizabeth Hall 2nd graders have an increased knowledge of bees after our programming.

- **One key metric you think best measures educational success**

The number of students who returned for another year of beekeeping was close to 75%, which, if you look at the students who came more than twice during summer 2012, was closer to 90% return rate. (all but one person, who was in Central America in summer 2013.)

For a program that is entirely voluntary once everyone one/two weeks, we're proud of our attendance.

- **One anecdote about the youth having their "lights turned on" by your environmental education program**

A couple- the first time 11 year Robert put on a beekeeping suit and held a frame of bees he said- "I was made to be in this environment!" 6 year-old Kiera was the younger sister of another youth who worked with us over our two-year partnership. She was too young for our programming, but, on the first day of our summer 2013 class, she woke her dad up to tell him it was bee day. He called to see if she could come, and after hearing that story, we had to let her in. She was the most engaged participant this summer, always the first in a bee suit, even on the hottest days.

There are a number of other stories of youth and adults getting over fear of bees and wearing suits, getting close to an open bee hive, and even holding a frame. One teacher that we collaborated with on another partnership talks about how working bees in the way that we do changes people- that you can see the difference on a student's face.

- **What efforts/planning have you done to sustainably continue your project into the future?**

The Beez Kneez will continue to maintain the hives at McKinley. We are beginning to plan programming for future summers and determine revenue streams for that programming. We will continue to use the curriculum we developed through programming with McKinley as made possible through this grant with all our other Beez Kneez classes. We will be sharing this curriculum with interested teachers through our teacher workshop, School Garden Sustainability and Support, offered to Minneapolis Public School teachers as supported by this grant. We hope to recruit some teachers from Elizabeth Hall Elementary to attend this workshop.

We've also learned that, often, the most engaging parts of working bees is those initial few times in the hive. Building confidence and skill through a two-year program is valuable, but where we see the most measurable change is in that initial few interactions. We plan to concentrate our efforts on bringing this opportunity to more people.

- **As a result of your project, what student behaviors have changed toward being more environmentally aware?**

Part of why we love teaching with bees is that they bring the abstract idea of ecosystems and our connection to our ecosystems to a concrete level. Our food system is just that- a system- one that is complicated and broken in a lot of ways. Everyone eats though, and everyone is connected to this system through food. Bees highlight this connection as critical pollinators to 1/3 of the food we eat, and their complexity highlights the complexity in the whole system.

We didn't measure behavior change, but anecdotally, we saw youth more comfortable around bees both in the hive and in the garden. This comfort extended to other insects.

- **What lessons have you learned from this project?**

Through this project we were able to develop and pilot a two-year youth beekeeping curriculum. We gained valuable perspective on which teaching styles, methods, and curriculum topics were successful for both students and bees while working a hive and which ones require rework.

We're learning that there is no substitute for the experience of safely working a beehive- that an indoor lesson without this component is not as effective as a teaching tool as time in the hive.

Our collaboration with McKinley on this project is invaluable; as an organization we will continue to be committed to collaboration.

Evaluation metrics are difficult with education, especially informal education like this project. Our pre and post tests were a successful tool for the most part, but there were some flaws and we've learned some ways to improve them.

Phyllis Wheatley Community Center

Total Award: \$45,000

Spring 2012-Summer 2013 Environmental Explorers Outcomes

-135 unduplicated K-8th youth have participated in multidisciplinary environmental programming at Phyllis Wheatley and Heritage Park.

-73 of those youth participated in environmental advocacy and community service around the neighborhood.

-25 of those youth presented environmental projects at the Minnesota State Fair and University of MN Insect Fair.

-32 unduplicated teens were trained and employed as the Teen Earth Corps through StepUp and Environmental Explorers. Teen Earth Corps members mentored and assisted youth during environmental programming.

-30 youth and teens participated in overnight outdoor exploration in partnership with the Red Wing Environmental Learning Center.

-85% of youth attended programming consistently (at least 90% of the time).

95% of youth's behavior and/or values improved towards the environment.

-320 unduplicated parents and community members attended environmental events organized by the youth including the STEM fair, family celebrations, State Fair Urban 4-H presentations, GoGreen Family edition, and National Night Out.

-2 youth gardens were designed, planted, and maintained within the neighborhood in partnership with Hennepin County Master Gardeners.

-2 public eco-art installations were created by youth and permanently placed in the Heritage Park and Powderhorn Park Neighborhoods educating residents about the importance of clean water.

For 2014 Phyllis Wheatley Community Center applied for a Green Partner's grant to expand our environmental education throughout the community. Youth will create a sustainable environmental entrepreneurship project utilizing the garden's produce that will help sustain program costs in the future.

Research and Renewables Policy Institute

Total Award: \$16,000

Aquasol

This period traverses the project's final phase, integration of the Aquasol laboratory into the schoolroom.

This of this phase has completed and tested its first task, building and testing the aquaponics laboratory. Two substantial activities have resulted 1. We had decided to involve students in an additional flow control elements (simply constructed auto-siphons in the grow beds) for science learning purposes. 2. The highest technology medium (new and highly efficient in controlling and maintaining aeration as well as recycled glass derived) proved to be a little sharper than allowable as very little individuals are also concerned, the Renewables Research and Policy Institute (RRPI) has moved to replacement with the classical Hydroton media instead of the Growstone product.

For the second part of the phase, science instructors' aptitude in the Indoor/outdoor garden environment, two challenges have been derived.

1: Transitioning trained teachers due to huge flux of science and interested instructors. The most recent imperative is for a new set of instructors to undergo

- A) The School District's Schoolyard Sustainability and Support Workshop.
- B) The Hennepin County's program to instruct teachers in garden environment environmental education through a portion of this LCCMR is being advocated.
- C) For this current set of North High School instructors RRPI will repeat of the training for transitioned, prior trained instructors.

2: Funding for future maintenance and stocking of the laboratory and animal welfare. We intend to increase the community's aquaponics knowledge and resource towards production in the Northside to inculcate resources for the lab intrinsically.

Minnesota Internship High School/Spark – Y (formerly YEA Corps)

Total Award: \$16,600

December 2013 marks the halfway point of the second year of this exciting project at MNIC Unity High school. This project has uniquely displayed the ability to serve multiple societal and educational purposes in one weekly program:

- 1) Hands on environmental science education
 - a. A living in class room ecosystem through Aquaponics (growing fish, plants, and bacteria together) where assignments based around natural process can be studied
- 2) Commercial Food system education
 - a. Growing clean, healthy local organic food that is used as an example for in classroom education, and to illustrate what food means to society, culture, and the economy
- 3) An actual community business that generates revenue on behalf of the school
 - a. Selling produce to local sources, marketing, reporting, tracking and entrepreneurial education through actual performance and internships.
- 4) An integrative, one of a kind sustainable experience
 - a. Field trips, outside experts from commercial and academic sectors, all creating an education experience that at risk youth need.

So far, the results are another huge win with this program. They include an amazing experience for key leadership students such as Travon, who has spoken against climate change with US rep. Keith Ellison, Will Steger, and traveled to a national conference to represent environmental issues for MN youth. We have served ~83 students in year one, 39 students halfway through year 2, and ~13 college students. There has been a major shift at the school, and a measured behavior change using our oral survey, with students displaying more knowledge in science and sustainability, and an increased likelihood to change their behavior regarding recycling and environmental action. This project will continue on past the final LCCMR funding date – it has become sustainable. We have garnered other funding to support the project, and are excited to continue into year 3 in Fall 2014. Our Final report regarding this project as it pertains to the LCCMR and Hennepin County will be completed in 2014.

Environmental Justice Advocates of Minnesota

Total Award: \$49,917

The LCCMR Project Manager is working closely with the Board of EJAM to provide a status update on their budget as well as all programming related to this grant. EJAM was left without staff as of October 2013 and a full-time Managing Director since spring of 2013. At this time, it is unknown if they will be able to expend their full grant amount.

Final Report Summary October 2014

October 9, 2014

RETROACTIVE AMENDMENT REQUEST: Amounts in Activity 2 for staff to be increased by \$14547.51 to cover the total amount of hours paid for the full project, \$114,547.51. This will leave a total amount of \$31452.49 in the Equipment/Tools/Supplies/Field Trip category. Total award amounts per group were not changed, the estimates for total staff hours was less than actual.

Amendment approved retroactively by LCCMR – 10-9-2014

Beez Kneez, LLC.

Award: \$17,000

Spent: \$16,745.95

Project summary: Beez Kneez and McKinley CSA taught at the Elizabeth Hall Elementary in North Minneapolis throughout spring 2013--teaching how bees are essential to the food that we eat and grow.

Leveraging: The Beez Kneez LLC collaborated with McKinley Community CSA and with Elizabeth Hall Elementary over the course of this project.

Learning: At Elizabeth Hall Elementary, they worked with 60 second graders, talking about bees, pollination and our food system. They brought bee hives and beekeeper suits to the school. When the kids put on beekeeper suits and worked with a hive, they greatly increased their knowledge of bees and pollination. Beez Kneez also created a summer program with the McKinley Flower Team. Beez Kneez also learned the most engaging parts of working bees is those initial few times in the hive. Building confidence and skill through a two-year program is valuable, but where they saw the most measurable change was in that initial few interactions. They plan to concentrate their efforts on bringing this opportunity to more people.

Longevity: Beez Kneez will continue to maintain the hives at McKinley to develop curriculum with them. They are beginning to plan programming for future summers and determine revenue streams for that programming.

Environmental Justice Advocates of Minnesota

Award: \$49,917.00

Spent: \$49,917.00

Project Summary: In partnership with Kwanzaa Community Church, Environmental Justice Advocates of Minnesota (EJAM) proposed to create TROUPEmn—an environmental education program for kids in North Minneapolis. They have had changes in staff and are working to develop a new work plan.

Leveraging: For its Urban Watch project, EJAM collaborated with Kwanzaa Community church, which has a long history of building youth, women and community leadership in North Minneapolis. They also worked with We Win Institute, working with children and families to create urban gardening and environmental justice curriculum.

Learning: EJAM reached 20 youth directly, 60 or more youth overall during their program. The majority of youth were African American, but also Somali and Hmong. The students learned about food, moving from a preference for store bought produce to growing their own. They also gained increased awareness of waste, pollution and environmental justice. An added benefit was a deeper appreciation of other cultures and their own cultural heritage, and the advantages of youth and elders working together.

Longevity: EJAM extended the work of the project by connecting to younger youth through the We Win Institute and will continue to build youth leadership development through on-going partnerships with Kwanzaa Community Church and We Win Institute. EJAM is also developing an urban farm curriculum with We Win Institute.

Minnesota Internship Center High School/SPARK-Y

Award: \$16,600

Spent: \$16,600

Project Summary: Spark Y worked closely with staff and students at the Unity Campus of the Minnesota Internship Center School developing and installing an aquaponics laboratory. Students were involved and directed every aspect of the project from design to plant materials grown, maintaining the system daily.

Leveraging: Spark Y worked with Chef E in, who is involved with urban agriculture on the Northside of Minneapolis. Chef E and the students used the commercial kitchen at Unity to prepare freshly grilled Tilapia tacos at the year-end celebration. Another partner was Avenue Eatery, a restaurant on Broadway and Emerson. The Avenue's owner came to Unity to talk to students about entrepreneurship and food systems, relating directly to their own efforts to grow, price and sell their produce. One of the highlights for Unity students was their fellow program participant, Travon Williamson, CEO of Unity sharing the stage with Will Steger and U.S. Representative Keith Ellison. Travon spoke at an environmental rally in North Minneapolis and spoke directly about his experience at Unity. This project, Spark-Y, and the Rally are about taking a stand for a sustainable future.

Learning: 145 youth were directly involved in all aspects of the aquaponics project at the Unity Campus. 95% of the students were African American, 5% a mix of Caucasian, Native American, and Asian. The age range was 15-24. Additional estimates of 50 youth were reached through increased project awareness, related events and system interactions.

Longevity: Spark Y has transitioned lessons learned from the Unity campus to other schools within the metro area. The most important lessons staff learned were how to integrate science and environmental issues into everyday life for at-risk youth. Focused, consistent faith and trust and attention placed in our youth allow them to grow beyond limitations, and create the foundation for improving our culture and society to be sustainable.

Phyllis Wheatley Community Center

Award: \$45,000

Spent: \$45,000

Project summary: The Phyllis Wheatley Community Center (PWCC) in North Minneapolis offered Environmental Explorer classes, including Teen Earth Corps Class; Science, Technology, Engineering, Math (STEM) Fair; Active Chefs Intro Class and more.

Leveraging: PWCC worked with the University of Minnesota Urban 4-H and the Red Wing Environmental Learning Center. The Urban 4-H partnership provided access to U of MN extension curricula, "Driven to Discover" scientific inquiry, county and state fair presentations, content specialists and introduced the partnership with Master Gardeners. The Red Wing ELC provided outdoor exploration for youth with a trained naturalist on the North Shore.

Learning: This program worked with 135 K-8 grade youth. 99% free or reduced lunch, 45% African American, 45% African, 5% Multi, and 5% other. During the program, two youth gardens were planted and maintained. Two public eco-art installations about the importance of clean water were created and permanently placed in the Heritage Park and Powderhorn Park Neighborhoods. Students also gave presentations for the Minnesota State Fair and the University of Minnesota's Driven to Discover Insect Fair.

Longevity: Youth are creating a sustainable environmental entrepreneurship project, using the garden's produce to help sustain program costs in the future. PWCC will continue a partnership with volunteer Master Gardeners to support the youth gardens.

Renewables Research and Policy Institute

Award: \$16,000

Spent: \$16,000

Project Summary: The North High School (NHS) AquaSol project—a partnership with North High School and the Renewables Research and Policy Institute—provided a two-part, STEM-based education laboratory to teach renewable energy and eco-friendly agriculture.

Leveraging: For AquaSol project, the Renewables Research and Policy Institute partnered with North High School, Project Sweetiepie and the Northside Resident Redevelopment Council (NRRC).

Learning: Through the course of this project, Renewables Research and Policy Institute worked with 150-200 youth in North Minneapolis. During the first phase of AquaSol, they cultivated the inner courtyard beds for a planting project. Youth from project Sweetiepie and NRRC, along with Master Gardeners, enabled a successful second year outdoor phase.

Longevity: The program made contributions to North High School's learning environment, including a laboratory and extensive cultivated plots. Pre-gardening activities each year will allow a different set of children access to the outdoor locations while returning students can graduate to Controlled Environment Agriculture (CEA) aquaponics lessons.

V. DISSEMINATION: All means of communication will be employed including press releases, electronic newsletters, direct email, timely website updates, announcements in local newspapers and letters.

Description: www.hennepin.us will be the main format for dissemination of news, updates, opportunities and project statuses. We will also provide printed pieces as appropriate. Social media will also be utilized to disseminate information.

Status as of January 2012:

Notification of the Request for Proposals was distributed through the County's electronic newsletters; emails and media outlets. The actual RFP was posted on the County website. The Academy was promoted through Department and County electronic newsletters, sent by email and was placed on the County website.

Status as of June 2012:

Use of the Hennepin County website, electronic newsletters and a Facebook Group all share in disseminating information about program successes and developments.

Status as of July 2013: Hennepin County staff will be compiling all updates to develop an overall project report that will be shared online, in electronic newsletters, with the County Board and LCCMR.

Status as of January 2014: Hennepin County Communication staff is working with the Project Manager to gather all pertinent information from groups to develop a final report for the LCCMR as well as County Board members. Highlights, notices, events from the grantees have been shared on Hennepin County's social media outlets as well as periodic updates to Department Managers and staff. Hennepin County has recently undergone a website redesign and update. We are currently working on creating an LCCMR page to highlight these projects and all developments.

Final Report Summary August 2014: Hennepin County Environmental Services has produced a printed report that will be given to the County Board, County Administrator, and Public Works Administrator for review and use. We will continue to highlight work done by Urban Watch grantees and will assist in providing financial assistance and guidance. Hennepin County will provide the LCCMR staff with final report copies as soon as they are final and approved.

VI. PROJECT BUDGET SUMMARY:

A. ENRTF Budget: Please see revised attachment A

Budget Category	\$ Amount	Explanation
Total grant amount(\$145,238)		Grants will be awarded up to \$25,000 per organization.
Grants - Personnel: to organizations that obtain funding	\$ 100,000	Approximate of 30% of grantee budget
Grants - Equipment/ Tools/ Supplies	\$ 46,000	Estimate of 65% of grantee budget
Teacher Academy workshops	\$23,000	Costs include all materials and instructors; project management, workshop follow-through
Teacher implementation funds (per teacher and per school)	\$31,000	Equipment, supplies, resources for schools and teachers to implement program
TOTAL ENRTF BUDGET:	\$200,000	

Number of Full-time Equivalent (FTE) funded with this ENRTF appropriation:

Grant funds will be used for new staff (1.5) to fulfill obligations for ENRTF projects. Approximately \$45,000 for staffing is estimated with the remainder (\$94,000) for equipment and supplies.

Number of Full-time Equivalent (FTE) estimated to be funded through contracts with this ENRTF

appropriation: Put in staff time as in kind here: All County (HCES) staff involvement will be at the cost of Hennepin County. All UM Extension staff will be at the cost of UM Extension (Betsy Wieland 5%).

B. Other Funds:

Source of Funds	\$ Amount Proposed	\$ Amount Spent	Use of Other Funds
IN-KIND: Staff from HCES and UM Extension	\$38,400	\$	
TOTAL OTHER FUNDS:	\$38,400	\$	

VII. PROJECT STRATEGY:

A. Project Partners:

We are actively networking with existing programs in North Minneapolis including Minneapolis Public Schools, EJAM, Project Sweetie Pie, NorthPoint Health and Wellness, Minneapolis Public Schools, University of Minnesota Extension, Minnesota Department of Natural Resources, and the Hennepin County Human Services and Public Health Department. Our community representative is Mr. Bill English. The list of partners will continue to grow as we work with community members throughout this project. All grant awardees will become project partners and will have hands-on assistance as needed.

B. Project Impact and Long-term Strategy: This project is unique in Hennepin County as the focus for all projects is urban youth. In many instances this part of the population is lacking for experiences and resources related to environmental education. The intention is to provide the necessary opportunity and tools for urban youth to expand their experience and exposure to environmental resources. 30 teachers will be trained in proven curriculum and will be given funds to assist with successful implementation into the classroom. These 30 teachers will directly impact an estimated 600 students in classrooms each year. Growing Futures will also provide a means to increase exposure to outside experiences in the natural resource realm. This particular project is only a

piece of a larger concept that we hope to implement in future years. Additional funding will be sought from various resources.

C. Spending History:

All staff time that has been invested into this project since 2010 has been an in-kind contribution from Hennepin County.

Funding Source	M.L. 2005 or FY 2006-07	M.L. 2007 or FY 2008	M.L. 2008 or FY 2009	M.L. 2009 or FY 2010	M.L. 2010 or FY 2011

XI. REPORTING REQUIREMENTS: Periodic work plan status update reports will be submitted not later than January 2012, June 2012, January 2013, June 2013 and January 2013. June 2014. A final report and associated products will be submitted between June 30 and August 1, 2014 as requested by the LCCMR.

Attachment A: Budget Detail for M.L. 2011 Projects -Environment and Natural Resources Trust Fund Projects.									
Project Title: <i>Urban Watch:Experiential Environmental Education for Urban Youth</i>									
Legal Citation: M.L. 2011, Chp. , Article 3, Sec 2 Subd. 8(c)									
Project Manager Name: <i>Mary Karius</i>									
M.L. 2011 ENRTF Appropriation: \$200,00									
Project Length and Completion Date: 3 years: June 30, 2014									
Date of Status Update:									
	Activity 1: Budget	Amount Spent	Balance	Activity 2: Budget	Activity 2 Budget - revised as of 1/9/2014	Amount Spent	Balance	TOTAL BUDGET	TOTAL BALANCE
2011 Trust Fund Budget									
BUDGET ITEM									
Professional/Technical Contracts									
AMENDMENT APPROVED by LCCMR Staff January 7, 2014: Contract with Beez Kneez LLC to organize and hold teacher workshop in January 2014.	\$ 23,000.00	\$ 23,000.00	\$ -					\$23,000	\$0.00
Equipment /Tools/Supplies (workshop materials and supporting equipment; curriculum resources; classroom resources; tool kits for implementation; resource supplementation; materials for gardens; program sustainability)	\$ 31,000.00	\$ 19,605.97	\$ 11,394.03					\$31,000	\$11,394.03
Grants									
AMENDMENT APPROVED BY LCCMR STAFF Jan 7, 2014 Grants - staffing needs for grantees (estimated at 30%)				\$ 100,000.00	\$ 114,547.51	\$ 114,547.51	\$ -	\$ 114,547.51	\$0
AMENDMENT APPROVED BY LCCMR STAFF Jan 7, 2014 Grants - Equipment / Tools/Supplies/Field Trips: funds estimated for grantees, to be used for *field trips,equipment and supplies to implement outdoor environmental projects. (estimated at 65%)				\$ 46,000.00	\$ 31,452.49	\$ 31,198.44	\$ 254.05	\$ 31,452.49	\$ 254.05
COLUMN TOTAL	\$ 54,000.00	\$ 42,605.97	\$ 11,394.03	\$ 146,000.00	\$ 146,000.00	\$ 145,745.95	\$ 254.05	\$ 200,000.00	\$ 11,648.08

Mary Karius
Hennepin County Environmental Services
701 Fourth Ave South, Suite 700
Minneapolis, MN 55415-1600

JULY 2013

RE: YEA Corps and Minnesota Internship Center Unity Project
LLCMR Grant Report to Hennepin County
March and April 2013

Mary,

Please find enclosed a summary of all activities relating to the grant awarded to MNIC in partnership with YEA Corps at the Unity Campus from March through June. This report can be paired with our previous reports for September through February to give an accurate overview of the entire project thus far for the school year. The budget attached covers the entire life of the project, and includes electronic version of the latest receipts. Our next report for the remaining summer through August will include an electronic submission, and a description of planned activities for the 2013-2014 school year.

Please find in this report:

- a. An executive summary of current project status
- b. Our blog posting, detailing the events of each weekly sustainable/environmental project workday
 - i. Quantitative analysis of the results of each project workday
- c. Educational survey results
- d. Budget updates and submissions
- e. Attachments and reference information (receipts etc.)

Sincerely,

Zach Robinson
Executive Director
YEA Corps

A. Executive Summary of Unity Project

In the months of March and April, YEA Corps made significant strides within the Unity project. Our team developed comprehensive tracking systems to measure attendance, participation, and success. We administered lessons in plant science, worked with students to utilize the aquaponics system that we completed in February, coordinated a field trip to a youth urban farming conference, and taught students how to harvest, package, and market their product. We partnered with three students from a University of Minnesota horticulture class to create a microgreens operation, and with a local chef to speak to students about marketing to restaurants and caterers. We took on a student intern to act as a leader within the group and perform necessary tasks when we are not on-site, who will receive 2 class credits for his continued work with us. Moving forward, we expect to take on this student, along with up to two others, as a paid intern through our summer internship program, launching Unity Gardens as a student run business. The students selected will gain skills around professional development and leadership, receive mentoring from YEA Corps staff, and cultivate their passion for this work. As we near the end of the school year, we are planning our end-of-year celebration, in which students will have the chance to fillet fish, do a job interview, and celebrate their accomplishments. The next school year at Unity will involve more direct leadership from this year's program participants, and a continuation of our program offering to new students, involving another aquaponics system build and more direct utilization of products grown. Students have already begun to sell their products internally within the school and to develop a plan for market expansion; moving forward, they will implement these plans, selling their product to local chefs and farmers market customers. Below, please find qualitative and quantitative reporting for each YEA Corps workday at Unity MNIC.

B. YEA Corps Unity Work Day Blog and Quantitative Results

March 6th, 2013

1) Narrative (blog post): This week at Unity, we were QUITE productive. On the marketing end, we set up a Gmail, Twitter, and Blogger account for the Unity project, to be maintained by students. The marketing group wrote a post, took photos, and worked on a logo.

On the business end, we started going deeper into our business plan and pricing strategy. We added up our total costs so far, looked at typical prices for our products, and figured out how

much we need to produce to make a profit.

On the systems side, we rinsed another 50 pounds of hydroton for the plant bed, which now looks even better:



We came up with new ideas for containing the fish (we had a fishy suicide last week), and strategized about keeping the plants healthy.

We're excited to keep feeling out our intern candidates, and to go to the [Bud Markhart Urban Youth and Food Day](#) on March 29th, which many students signed up for this week!

Until next time...

2) Quantitative Results

Student participation: 9 (24%)

YEA Corps staff: 5

Length of workday: 3 hours

Budget expenditures: N/A

YEA Corps management activities: YEA Corps staff members in attendance were Sarah Halvorson-Fried, Saeed Nezhad, Michael Tuma, Curtis Wilson and Kirk Marschel. One Unity Team Meeting was held prior to this workday at which Sarah, Saeed, Mike, Zach Robinson and Cristina Leifson were present. Time was spent at this meeting to evaluate current teaching strategy and establish goals for the project. Sarah prepared materials for the workday and printed them on-site.

March 13th, 2013

1) Narrative (blog post): Today was a day of review, business planning, and system maintenance. We spent the first half of the workday doing a review of everything we've learned this semester, and looking at produce prices to figure out potential revenues for our product.

We made a chicken wire cover for our fish tank – no more fishy deaths – and did some routine maintenance: transplanting some plants into larger plots, planting more seeds, testing the water, and of course feeding the fish. Students continued to document our activities through photos!



It's so nice to have the aquaponics system up and running – when doing the review worksheet with a student who hasn't been around so much, I was able to say, "You want to know where the bio-filter connects to? Well, let's take a look." And hands on learning proves itself worthy once again. We tasted some micro-greens (delicious) and plan to harvest, package and sell a small amount next week.

2) Quantitative results

Student participation: 8 (21% attendance)

YEA Corps staff: 4

Length of workday: 3 hours

Budget expenditures: \$14.20 for aquaponics system equipment (wire to make screen).

YEA Corps management activities: YEA Corps staff members in attendance were Sarah Halvorson-Fried, Saeed Nezhad, Michael Tuma and Kirk Marschel. One Unity Team Meeting was held prior to this workday at which Sarah, Saeed, Curtis and Zach Robinson were present. Time was spent at this meeting evaluating the previous week, discussing internships and developing a plan for the week.

March 20th, 2013

1) Narrative (blog post): An exciting event occurred today: Unity Gardens had its first sale! Students harvested, packaged, marketed and sold a bag of microgreens, which they had planted only a few weeks ago. We marketed the product about as locally as we could – in the building, to the school social worker. And sold a glorious bag of microgreens for \$2.50.



Students also spent time beautifying the aquaponics system with crafty labels (where some really proved their artistic skills), doing basic system maintenance and testing, and hardcore construction work to improve the fish tank cover.



We planted seeds for basil and nasturtium, a colorful and delectable edible flower, which we plan to sell at Brooklyn Center Earth Fest (link) on April 20th – Earth Day! Look for us around town, folks – we're up and running.

2) Quantitative results

Student participation: 12 (31% attendance)

YEA Corps staff: 5

Length of workday: 3 hours

Budget expenditures: \$35.76 for cork board, push pins, poster board, markers, etc., \$16.95 for additional cork board and push pins, \$81.80 for hydroton.

YEA Corps management activities: YEA Corps staff members in attendance were Sarah Halvorson-Fried, Curtis Wilson, Saeed Nezhad, Michael Tuma and Kirk Marschel. One Unity

Team meeting was held prior to this workday at which Sarah, Saeed, Michael and Kirk were present. Time was spent at this meeting evaluating the previous week, discussing strategies to encourage more participation among Unity students, and planning for the upcoming workday.

March 27th, 2013

1) Narrative (blog post): Today was a day of learning for all – we got a chance to buckle down in peace and quiet, read an article about nutrient deficiencies and figure out our business plan. The peace and quiet itself was an accomplishment, but so were the peas, spinach and herbs we planted, the beautiful signs we made, and the adjustments we made to pH that, as we learned, will help the plants in our system take up more nutrients. New students joined us this week even as the grading quarter drew to a close and spring break began. We're excited for new blood! Meanwhile, some of our old blood attended the first annual youth urban farming conference at the University of Minnesota, where we saw hydroponics (photo below) and microgreens in action (the two out of eight workshops that our group got to go to), met other youth working on urban agriculture projects in the cities, and listened to some inspiring speakers – including spoken word artist Jake Virden (<http://www.youtube.com/watch?v=BLV3kS2DS54>).



Oh, and did I forget? Ate a fantastic, locally sourced lunch, freshly harvested pea shoots included.

2) Quantitative results

Student participation: 12 (31% attendance)

YEA Corps staff: 5

Length of workday: 3 hours

Budget expenditures: \$20.63 for classroom materials, \$14.97 for seeds.

YEA Corps management activities: YEA Corps staff members in attendance were Sarah Halvorson-Fried, Curtis Wilson, Saeed Nezhad, Mike Tuma and Kirk Marschel. One Unity Team Meeting was held prior to this workday at which Zach Robinson, Sarah, Curtis, Saeed, Mike and Kirk were present. Time was spent at this meeting evaluating the previous week, discussing upcoming field trips, brainstorming ideas and setting goals for the next month of programming, and planning for this workday.

April 10th, 2013

1) Narrative (blog post): We came back from spring break with a bang: Having made great connections at the University of Minnesota's Growing Food, Growing Youth event, we were able to bring in expert guest speakers from a horticulture class on Growing Successful School Gardens. Three talented young ladies shared their expertise with Unity students, who learned how to grow microgreens in soil, what the difference is between microgreens and sprouts, and a little bit about seed structure – going beyond the work we'd done earlier in the semester to a deeper level of understanding, and reinforcement of what had already been covered.



We look forward to having these great folks back next week, as well as local business owners and chefs from the neighborhood. As we continue to apply what we learn to real life situations (growing produce, interacting with potential clients, getting the word out to the public), we see students understanding more and more – really getting it, as they say.

2) Quantitative results

Student participation: 13 (34% attendance)

YEA Corps staff: 3 (plus 3 U of M students)

Length of workday: 3 hours

Budget expenditures: N/A

YEA Corps management activities: YEA Corps staff members in attendance were Sarah Halvorson-Fried, Curtis Wilson, and Mike Tuma. One Unity Team Meeting was held prior to this workday at which Sarah, Saeed, Mike, and three University of Minnesota students helping with the project were present. Time was spent at this meeting coming up with a plan for the week and orienting new project members (the U of M students) to the project environment and status. Class materials were brought by Curtis, as well as by U of M students.

April 17th, 2013

1) Narrative (blog post): “That’s what it’s all about...”

At YEA we don’t believe we have the answer, only our response to the demand placed on today’s generation for more sustainable projects and practices.

That’s why the question of the day was so appropriate; Lakeesha asked more than once, “What are we doing with these worms (farms) anyways? What do that have to do with our project?”

That’s probably the best question we can ask, what does what I’m doing (in class/ at home/ right now) have to do with my life and how does it make it more sustainable??

The cool part about our group today is that a natural conversation flowed out of these questions and everyone had their own take on it. So, Ari mentioned how the worm castings are especially fertile soil for our plants to be grown in later. Others took the economic sustainability aspect of worm castings and mentioned that in the garden store bags of worm “dirt” can be sold for \$25. As a group we also observed the conditions in the worm bins were beneficial for other life forms like little white soil bugs, a.k.a. microorganisms, a very good sign that our worms are happy and healthy.

Any visitor to MNIC’s North side campus can notice what a good job of maintaining the worm bins the UNITY team has done so far. That’s why we are excited to launch another system in a multi-level wooden worm farm (<http://www.woodwormfarms.com>).



The different levels can be moved and replaced to allow worms to move up in the system to empty levels; placing worm food, i.e. organic kitchen scraps in higher levels attracts worms upward leaving their castings in the bottom levels for easy removal and use.

The quote of the day probably came from Lokia. When the conversation grew into a dialogue surrounding power in society and gender roles, she said "Respect is Power". I was like, "whoa, that's real". That's why today was so encouraging, I think, for the respect we showed toward Life inherent in living systems.

Overall a very productive day where dedicated students all worked toward the same goal: to create the conditions for life to thrive. We all got our hands (or at least our gloves) dirty and contributed to the conversation of the day... and that's what it's all about!

2) Quantitative results

Student participation: 6 (16% attendance)

YEA Corps staff: 4

Length of workday: 1 hour (Note: our time was cut short due to state testing).

Budget expenditures: \$87.50 for wooden worm bin.

YEA Corps management activities: YEA Corps staff members in attendance were Curtis Wilson, Saeed Nezhad, Mike Tuma, and Kirk Marschel. One Unity Team Meeting was held prior to this workday, at which Curtis, Saeed, Mike, Kirk, Sarah Halvorson-Fried, and three University of Minnesota students were present. Time was spent at this meeting planning for this workday. Due to state testing, YEA Corps program time was cut short, and a plan was improvised: The University students postponed their lesson until the following week, and YEA Corps staff led a discussion as well as construction and planning activities with Unity students.

April 24th, 2013

1) Narrative (blog post): Today was another great day with our guests from the U of M. We harvested and sold produce, seeded more microgreens, and learned more about plant structure through an interactive game. Reinforcing these concepts is proving invaluable to the program, as students continue to filter in and out.



We see students getting more and more excited as their business grows. Right now our market consists of teachers in the school, but we are making plans for expansion. Students are learning the ins and outs of business planning and administration. Logos are being developed. We're on a roll!

2) Quantitative results

Student participation: 9 (24% attendance)

YEA Corps staff: 4 (plus 3 U of M students)

Length of workday: 3 hours

Budget expenditures: N/A

YEA Corps management activities: YEA Corps staff members in attendance were Curtis Wilson, Saeed Nezhad, Mike Tuma, and Kirk Marschel. One Unity Team Meeting was held prior to this workday, at which Curtis, Saeed, Mike, Kirk, and Sarah Halvorson-Fried were present. Time was spent at this meeting planning for a proposed field trip with Unity students, and confirming a plan for this workday. Materials were created and brought by University of Minnesota students.

May 1st, 2013

1) Narrative (blog post): The past few weeks at Unity have seen more microgreens action: University students led us to plant more trays and think more deeply about our business, and today, we were blessed with a guest speaker in the form of Chef Eric, formerly of Big E's Soul Food and currently of Kids Cafe at North High.



Seeding more trays



Big E inspires us to grow our business

Big E told us what he looks for in a product, how to talk to a potential customer such as himself, and that we already have an edge: we're local, our product is fresh, and we grow through all seasons. The variety of flavors that we can produce are music to a chef's ears. We look forward to seeing him again soon, for a fish fillet and cooking demonstration and to learn how he pairs flavors in fine dining.

2) Quantitative results

Student participation: 7 (18% participation)

YEA Corps staff: 5 (plus 3 U of M students)

Length of workday: 3 hours

Budget expenditures: N/A

YEA Corps management activities: YEA Corps staff members present were Curtis Wilson, Kirk Marschel, Michael Tuma, Saeed Nezhad, and Sarah Halvorson-Fried. University of Minnesota students present were Tierney Lain, Abby Shea, and Jenny Heck. One Unity Team meeting was held prior to this workday, at which Curtis, Kirk, Sarah and Tierney were present. Curtis coordinated with guest speaker Eric Austin.

May 8th, 2013

1) Narrative (blog post): Today at Unity, we took the lessons Chef Big E imparted to us and put them into practice, tightening our business plan and including microgreens, posting to the blog and taking photos, working on a logo, and maintaining our system so that we can continue producing a quality product.



One of the most remarkable things I noticed today was students helping each other – explaining facets of the different areas of operation to one another, contributing to the blog post, giving ideas for the business plan.

2) Quantitative results

Student participation: 8 (21% participation)

YEA Corps staff: 5

Length of workday: 3 hours

Budget expenditures: N/A

YEA Corps management activities: YEA Corps staff present were Sarah Halvorson-Fried, Tierney Lain, Michael Tuma, Kirk Marschel, and Saeed Nezhad. One Unity Team Meeting was held prior to this workday, at which Sarah, Tierney, Kirk, and Curtis Wilson were present.

May 15th, 2013

1) Narrative (blog post): Today at Unity we had a solid small group that were giving us their attention, and more importantly helping each other out. We started by talking about last week and about the business. The students asked Ms. Hollins what she thought about the products she bought, and the students liked the input so much that we decided to develop a survey/marketing card to give out with sales.



Students led a maintenance instruction lesson, where people learned how to harvest, prune, test levels, and use the tracking sheet. Several students expressed interested in the summer internship opportunity, and signed up for interviews. To finish off the day after lunch, we cleaned up and did a little bit of maintenance. The two rooms are looking fresh as ever and the students are ready to sell more produce.



Student participation: 6 (16% participation)

YEA Corps staff: 4

Length of workday: 3 hours

Budget expenditures: N/A

YEA Corps management activities: YEA Corps staff present were Curtis Wilson, Tierney Lain, Michael Tuma, and Kirk Marschel. One Unity Team Meeting was held prior to this workday, at which Sarah, Tierney, Kirk, and Curtis were present.

May 22nd, 2013

1) Narrative (blog post): Our second to last day in class had us completing the end-of-year success survey and planning the end-of-year celebration.

The success survey was brought to us by YEA Corps board member Fran Linhart, who has worked extensively in education, especially in results measurement. We ask students questions like, “what is organic food?” and “do you recycle?” both at the beginning and the end of our time with them. This tells us whether we have met our education goals.

Of course, measurements like this are not the only indicators of success. We think we’ve been successful if students feel confident enough about their knowledge and comfortable enough with their environment to teach each other. We think we’ve been successful if students like the program so much that they want to continue on with us as interns. We think we’ve been successful if students use the excitement they get from selling their produce to invest time and energy in the sustainable systems (aquaponics, microgreens, vermicompost) that make it possible.

Anytime we can involve students in decision-making we like to do it – we find it gives students a sense of ownership and pride. So for the end-of-year celebration, we asked students what they might like to do – specifically, if they would enjoy a cooking demonstration from Chef E, our guest speaker from a few weeks previous. The answer was a resounding YES. We plan to return next week with ingredients for fish tacos, interview questions for potential interns, a jeopardy game, prizes, and business cards made from the logo that Sabastian, our student artist, finalized today.

2) Quantitative results

Student participation: 6 (16% participation)

YEA Corps staff: 5

Length of workday: 3 hours

Budget expenditures: N/A

YEA Corps management activities: YEA Corps staff present were Sarah Halvorson-Fried, Curtis Wilson, Michael Tuma, Tierney Lain, and Kirk Marschel. The educational survey dialogue was printed by Sarah on-site. One Unity Team Meeting was held prior to this workday, at which Sarah, Curtis, Kirk and Tierney were present.

May 29th, 2013

1) Narrative (blog post): Celebration day!!

It’s hard to believe that it’s the end of the semester already. Our celebration at Unity last Wednesday kicked off with a program recap presentation by Zach, and the distribution of business cards, featuring the program’s new logo that was designed by the students over the semester.



Our class then headed down to the cafeteria where Chef Eric Austin, better known as Chef Big E, led a demonstration on how to cook with the produce that the students had been growing all year. Big E talked the students through all the steps to make delicious tilapia fish tacos, highlighting how important their role as growers is to the process of casual and fine dining.



After tacos students feasted on sandwiches generously donated by our newest neighborhood supporters, the Avenue Eatery. We wrapped up the day with a riveting game of urban agriculture-themed jeopardy, utilizing all of their knowledge of the sustainable agriculture systems they have built this past year. After a neck and neck game, our newest interns Travon and Sabastian pulled ahead during final jeopardy, when given the answer “This is the chemical found in fish waste that once introduced into the Bio filter bacteria transforms it into Nitrites first, then Nitrates which the plants can easily digest.”



Expect to hear great things from the Unity project in the future as we continue growing into the summer semester, and as students from MNIC Unity join us at YEA Corps for our 3rd annual Summer Sustainability Internship

Student participation: 16 (42% participation)

YEA Corps staff: 7

Length of workday: 3 hours

Budget expenditures: \$5.35 for business cards, \$31.96 for chef demonstration supplies

YEA Corps management activities: YEA Corps staff present were Sarah Halvorson-Fried, Zach Robinson, Curtis Wilson, Tierney Lain, Kirk Marschel, Michael Tuma, and Saeed Nezhad. Eric Austin was also present as Guest Chef. A presentation was prepared by Zach, a jeopardy game was prepared by Curtis and Kirk, and business cards were prepared and printed by Kirk off-site. Interview questions were prepared by Sarah and printed on-site. Materials for the chef demonstration lesson were purchased by Curtis and Saeed. One Unity Team Meeting was held prior to this workday, at which Sarah, Curtis, Zach, Kirk, Saeed and Tierney were present.

June 2013

1) Narrative: The Internship @ Unity Garden Begins!!!

Travon Williamson was selected to be the CEO of the Unity Gardens Project. Every single Monday and Friday at the 3rd annual YEA Corps internship, he has shown up and been mentored to Launch the Unity Gardens Business this Fall. Working with the YEA Corps Staff and other community leaders such as Zoe from Appetite for Change, Travon has developed relationships to sell the produce grown. He is working on final product selection and tracking methods for the system maintenance and care, and tracking the project. For this position, Travon has the responsibility of developing the Unity Gardens Business, and caring for the System Built this year at Unity. It truly and awesome thing to see him develop personally and professional, and we

think next year will continue this programs success. Additionally, YEA has garnered more stipends and funding that may be put toward this project in the future. Finally, the facebook page, complete youth business run has been launched!

<https://www.facebook.com/pages/Unity-Gardens/380227138745369?ref=notif¬if t=fbpage fan invite>

Student participation: 100% internship participation

YEA Corps staff: 1

Length of workday: 3 hours

Budget expenditures: \$0 (Travon will be compensated with a stipend in July.)

C. Educational Survey Results

These results come from a ½ year of participation for the unity program.

All Unity students in attendance were surveyed twice (Survey #1 on February 20, 2013 and Survey #2 on May 22, 2013) in a group interview style. The survey used was developed by YEA Corps board member Francine Linhart, a retired school standards specialist.

Students were asked the following questions, and YEA Corps staff analyzed their answers according to the level of understanding, described below.

- **Deep Knowledge** – Students’ responses reflected a detailed understand of the concepts and were able to engage in thoughtful conversation.
- **Acceptable Knowledge** – Students understood concepts, but essential details would be missing from their discussion; students had bits and pieces, but were not able to synthesize a complete picture
- **Sketchy Knowledge** – Students made statements, but provided few details. Responses often appeared to be guesses.
- **Nonexistent** – Students responded “I don’t know” or provided an off-topic, unrelated response when asked a question.

Survey #	SURVEY QUESTION & ANSWER SUMMARY	DOK (Depth of Knowledge)	Analysis & Conclusions
	Why did the student sign up for the class?		At the beginning of the program many students joined for the credit potential. However, the students who participated
1	Credit Seemed eye catching	Acceptable	

2	To learn about this, to see what it was about To figure out what aquaponics is "I like learning new things about food"	Deep	through the end of the year gained a genuine interest in the subject matter.
	Define sustainability		When first surveyed, students did not understand the term "sustainability." At the conclusion of our program the word is still not what students use to describe the work they are doing, but understand the concept when it is explained, especially as it relates to their aquaponics business.
1	Stable	Nonexistent	
2	Control	Sketchy	
	Describe food habits		Students have a deep understanding of how they eat. More concern for healthy, local eating could be fostered through more opportunities to eat produce grown.
1	3 shop for own groceries Some garden at home Most eat out every day Farmers market – yes	Deep	
2	Used to have a job growing plants Meat Cereal and milk Been to farmers market once to get fruits and vegetables Been once with my mom Noodles Food comes from the ground up	Deep	
	Length of time in class		The high turnover rate and variable attendance that is apparent here is an important factor in lack of knowledge retention.
1	Since last semester Since first time Just today Varied	Deep	
2	Since February Since October	Deep	
	Define organic food		The comment, "I don't eat organic food because it comes from poop" was made at the first group survey.
1	Natural No processed food, nothing artificial to make it stay (preservatives) 'The real deal'	Sketchy	

	Comes more from the ground Fresh taste Never eat it, comes from poop Heard it was healthier Different people eat different food		Since then, students have been exposed to organic vs. conventional produce pricing, a local chef who uses organic produce, and growing it themselves. The last piece is no doubt where the response, "more labor intensive" comes from: students have gained an understanding of the work it takes to produce food. They also understand nutrient flow, and that their product contains a high amount of nutrients and flavor.
2	Tastes different Seems more healthy More potent (flavor, nutrients) More labor intensive Natural Not processed	Acceptable	
	How does organic food fit in with sustainability?		Students had trouble answering this question due to their lack of understanding the term, "sustainability." More work defining key vocabulary will be done in the future.
1	Sustains nutrition in the body You can recycle it Makes the earth better Maintainable	Sketchy	
2	Controlling the process of growing Sustainability is like organic but they do more Organic is natural, sustainable they're doing extra	Sketchy	
	Aquaponics discussion		The aquaponics project was the center piece of our program. This, and the tangible nature of the system, means that students learned a great deal about the science, practice, and business of aquaponics. Additionally, students demonstrate pride in their ability to use this cutting-edge technology.
1	Aqua means water Water system, sterilized Many processes	Nonexistent	
2	Description of system Easier way to grow Self operated Organic/natural – no chemicals Can grow year round: don't have to worry about weather	Deep	

	Vermicomposting discussion		Vermicomposting was not a primary focus of our program; however, the use of the vermicompost system to dispose of plant and food waste throughout the year allowed students to understand it.
1	Some recycle (emphatic yes), some don't About 4 recycle Worms are to feed fish	Sketchy	
2	Recycle → yes When you recycle, you don't have to use new resources. Less waste, less trees to cut down, more flowers, worms turn into dirt that's high in nutrients.	Deep	

Final Survey Conclusions:

- 5 out of 8 question categories showed verbal improvement in knowledge base.
- 3 of 8 categories stayed even in knowledge base.
- 0 of 8 questions showed decrease in knowledge base.
- 2 of 8 questions showed the maximum amount of improvement. Interestingly, these areas of improvement were the exclusive questions pertaining to the “hands on” learning and engagement students engaged in – the aquaponics and vermicomposting activities.
- A one level increase was seen in 3 questions pertaining to sustainability, organic food, and a genuine interest in subject matter. While the progress made with hands on learning was not as evident in these non-hands on categories, it appears that exposure to the subject matter peaked interest and knowledge measurably.

2012-2013 Program Review

Many amazing things happened at the program this year:

- Important progress and demonstrated, measurable success was established in a resistant school environment that is typically dismissed and unfairly labeled.
- Educational merit to hands on learning in high risk environments was established.
- 6 community businesses and organizations were brought in and exposed to the students as examples of entrepreneurship through guest speaking and hands on action.
- Secondary results including mentorship and education experience was provided to young professionals (<25) and college students who helped teach and administer the program.
- U of M students earned credit while working through our program.
- The students took field trips to actual commercial businesses.
- The students designed and built a 100 gallon recirculating aquaculture system that grows sustainable food.
- Professional conduct, entrepreneurship and marketing ability were demonstrated and exemplified.
- Students designed and executed the branding and logo creation of their new business.

- Food was grown, harvested, and sold within the school.
- 3 students interviewed and were successfully selected as summer interns, and will officially launch the “Unity Gardens” business next fall, selling to the community.

Moving forward, our program will continue all efforts at making the new student hands on education program, and the “Unity Gardens” business efforts sustainable. We will be continuing activities and progress in 2013-2014.

Directions: Complete this form in detail. Common line items are indicated. Add or change categories and add rows as necessary. If you have any questions about the budget form, contact Mary Karius at 612-596-9129 or mary.karius@co.hennepin.mn.us.

Expense Category	Description/ Role	Hourly Rate/ Cost per Item	Number Hours/Items	Funds Requested	In-kind/ Matching*	Total Project Costs
(A) Staff and Personnel						
Administrative staff	Program Manager	\$10.00	336.5	\$3,365.00		\$3,365.00
Project management staff	Executive Director	na		\$3,250.00		\$3,250.00
Teaching Assistant	Head YEA teacher	\$45.00	27	\$1,215.00		\$1,215.00
Volunteer Management Staff	3 people	\$10.00	277	\$0.00	\$2,770.00	\$2,770.00
				\$0.00		\$0.00
				SUBTOTAL =		\$10,600.00
(B) Reimbursable Expenses						
1. Project Supplies -- List all of the supplies needed for your project (add rows below as needed)						
Organic Pizza -Launch Day						\$0.00
Beverages						\$0.00
paper, folders 45 students				\$92.79		\$92.79
Cork Board, Tape, push pins				\$35.76		\$35.76
Cork board, push pins, hanger				\$16.95		\$16.95
Poster Board and Labels				\$20.63		\$20.63
Business Cards				\$5.35		\$5.35
Cooking Lesson Supplies (groceries)				\$16.99		\$16.99
Cooking Lesson Supplies (groceries)				\$14.97		\$14.97
2. Equipment -- direct expense for necessary equipment. List all individually (add rows below as needed)						
Plant Bedding # 1				\$259.95		\$259.95
Plant Stand # 1				\$375.95		\$375.95
Tools and Materials				\$275.91		\$275.91
Material Cart				\$0.00	\$950.00	\$950.00
Knack Tool lock box				\$0.00	\$3,133.00	\$3,133.00
Balance of system equipment (pumps, tubing etc.)				\$661.39		\$661.39
Bio filter media and Project Tools				\$87.89		\$87.89
Gravel and extension cord				\$36.71		\$36.71
Bio Filter casing and amenities				\$379.00		\$379.00
Timers and Drains				\$60.24		\$60.24
Plants and Seeds				\$16.04		\$16.04
New Wheels tray stabilization				\$140.91		\$140.91
GFCI Plug and Cords				\$40.91		\$40.91
Growing Medium, pots, therm, air				\$92.53		\$92.53
Water test kit, nets, lava rock				\$49.45		\$49.45
Timer and Drains				\$19.35		\$19.35
Reservior and backup pumps				\$103.75		\$103.75
Menards (valve check fittings)				\$10.31		\$10.31
Seeds and candy				\$36.62		\$36.62
Wooden Worm Bin				\$87.50		\$87.50
Hardware Cloth				\$14.20		\$14.20
Hydroton				\$81.80		\$81.80
Seeds				\$14.97		\$14.97
3. Stipend -- Must be tied directly to project (add rows below as needed)						
				\$0.00		\$0.00
				\$0.00		\$0.00
4. Marketing and Communications						
Printing				\$0.00		\$0.00
Mailing				\$0.00		\$0.00
Distribution				\$0.00		\$0.00
5. Other Expenses (add rows below as needed)						
Field Trip Transportation				\$190.00		\$190.00
				\$0.00		\$0.00
				SUBTOTAL =		\$7,321.82
				TOTAL =		\$17,921.82

Hard Copy and e-Invoice

9 monthly YEA Invoices	x
Receipt Galactic Pizza	x
Receipt Walgreens/cub	x
Receipt Office Max	x
Receipt Target	x
Receipt Menards	x
Receipt Target	x
Receipt Target	x
Receipt Wedge Co-op	x
Receipt Vastland	x
Compass	x
Receipt Interior Gardens	x
Receipt Interior Gardens	x
Receipt Home Depot	x
Receipt Interior Gardens	x
Receipt Home Depot	x
Receipt Interior Gardens	x
Receipt Interior Gardens	x
Receipts Bachmans	x
Receipts Menards	x
Receipt Home Depot	x
Receipt Interior Gardens	x
Receipt Petsmart	x
Receipt Interior Gardens	x
Receipt Interior Gardens	x
Receipts Menards	x
Receipt Seward Co-op	x
Receipt Personal	x
Receipt Home Depot	x
Receipt Interior Gardens	x
Receipt Ace Hardware	x

Invoice/Receipt First Charter x

*Updated 7.2.13

Project Budget

No.	Phase	Items	Description	Price	CURRENT (7.2.13)	Remaining
1	Project Management			\$10,000	\$7,830.00	\$2,170.00
2	Aquaponics			\$3,200	\$2,845.38	\$354.62
			<i>Design, Permitting, Procurement, Testing</i>			
			<i>Materials and Construction (Tanks, pumps, structure, tubing, seeds pots, growing medium, fish, Indoor lighting, humidifier)</i>			
3	Mushrooms		<u><i>(Need to keep focus on Aquaponics system success)</i></u>	\$0		
			<i>Shelving, containment, mycelium, bags, tools, dehumidifier etc.</i>			
4	Stipends			\$2,500		\$2,500.00
			<i>Student stipends</i>			
5	Field Trips			\$400	\$190	\$210.00
			<i>Transportation</i>			
6	Contingency (Operating Cash)			\$500	\$203.44	\$296.56
			<i>Misc. Costs</i>			
4	TOTAL			\$16,600.00	\$11,068.82	\$5,531.18