North Flint Aquaponics & Healthy Food Initiative:

*How REI Co-Learning Plans and Student Led projects can serve as a catalyst for building local economies.*

Bob Brown, Willie Smith, Rev. Reggie Flynn, Mark Evans, and Adriana Flores
September 7, 2016
We started with a straightforward concept:

• Let’s co-implement applicable Co-Learning Plans or Student Led, Faculty Guided Projects with partners in Flint

• Let’s see what we learn in that process
Almost immediately the context of Flint began to change our scope and scale of our effort.
A City of Hopes, Dreams, and Trauma
Home to Amazing People
Home to Olympic Heroes
And Everyday Heroes
Home to Deep Faith
Martez S. Warren Ministries

PRESENTS

FROM THE HOOD TO THE PULPIT

CONFERENCE 2015

"I'M BETTER NOW!!"
(1 JOHN 4:4-5)

AUGUST 12TH - 15TH

WORSHIP SERVICE @ 7PM NIGHTLY

WEDNESDAY, AUG. 12TH
PASTOR MARTEZ WARREN (MAIN SPEAKER)
LECTURER, PASTOR FRANK WOODS

THURSDAY, AUG. 13TH
PASTOR SEAN PAYNE (MAIN SPEAKER)
LECTURER, PASTOR ALVIN SMITH

"This conference is designed to assist those who are seeking the next move after salvation, and it's also to encourage those who may feel they've gone too far to turn their lives around."
Home to Never Ending Hope
And Yet...
“Homicide rate spikes as Flint named third most-violent city in nation” – 9/15/15
Blight is everywhere
“According to the U.S. Census, 40.1 percent of the city's population is living in poverty. That makes Flint the second most poverty-stricken city in the nation for its size, just behind Youngstown, Ohio.” 9/17/15
All the major grocery stores left...
... and many were left with this
AND THEN.....
The Poisoning Of An American City

Toxic water. Sick kids. And the incompetent leaders who betrayed Flint
By Josh Sanburn
GOD HELP US SAVE FLINT
The intertwined wicked problems confronting Flint

- poverty
- disinvestment
- violence
- blighted neighborhoods
- poor grocery store choices (food desert)
- few viable entrepreneurial options
- youth with few job skills and no educational credentials
That Context Changed Everything...

Can we create a local economic system that builds the wealth and prosperity for everyone and responds to the context of Flint?
North Flint Aquaponics & Healthy Food Initiative

Makerspaces: Supporting an Entrepreneurial System (2013)
Benton, Dempsey, Mullins, Shelley, City of East Lansing
plus
Mankouche, Murray, Sach, Schulte, Sturt, & Williams
Plus
Framework of building neighborhood wealth, not gentrification, as proposed by The Democracy Collaborative and adapted from Cities Building Community Wealth.
Plus
The Need for Lead Mitigating Foods
Makerspaces are places where like-minded persons gather to work on personal projects, share tools and expertise as well as learn from each other (Tweney, March 29, 2009).

“Learning environments rich with possibilities, Makerspaces serve as gathering points where communities of new and experienced makers connect to work on real and personally meaningful projects, informed by helpful mentors and expertise, using new technologies and traditional tools.” (Maker Media, Spring 2013:1)
What is an afterhouse?
Mankouche, Murray, Sach, Schulte, Sturt, & Williams
Community wealth building framework

• It has multiple drivers that work together to create a system that delivers the outcome sought: an inclusive, sustainable community economy where all can prosper—particularly those normally excluded.

• This system can be defined as having seven key drivers.
1. Place
2. Ownership
3. Multipliers
4. Collaboration
5. Inclusion
6. Workforce
7. System
Lead Mitigating Foods

• Foods that contain calcium:
  ○ Milk
  ○ Yogurt
  ○ Cheese
  ○ Leafy Green Vegetables- spinach, kale, collard greens, and swiss chard

• Vitamin C (helps the body absorb iron):
  ○ Oranges
  ○ Grapefruit
  ○ Tomatoes
  ○ Green Peppers
  ○ Juices- Grapefruit and Tomato

• Iron-rich foods:
  ○ Lean red meats
  ○ Fish
  ○ Chicken
  ○ Iron-fortified cereals
  ○ Dried fruits- ex. Raisins and prunes
North Flint Aquaponics & Healthy Food Initiative

What is Aquaponics?
Why Aquaponics?
Aquaponics Nitrogen Cycle

Fish

Ammonia NH4+

NitrosomonaS

Nitrites NO2+

Nitrospira

Nitrites converted to Nitrites

Ammonia converted to Nitrites

Fish excrete Ammonia

Fish absorbs Nitrates

Plants absorb Nitrates

Filtered H2O

Nitrates NO3+

Plant

Nitrospira

NitrosomonaS

Nitrites NO2+

Nitrite converted to Nitrates

Ammonia converted to Nitrites

Nitrospira

NitrosomonaS

Nitrites NO2+

Nitrite converted to Nitrates

Ammonia converted to Nitrites

Fish excrete Ammonia

Fish absorbs Nitrates

Plants absorb Nitrates

Filtered H2O
North Flint Aquaponics & Healthy Food Initiative

• Will create **work and opportunity which is place-based**, is supported by the purchasing power of anchor institutions (ultimately grocery co-ops in north Flint)

• Is built on **local or cooperative ownership**

• Is **broadly collaborative** (not just between city government and the private sector)

• **Opens up economic opportunity to underserved groups**, reaches out to those with employment barriers, and supports our community rather than extracting profits from it

• **Develops family assets** such as social networks, specialized and broad skill sets, and a home within a neighborhood with social fabric and bonding
15 Partners

- Breidenstein Builders (Private Business)
- West Pulaski Street Block Club (Residents)
- Building Neighborhood Capacity Neighborhood Advisory Committee (Residents)
- Black Men for Social Change (Residents)
- WOW Outreach (Community-based Non-profit)
- Metro Community Development (Non-profit)
- Habitat for Humanity (Non-profit)
- Community Foundation of Greater Flint - Flint Food System Initiative (Philanthropy)
- North Flint Reinvestment Corporation (Non-profit)
- Red Ink (Non-profit)
- Flint Soup (Community Organization)
- MSU Center for Community & Economic Development (Public Higher Ed)
- Mott Community College (Public Higher Ed)
- MSU Extension (Public Higher Ed)
- Kettering University Student Association for Global Engineering (students)
Three Main Projects

• Aquaponics Learning and Distribution Center

• Neighborhood Aqua House

• North Flint Food and Aquaponics Co-op
Aquaponics Learning and Distribution Center
(a Metro Community Development project)

• A grassroots entrepreneurial structure and process which will allow those with barriers to employment by learning how to grow and bundle a package of aquaponics products.
  ○ youth ages 18-24 who are disengaged/dropped out of school
  ○ Ex-offenders
  ○ north end residents in general
Plant system

Fish System
West Pulaski Aqua-House
(A West Pulaski Block Club Project)

- Aqua-House: semi-subterranean passive solar greenhouse that utilizes the basement system of an abandoned home to build an aquaponics system.
- The structure integrates high volume to surface shapes and thermal insulating materials
  - maximizing winter exposure to the sun and minimizing over-exposure to summer sun.
- The structure incorporates thermal mass storage design and convective loop cooling/ventilation
  - limit/eliminate dependence on fossil fuels for heating and cooling.
- Energy considerations in the design can minimize required investment and maintenance costs to create a more sustainable design
- It is owned by the neighborhood
North Flint Food and Aquaponics Co-op
(North Flint Reinvestment Corporation project)

• We believe that a resident/worker-owned cooperative grocery and aquaponics network will empower north-Flint residents and help build a stronger community by keeping resources and decisions in their control.

• Decisions are made democratically: one member gets one share gets one vote.

• A food co-op can be created to provide food that is healthy and reasonably priced for those who live below poverty and/or live in food deserts.

• Many communities in our nation have benefitted from business co-ops, including those that are highly impoverished post-industrial cities, including Philadelphia, PA, Cleveland, OH, and Richmond, CA.

• As collaborators we will work to develop a strong, resident/owner-led food co-op which is served by an urban aquaponics food supply.
North Flint Food and Aquaponics Co-op Site
Aquaponics Learning and Distribution Center
Current Results
Makerspace: Up and Operating
Aquaponics Learning and Distribution Center
1st Learning Group Engaged

Aquaponic Food Production
Raising fish and plants for food and profit

Rebecca L. Nelson
with contributions from John S. Pade
West Pulaski Aqua House

- Zoning
- Land Bank
- Business Plan (co-op model)
- Operating Plan and Budget
- Deconstruction/Construction Budget
- Resident Engagement & Support
- Funding Prospectus
- Resource Development Plan & Grant Writing
North Flint Food and Aquaponics Co-op

JOIN US
FEB. 8TH, 2016, 6 PM
AT
EAGLES NEST ACADEMY
5005 CLOVERLAWN DR.
FLINT, MI 48504

THIS WILL BE A PLANNING SESSION ON
THE START OF A GROCERY STORE

JOIN US...
COMMUNITY FOOD INVESTMENT
ORGANIZING MEETING
THURSDAY, APRIL 28TH, 5:30PM
EAGLES NEST ACADEMY
AUDITORIUM
5005 CLOVERLAWN DR.
FLINT, MI 48504

HOSTED BY NORTH FLINT REINVESTMENT CORPORATION
WWW.NORTHFLINTCORP.COM
810.965.1514
North Flint Food and Aquaponics Co-op

April – June

Flint & Genesee Chamber of Commerce connects market feasibility study

Results: Neighborhood can sustain a 22,000 square foot store
North Flint Food and Aquaponics Co-op

• Business Plan
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