

Explore
**SUSTAINABLE
INDIANA**

*Celebrating
Hoosier Solutions
to Our Climate Crisis*



The page is framed by a border of vibrant green leaves, likely from a maple tree, which are scattered around the edges, creating a natural and fresh aesthetic. The leaves vary in shades of green, from light lime to deep forest green, and are set against a plain white background.

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Foreward

This book is a container for hope. Not the pie-in-the-sky kind, but hope you can savor right here, right now. In these pages you will find stories of people all over Indiana responding to the world's ills with healing actions.

What ills? Loss of topsoil, pollution of rivers and air, disruption of climate, dwindling of wildlife, urban sprawl and rural blight, congested and deteriorating roads, a cult of consumerism, overflowing landfills, underperforming schools, offshoring of jobs, an epidemic of obesity alongside hunger, a concentration of wealth alongside poverty, abdication of civic responsibility by many politicians and corporate executives, and a pervasive mood of cynicism.

What healing? Organic agriculture to protect soils and watersheds, farmers markets to support growers, cooking with real food to nurture health, land trusts to preserve habitat and wildlife, power from sun and wind to reduce pollution and greenhouse emissions, buses and bicycles to relieve congestion and sprawl, revival of local economies to foster jobs, renewal of public schools to prepare citizens for a modern democracy, green building to conserve energy and materials, community building to address shared needs, and a pervasive mood of confidence.

The Hoosiers doing this work of conservation and restoration include children and teenagers, parents and grandparents, teachers, preachers, farmers, truckers, artists, journalists, businesspeople, and public officials—citizens of every age and stripe. What they have in common is the ability to imagine a kinder, fairer, more joyful and peaceful and sustainable way of life, and the desire to help create it. Instead of lamenting what's wrong, they roll up their sleeves and work to set it right.

We all have that power. Each of us—every person reading these lines—is a vessel of hope. You don't need to be rich. You don't need to be a bigshot. You only need to possess a lively imagination and a big heart. In these pages you will find a wealth of ideas about what you might do, what your family and friends and community might do, to help in mending the world.

Scott Russell Sanders
Thanksgiving Day, 2015

Preface

Why this book?

The world as we've known it is unraveling. Among many indicators, the weather is getting unpredictable and frequently severe. Many of us have friends or relatives battling fierce wind, water, fire, and snow storms with accompanying power outages, transit disruptions, and property losses. Scientists tell us that the intensity and frequency of these extreme weather events are caused largely by climate change which gets personal very fast if your corn crop is wiped out by a prolonged drought or too much rain at the wrong time, as experienced by many Indiana farmers.

World leaders including Pope Francis, the Dalai Lama, and Secretary General of the United Nations, Ban Ki-moon, have issued an urgent appeal to curb greenhouse gas emissions. Hundreds of cities around the world have signed on to The Compact of Mayors: an agreement of city networks—and then of their members—to undertake a transparent and supportive approach to reduce city-level emissions, to reduce vulnerability and to enhance resilience to climate change.

We worry about our children and their future in a world forever altered by climate change and consequent geopolitical upheavals. Where will our food come from? How will we get around, handle waste, go shopping, get electric power, and build places to live and work? What will our schools and communities be like? Can we really have a quality life without fossil fuels and a six figure income?

YES, we can. This book is about what some pioneering Hoosiers are already doing to ensure a quality future for themselves, their children and their grandchildren. It is a book of stories; practical solutions for how we can grow local and eat healthy, how we can clean up the air we breath and preserve safe water to drink, how we can conserve energy and power our way forward with wind and solar. These are real-life stories about contemporary Hoosier trailblazers who are finding ways to live lighter on the land, enjoy more time with nature and neighbor, create work that is more satisfying and connect with kindred spirits in fashioning resilient communities. That future we pine for is already here in prototypes across Indiana.

How did this book come about?

Back in the spring of 2001, Jerry King (currently Executive Director of the Indiana Public Health Association) and I convened a small gathering of activists to review the newly-minted Earth Charter (a global consensus of guiding principles for achieving a sustainable future). There evolved a strong feeling that the Charter would be a unifying and motivating framework for our many interdependent causes including environmental protection, inclusive human rights, economic equity, and a culture of nonviolence.

To make the Charter known, we decided to hold an Earth Charter Summit in late September. Marian University, then known as Marian College, in Indianapolis kindly offered to host the event and over 400 people attended.

Enthusiasm was high. We held annual Summits in a variety of venues including the Unitarian Universalist Church of Indianapolis, the Indianapolis Art Museum, St. Luke's United Methodist Church, Old Centrum (now the home of Indiana Landmarks), and Butler University. To carry the momentum forward, a 501(c)3 nonprofit, Earth Charter Indiana, was formed in 2005.

In 2006, at the Earth Charter Summit at St. Luke's UMC, we launched a bicentennial initiative named Sustainable Indiana 2016 to discover, document, and celebrate Hoosier-based sustainability models as a bicentennial legacy. Now, a decade later, 200 Green Legacy Projects and over 20 Green Legacy Communities have been identified. All together, these "Green Lights" of Indiana constitute a tribute to Hoosier ingenuity, a useful guide to sustainable options, and a body of evidence that Indiana is more progressive than most people think.

The Indiana Bicentennial Commission endorsed **Sustainable Indiana 2016** in February 2014. They wrote, "We appreciate your interest and willingness to make Indiana's 200th birthday a success in which Hoosiers in all 92 counties, can take pride."

Gathering and writing up the stories for Explore Sustainable Indiana has been a decade long process involving several **Earth Charter Indiana** staff members, Sustainable Indiana 2016 Regional Coordinators, and lots of capable volunteers, including students from Butler University, Ball State University, Hanover College,

Notre Dame, IPFW, IU, IUPUI, and Valparaiso University. A cadre of professional journalists, artists, designers, and editors came together in 2014-15 to advise and enhance the final product.

I am especially grateful to Jim Poyser, Executive Director of Earth Charter Indiana, and to **Sustainable Indiana 2016** staffers: Judy Voss, Shannon Anderson, and Richard Clough for their many dedicated hours of research, writing, editing, creating, and networking.

Of course, the real celebrities here are the men, women, and children whose names and stories are recorded in the book. It has been an immense pleasure to meet most of them personally as I've traveled across the state over the past 10 years. They have revived my faith in the goodness of humanity. Their example has given me hope and courage to keep going when the prospects for a livable future seemed dim. I trust you too will get a lift while reading their stories. Even more important than admiration, however, is the prospect of learning from them and replicating their achievements.

John Gibson, State Coordinator

*Sustainable Indiana 2016
A Bicentennial Initiative of Earth Charter Indiana
Endorsed by the Indiana Bicentennial
Commission*

DEDICATION

-for our children's children

**The greatest danger to our planet is the
belief that someone else will save it.**

-Robert Swan

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Greener Food Systems

“If every US citizen ate just one meal a week (any meal) composed of locally and organically raised meats and produce, we would reduce our country’s oil consumption by over 1.1 million barrels of oil every week. That’s not gallons, but barrels.”

—Barbara Kingsolver, “Animal, Vegetable, Miracle”

We all eat, most of us three times a day. We select our food on the basis of cost, taste, calories, nutrition along with an abundance of other factors. Only rarely do we consider how these choices affect the future of our planet. Yet, our food choices have a huge impact on the environment. More than how we drive, how we heat and cool our homes, or how we fertilize our lawns, food production, packaging, and transport uses vast amounts of nonrenewable resources. Our current system of producing food and bringing it to the table is simply not sustainable.

In this chapter, we present some stories of people and practices that are kind to the earth.



Faith Cohen

We'll grow more of our own food

During World War II, Victory Gardens abounded throughout our nation. Public parks, front yards and vacant lots all were turned into sources of healthy, fresh, high quality food. By 1943, there were 18,000 such gardens across the country producing a full one-third of all vegetables grown in the US. We know we can raise our own food because we've done it before.

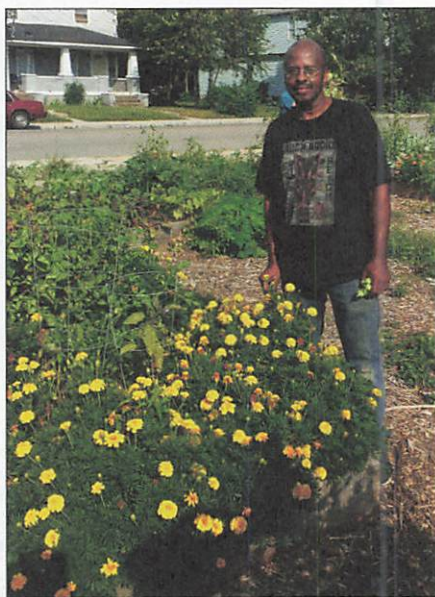
Backyard gardening has always been popular. In recent years, community gardens have sprung up across the state providing urban dwellers the opportunity to grow their own. The advantages of growing your own are numerous. It's inexpensive. A single seed packet can produce a dozen or more servings. It's nutritious. Most people need to eat more fruits and vegetables. It's environmentally friendly since delivery requires a short walk rather than long truck ride from California. And, as any gardener will tell you, the taste of fresh picked produce is vastly superior to what you can buy in the supermarket. (You haven't really eaten peas until you've gently cooked them a few minutes after picking.) Community gardens have the added benefit of bringing neighbors closer together.

The Unleavened Bread Café is something of an unofficial community center for the Fall Creek neighborhood. It's a gathering point for many in the area. In the spring and summer and you'll find lush, green plants.

Fall Creek Gardens

Stop by Fall Creek Gardens in Indianapolis on a Saturday morning in summer and you'll find people busily working in their plots. The 50 families who garden here weed, water, harvest and pick off unwanted bugs. All of them are enjoying what they're doing although the reasons may vary considerably.

Garlidene King has had a plot here since the gardens first opened. She credits her mother with her interest in raising fresh produce. "Growing up, we had good food even though we were very poor." Her mother raised fresh



Levert Sharpe in his garden

fruits and vegetables and was able to feed her family well because of that. Following in her mother's footsteps, Garlidene raises beans, squash and other produce for herself and her family. She especially likes green beans and tomatoes. She is extremely pleased that even her 18 month old grandchild likes the veggies from her garden.



Lever Sharpe has a plot because he just loves to garden. And he likes what it produces because, "You know what you're getting. At the supermarket, you don't know if it's genetically modified, treated with sewage or what's been done to it. When I grow it, I know just what I'm getting." He'll also tell you of the wonders of compost and proudly shows you plants that have prospered with healthy doses of compost tea. He likes to think of himself as the "keeper of the pile."

Amy and Dave Bear had never gardened before but attended a winter class on gardening put on by Fall Creek Gardens and became hooked. They find it fun to do but now they love the food it produces. They like that it sends a message to people driving by that you can live downtown and still grow your own food. They, along with all the gardeners, agree that these gardens help neighbors get to know each other. Numerous friendships have developed as a result of the gardens.

Nearby Broadway United Methodist Church has for some years sent roving listeners out into the neighborhood to visit with neighbors, listen to their stories and learn what they want of the area. Out of that came the idea for a community garden. With help from the Efrogmson Foundation and other supporters, the garden came into being beside the Unleavened Bread, a neighbor café and community center. In 2011 they incorporated as a non-profit entity. In addition to the plots for 50 families, there are gardens for kids and several that raise produce for the Mid North Food Pantry. On top of that, the patrons of the Unleavened Bread dine on the fresh produce next door.

Maggie Goglein Hanna is the Executive Director of Fall Creek Gardens. She keeps track of the gardens but does a whole lot more. Fall Creek Gardens conducts classes throughout the year on topics ranging from gardening organically, raising backyard chickens, beekeeping and

canning and preserving. The intent is for urban dwellers to become self-sufficient in producing their food.

A piece of vacant land, that was once something of an eyesore, has been transformed into something not only pleasing to the eye but which provides fresh, wholesome food while bringing the community together.

-by Richard Clough

Fort Wayne Urban Farmers

Imagine how much work it would take to plant a variety of seeds, weed, and spread fertilizer on a six acre garden. Imagine the sweat, aches, and dirt on your hands after a long day in the sun. Then imagine that hard work coming to fruition as your seeds grow into fine plants ready for picking. Now take all of that hard-earned produce and give it away.



Ephraim Smiley

This is what Mr. Ephraim Smiley and the Fort Wayne Urban Farmers — or “Garden Angels”, as they like to be called, do with the food they produce. Their all-organic garden lies beside the Fellowship Missionary Church, on Tillman Road, who donated the land to help those in need. Smiley learned his gardening knowledge from his great grandparents, who were sharecroppers in Alabama. Generous community donations of money, seed, and volunteer labor have enabled the Urban Gardeners to buy a tractor, expand the garden and diversify the plants to cater to the needs of different cultural groups.

This place is more than a garden; it provides a sense of purpose for the people who volunteer here and it allows those on a fixed income to get a freezer full of vegetables at no cost. On average, this garden produces over 2,000 pounds of food per year. Smiley partners with

Maplewood Elementary and teaches the youth about gardening. They learn not only how to plant, but how to identify insects by the eggs laid or bite marks on the produce.

Mr. Smiley suggested that in order for him to expand the project, he needs things such as a planter, continued donations, and more volunteers. We asked him why he does this. He replied with, "The reason why I do this is that I believe everyone needs something in their life that they are committed to. This is my commitment."

-By Jared Burger and Caleb Hagan

We'll buy our food from small local farms.

That head of lettuce at your supermarket is a long distance traveler. Grown in the San Joaquin Valley in California, it has been trucked 2200 miles to your neighborhood Kroger. Despite the fact that Indiana has over 15,000,000 acres of arable land, an estimated 90% of our food is imported. Doesn't it make sense to grow food locally?

Indiana has a number of small farms producing food for local markets. A head of lettuce grown on a local farm needs to travel only a few miles to market rather than cross country. It's a huge energy savings. Additionally the quality is likely to be superior since it's fresher. Here's a look at one of them.

Hawkins Family Farm

Just a few miles southeast of North Manchester in Wabash County is a 99 acre family farm that combines three major features of climate readiness: Food security, Green Jobs, and Cohesive Community.

Jeff and Kathy Hawkins and their son, Zachary, are the principal farmers. Zach has just returned to his farm roots after exploring the wider world. With the help of occasional volunteers and clergy interns, the Hawkins family grows lots of veggies "naturally" without chemicals or artificial fertilizers, while raising free-range beef, pork, chickens and turkeys in an interdependent circle of soil nurture and nutritious food. Beyond providing for the Hawkins' table, the abundant harvest offers seasonal food for families through CSA (Community Supported Agriculture) shares. Hawkins' farm food also graces the menu of several area

restaurants and can be purchased on site in the Farm Store which is open 8-6 Monday through Saturday.

Food also builds community at and beyond the farm. During the summer, neighbors far and near flock to the Friday-nights homemade pizza parties. Late in September the farm features an annual “farm-to-fork-dining-in-the-gardens upscale harvest dinner” (with white table cloths) aptly named Between Heaven and Earth.

Another community building feature of the Hawkins' Farm is called Hope CSA (Hands-On Pastoral Education using Clergy Sustaining Agriculture). Small groups of area clergy come to the farm one day a month to learn a more “organic” way of life and ministry where soil and soul unite under the tutelage of Jeff Hawkins, himself an ordained Lutheran clergyman.

The entire operation of the farm provides full and part time jobs that enrich and sustain soil, body and soul. Work may or may not be rewarded with money but money is not the motive or measure of a green job. Green jobs are measured by their contribution to a safe, sufficient and satisfying life for this and for this and future generations.

-by John Gibson

We'll buy food from large environmentally friendly and sustainable producers.

Large food producers will inevitably be part of the future. But being big doesn't mean a producer can't also be green. It is possible for a large corporation to have a minimal negative impact on the environment and still produce on a large scale. As the world's awareness of the need to consider climate impact grows, people will demand that producers and suppliers be green. Bell Aquaponics is a corporation that is already operating in a way that is gentle to the planet.

RDM Aquaculture

Cows, pigs and chickens? Indiana's got plenty. Goats? Sure. Alpacas? You bet.

How about seafood?

Meet RDM Aquaculture,
Indiana's premier
shrimpers.
That's right — they're
Hoosier shrimpers.



RDM's Facility

Yep, the state of Indiana — with exactly zero miles of saltwater coastline — is home to a shrimp-and-crawdada operation in that legendary seaside town of Fowler. Karlanea and Daryl Brown have been raising seafood in seven indoor tanks in the middle of landlocked Benton County for five years running, and are now offering their services as consultants for anyone who'd like to get into the same business.

We were able to connect with Karlanea via email — she and Daryl have been literally criss-crossing the Midwest helping folks start their own aquaculture operations.

NUVO: *What are the challenges in your business?*

Karlanea Brown: Our biggest challenge right now is growing enough shrimp to supply our customers. We are a 40-count-per-pound shrimp operation and we cannot get past this weight because we sell them faster than we can grow them.

NUVO: *What's an average day like?*

Brown: Our average day [consists of] first testing the water so we know how to take care of the shrimp. We test for nine different items, every day, once a day. It usually takes about three hours. Then we feed, clean and sell or move shrimp. Every day is different, other than the testing. Every tank is different so it will have to be taken care of differently to the tank next to it. The tests tell us how we feed the shrimp and if anything else needs to be done, such as add baking soda for a low alkalinity level, for example. We add zero hormones or antibiotics to our tanks. The only things that go into our tanks are water, salt, shrimp, feed and some baking soda.

NUVO: *How environmentally sustainable is this business?*

Brown: We are very environmentally sustainable. We reuse our water. It is never discharged down the drain. The bacteria we use to sustain our water also acts as our water treatment. It consumes all the waste — and it is very cost effective. We do not use a lot of energy. We use radiant heat and we have a [liquid propane] boiler that we use to heat the tanks.

NUVO: *Explain the process that allows you to reuse the water.*

Brown: We do not discharge our water because the bacteria take care of the waste. When our tanks' bacteria or settled solids get too high we then pump them into a tank next to the shrimp tank. Then we let all the waste settle to the bottom and the clean water comes to the top. The clean water is pumped back into the tank with the shrimp. When the bacteria get to the level we want we then let the bacteria consume all the waste in the settling tank. In about 14 days I have ice-tea-colored water in our settling tanks.

NUVO: *How does the flavor stack up against Gulf shrimp?*

Brown: Our shrimp have a much better flavor. The only adjective I have ever been able to come up with is "clean." They have a much cleaner taste. No comparison — our shrimp taste much better. They have very little in their mud vein and their shells are very thin.

By...selling them live [the customer gets] the head and when the shrimp are cooked with the heads on you get this wonderful sweetness into the meat. We actually eat everything on the shrimp except the head. A lot of our clients love the head. They can have mine!

NUVO: *Whom are you selling to?*

Brown: We sell 99.9 percent retail out our front door. We [sell to] some restaurants like the Renaissance in Chicago, or the DigIN festival in Indy. We just added on to our building and will be adding 14 more production tanks along with a few tilapia tanks and an aquaponics system. We raise Pacific White shrimp and Australian Red Claw Crawfish.

NUVO: *You consult, too. You've helped to set up 18 farms. Why are you so interested in aquacultural growth beyond your farm?*

Brown: We started consulting just to help people get started. Our first year we lost over one million shrimp due to simple things and now we know what to look for ... We thought we could help others so they [could avoid] the hard times. We actually take 18 months off your learning curve. We can get you into shrimp farming with an eight-tank system including everything you will need for your building and six months chemical supplies for testing for about \$100,000.00. This includes everything you will need minus your building. We have put these [operations] in chicken barns, turkey barns, hog barns, school gymnasiums, new buildings and cider mill barns.

You should get some return on your investment at about the 24-month mark. The only pitfall is banks don't understand what we're about — they already have a preconceived idea. They are starting to come around. The shrimp have paid for us to add two employees, build a

new building and expand our production without loans.

My interest in the growth of this business is simple. Most people do not understand where their shrimp come from. They do not know they are loaded with hormones and antibiotics. We need more shrimp farmers because we can supply enough shrimp to everyone who wants and needs great tasting shrimp with no hormones or antibiotics. The only way we can do this is by getting more farmers involved. No one farmer can supply all the corn or soybeans needed for consumers.

NUVO: *What worries you? Power outages, I imagine?*

Brown: Power and disease are our worries. We've had several power outages here in Benton County, some as long as 11 hours. The shrimp can only survive for one hour with out power. We do have a backup generator. Disease is another worry — this is why we test continuously. We also have very strict protocols on how we do our testing. We have been fortunate we have not had any disease problems.

rdmshrimp.com

-by Ed Wenck

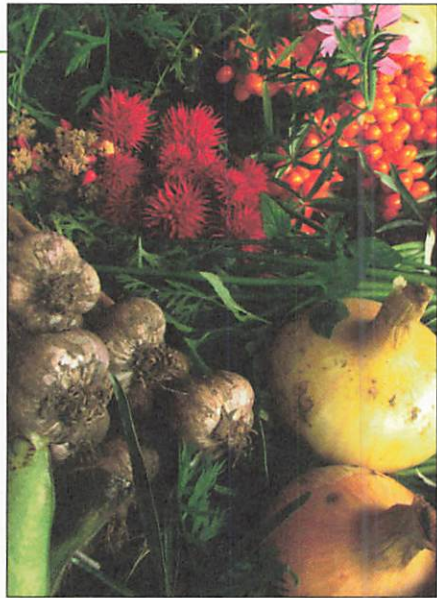
Reprinted with permission from NUVO

We'll have community owned markets.

Locally owned grocery stores assure that decisions about products will be made not in a board room thousands of miles away, but in the community itself. The needs and desires of the community will be paramount. Further, there is a much higher likelihood that community owned stores will utilize local growers and suppliers. And any profits stay in the community. Stop by the River City Food Co-op in Evansville and you'll find just such a store.

River City Co-op

A few years ago, some Evansville resident got together with a shared concern: they wanted access to high quality organic and bulk foods. In a delightful old Victorian house at 120 Washington St. in Evansville, you'll find the result of that gathering. It's the River City Co-op. Established in 2005, its mission is to improve access to healthy, sustainable food, while



promoting community for those who produce food and those consume it.

As a co-op, members pay a fee to join, however anyone can shop there. Members receive a discount as well as a say in the operation of the business.

They established some core values to guide them: their products would be locally produced whenever possible in an effort to strengthen the local economy, they would be organic, producers must subscribe to fair trade principles, and finally, they insist on humane animal treatment.

More than a store, the Co-op offers classes on a variety of topics. Recent classes include “Delicious 101: Easy Whole Foods” and “Vegan Stir Fry.” Hoping to promote organic, healthy eating, the Co-op offers discounts to SNAP and EBT users.

Pouge’s Run Grocer

The plan for a grocery that would sell healthy, fresh, local food to the underserved Downtown and Near-Eastside communities of Indianapolis was hashed out by a dozen people sitting around a table at the old Abbey Coffeehouse in 2007, says Mary Bowling, a founding member. They dreamed of a co-operative with its adherence to the principles of open membership, democratic policy making, autonomy, economic participation, education and community concern.

About the same time the Near East Side Community Organization, was developing its Quality of Life Plan. “We need a grocery store” was a refrain often heard at neighborhood forums. So the group that wanted to start a co-op tapped into the plans of NESCO, the John H. Boner Community Center and other community organizations that were trying to address issues such as substandard housing and lack of economic opportunity.

The stars aligned for an independent, community-owned grocery store when the City of Indianapolis and the National Football League embarked on a legacy project for Super Bowl XLVI.

Interest and money were coming to the Near Eastside, and a location was found in a vacant building on East 10th Street. Pogue's Run Grocer, the brick and mortar operation of the Indy Food Co-op, officially opened for business in December 2010.

Today, Indy's only co-operative grocery store is known for its brightly painted mural of sunflowers and vegetables wrapping the facade. The grocery is the go-to place for fresh and often organic produce from local micro farms such as South Circle Farm, Growing Places Indy, Big City Farms and Waterman's Family Farm. *Pogue's Run Grocery*



Pastured meat comes from

Gunthorp in LaGrange and Fischer Farms in Jasper. Buying from local vendors and artisan producers keeps the money in the community and reduces energy used in transportation.

Shoppers at Pogue's forsake the box by bringing their own containers to fill with beans, nuts, grains, flours from the bulk bins. It's both an economical and sustainable way to consume. Egg cartons and glass milk bottles get reused and deli containers are compostable.

"We have very low waste," says Nate Roberts, general manager and "chief food slinger." He points out that unsold produce gets used in one of the three soups made daily in the Pogue's deli. Number 10 cans, cardboard boxes and bottles are recycled at nearby RecycleForce.

Support for urban farms and support for urban people in the form of movie nights, field trips and cooking classes are all part of Pogue's Run Grocer's community outreach agenda.

-By Janet Schneider

We'll eat more locally grown and produced food.

Take a look at a typical dinner plate set before us. Its contents have traveled more than some of us do in a lifetime. The lettuce comes from California, the tomatoes from Mexico. Add a potato from Idaho and some asparagus from Chile and our food has traveled many thousands of miles by the time it reaches our dinner table. Each food item in a typical US meal has traveled an average of 1500 miles. And each of these miles along the way consumes fossil fuel, giving our veggies a hefty carbon footprint. These many miles just aren't sustainable. Fortunately, Indiana is working to change that.

Indiana Grown Initiative

Indiana has over 12 million acres of farmland, much of it very fertile. Yet, amazingly, we import 90% of our food. Does this make sense?

In the year 2014, the Indiana legislature unanimously passed and the Governor signed a bill to promote Indiana grown agricultural products. Labels such as "100% Indiana" and "Indiana Grown" will let consumers know this item is locally grown. This will be accompanied by an educational effort to make Hoosiers aware of this initiative and encourage participation. If successful, our food delivery system will be much more earth friendly. Bringing lettuce to Lafayette from Clinton County requires a lot less petroleum than from Fresno, California to Ft. Wayne.

There are also important economic advantages. Shifting just 10% to locally grown products would add over a billion dollars to the state's economy. Both the environment and our economy come out winners.



Chapter 2

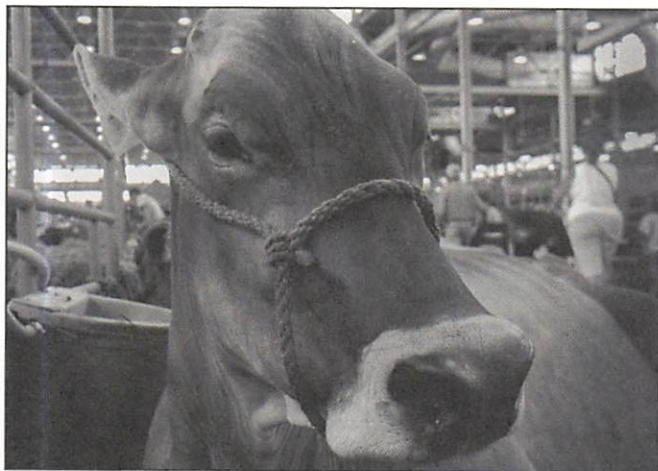
Eating to Thrive

“I decided to pick the diet that I thought would maximize my chances of long-term survival.”

-Al Gore

We'll eat more plants and less meat.

“Beef – It's what's for dinner.” So says the ad. Whether beef, pork or chicken, the typical American diet centers around a meat portion. An average American consumes about 9 ounces a day. But we're learning that animal agriculture has a devastating impact on the environment and causes more disruption of the climate than all forms of transportation combined. And because it takes as much as 10 times more grain to produce the same amount of calories through livestock as through direct grain consumption, eating a plant-based diet could free up resources for the hungry.



Faith Cohen

The journey away from a meat based diet follows different paths and is done for different reasons. For some, it is compassion for animals that leads to a change in diet. The Beatles' Paul McCartney and his wife Linda were dining on a dish of lamb while

looking out on a hillside of frolicking lambs. Suddenly, Paul said, “The lightbulb came on.” The connection was made and they became vegetarians. Lori Lovely is an Indianapolis resident who had a similar “lightbulb” experience. Here is her story of what followed her conversion experience.

A Vegan Journey

It was a lovely spring day many years ago when a teenager was riding in the passenger seat of a racecar hauler that was being driven through rural Iowa on its way to a race. Gazing serenely upon the passing view, she observed pastoral scenes of cows, young calves in tow, grazing tranquilly on fresh green grass.



Lori Lovely and her alpacas

It was a familiar sight: the backdrop of her life in small-town Midwest America. But suddenly it struck her. Although not familiar with the unbearably gruesome details of the slaughterhouse, she intuitively understood the future that lay ahead of these gentle creatures. The connection between those rest stop burgers and these mothers with their babies, once made, could never be undone. She never ate meat again.

That teenager was me. That was my moment of clarity.

Giving up meat was easy for me—much easier than enduring the questions, jokes, taunts and sneers slung at me due to my choice. Because of the ridicule hurled my way, I was low-key about it, quietly trying to eat vegetarian options without notice or fanfare. I got so tired of answering questions about what I did and didn't eat and why I did or didn't eat it. (No, I don't eat fish. Yes, they are animals.)

Back then I didn't proselytize. The choice I made was right for me, but I didn't push my values on anyone else. I just wanted to eat in peace.

It took about ten more years for the next moment of clarity: The animals just wanted to live in peace. At that point I gave up leather. I also began donating to animal rights organizations, adopting pets from shelters and rescues and respectfully talking to friends about eating meat, hunting, fishing and countless other activities that hurt animals.

As my voice became stronger, my use of animal products diminished even further. And then, one day about five years ago, my husband and I decided to go vegan. Overnight. Done. It seemed the natural progression for me: the next step. I thought it would be much easier for me than for my husband, who wasn't even vegetarian. I had a lot to learn.

The first person I turned to was Ingrid Newkirk, who had become a close friend. She immediately sent us several books by Dr. Neal Barnard, another good friend. They were a tremendous aid—a sort of instruction manual. While they contained some recipes, their value was more in the instructional guidance they offered.

We followed the steps prescribed in one of Neal's books. First, we cleared the refrigerator and cupboards of everything that wasn't vegan. Anything unopened was donated, the rest either fed to the dogs or tossed out.

Next, we went to the supermarket to restock the shelves. It took us ages to shop that day because we had to carefully scrutinize the labels on every single item. We were astonished to see how many items were made with milk. We could hardly find a loaf of bread at our regular supermarket. We felt defeated before we'd even begun. This wasn't going to be as easy as we'd thought.

We persevered. My husband sampled a few brands of faux meat, but after 30 years of a vegetarian diet, that didn't interest me. We looked through vegan cookbooks for interesting dishes. There were hits and misses. We struggled with the transition for a while.

One night, just as we were finishing chores on the farm, a vegan friend and neighbor who likes to cook brought us a couple servings of the black bean lasagna and Thai salad she had just made. That turned the tide for us. So there were delicious vegan entrees, after all! Modifying her recipe a bit, we've made the dish many times, especially when we have guests for dinner. Everyone loves it, whether they're vegan or not. That led, in turn, to other recipes, more experimentation and additional sharing.

There were setbacks as we learned the vegan lingo that led to us eliminating additional items from our shopping list. I already knew that gelatin and marshmallows are made with beef tallow (although the nutritional label won't tell you so), but we discovered that casein, a dairy product, is a common ingredient in many foods and some lecithin comes from meat, dairy or eggs. Label reading became trickier.

Vegan items are often stocked in the organic section at the supermarket, but organic doesn't mean meat- and dairy-free. Nor does vegetarian. Few products carry a vegan label (although I wish the FDA would insist that they did; it would be so much simpler!)

We had to remain vigilant to avoid items with meat and dairy. We became detectives, investigating the food we considered putting in our mouths for hidden animal products. We began eliminating foods when their labels read "may contain milk." If the producer couldn't be sure, neither could we.

It's easy enough to prepare vegan meals at home. However, it's been tougher on my husband when he travels with the race team, often stuck at a race track until late at night, or stranded at some hotel in a foreign city—or country—with limited options and no transportation. Then there are the countless late nights at the race shop, when they order pizza that he can't eat. I'm proud of him for sticking to it, taking his lunch to the shop, stashing granola bars in his backpack to nosh while the rest of the team is dining on take-out.

Despite some bumps and detours, the road has become easier with time as new habits develop. We've made new vegan friends and found out that a few we already had are now vegan too. Everyone has a favorite dish or recipe or restaurant they're eager to share. Ingrid sends us vegan care packages every year with new yummys to tempt us and teach us that eating a plant-based diet is healthy, tasty and completely doable. As my neighbor said, it can be a fun challenge to figure out how to "veganize" a recipe.

It's certainly easier—and more acceptable—to be vegan these days than it was when I first gave up meat 35 years ago. I no longer have to hide my dinner plate or feel like an imposition at the company Christmas party. I'm no longer embarrassed to inquire about the ingredients, or to politely decline if they include animal products.

Now I'm more apt to ask others why they eat meat when there is so much documentation of its adverse health effects, the devastating impact of animal agriculture on our environment and, of course, for me perhaps the most important aspect of it all, the suffering it causes animals. Reading labels has become second nature. Neal Barnard was right about retraining taste buds. I don't miss Parmesan cheese. (Yes, we eat pizza without cheese and we like it.). I know I feel better about us because we are not contributing to animal cruelty or global warming. There is no cruelty on our plates.

I ask everyone to join us—for your own health, for the future of our planet and for the innocent animals whose lives are so unjustly stolen in the name of cuisine.

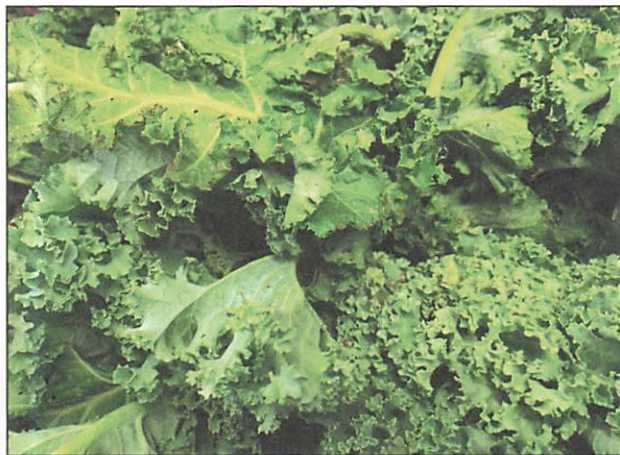
-by Lori Lovely

Some adopt a vegetarian diet out of compassion for animals. Others take this step because it's good for the planet. A third reason, and a very compelling one, is for health reasons.

Vegan for Health and So Much More

It started for me in 1992 at the age of 58. Until then it never occurred to me that eating meat might be a problem. Even after my first cancer diagnosis and subsequent surgery in 1985, diet never became an issue. But then, in December of 1991, when the doctor pronounced the dreaded “C” word for the second time, a friend told me of some studies where a macrobiotic (meat free) diet had worked wonders for some people. Determined not to go through another surgery I immediately did my own research, sought out advice from a macrobiotic practitioner/counselor, and started the adventure of eating very differently.

My wife, Anita, was also persuaded and gave me her full support. The macrobiotic diet was mostly grains and veggies, no meat, no refined sugar and no dairy products. It wasn't easy



to find these items in conventional grocery stores so we sought out and found two health food stores where grains and nuts were available in bulk and brought home in recyclable brown paper sacks.

It was even more difficult to find restaurants with vegetarian offerings so we leaned to make what we ate mostly from scratch.

This meant more meal preparation time, including my assistance in the kitchen cutting up vegetables and fruits for the salads' while Anita made miso soup and protein rich meat-substitutes from soy and grain products.

The word got around that we were eating "macro." One day a local hotel called up to ask Anita if she would cook for Dr. Benjamin Spock and his wife who had agreed to a speaking engagement in the city on the condition that they could adhere to their strict macrobiotic diet. The hotel chefs had no clue how to oblige so Anita took two days off work, made the Spocks their cherished meals and transported them to the hotel kitchen in insulated containers. The celebrated guests were apparently pleased with the service and invited Anita and myself to dine with them at the hotel for their farewell dinner.

Before long, closeted vegetarians sought us out and together we started the Vegetarian Society of Indianapolis. We came together monthly to share veggie dishes, recipes and personal stories around where to buy in bulk, where to eat out and how to keep the peace with carnivore friends and family members; especially during holidays when culinary traditions run deep. We even started a rudimentary farmers market where local produce growers connected with eager city consumers.

Finally, more and more restaurants started to offer vegetarian options on their menus. Conventional grocers installed "organic" and "natural" sections in their stores. Farmers Markets, Food Co-ops, and CSAs (Community Supported Agriculture) appeared. Eating healthy was catching on and the market responded accordingly. Today these things are commonplace and taken for granted. Not so, twenty years ago.

Eating macro helped me lose weight and feel better. Although it didn't cure my cancer it did help stave off invasive surgery for 6 years and it taught me a whole lot about the relationship of food choices and good health. Even so, I've had partial relapses along the way. I convinced myself that fish and white meat weren't all that bad. Dairy and sugar crept back into my diet. On social occasions I've made compromises to honor my host.

Recently, a nephew urged me to watch a documentary called "Forks over Knives." It made the case for a plant based diet based on numerous scientific studies. Another documentary, "Cowspiracy," portrays the inhumane and unsustainable facts of animal agriculture, especially confined feeding operations. Studies point out that the amount of grain and water required to produce edible meat is enormous. Added to the inefficiency of meat production is the toxic

effect of growth hormones and antibiotics ingested by animals and passed along to human consumers in their meat and milk. Also, the methane from animal agriculture is a major contributor to greenhouse gases. So, in addition to giving up meat and milk for health reasons there are numerous other benefits from going vegan. I've re-committed.

These conclusions do not come easy for me. I was raised on a small livestock farm. Most of our animals had names and were grass fed. My father was also an Agricultural Extension Agent. Much of my early education was in 4-H Clubs. I took numerous college classes in Animal Husbandry and participated successfully in national livestock judging competitions. I pastored rural churches for many years where farmers and ranchers became close friends. And I fully understand the economics and culture of small farms quite apart from Confined Animal Feeding Operations (sometimes called factory farms which have little to do with farming in my opinion).

Nevertheless, these are different times. We know things now we didn't know before. It is hard to change and ought not to be suffered for frivolous reasons. My own journey to veganism began as a path to personal health. But our collective survival is now at stake and has become the impetus for my return to veganism.

-by John Gibson

"Coming out" as a vegetarian can be uncomfortable. Some people are threatened and feel judged when you tell them of your diet. Others are compassionate and ask, "But where do you get your protein?" A vegetarian can disrupt family gatherings when they, for example, refuse the turkey at Thanksgiving dinner. Below is a story of a young woman and her husband in their journey toward a sustainable non-meat diet.

Struggles Along the Way

Megan Hart is a young woman who teaches art classes at the Indianapolis Art Center. Her husband, Brandon Schaaf, is an actor and original member of the acting troupe "Know No Strangers" as well as a student at Ivy Tech. Together they are on a journey toward becoming vegans.

Megan became a vegetarian in 2009 after viewing the documentary, "Eating Animals." She couldn't reconcile her diet with the treatment of animals that she encountered in the food industry. She read everything she could find on the ethical treatment of animals and resolved

to stop eating meat. That part was easy. However, at the time, she lived with her parents and they considered meat the central part of a diet. She knew they would be offended by her food choice and not understand. So for over a year, she secretly fed her meat to the family dog stationed under the table. She said, "We had the best fed dog anywhere."

When Megan met Brandon, he was interested in her vegetarian diet and willingly joined her in that choice. When he became aware of the treatment of animals, he became a proponent of going meatless.

They became vegetarians out of a concern for animals. When they viewed the film, "Cowspiracy" they became aware of another reason for forgoing meat. They realized, in Megan's words, "We're killing the planet." The movie opened their eyes to the tremendous impact that animal agriculture has on our environment. They thought about future generations. Megan said, "If I'm even going to consider having children, I need to do all I can to save the planet."

They also came to believe that even humanely raised meat could not be justified for them. They then decided to move toward becoming vegans and eliminating all animal products from their diet. This was more of a challenge. Finding good foods with no cheese or dairy products isn't as simple as avoiding the meat course. Animal products are everywhere. But together they moved ahead toward the goal of becoming fully vegan. When dining out, they find ethnic food frequently offers many vegan choices and even mainstream restaurants almost always have a vegan option. She notes that Burger King has a "Veggie Burger" and White Castle offers "Veggie Sliders."

Another challenge for vegetarians and especially vegans is when and when not to share your beliefs. Megan says she doesn't usually bring up the matter of her diet with others for fear of being seen as judgmental. However, if someone expresses an interest in vegetarianism, she will provide books and resources about the subject. Brandon, however, is more apt to make known his food choice and occasionally gets into "verbal scuffles" with people on the topic.

-by Richard Clough

Some people choose to be vegans while others decide on an ovo-lacto diet which includes dairy products and eggs. Still others believe that a diet with very little meat and dairy is the morally correct response for them. Here's a story of one such person and the reason for that choice.

Eating As a Citizen of the World

I first encountered the Shakertown Pledge many years ago as part of a simple living group. Its first statement is, "I declare myself a citizen of the world" and that is followed with commitments to lead an "ecologically sound life" and work for the reshaping of institutions to create a "more just global society." It struck a responsive chord with me and I adopted the pledge as my credo and it still influences my outlook these many years later. A morally responsible person must live with an awareness of how their behavior affects other people around the world.

Some time after meeting up with the pledge, I learned an interesting fact about food production. It takes a lot of land to produce meat. 2.5 acres will produce enough beef for one person but that same 2.5 acres planted in wheat can support 15 people. Corn is even more efficient and 17 people can live off that same land area while 19 rice eaters are fed. Pork and chickens require considerably less land but still are less efficient food producers than grains and vegetables.



Faith Cohen

I realized that if I was to be a global citizen and consume no more than my share, I had to drastically move away from a meat based diet and took steps to do so. In subsequent years, evidence kept rolling in that eating less meat is a good thing for each of us and our planet. At that time I decided to eat less meat, I was unaware of the role animal agriculture played in water usage. Not only do animals require lots of land, they also need huge quantities of water. The USGS estimates that between 4000 and 18,000 gallons of water are needed for a single hamburger! Consider the significance of that as you read about the water shortage crisis in the western U.S.

Still later, I became aware of the impact that animal agriculture had on global warming. I use to attribute global warming solely to the burning of fossil fuels. I was only partially right. According

to the UN Food and Agriculture Organization, "Livestock are responsible for 18 per cent of the greenhouse gases that cause global warming, more than cars, planes and all other forms of transport put together." If that's true, I realized, I could ride my bike instead of my car, install solar panels and heat the home with wood but if I then ate a steak, I would undo all the good I had accomplished.

On top of all that, a plant based diet is a healthy diet. Consuming a high meat diet substantially increases your risk for heart disease, certain forms of cancer, diabetes and even doubles the risk of developing Alzheimer's disease.

My wife and I are not complete vegetarians but we have adopted a diet with very little meat. We eat no beef, pork no more than once a month and chicken and fish once a week. None of these are from factory farms. We strive to keep cheese and other dairy products to a minimum.

The upshot is that we believe we are engaged in a form of good citizenship and, as a bonus, our health is excellent.

-by Richard Clough

Responding to the climate crisis, some have chosen to go vegan, while others to become ovo-lacto vegetarians. However, some people find the challenge of suddenly eliminating all meat from their diets to be overwhelming and beyond their reach. For these people, the Meatless Monday campaign offers a manageable alternative.

Meatless Monday

Sid Lerman is a former advertising executive whose previous claim to fame was developing the "Don't Squeeze the Charmin" campaign. In the year 2003, he gave us another reason to remember him. He learned that the FDA and the USDA both recommended that Americans cut back on their fat consumption by 15%. He calculated that three meals out of 21 is approximately 15% and the goal of less fat could be achieved by eliminating meat for one day of the week. Together with Johns Hopkins University, the Meatless Monday campaign was launched.

Meatless Monday invites people to take a simple pledge: "I pledge to go meatless on Monday."

While the initial motivation was health, support came from those who were concerned about animal welfare and those concerned with the environment.



The idea took off and today there are Meatless Monday initiatives in 36 countries around the world. In Ghana, Meatless Monday organizers present lectures and public presentations on meatless dishes. In Bhutan, it's known as "Jangsem" Monday, a word associated with the Buddhist concept of enlightenment. It's even promoted on the national TV network. In Luxembourg, the local chapter took to the streets giving out fresh fruits and veggies along with vegetarian recipes. In Quebec, Meatless Monday recruited and promoted restaurants who agreed to offer meatless meals every Monday. In 2012, Los Angeles became the first US city to endorse Meatless Monday. Locally, Meatless Monday is promoted by Sustainable Indiana 2016.

Support for Meatless Monday has from come many sources. Celebrity chef Mario Batali joined the movement. He said, "In recent years I've been more aware of how much my food choices impact our planet. I was introduced to the Meatless Monday campaign and realized eating a little less meat makes a big impact, both when it comes to losing weight, as well as relieving some of the tremendous burden on our environment."

The Beatles Paul McCartney supports and promotes Meatless Monday. "We are facing big environmental challenges today and we need big solutions. Going meat free one day a week will take us a long way."

Opposition has come from two directions. Meat producers have predictably worked against Meatless Monday. A representative of the National Cattlemen's Beef Association called it a "sinister plot."

But others are critical, saying once a week is too small a step. Wrote one such person: "The issue I have with Meatless Monday is meat eaters then justify eating meat 6 of 7 days a week (sometimes intake increases as they feel the need to make up lost meals). Their attitude is, 'I'm doing my part, so it's okay'".

Most vegetarians agree, however, that Meatless Monday is a positive first step. It provides an opportunity for people to learn that going meatless is both easy and delicious. It also is an opportunity for education where people learn about the ecological and health benefits of a vegetarian diet. As one vegetarian stated: "I started my journey doing Meatless Monday. It only took me two weeks though to realize there is no difference between Monday and Tuesday and the rest of the week."

Why Am I Vegan?

Seventeen years ago, I was born into a vegan family. I had been raised in an environment where we took into account the socioeconomic, health, and environmental impacts of our food choices. And for most of my life I was a vegan.

When I was old enough to understand the idea of these consequences, my dad explained to me why he went vegan. What stood out to me was that with all the starving people and poverty around the world, there was a solution. We had the food to provide for them, but instead of using the grain and wheat we were harvesting to feed humans, we gave it to livestock. My dad could no longer support standard American dietary choices. I had the option to change my lifestyle when I was 13 years old, and I jumped on the chance to figure out what the hype was about cheese and milk. I switched from being vegan to vegetarian. I experimented with dairy products for about a year, discovering that, in reality, the practices that go into producing dairy and any animal products, were not something I wanted to be a part of.



I discovered the harsh reality *Iris* that was hidden by slaughterhouse and factory farm walls: small containment, separation at birth, abuse, beatings, are just a few of the crazy events that occur at factory farms. Not only were the animals being deprived of their natural habitat and potential for a happy life,

the majority of animals were being injected with growth hormones and antibiotics that in turn entered our bodies.

This is what made me decide that I could not be a part of this industry. I didn't want to support it, so I went back to being vegan and, this time, it was not because I was born into this lifestyle, it was because I was standing up for something I believed and taking a stand against factory farms and corporations supporting animal cruelty.

Being vegan has empowered me to stand up for what I believe in and speak out when I see something wrong in society. It has provided me with a healthy lifestyle where I receive all nutrients and proteins necessary, and have been introduced into a community of like-minded people.

Now, as a 17 year old girl applying to colleges and figuring out what I want to do with my life, and who I want to be in the future, I have found that finding out what goes on behind slaughterhouse walls was the turning point of my life.

—by Iris O'Donnell Bellisario

Building the Way

“Architecture is the will of an epoch translated into space.”

- Ludwig Mies Van Der Rohe

Indiana limestone helped create some of America's most famous buildings including the Empire State Building, Grand Central Station, the Lincoln Memorial, and the Chicago Public Library. It's durability and beauty are part of Indiana's architectural legacy around the nation. Quarried from the Salem Formation, Indiana's limestone, aka Bedford limestone, is pure and consistent, composed of more than 97% calcite, making it a durable and beautiful building material. Limestone, however, is vulnerable to acidic rain and in limited supply. Quarrying can damage sensitive ecosystems. Limestone is also a critical ingredient in concrete, another common building material.

From repurposing some of the old, to creating new green materials, construction projects all over Indiana are inspiring us to think about architecture and energy efficiency at every step.

What of greener building materials themselves? Concrete has a tremendous carbon footprint, accounting for 5% of global emissions. The specific type of river sand used in manufacturing new concrete is also in dwindling supply. Indiana has a special solution to concrete, however, and it's not only made here, it's carbon-fixing!



Indiana Statehouse

Industrial Hemp as CO2 Scrubbing Building Material

To find Purdue University's crop research farm, located just south of the university's West Lafayette location, you have to travel on roads through vast tracts of corn and soybeans. Often, corn is on one side of the road, soybeans on the other; you are in a sandwich of traditional monoculture.

Is there another crop waiting in the wings, aching for its opportunity to join the big two? Industrial hemp is only in its infancy in Indiana, but already there are numerous positive indications of its impact, including the myriad of goods created from hemp: clothing, food, health products, biofuels, and building materials.

Building materials?

That's right. In the summer of 2015, we took a tour of the Hemp Project that included presentations on economics, budgeting, weed management and cultivation, led by numerous Purdue scientists. Over 110 people attended, from farmers to hemp product merchants to sustainability enthusiasts.

No one has been able to grow hemp legally in the United States since 1957. Recent Indiana legislation, led by legislation on a national level (Farm Bill of 2013), opens the door for research to explore the possibilities of industrial hemp production, which portends many benefits for Indiana's farmers and overall economy.

One of the most exciting presentations that day was by Brandon Pitcher, a well-known sustainability expert. He is Chief Sustainability Officer for the Indiana Hemp Industries Association and held a session focusing on a building material called hempcrete, comprised, as you might imagine, of hemp.

Placing his hands on the hempcrete blocks, he told us that hempcrete replaces the existing building system: "It's the brick, the insulation and the siding all rolled into one block." He called it a "plug and play" assembling process. "It's like a LEGO building system. Put a little mortar in and you're good to go."

He called the environmental and ecological benefits of hempcrete “tremendous, including the carbon sequestration potential.”

Pitcher directed me to an article he co-wrote,



Hempcrete

stating: “A 2000 sq. ft. house constructed with these blocks will lock up over 5 tonnes of CO2 ... These blocks are not just net-zero they are carbon negative, absorbing even more CO2 as the walls age.”

Hempcrete will, according to Pitcher, sequester carbon for at least 100 years. But that’s not all. “When you mix this material with lime it creates a process called calcium carbonation which will result in limestone in about 100 years. This will be a stronger material for your great grandkids than it is today.”

Brandon mentioned he has a Hoosier client interested in developing what could be the first hempcrete building in the United States. He added, “Hemp Circle Industries is actively seeking to develop projects with people looking to get in the hemp industry.”

Like everyone else that day, Pitcher emphasized that hemp is about “job creation all along the supply chain,” adding that he also believes hemp to be the “most competitive plant species for sustainability.”

“My hope would be,” he told the workshop goers, “that if we take sustainability seriously in this state, then this plant would be the number one most economically valuable plant,” because of its impact on a myriad of systems; food production, energy generation, building materials, healthcare.

“One plant can solve so many problems,” he mused. “If you tell me this isn’t economically viable, I’ll tell you ... you have no creativity.”

-by Jim Poyser

Reprinted with permission from NUVO

Building construction is not just about the blocks we use to create buildings, but the plumbing, wiring, lighting, and heating or cooling of the spaces within the walls. Energy and water use can be conserved at every stage of construction or rehabilitation. Incorporating smart design and green spaces contributes to a lowered resource footprint, much like Eskenazi Hospital has done with their newest building.

Eskenazi Hospital

In 2009, Indianapolis voters approved a decision to replace the aging and inadequate Wishard Hospital with a new facility. Named for its benefactors, Sidney and Lois Eskenazi, construction began the following year. I took a tour of Eskenazi hospital with the intention of exploring the numerous eco-friendly amenities the hospital installed to become a greener business. Upon my entry I immediately noticed that this hospital is much more than the waterless urinals and paperless hand dryers I was told about. Eskenazi is more than just a hospital, it's a cultural healing center.

I visited with the intentions of checking out the ecologically friendly attributes the hospital has to offer and quickly found that no corners were cut to save money. Eskenazi is the first hospital in the US to be LEED certified at the silver level. LEED is an acronym for "Leadership in Energy and Environmental Design" and involves meeting difficult requirements for energy efficiency, using environmentally friendly building materials and creating a positive impact within the community, among other factors. In the construction of the hospital, special attention was paid to using local and recycled material. Seventy percent of the construction waste was thus diverted from the waste stream. The new design allows forty percent reduction in water usage. Water efficient appliances are utilized throughout the hospital. These amenities include low-flow faucets and showers, dual flush toilet handles and waterless urinals. Additionally, rainwater is collected from the roof and is used in toilets, thus saving potable water at no extra cost.

The roof is painted with solar reflective white coating that reflects up to 90% of sunlight, as opposed to traditional black roofs which reflect only 20%. A roof's SRI is a measure of a surface's ability to reflect solar heat. This is a simple and cheap way to save money and energy. In the hot months of the year, Eskenazi will actually spend less energy by trying to compensate for hot weather via air conditioning.

My favorite part of the visit was by far the trip onto the sky farm. A sky farm is a system of raised planter boxes placed on the roof of a building. During the warm seasons the hospital is able to

grow a variety of fruits and vegetables to be used in meal preparation for patients. Eskenazi is not only saving money by doing this, but they can ensure that food they serve patients is



Eskenazi kids at the sky garden.

an organic and healthy alternative to heavily processed meals. In 2013, the first year the sky farm operated, the hospital was able to grow 3000 pounds of food for its patients. The sky farm at Eskenazi isn't only a functional feature: any patient or visitor can go exploring there and wander the aisles of fruits, vegetables, and grasses. The sky farm is also the best place in the hospital to view the city of Indianapolis. You can see out of the sky farm 270 degrees. That view includes Lucas Oil Stadium, the "Big Blue" JW. Marriott, IUPUI Campus, and the remainder of the Indianapolis Skyline. I found myself not wanting to leave the sky farm, even in the dead of winter while no plants were growing.

Beyond the building, Eskenazi wanted to reduce the energy required to travel to the site. There are 250 bicycle storage units to encourage pollution free transportation for employees. Public transportation to the hospital is extremely easy to access around Eskenazi. In fact, there are three bus stops near the hospital. To promote carpooling and energy efficient cars, the hospital has premium parking spaces for such vehicles.

I applaud the Eskenazi staff on a number of things, but I think it's necessary to recognize their use of art outside and inside the hospital. Just outside the front exterior entrance sits a beautiful glass building surrounded by an enormous metal sculpture. The metal structure is constructed so that vines are able to grow upward on the cables, encasing the glass building in a walls of green. There are also two water features in this same courtyard. The Eskenazi crew constructed a faux waterfall unlike any I've ever seen. Instead of draining the source of water during the winter season, the rock formation is designed to expand and contract. This means if temperatures drop below a freezing 30°F, the fountain is not damaged when ice forms. More importantly, the waterfall naturally freezes into a display of ice that cascades down the front of the fall. On the opposite end of the courtyard a shallow wade pool rises up and sinks down naturally. Two poems are carved into the pavement on the rim of the pool. Depending on the level of the water and the time of day, you might see one poem exposed, and the other hidden underwater. Each poem has a message worth remembering.

Within the building are variety of styles of art, ranging from preserved nature murals to an enormous, contemporary ladder sculpture that hangs in the main hallway of this hospital. The designers of the updated building paid special attention to bringing the outdoors inside. A courtyard was constructed so that trees may be placed within the walls of the building, but are still able to change, grow, and mature as seasons go by. Strategically placed beside this courtyard, yet another a glass room was specifically designed for people of diverse faiths to express their spirituality. Twice a day a different religious service is given, including, but not limited to, Christianity, Islam, Judaism, and general meditation. When I asked my tour guide the reason they went through so much effort to incorporate art, design and nature into every corner and crevice of the hospital, he explained to me that art has a healing power medicine cannot duplicate. If a patient must spend time there, they can utilize the numerous indoor and outdoor facilities the hospital offers to rest, think, and find peace.

I was pleasantly surprised to find that the hospital administration had invited a popular Muslim folk band to perform in the lobby. The small group played numerous songs, both calm and exciting in nature. By far my favorite part of their performance was a man dressed in a long, white outfit. He danced elegantly in front of the crowd, showing off the white fabric that flowed nicely as he turned around and around. The patients who managed to see the performance were just as impressed and pleased as I was.

By far the biggest compliment to Eskenazi Hospital that I can reiterate is the care and effort they put into everything they do. This is an environment where care ranks over cost. As a college student I look for progress in everything I do, and I feel that I can safely speak on the behalf of my generation that now is a time for positive change. Eskenazi is a perfect example of that positive change we need to see.

-by Jimmy Lardin



Sky

*The bank of trees has been
cleared to make way for*

*the usual big box store.
It left a piece of sky wide open,*

*nothing to buffer it, no tangle
of oak and ash, naked or clothed,*

*to break my line of vision as I
gaze north. Those trees lie now*

*in massive piles, bundled
like a giant's grip of kindling.*

*This great gaping maw of sky
hurts my eyes, makes me*

*look away as trucks push
the tangled mess of trees*

*to another corner
of this emptied landscape.*

-Mary Sexton

Indiana University LEEDs the Way

As a leading Research 1 institution and a member of the Big Ten, Indiana University's student and faculty academic accomplishments are well-recognized. What may be less well-known, however, is IU's commitment to Leadership in Energy and Environmental Design (LEED) certified buildings, which it outlines in its Bicentennial Strategic Plan. In fact, the University boasts a total of 14 LEED certified buildings on three of its campuses—the most of any other Big Ten school. IU hopes to increase its green buildings to 20 by 2016.



LEED is a method for classifying buildings based on the impact their construction and operation has on the environment. Points are awarded for conscientious design choices, including site selection to avoid ecologically sensitive areas, renewable energy production

capacity, water efficiency, proximity to public transportation hubs, and construction material sustainability, among other criteria. There are four LEED categories (Certified, Silver, Gold, and Platinum) awarded based on the number of accumulated points.

One of the challenges that IU faces is educating students and other members of its campus communities about the presence and benefits of LEED. Few IU courses include LEED certification in their curricula. Kelley School of Business Professor Gil Souza's Sustainable Operations class marks an exception.

Professor Souza began teaching an iteration of the course several years ago to MBA graduate students. The experience was such a success that he later adapted the course for undergraduates. Taught every spring, the class engages LEED certification via a case study that requires students to answer questions and to conduct calculations associated with the case. In class, Professor Souza and his students discuss what LEED is, its different categories, and how

the building's engineers and designers earn points for each category. They also examine the barriers to and opportunities afforded by the certification, and how sustainable design benefits both businesses and employees.

"It's quite interesting. They love it. They have to do a bit of research, so it's quite comprehensive, and they get really familiar with how you gain points and, from a business perspective, how expensive it is. They get the picture that, with LEED, the big thing is about the people who are in the building and how much better they feel," Professor Souza said.

Former students said Professor Souza's class instruction and activities helped them think about sustainable design and the certification process in new ways. "I think it's really interesting, and what I like is the conversational part during class," stated junior Christine Faora, a Kelley sustainability major. "He'll give us questions, and we'll come to a solution and what the company can actually do. And I think that's what I like; it's not like you're being lectured all class."

In the spring of 2015, Souza taught in Hodge Hall prior to its renovation. Now with the building's pending LEED Silver Certification, Souza remarked he will likely modify his future teaching to reflect the new surroundings. "I think it makes a huge difference" to have a LEED certified building, explained junior Marissa Buffo, a finance and supply chain major who took Souza's class. "In the newer classrooms you can tell the lighting is more efficient, and I think it has a huge impact learning about it. Now my classes are both in west facing classrooms, so they get a lot better sunlight. Even with the blinds closed, it feels like a more collaborative and energetic learning space."

Faoro echoed a similar claim. "I think that it does help the learning experience and definitely I appreciate it. It shows you're making an effort, and it makes students feel better about where they're going to school. I think it's more of a subconscious thing. You don't think you're learning better because it's LEED certified, even though it's happening."

This lack of conscious awareness resonates with Souza and his students. They claim the University could do more to explain and promote its LEED buildings. Some students suggested that IU publicize its LEED certifications more prominently on social media and on its homepage. Others expressed that, while this effort is important, without sufficient knowledge of LEED certification in the first place, the added publicity can only be so effective.

“I think the biggest problem isn’t with the University itself as far as communication but with public knowledge. If you ask anyone off the street, they’re not going to know what LEED is or how it relates to being green,” junior Davis Steinbrecher, a double major studying finance and international and sustainable business, asserted. “Because LEED is such a huge accomplishment, it would be great for the University to communicate why that is an accomplishment.”

-by Kathleen DeBrotta and Kathleen de Onís

What of incorporating green spaces into our architecture like Eskenazi has done? More buildings around Indiana are choosing to go green, literally, when they can. Green roofs are one significant way to lower the carbon footprint of a building, and in Evansville, the Oaklyn Library has done.

Oaklyn Library, Evansville

Hot evening sun spilled over a riot of wildflowers, insects droned and flocks of goldfinches nibbled on patches of seeding bee balm as librarian Pam Locker and Dr. Chris Hochwender of the University of Evansville walked the paths of the native prairie reconstruction at Oaklyn Branch Library on Oak Hill Road.

Hochwender, who specializes in plant-herbivore interactions and teaches Environmental Science, Evolution and Ecology, and Ecology at the University of Evansville, was there to help identify native and invasive plants in the meadow. Master gardener Locker was taking note of species and varieties new to her.

The meadow was built as an adjunct to the library building’s “green roof,” a portion of the building actually covered with a carefully managed layer of soil and grass.

“We had the land for the new library, and there were two possibilities of how to build because of the slope,” said Locker. “Either put the building at the bottom of the hill, or put it into the side and have the green roof.”

Locker said the building was designed by architect Bill Brown, who is now director of sustainability at Indiana University.

“He’s a green guy and had an interest in building a green building,” she said. “Now the energy bills are very efficient, and the roof will last the life of the building, so there is less maintenance.

Photo courtesy of Evansville Vanderburgh Public Library



Oaklyn Library

Along with the green roof, they decided to do a native prairie reconstruction around it. It was an ambitious effort, but it has succeeded.”

The library opened in 2003, but the meadow didn’t take off right away, Locker said.

“It’s really hard to start a native meadow because there are so many weed seeds in the soil,” she said. “They hired Eco Logic from Bloomington to come look at it, and they used Roundup to basically kill everything, and then used a special seed drill to plant the native seeds. It’s been going well for eight years now, and each year we get more of the good things, and they take over and outweigh the bad things. ... It’s a process of keeping after the bad things until they are all gone.”

The caretakers of the meadow are constantly removing invasive plants such as thistle, ragweed, hairy vetch, various vines such as morning glory, Johnson grass, white sweet clover, yellow sweet clover, Queen Anne’s lace and volunteer trees, especially cottonwood. These might be pretty, but are not native to North America and will take over the habitat meant for indigenous plants.

The meadow is weeded in spring, early summer, and fall.

“We did a total of probably 40 hours worth of weeding earlier this year,” Locker said. “The red clover isn’t something we want, and we had to pull out sweet peas, and lots of crown vetch. That’s bad because once it gets in it produces so many seeds. Queen Anne’s lace can get very invasive, too. If you can at least get the seed heads off the invasives before they spread, it’s better than nothing.”

“Most of the desirable native plants in the meadow fit into a few families,” Hochweder said.

“There’s the mint family, the pea family, the aster family and the grasses.”

Members of these families not indigenous to North America can be invasives as well, of course, and it’s important to be able to identify which are which.

Hochwender said that in the wild, prairie settings do not get mowed, of course, and dead growth falls over and forms a layer under the new green growth. Every few years, lightning starts a fire, and this dry, old growth burns quickly. This is how prairies are cleared and renewed. Because burns wouldn’t be prudent at Oaklyn, the meadow is mowed once a year, in November, to keep trees from taking over.

“The meadow of course changes so much with the seasons,” said Locker. “Visitors are welcome to come inside the building to pick up a brochure, as well as to walk the mown paths.”

In the meadow in spring you’ll find hairy mountain wood mint, beard’s tongue, purple prairie clover, butterfly weed, baptisia (wild indigo) and swamp milkweed among others; early summer hosts milkweed and bee balm; and in the fall various native goldenrods, New England aster and dogbane abound.

The Oaklyn green roof won a Green Roofs for Healthy Cities North American Green Roofs of Excellence Award in 2004. It has been given accolades in two books about green roofs: “Award Winning Green Roof Designs,” by Steven Peck, and “The Professional Guide to Green Roofs, by Karla Dakin,” Lisa Lee Benjamin.

-by Aimee Blume

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Another way to incorporate green spaces into our towns is by creating rain gardens. Rain gardens not only retain water and prevent excess runoff, but help manage water quality. The City of Fort Wayne has introduced one example of this beneficial garden.

Fort Wayne Rain Garden Program

In 2005, Fort Wayne City Utilities began to look for ideas to educate students and the community about the benefits of rain gardens for the environment. A rain garden is a landscaped area which can range from 80 to 300 square feet, in which native plants are used to hold and filter, rainwater runoff and let it sink into the ground. Native plants clean the water by removing excess nitrogen and phosphorus. Using native plants provide benefits such as food sources for butterflies, birds, and pollinators. These plants are able to tolerate hot, dry summers and cold, wet winters. City officials had to overcome some barriers if they were going to establish a Rain Garden Program in Fort Wayne. The budget was somewhat small, however by investing it judiciously into the community, about 150 rain gardens were developed. Another dilemma was changing the perception of rain gardens from what people considered to be weed patches. Educational workshops were offered to the public. "Train the Teacher" workshops and an educational curriculum encouraged schools to educate students about how rain gardens improve water quality, reduce mosquitoes, are inexpensive, and may require less maintenance than traditional landscaping. Lastly, they needed to find a way to help internal engineers "get into" rain gardening and communicate with the public about creating greener infrastructure. The city collaborated with others to host conferences and workshops that have attracted and inspired people locally, regionally and even nationally. Some of the allies that have helped make this project possible include Master Gardeners' volunteers, landscape and garden centers, Fort Wayne Community Schools, and Science Central. The City of Fort Wayne wants to be a model for future rain gardens in other cities. Rain Gardens help build a sense of community and ownership as people help the environment by reducing the pollutants in the water.

-by Anna Papaik and Zaphielle Whited

Some buildings are setting a very high bar for new construction, by taking energy efficiency and water use to the next level, as well as protecting the surrounding land. COPE Environmental Center's new Sustainable Education Center in Wayne County is doing just that.

The Cope Environmental Center

Located between Richmond and Centerville in western Indiana, the Cope Environmental Center was formed in 1992 "to promote the sustainable use of the earth's resources through education, demonstration and research." The Center hosts school visits, has numerous summer camps and a wide array of educational programs. It's currently in the process of erecting a building that will be a model of sustainability.

The Cope Environmental Center (CEC) is in the pre-construction stage of a 6000 square foot new sustainable environmental education center expected to be completed next year, according to Alison Zajdel, Executive Director. This building will be a keystone project for Indiana's bicentennial celebrations. Working with LWC, an architectural firm from Dayton, LWC, the plan is to have the first Indiana net-zero-energy building registered with the Living Building Challenge (LBC). This certification has the most rigorous green building standards in the world, even more rigorous than LEED. At this time, there are only five building in the US with the "Living Building" certification and CEC hopes to be the sixth.

The LBC certification requires that the most advanced measures of sustainability be employed and is composed of seven performance areas or "Petals" of Site, Water, Energy, Health, Materials, Equity and Beauty. These Petals collectively comprise 20 imperatives. For example, to be a net zero energy facility the building must demonstrate that energy is harnessed only from on-site renewables such as wind, solar, or earth to meet all of the heating, cooling and electrical needs. Many facilities strive to attain net-zero-energy, but the true performance of their buildings may be overstated. True net energy buildings are rare. In addition, LBC certification requires all water to be sourced on site (wells or rainwater capture) and waste water to be treated on site. There are also limits to sprawling development and expectations of inclusion of "Beauty, Spirit and Inspiration + Education" to insure that the renewable energy system is incorporated into an attractive and inspiring building. The building must be occupied for one year with zero net energy and meet the other criteria to obtain the certification. [See the LBC website for certification criteria: living-future.org/ibc.]

This public/private partnership between CEC, Indiana Department of Natural Resources, Whitewater Valley Land Trust and Indiana Nature Conservancy is a keystone project of



Cope Environmental Center, Rendering LWC Inc.

Indiana's Bicentennial Celebration. Funds from the Bicentennial Nature Trust will be used to purchase and manage new lands adjacent to the center for use in environmental education. This will form part of a corridor of contiguous, protected land extending south through the CEC to the Brookville Reservoir and Whitewater Memorial State Park.

The building will include a dedicated classroom for hands-on learning, plus a large multipurpose room will host many functions and permit accommodation of large groups of visiting school children since the room can be subdivided into 3 areas holding 50 people each.

The new LCB-certified building is expected to serve as the "trailhead" for Indiana's Bicentennial Legacy Conservation Area for thousands of students and visitors to learn about conservation and sustainability. Currently, in addition to hundreds of other visitors, all students in the 2nd grade in the Richmond area are required to participate in an environmental education unit at the CEC. The center's goal is to reach 50% of elementary children in Wayne County. The LCB-certified construction will not only host bicentennial activities but will be important in extending Indiana's sustainability footprint to additional educational facilities within the state.

-by Carolyn Vann

By far the best way to lower the environmental impact of construction, is not to build at all! Rehabilitating and repurposing existing structures have become the smart way to go in many towns across Indiana. Sometimes it saves money while also saving struggling downtowns, making it an attractive option for towns on a tight budget who are also trying to preserve a piece of their history. In their downtown, the City of Goshen has brought new life to old buildings.

Revitalizing Downtown Goshen

Goshen, Indiana is a city of just over 30,000 located a few miles from the Michigan border. In many ways, it's a typical small city. But unlike most small cities, Goshen's downtown is thriving. Retail stores and restaurants abound and frequent entertainment events bring out large crowds. How did they do it?

In the year 2007, several business, civic and government groups got together and created Downtown Goshen Inc.



Downtown Goshen, Indiana

(DGI). That group went to work initially with two major projects. They instituted "First Fridays," in which entertainment events combined with retail and restaurant special deals to bring people downtown once a month. It was a great success and soon more than 4,000 people were participating.

Their second initiative was the "Façade Program." Matching grants were offered to downtown businesses for signage and storefront improvements. Nearly half of the merchants took advantage of these grants. The result was that the area became a vibrant and appealing place to visit with attractive shops lining Main St.

The centerpiece of downtown is the Goshen Theater, an 80-year old building that was recently remodeled with more improvements being planned. It currently offers a variety of events and its backers hope to make it a regional hub for arts and entertainment.

In 2013, Goshen became one of ten pilot-program cities participating in the American Planning Association's Sustaining Places Initiative. This program is geared towards community sustainability and has required the City of Goshen to plan for a variety of areas of municipal life, including land use, local food, housing, economic development, civic facilities, and transportation. They've introduced permeable pavers, rain gardens, and restored their old Mill House to provide a little hydroelectric power. Several trails encourage bicycling and walking.

Drive down the main street of many small city centers and you'll find boarded up stores, empty buildings and few people. Goshen shows that it doesn't have to be this way.



Goshen Annex

Goshen Family Fuels Downtown Restoration

When they renovated their first building in 1985, Dave Pottinger and his wife, Faye Peterson-Pottinger, never imagined downtown Goshen would look the way it does now.

"It was an evolution," Peterson-Pottinger said while sitting at The Electric Brew on Saturday, Sept. 27. The business is housed in one of the buildings they helped restore. Peterson-Pottinger said she and her husband renovated some of the downtown buildings as the opportunities came up.

Eventually their daughter, Maija Stutsman, and their son-in-law, Jeremy Stutsman, joined them, and their restoration projects became a family affair.

"There was a point where we all would've moved. When we all would have left Goshen," Maija Stutsman said. "Because it was getting to the point where there was nothing that could tie us here. There wasn't real community involvement for us."

Almost three decades have passed since the Pottingers started renovating buildings, and the four family members now work with about 50 businesses in the downtown area. The family was nominated to receive the 2014 Larry A. Conrad Civic Service Award from the Indiana Association of Cities and Towns and was announced as the winner Sept. 10.

The Larry A. Conrad Civic Service Award honors the contributions made by private citizens, companies or civic organizations to the local government. In a news release sent out by the Indiana Association of Cities and Towns, the organization noted the contributions made by the family.

Aside from working on the preservation of historic buildings, the family has collaborated with

the city to add streetscape features and participated in the city's downtown business improvement district board and city council, according to the news release.

Pottinger and his wife ultimately became the catalysts in the restoration of downtown when other developers and businesses started looking at their work, Goshen Mayor Allan Kauffman said. Kauffman nominated the family.

"There aren't very many people like Dave Pottinger who come along and are willing to take on the challenges that he took on, and I don't think he would've taken them on in Goshen if he hadn't seen that there was some progress already made," he said.

Goshen had joined the Main Street Program, which helps guide communities with the restoration of their downtown areas, Kauffman said. Pottinger moved to Goshen from Detroit in 1977, and Peterson-Pottinger moved in 1978 from Colonial Williamsburg, Va. Pottinger already had some experience renovating historical buildings when he and his wife began their work in 1985. That's when they renovated the building at 1122 S. Main St. to start a business — a restaurant called South Side Soda Shop, which they eventually sold to their daughter and son-in-law, Charity and Nick Boyd.

For the past 14 years, the Pottingers have moved their projects up a few blocks and have been working on the restoration of the downtown area, Jeremy Stutsman said.

Both Pottinger and Peterson-Pottinger had a love for the arts and historical buildings. But they both went into the business of restoration knowing that downtown Goshen was "sliding toward darkness," Pottinger said.

The vibrant Main Street one finds now in the downtown area was once full of vacant buildings. Many of them were boarded up a couple decades ago, including The Famous building that now houses The Gift of G.A.B or the Rexall Drugs building, which is now Kelly Jae's Café.

They got the idea to build the Goshen Clay Artists Guild when Maija Stutsman took a pottery class in high school and her teacher started talking about having a space for clay artists in Goshen in the late 1990s.

Shortly after the guild was built behind Maple City Market, 314 S. Main St., the city called Pottinger and asked if he was interested in purchasing an old lumber yard along W. Washington Street. That vacant lot became the Millrace Center Farmers Market around the year 2000, Pottinger said. The Clay Artists Guild was later moved to the building behind the farmers market in 2004.

That was around the time Jeremy Stutsman started working with the family. Soon after, the Stutsmans were acquiring their own properties and restoring them.

“So all the opportunities came together. (The Stutsmans’) age and interest in wanting to join us, our interest in historic buildings, the town sliding down, people wanting to sell their buildings and nobody was restoring them,” Pottinger said. “Because that’s a tricky different business. There aren’t many people who do what we do. When we bought the Millrace Center everyone said, ‘Bulldoze, get rid of it.’ It was an old lumber yard falling apart. So it takes a special interest.”

You could say Pottinger is a hands-on kind of man. If you walk up the second floor of the municipal annex building in downtown Goshen, which is mostly unoccupied, you will find a detailed model of the city’s downtown, which Pottinger built himself. “Where other people make canvases or design them on a computer, he builds them by hand,” Kauffman said.

Each one of Pottinger’s projects is a balance of revamping the structure and conserving the aesthetic aspects, something Kauffman calls “authentic urbanism.”

“For some of these buildings, they’ve preserved some of the historical artifacts (such as) signs and different architectural elements of the buildings,” said Mark Brinson, director of community development. “In some cases they’ve had to rebuild the façades. And those new façades really look original.”

Once the building is restored, Pottinger and his family wait until the right entrepreneur comes along. “Doing what we do — the restoration — is the easy part,” Pottinger said. “Getting the right kind of clientele to come down, take a chance, set up a business, is different. And almost all of the businesses that we rent to are new. And they are almost all local people who have never owned businesses and want to start.”

Brinson refers to Pottinger’s business model and vision as holistic. “He doesn’t look at each individual space and say, ‘What can I put in to generate the most rent?’ That’s the typical real estate investor mindset,” Brinson said. “He’s looking at the whole of the downtown and trying to figure what a good mix of uses are so they can compliment and kind of feed off of each other.”

And the family’s goal, Brinson said, is not necessarily to attract visitors and businesses from out-of-town but to invest in downtown for the residents.

“But as a result, what we found is when we build a great downtown and a great community it attracts a lot of visitors so that’s brought in lot of additional business.” Kauffman half-jokingly refers to the city’s business with Pottinger as a love-hate relationship.

“Dave likes to do things the way Dave wants to do things,” he said. “He freely admits he doesn’t work well in committees, he wants to do his building rehabs the way he wants to but we have codes that we have to enforce. “And then he gets mad at me and says, ‘I’m not investing in downtown Goshen!’ And couple months later he’s bought another building to (renovate).”

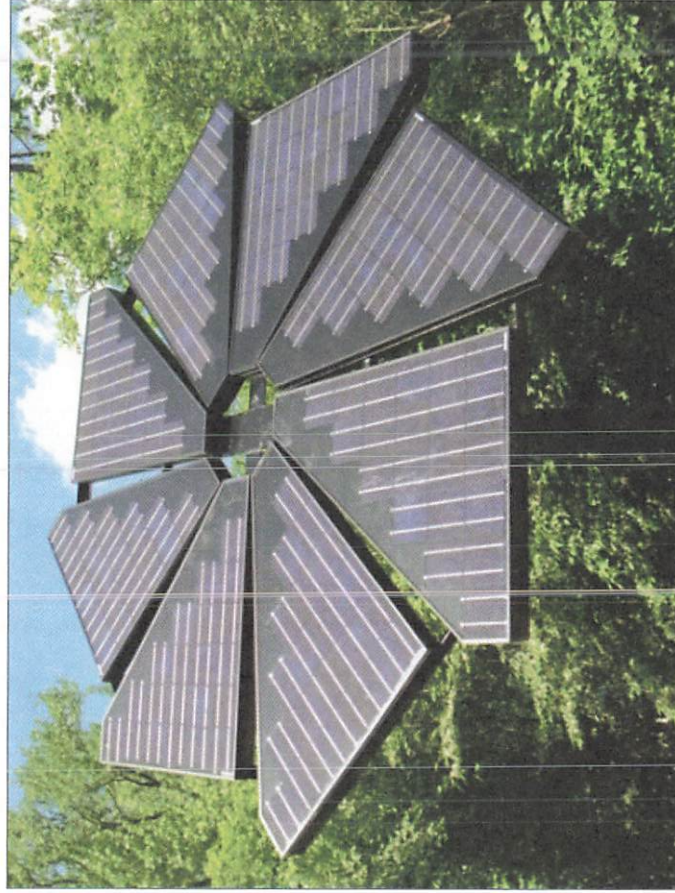
It’s clear, Kauffman said, that Pottinger loves the community enough to continue what he’s doing. “He definitely has an emotional attachment to his community and because of his work, other people are having emotional attachments to the community also,” he said. “So (the Pottingers) are pretty precious.”

When asked what they plan to do next, the family looks at each other with twinkles in their eyes, and without giving anything away, they say they just plan to continue doing what they’re doing. “One of the things that always concerns you is that you’re not going to be there forever,” Pottinger said. “And what’s the next generation going to do? Are they going to continue this? It’s easy to change, you can make something that will change everyone’s attitude quickly. I think we want to stay involved to try and influence the direction that this growth is taking.” In the meantime, the family celebrates its successes. For Peterson-Pottinger, it’s that the community has started getting involved, that residents are supportive of each other and that they appreciate arts and culture, she said.

“I must say, Goshen is a very special place to me,” she said. “If you create an interesting place, these people are going to support it. And then you throw in First Friday, which has been very successful, so you have a pretty place to come to, interesting activities, and it works.”

-by Sharon Hernandez

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Solar Systems of Indiana

Energizing Energy

“You want coal? We own the mines.

You want oil and gas? We own the wells.

You want nuclear energy? We own the uranium.

You want solar? We own..er...ah...solar power isn't feasible.”

Mike Peters, Dayton Daily News

“The sun delivers more energy to Earth in one hour than humanity consumes over the course of a year.”

MIT Technology Review

During the extreme summer storms in 2015, over 35,000 Hoosiers lost their power for days. The way we generate and store our power is an huge responsibility for our state, its counties, municipalities, many private companies, and cooperatives. With coming changes in extreme weather, examining not only the potential in renewable energy but also distributed energy is essential to our continued reliance on electricity.

Electricity has revolutionized the way we live in the past hundred years. It is impossible to overstate the role of electric power in our lives. But we have paid an enormous environmental price tag for our use of hydrocarbons to provide energy to our cities, homes, transportation, and industries. When future generations look back on this era, it will seem to them a primitive and irresponsible dark age of power generation, using the irreplaceable fuels of the planet to perform tasks that can easily be accomplished by renewable energy.

The future of energy is truly exciting. In a way, we have always been able to imagine a future free from conventional fuels and nothing feels quite so futuristic as technologies like solar glass, roadways, and cloth. But we are only copying nature. Plants the world over have been generating their own energy from the sun since chlorophyll first formed. We have a lot of catching up to do.

SUN

The price of solar panels has dropped dramatically in the last several years, 80% since 2007, according to the Berkeley National Laboratory. They have quietly become competitive with fossil-fuel based energy, coming in at 12-30 cents per kilowatt/hour. (endnote: <http://www.nrdc.org/energy/renewables/solar.asp>) and with expectations that it will hit 4 cents/kWh in the next decade, and in some places like Nevada, it already has. (endnote: <http://cleantechnica.com/2014/10/03/solar-power-costs-headed-toward-4ckwh/>)

Currently, most solar panels are manufactured in China, but global demand and expanded manufacturing are growing the industry in Europe and the U.S. The carbon footprint of solar is a fraction 500-100 of that of coal-based energy. Including the manufacture of the panels, it produces only 30-60 grams of CO₂/Kwh compared with coal's 500-1000 grams of CO₂/kWh.. Also, as the solar industry grows, there will be more options to recycle solar panels, which contain valuable metals, but are 98% recyclable. Solar panels operate silently, without creating any air pollution, and take in energy from free sunlight. Even on cloudy days, they generate reliable power for over 700,000 homeowners in the U.S.

In Indiana, we produce 112 megawatts of solar energy already, basically power for 12,000 homes. And we are just getting started. What does that mean for emissions? The power Hoosiers currently get from the sun is enough to offset 100,000 metric tons of carbon emissions last year. In Indiana, there are 65 solar companies providing employment for about 1,500 people.

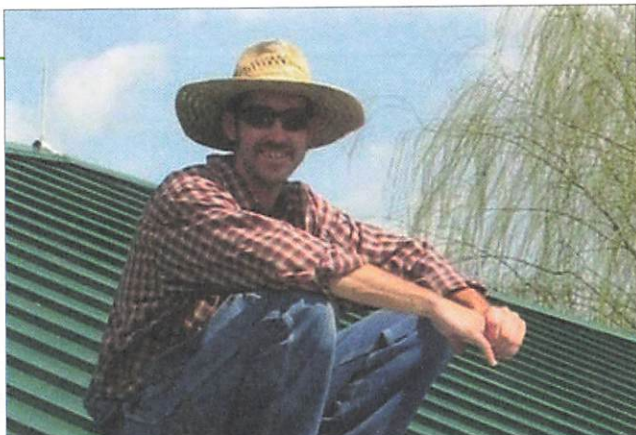
One such company is Whole Sun Designs in Wadesville, Indiana situated a few miles north of Evansville.

Whole Sun Designs

Ryan Zaricki, founder extraordinaire of Whole Sun Designs, grew up knowing that you don't swim in the Ohio River, you don't eat the fish, but that never sat right with him. After attending Rose-Hulman Institute of Technology in Terre Haute, he headed out to Colorado and worked in green buildings, learning skills in sustainable trades, thinking more critically about electricity and water. He was having fun. But his dad needed his help building a house, so he found himself back in Southern Indiana. He worked for another solar contractor for a while, moving back and forth between the two states as jobs presented themselves. But when some Indiana

projects fell into his lap, he began his own business.

He says he got into the solar business for himself, "out of necessity. I don't like working for other people and I saw a need



Ryan Zaricki

for people to be doing solar in this area. My first job came from an email on a listserv. Someone posted something about solar and I chimed in to offer my experience from what I saw in Colorado. A person asked about differentiating between bids, I helped out with that. They finally asked if I would just bid for the job.... Happy customers led to more customers."

There was a drastic drop in solar prices in 2011, so the time was right.

Ryan says "I just wanted to make enough money to pay my bills and student loans, but work snowballed and we had the chance to hire some employees. We're still a small crew – I don't really want to become a huge company."

There have been challenges, stemming principally from the lack of education about solar energy. Letting people know that solar works and is cost effective is something Indiana doesn't do particularly well. Also, incentives for solar here aren't what they are in Colorado. Further, incentives can provoke utility companies into not being solar-friendly, so it's a double edged sword.

We asked Ryan what surprises people most about investing in solar and we heard a common refrain: "It really is cost effective." They install systems at Whole Sun Designs that are warranted for 25 years but pay for themselves in 10 years. Bigger systems can pay for themselves in 7 years. Compared to the stock market, Ryan says, "the rates of return are comparable to major investments. The technology is user friendly, requires zero maintenance, and people can monitor their systems on a smartphone. The features people get are really cool."

When Whole Sun does a solar assessment, they look for some basic things. First, a sunny, open sky is a priority. Second, utility bills tell the customer how much electricity they are

using, which can also lead to a conversation about energy efficiency and how expensive their electricity rates are relative to other customers. Vectren, the power company in much of southwest Indiana, has higher rates than many other power companies, which helps the solar systems pay for themselves more quickly.

Once they work through all the details and paperwork, they can install a system in just 2-4 days.

Despite more Hoosier homes going solar, there are still some widespread misconceptions about solar energy and photovoltaic (PV) systems. The most common? “That it’s expensive,” Ryan says. “Put it side by side with standard utility power and it blows it out of the water.”

He’s received some crazy questions over the years, about solar flares, requests to build a concentrator on a customer’s roof to reflect more sunlight into their panels. “It was pretty gaudy, aesthetically,” he adds.

The recent California Solar Initiative study provides some early indicators of a consolidating solar market. There are about 5 big national solar installers that perform roughly half of residential PV installations in that state. Outside of those companies, there are thousands of smaller companies that serve a local area, referred to as the “long tail” of solar installers. Ryan’s company, Whole Sun, offers something special that the big companies can’t: a personal relationship.

“From my point of view, once I realized my path was in a home/contractor type of work, I’ve always felt kind of humbled that people let me into their homes, into the deep, dark depths of their homes even! Their utility closets. It’s kind of a sacred space. It’s unlikely you’d let strangers into these places.”

Creating a customer service-focused local business is a big priority for Whole Sun. Buying local isn’t just for food anymore. In many ways, you can get that personal touch by going local in your energy, also. For those looking to invest in their home or business by installing solar panels, Ryan recommends that they find an educational workshop and really see what it’s all about. He recommends the Southern Indiana Renewable Energy Network (SIREN) in Bloomington or the USDA workshops geared towards farmers. “Get tied into a community that has the knowledge and once you have that, go talk to contractors in your area. The internet is a wealth of information. Find a contractor you trust.”

There is so much to look forward to with solar energy technology, recent developments like the Tesla Power Wall and the Battery Innovation Center in southern Indiana are cool for renewable professionals like Ryan. "Batteries, off-grid systems, it's going to be coming full circle. We are carrying around lithium ion batteries in our pockets, it's just a matter of time before that scales up." For power geeks like him, he adds, "inverter technology is cool." From things like interconnected homes, smart grids, and the way energy services are delivered, it's a fascinating future.

*You can find out more about Whole Sun Designs at <http://www.wholesundesigns.com/>
-by Shannon Anderson*

Ray Wilson, Solar Homeowner

While many Hoosiers have their home as their primary investment, solar homeowners are making their roofs work over time for them. With electricity costs on the rise, many homeowners are looking to make the switch to solar power but they have a lot of questions.

Indianapolis resident Ray Wilson has owned photovoltaic panels for several years and he shared his experience of being the first wave of Hoosier solar homes. Ray's background is in agricultural engineering and during the 1973 oil embargo, price surging made him a bit of an energy expert at his then employer, the Farm Bureau. He says "I became really interested in energy and the finite amount of it. Farmers are always interested in saving money."



Wilson's home

When he remodeled the second floor of his home, he designed the roof so he could place panels there. Years went by, and despite a new roof, he still hadn't put up the solar panels he'd been intending. A trip to Denver for a weeklong conference on renewable energy gave him the final push and he came home with a now-or-never sense of commitment. There weren't a lot of solar businesses in the area, but he finally managed to find one and started on his system. He acknowledges, "I should have shopped around but at the time there weren't too many choices." Now there are dozens. At the time, he paid \$3.85 per watt for his 5 kW system. Ray's church then bought a system for \$2.85 per watt a few years later. Five more churches that are part of the Hoosier Interfaith Power and Light program recently received a quote for \$2.25 per watt recently. Ultimately, Ray said, "it's the right thing to do, and I was prepared to do it."

Ray said he had been conserving energy and using energy more efficiently for a while, an important first step in a renewable energy conversion. His electric utility company, IPL, requires that you size your PV system to the power you use, so he determined the size of his system based on his past use, which his electricity bills could document. He paid about \$19,250 total for his system, but that was before tax credits and the rebate from his utility, so in the end it was closer to \$10,000. Now, systems like his start a bit closer to \$10,000, not too far off the cost of a kitchen remodel or new carpeting.

His neighborhood didn't pay much attention to the panels until their bills started comparing their usage to that of their neighbors. When they learned that one of their neighbors was spending far less, they became very interested.

During the winter, Ray said, solar panels make more electricity in cold, so his power production does just fine. He has a steep slope on his roof, so the snow tends to slide right off, but he's been known to get up there and sweep it off on occasion.

In 2015, solar panels became a hot topic during a session of the Indiana General Assembly with the introduction of HB1320, a bill to end the state's net-metering program and allow utilities to write the rules for homeowners who want to invest in their own solar panels. Ray, with expertise from being an early adopter and an engineer, became an advocate for rooftop solar. He said he learned a few things during the session. "It became more apparent that people just can't turn off their bill, there's a base connection cost. If you use a small amount of electricity you pay a higher price per kiloWatt hour." His cost is 12-18 cents more per kWh when he uses under 300 kWh per month." He was also happy to find that he was NOT costing his neighbors more for their share of the grid, in fact he was likely providing a net benefit.

Overall, he is nothing but happy with his decision to go solar. He produces just about as much power as he uses with his system, about 17kWh per day of his 19.5kWh usage. He could increase his solar production even more if he was willing to “cut down that tree,” he says, referring to a tree that partially shades his home. He hopes many more Hoosiers who have a little to invest in their homes will consider going solar. It’s one of the best investments you can possibly make, even compared to saving money in interest-bearing accounts. Rooftop solar systems can also add \$15,000 to the value of a home, as well.

“People need to understand it’s not complicated. They ask how I maintain my panels, well, you put them up there and they generate electricity, that’s it.”

-by Shannon Anderson

Rectify Solar

For some Hoosiers, renewable energy is a personal mission. Phil Teague was a young man working for Marathon Oil.

The bills were getting paid and he was earning a decent living. Then one day he learned about the Alberta tar sands oil and its potentially huge environmental impact. He decided that while the paycheck was nice, he couldn’t live with himself in his job. Thus was born Rectify Solar LLC. Phil with his two brothers formed the company in



Rectify Solar

2013 to promote solar energy. Based in Indianapolis and Boonville, they perform energy audits and install solar panels as well as vehicle charging stations.

Phil is now a Board Member of the Indiana Renewable Energy Association (InREA), in which

he's active when he's not busy installing solar systems in the Indianapolis area or giving presentations about solar energy to many different organizations, businesses, and schools. Rectify Solar has received the ISBDC EDGE Award in the Indianapolis Emerging business class. EDGE is an acronym for Economic Development and Growth through Entrepreneurship. It was presented June 19, 2015 by Lt. Gov. Sue Ellspermann.

According to Phil, solar energy not only helps fight global warming, it is cost effective as well. There are many variables involved in calculating the cost. The type of panel, its angle to the sun and degree of shade, as well as the cost of electricity from each provider, all factor in determining the cost efficiency of a solar system. Additionally, there may be tax credits available that figure in the cost. Adding these factors together, solar panels can pay for themselves in as little as seven years.

Visitors to Phil's home find a garage with solar panels on top. Inside the garage is an electric motorcycle. He says that the panels produce enough electricity to fully power the vehicle so, he rides around town leaving no carbon footprint at all. According to Phil, the quickest way to get a financial payoff involves electric vehicles. Converting from gasoline power to sun generated power substantially reduces the cost of getting around.

Photovoltaic (PV) panels produce electricity that may be used to power your home reducing your need to purchase power from a utility. When the panels produce more than is needed, the electricity goes out of the home to the utility. Essentially, the electric meter runs backwards and you receive a credit for your excess electricity that may be used later. Duke, Indianapolis Power and Light(IPL), Vectren, Northern Indiana Public Service Co. (NIPSCO) and Indiana and Michigan Power Co. all participate in net metering.

Rectify Solar provides a product that has the potential to make a significant impact on our planet. Solar energy emits no exhaust and leaves behind no ashes or other waste. It never pollutes rivers or contaminates the earth. It's quiet and can be cost effective. It isn't the only answer to global warming, but it is a part of the solution.

More information about Rectify Solar LLC may be found at www.rectifysolar.com.

-by Richard Clough

EARTH

Turning our gaze down from the sky, under our feet we have a lot of renewable energy potential. A geothermal heat pump system is a heating and cooling system that uses earth's ability to store heat in the ground, using the ground as either a heat source, when operating in heating mode, or a heat sink, when operating in cooling mode.

Ball State University

If you go just a few feet below the surface, our ground has a very stable temperature throughout the year. Geothermal heat pumps draw that available heat in the winter and sink heat into the ground in the summer where a furnace or boiler would be burning fuel to generate those temperatures.

At Ball State University in Muncie, Indiana, a

geothermal project takes advantage of this near-constant temperature of the earth starting approximately ten feet below the surface of the ground to assist with heating in winter months and cooling in summer months. There is no direct interaction between the water in the system and the earth, only heat transfer through the pipes.



Ball State University geothermal heat pumps

According to Mike Luster, senior mechanical engineer at MEP Associates who led the project at Ball State, geothermal systems offer college and university campuses a number of benefits. Those include operational energy cost savings, reduced system maintenance and associated costs, elimination of costs for handling the ash that would otherwise result from burning coal as a fuel, and reductions of the carbon footprint that otherwise would result from the use of fossil fuels to heat and cool campus buildings.

At Ball State, the geothermal system heats and cools all 45 buildings on the 660-acre campus. The geothermal system saves BSU approximately two million dollars per year in operating costs at today's pricing and will insure future avoided costs for carbon taxing. The system replaced four coal-fired boilers, reducing the university's net carbon footprint substantially. "Beyond the substantial economic and environmental benefits of this campus-wide installation, the geothermal project also is serving as a platform for field-based research and education," said Professor Robert Koester, Director of the Center for Energy Research/Education/Service and Chair of the Council on the Environment at Ball State University. "Faculty and students are working across disciplinary boundaries; the university is connecting with its counterparts to share its findings; and our industry partners continue to help as we advance our collective understandings of the best practices in the use of this technology."

By taking the coal-fired boilers offline, Ball State is able to reduce its carbon dioxide footprint by approximately 85,000 tons per year, nearly half of its previous footprint. Furthermore, the geothermal project is challenging the misconception that renewable energy is not cost-effective or practical for our institutions and businesses.

-by Shannon Anderson

Mel Joliff, Geothermal Homeowner

Mel Joliff was working as a residential realtor in Zionsville, when he first sold a home with "geothermal heating." At first, he had no idea what that meant. He joked that even after they explained it to him, he still had no idea. It was the late 1980's and geothermal was not a common feature in homes, so it made the property memorable.

When Mel bought his current house, he put serious thought into using renewable energy, but was not sure what kind would be best for the property. His house was built in 1871, on a small lot in Noblesville, which made a bold energy conversion challenging. But to Mel, with a real-estate eye, housing is a fashion industry and he says "we wanted off the fashion tree." He liked the community nearby, so they forged ahead with some upgrades like storm windows, attic insulation, filling some gaps, all while acknowledging they didn't want an air-tight house.

Their old pulley system windows were the biggest obstacle, as they were not energy efficient. Registers and supply ducts under the windows meant a lot of extra duct work. When an acquaintance put geothermal in their Broad Ripple home, Mel learned about diagonal drilling

and, how it was possible to install geothermal on a small lot by drilling on an angle. With available tax incentives and rebates they decided to get started. First, he called a large company because installing geothermal wasn't something most heating companies offered at the time. He would be their first geothermal customer. Unfortunately, during the first installation, the pipes were placed too close together. With pipes close together, the heat transfer was not optimal. After installing a second loop under their house, the system was more effective.

Mel says, "they dug a 6 foot by 6 foot hole in the front yard. The whole project took about a week." They use a Williams Comfort Air, which is like a heat pump that sits in the basement. "You don't even hear it, it's hard to know if it's on," Mel says. The pump has a service contract and a 10-year warrantee. The geothermal loop is under a guarantee for as long as he owns the house. The loop is powered by electricity coupled with a new gas furnace.

The results have been terrific. His gas bill has gone to zero. Monitoring the system he purchased allows him to monitor just the geothermal and water heater's output. This summer, Mel estimates, it cost him about \$56 to cool his 2,000 square foot home.

Mel says, "it's not as cheap as we thought it would be, but it's cheaper and we did it to save money and also to be responsible." He points out it just makes sense to use geothermal in the summer to lower the temperature of water from 55°F to around 45°F. The alternative is to cool down air which might well be 90°F or more. Mel points out an additional benefit: if your home has geothermal, it's worth more when it comes time to sell.

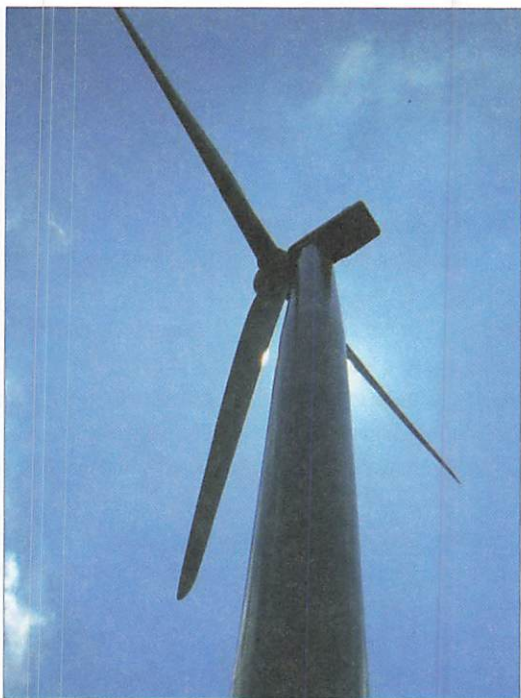
A common misconception about home geothermal is that it cannot be used in most properties. "Many people still think you have to have a big lot or open pond in order to have it," Mel says. "You can buy an energy efficient car, your home is tougher nut to crack... but it's a bigger nut. I'm a pretty lazy guy, I know I won't ride a bike, I won't do some things that are simple and small," Mel jokes, "but I can do this big thing, one time." He stresses, "It's important to me not to be a selfish person, not self centered, not doing that is like going fishing, keeping the fish, and throwing trash in the lake...if you've ever seen the Grand Canyon it will tell you who you are...we aren't the center of the universe."

-by Shannon Anderson

WIND

Midwestern windmills have been providing energy to pump water or grind grain for over a hundred years. Millions of windmills were installed across the midwest primarily to power irrigation pumps. By the 1900s, there developed a tremendous interest in windmills that produced electricity. In fact, the 1893 World's Fair in Chicago featured several designs by no fewer than 15 different companies. Wind powered generators spread throughout the midwest. However, by the middle of the twentieth century, many turbines were unused and shut down. The rising oil costs in the 1970s spurred a renewed interest.

The modern wind turbines that now dot the Hoosier landscape are mostly of the Horizontal-axis or HAWT variety with three blades, 20 to 40 meters long, and they are white for better visibility in the daytime. There are other designs and vertical axis designs as well. Horizontal axis turbines are capable of generating between 100 kilowatts to 5 megawatts of energy and every kilowatt hour of electricity produced by wind replaces 1.5 pounds of carbon dioxide that would have been generated by coal-fired power. But wind energy isn't just good for the environment, a 250 megawatt wind farm is able to provide 1,079 people with employment and add as much as \$50.14 million to the local economy.



Midwestern windmills

Megan Anderson

EDP Renewables

Drive along I-65, north of Lafayette, and you can't miss them. White sentinels, approximately 300 feet tall, turning, turning, by all appearances, slowly, but if you get closer, you see how fast those blades really spin – more than 100 mph at the tips in ideal wind conditions. The Meadow Lake wind farm, located in Chalmers, Indiana, has 303 wind turbines, providing 500 megawatts (MW) of glorious renewable energy. It is one of the largest wind farms in the country, owned and operated for more than five years by EDP Renewables North America (EDPR NA), which currently has 700 MW of installed capacity in Indiana, making it the largest wind energy producer in the state.



EDP Renewables (EDPR) is the fourth largest wind energy company in the world, with about half its facilities in Europe and half in the Americas. EDPR's parent company is Energias de Portugal (EDP), the largest Portuguese utility company headquartered in Lisbon.

The Meadow Lake wind farm in White County has had a huge positive economic impact via annual payments to hundreds of landowners and economic development payments and taxes to the county. Comprised of a variety of GE, Vestas, Suzlon, Acciona turbines, it was a \$1 billion investment. The power from this farm, however, is sold to Illinois utilities and the open market via independent system operator, PJM.

Ryan Brown, Executive Vice President of the Eastern Region, says that EDPR NA works very closely with the communities they operate in.

"It takes years to develop a wind farm, to do it properly, to get people on board for changing the landscape, but changing it for the better," Brown says.

EDPR NA has developed a few projects alongside communities for more than 10 years before actually building them, demonstrating care and commitment to the communities in which the company operates.

“We are focused on being the long-term owners of these assets. When you’re in it for the long-haul, you develop and build projects very differently,” Brown adds.

EDPR NA selects turbines for new projects based on the characteristics of the location and the best price. Wind turbine technology continues to advance at a very rapid pace with the cost of wind power having been reduced by 66% in the past six years according to the American Wind Energy Association (AWEA).

Brown is originally from Wisconsin, but he previously lived in Tena, Ecuador, working with indigenous communities on alternative tourism and economic development. Destructive oil exploration in the area motivated him to pursue a career in renewable energy technology. He also worked at the Indiana State Energy Office from 2004 to 2008, participating in early renewable energy conversations. EDPR NA approached him in 2008 about working for the company, and he accepted a position that found him developing wind farms. In 2010, EDPR relocated him to Toronto, Ontario, to start up the company’s Canadian division for a few years, but he’s now back in Indiana – ready to keep expanding Hoosier wind energy.

In Randolph County, near Winchester, you can find EDPR NA’s newest \$400 million project, Headwaters wind farm. Headwaters wind farm, its name derived from nearby headwaters of the White River, is a 200 MW farm, completed in December 2014, with its generated power sold to Indiana Michigan Power – enough to power more than 50,000 homes. Investing in wind is really smart: EDPR can offer 20-year fixed price contracts that fossil-fuel based power simply cannot. One of the biggest misconceptions about wind energy Brown hears is about cost.

“People lock into the idea of what the wind potential in the state was 10 years ago. They think about the technology in a static way when we’re currently seeing huge reductions in the cost of energy every couple of years. Every time we deploy a new version of the technology, it’s really important for policy makers to understand; it’s not a fixed point,” Brown comments.

Brown says he’s excited about the future of wind turbines – the blades longer, the towers taller, and the costs decreasing. Battery technology also interests him, with lowered costs and higher capacity in batteries.

“When communities start requiring their power to be clean and green, we can provide that energy on a large scale, in a cost-effective manner,” Brown says.

-by Shannon Anderson

Altairnano Technologies

Renewable energy clearly has many great advantages, but what happens when the wind stops blowing or the sun is on the other side of the world? Electric-generating utilities can manage the predictable ups and downs from renewable energy sources, but rapid and unexpected changes can cause problems. Electricity grids require a continuous balance between energy supply and demand. Renewable generation, such as solar and wind can pose some challenges in 24-hour supply, and that is slowing their adoption into the grid systems. This is where battery technology comes in.

Altairnano Technologies, in Anderson, IN produces a battery based system to deal with the intermittency problem. The battery, based on innovative nanotechnology, stores megawatts of energy when excess energy is available and begins releasing that energy back to the grid within milliseconds when the need arises. This gives the grid managers time to stabilize the grid, using conventional generators, and avoid major disruptions. Since the intermittency problem has slowed the adoption of renewable energy, the Altairnano system has the potential to accelerate the adoption of wind and solar energy.

For more information about utility-scale energy storage, and to see a list of articles and white papers, visit the Altairnano website at <http://www.altairnano.com>.

Storing energy from renewable sources will be actively researched at Southern Indiana's Battery Innovation Center (BIC) in Crane, Indiana. Duke Energy and the Indiana Office of Utility Consumer Counselor (OUCC) are partnering with the Battery Innovation Center to make strides in energy storage research for homeowners and communities alike. Research of this kind speeds progress towards making renewables the clear path to energy independence.

**MORE THAN
JUST POWER.
POWERFUL
SOLUTIONS.**

CHAPTER 5

On the Go

“Life is like riding a bicycle. To keep your balance,
you must keep moving.”

— *Albert Einstein*

How do we get from point A to point B? Unless you have a magic carpet, you'll need wheels of some kind, or you'll have to rely on the oldest transportation modality of all, your feet. Some forms of transportation are quite harmful to the environment; others not so bad at all. Here in this chapter we'll hear about a number of options, along with some personal stories of folks who committed to breaking a bad habit, such as relying on a car.



Going carless

“So why did I do it? Why did I sell my car? As I sit here on a beautiful Sunday afternoon after having just completed a bunch of errands on my bike, it feels timely to contemplate the why! It’s been a pretty easy two weeks as the weather has been especially cooperative. Not projecting, but others (me too) wonder what it will be like when it’s -5°F outside and the streets are covered in a thin sheet of black ice. I must admit, it feels a bit like an adventure as mass transit is not readily available in Indy – yet!

Last year I made a vow that I would master IndyGo and had a couple of good runs at it, and then my attention waned. I found that I used my car even when a bus was at my corner. So, as I recommitted to reducing my carbon footprint, it seemed that getting rid of my car was the natural next step. I do care about the future for my kids and this is one small way I can reduce the amount of pollution I’m putting out there.

And for full disclosure, I’m Chair of the Central Indiana Regional Transportation Authority (CIRTA). We are the convening agency for the nine donut counties focusing on transit. I want to walk my talk because I think public transit – and education – are the two things that hold us back from being a great city.

And a lovely side effect is that I’m saving money: no more car insurance, oil changes, repair bills and bi-weekly fill ups! I’m diverting those savings into college payments. I’ve also found that I really don’t have to schedule workouts any more. I’m literally riding my bike as often as possible and feeling it! Improved cardio, stronger legs, a pound or two less and my yoga has become just a practice for mental health. Not bad for unintended consequences!

And the final joy is that I’m participating in an unfolding sharing economy. Friends are willingly offering me their cars (distant soccer games), sharing rides, and we’re exchanging new delivery services and apps that make this transition a bit easier.

It feels important to acknowledge all of the true pioneers that have gone carless before me and have given me the confidence to know that I can do this. Thanks friends...

Here’s to lots of tailwind!!

-by Cassie Stockcamp

Indianapolis-based Cassie is president of the Athenaeum Foundation in Indianapolis, as well as a president of the board of CIRTA (Central Indiana Regional Transit Authority).

Electric Car Share in Indianapolis

Beginning in late 2014, Indianapolis became the site of the largest electric car share operation in the nation. With this development Indianapolis has become the leader in this very important step in changing transportation within dense metropolitan areas. Prior to this the only electric car share operations were on the west coast. Indianapolis and Indiana received positive press coverage in the spring of 2014 when Forbes Magazine carried a story about BlueIndy.



This service will provide *BlueIndy cars*

electric vehicles for hourly rental at convenient locations across the city. BlueIndy plans to establish 200 stations with 500 vehicles in Indianapolis during the first phase of the project. This will ensure that the vehicles are readily available to many Indianapolis residents.

The BlueIndy cars can travel around 150 miles per charge. Subscribers to the BlueIndy service pick up a car at one of the 200 stations using an automated system to reserve a car and a credit card sized key to unlock the vehicle. The subscriber can then drive the car and drop it off at the same or a different station when it is no longer needed. The cost is based on the length of time from unplugging the car at the pick-up station to the time of plugging it in at the return station.

BlueIndy was developed by a French group in conjunction with the City of Indianapolis. It is the next step in Indianapolis Mayor Greg Ballard's efforts to help the city go green. A similar service was launched in 2011 in Paris, France and it has been a runaway success. The Paris service

has been used by 140,000 subscribers who have taken 5 million trips as of early 2014.

— by Dick Sprague

Converting Gas Guzzlers to Electric Hybrids

Echo Automotive has developed technology at their Anderson (Madison County) tech center that the National Truck Equipment Association has called the most innovative product of the year.

The technology bolts onto existing or new fleet vehicles and turns them into highly efficient hybrids or plug-in hybrid vehicles.

The EchoDrive™ system enables gas powered vehicles to leverage electric grid power at a fraction of the cost of fossil fuels. EchoDrive™ applies the energy stored in the battery via the electric motor to assist the powertrain when the

internal combustion engine is most inefficient, significantly reducing the workload of the engine and the use of fossil fuels. EchoDrive™ also uses regenerative braking to recapture energy that is typically lost during braking. The recaptured energy is returned to the battery for later use.

These strategies combine to reduce the total energy use as well as the pollution and CO2 emissions associated with the typical internal combustion engine. echoautomotive.com

— by Dick Sprague

Freewheelin' Community Bikes

Getting your first bicycle is one of life's milestones for most people. Most of us can remember



Jeff Ronning, VP of Systems Architecture, shows Indy Champ, and Echo advisor, Arie Luyendyk how easily EchoDrive installs.

the day it happened. But for some families, there just aren't the resources to purchase a bike. That's where Indianapolis-based Freewheelin' Community Bikes come in.

Freewheelin' offers an "Earn-a-bike" program in which kids, aged 8-18, participate in an eight week training program learning how to repair and maintain a bike. Upon completion, they receive a quality bike. Along the way, they acquire mechanical skills and



Freewheelin' Bike Shop

mentoring from leaders who have previously completed the course. Lessons about leadership, accountability and perseverance are by-products of the program. Many stay with the program enhancing their mechanical skills.

Freewheelin' also conducts twice-weekly cycling tours of Indianapolis. In 2011 they took a week-long trip to Cincinnati and hope to offer another long trip soon. They are also getting into training for competitive bike racing.

The program was started by Nancy Stimson in 2007 at Tabernacle Presbyterian Church. In 2011, they had enough bikes, bike parts and attendant stuff that the fire marshal made them move out. They found a location diagonally across the street at 3355 Central Ave and moved the program there. This allowed them to open a retail store offering quality reconditioned bikes along with parts and accessories. Any profits help to support the program. (Sadly, Stimson passed away in 2015; Jennifer Cvar is now executive director of Freewheelin'.)

Do you have an old bike collecting dust in the back of your garage? Freewheelin' is a good place to recycle it (pun intended). The best of these donated bikes are fixed up and offered for sale. Others are used to develop the repair skills of the trainees. What can't be fixed is sold as scrap. They proudly point out that nothing ever goes to a landfill.

Many miles of bicycle lanes have been designated in Indianapolis and many more are in the plans. Biking has become a reasonable and environmentally friendly way to get around. It isn't just for kids riding around the neighborhood anymore. It's clean, cheap and gives you exercise in the process. Freewheelin' is helping encourage this important resurgence in biking and helping a lot of kids at the same time. freewheelinbikes.org

— *Richard Clough*

Happy Birthday to Heaven

As part of my work in schools on climate change and solutions, I was recently introduced to Louis B. Russell School #48. This intro to School #48 led to planning an IndyGo adventure to Indy Urban Acres. Indy Urban Acres is a frequent partner for our work at Earth Charter Indiana and Youth Power Indiana. Tyler Gough at Indy Urban Acres is in charge of growing food that goes directly to food banks in Indianapolis. Indy Urban Acres is part of the Indy Parks system, and is in partnership with Gleaners Food Bank.

Tyler himself is engaged in constantly improving his farming methods, adding a no-till strategy to his already organic-minded one.

Tyler is an educator as well as a farmer, and so I love taking kids out there for the fresh air, the fun, and the food instruction. Depending on the time of year, Tyler sends soil and seeds home with kids to start their own food garden.

As of last year, I began to take students to Tyler's Indy Parks farm on IndyGo, our public bus system. This doubles the sustainability instruction: responsible farming practices are an act of sustainability, carbon dioxide footprint reduction, and carbon sequestration and thus climate recovery. To take mass transit is to further reduce our carbon footprint and increase our sustainability.

It's a win-win for Mother Earth, who desperately needs a lot of check marks in the "win" category.

Ms. Stone from School #48 — along with numerous staff members of the school, including the principal, Mrs. Sam — invited me to come in and talk to the 6th graders before our bus adventure. I did so on a Tuesday, first presenting my standard Climate Change 101 powerpoint,

then connecting climate change to our decision to take a city bus for our field trip: lowering the carbon footprint.

Whether I am advocating for bikes or cars, the message also includes the numerous studies I've read that say one can save up to \$10,000 a year by not even having a car. That amount is based on car payments factored over time, plus gas, parking costs, insurance, maintenance, and other factors. That usually gets a wide-eyed response!

On Thursday, I returned to the school with a couple dozen day passes in hand, courtesy of my friends at IndyGo. IndyGo has now provided me passes for about a half dozen adventures, and as the word spreads, I have no doubt other schools will want to get into the game.

The three dozen 6th graders, along with their teachers and a volunteer, emerged from the school to await the #19. We had on Tuesday determined our path using IndyGo's website, which I shared with IndyGo so that the drivers would not be surprised at the sight of a mob of kids waiting at a stop.

As we got ready to head to the bus stop just across the street from the school, located at the intersection of Central Avenue and 34th Street, one kid pointed up Central and asked: "Is that our bus?"

The bus proclaimed "GARAGE" on its display sign, so I responded that no, it was headed the garage and just happened to be stopped right there.

Boy was I wrong.

IndyGo had actually sent a bus especially to us for our field trip. The teachers were happy about that, and while I was struck dumb by the generosity and sweetness of that, I was also a little disappointed, as it wasn't quite the authentic experience I was hoping to have.

The teachers were happy however, because most of the students had never been on IndyGo before, and the teachers liked the more controlled setting of having a dedicated bus. After a moment's thought, I decided I agreed. Especially as it took a long time for the students to line up and run their cards through the IndyGo machine!

Once the students were on board, I learned an additional bit of information. This route, the #19,

would become our next bus, the #30, and so we wouldn't even need to transfer.

While this made it easier, I have to say I was once again slightly deflated.

Two summers ago, I visited a summer camp in Fountain Square at the invitation of the Southeast Community Services Center. It was those kids, aged 8-17, who taught me how to use IndyGo in a robust way, transferring from one line to the other. Honestly, I had only gone on direct trips (to and from the downtown, never downtown, then east or west). So thanks to the great educators at that program for helping me understand just how effective our mass transit system can be.

The now-#30 took us to the intersection of 21st St. and Shadeland for the nearly mile walk to Indy Urban Acres. The field trip supervisor, whose name I never learned, pulled me aside at that stop. I told her back at School 48 how grateful I was for the special treatment but that I thought we could handle it on our own. She asked me on Shadeland, with hundreds of cars hurdling past us, if we wanted to be on our own in catching the #30 and then transferring to the #19 for the voyage back.

I told her yes, and responded that we were on our own.

And so we were.

We walked to Indy Urban Acres and Tyler Gough did his tour and instruction.

As we finished our tour, and started hiking back to catch the #30 at Shadeland and 21st, I realized that there was a bus stop for the #21 right next to Indy Urban Acres. A quick search on my cell phone resulted in an IndyGo map that said #21 would be a perfect way to return to the school. In fact we'd end up transferring downtown which I thought would be fun for the kids.

So after a quick consult with the teachers, we changed our plan and awaited the #21.

We had a brief pause downtown as we awaited the #19 to get back to the school. There, I gathered a bunch of students around me to announce my son Julian was turning 25 that day, and would they sing to him? They had heard about Julian on Tuesday, as I told them that one of my sons had decided not to drive, in good part because of that cost savings.

So they were more than happy to sing to him, but first, we had to sing to someone else.

Heaven.

One of the School 48 students on our field trip is named Heaven, and so we sang “Happy Birthday” to her, before singing to Julian on his voicemail.

Students enjoyed a field trip



Jim Poyser

I had never sung “Happy Birthday” to Heaven before. It seemed like a fitting celebration for our lovely day of travel and fun, a moment to pause and be grateful for everything, from the beautiful sunlight, to the generosity of Tyler Gough and of IndyGo, and the friends we made on the bus, like Midnight Rose, whom I spoke with the entire trip from Indy Urban Acres to downtown.

We are already planning our next adventure.

— by *Jim Poyser*

Girl in Transit

From January 2012 to September 2013, I wrote the column “Girl, In Transit” for NUVO.net,

producing roughly 50 articles. The column focused on Indianapolis public transit as the city struggled to grow their system. I sold my car and spent two years navigating the city, blogging about the ups and downs of being dependent on Indy's public transit system.

— Ashley Kimmel

The high cost of driving

I took an opportunity to steal my mom's car this past week while she was out of town, and I have to admit, I did a bit of joyriding. I like having a car. Not only is it fun, it makes life a whole lot easier.

It was not all fun and games, though. The convenience of car ownership comes at a cost. I kept track of things that I spent money on over the eight days, and here is what I came up with...

Girl in transit, Ashley Kimmel

- A little glimpse into the costs I accrued during one week of driving a car:
- Total money spent on gas: \$48.01
- Total money spent on parking: \$18
- Total money spent on unnecessary things only because they were conveniently accessible: \$103.87
- Total money spent on necessary things that are not typically conveniently accessible: \$148.53
- Total money spent on a bus pass that I lost because I didn't use it for a week: \$60



-
- Total time spent finding parking spots: roughly 45 minutes
 - Number of times I was late for work (due to traffic and unknowingly finding myself one-way streets): 2
 - Number of times I was late to class (due to lack of campus parking available to students without parking passes): 1
 - A little glimpse into the costs I usually accrue in a typical week without a car:
 - Total money spent on transportation (with my new student discount): \$30 per month
 - Total money spent on unnecessary things that happen to be close to places I go: roughly \$50
 - Total money spent on necessary things that are not conveniently accessible: roughly \$50
 - Total time spent walking to places because I missed the bus or the bus is late (or sometimes even just because walking is nice): 3-4 hours
 - Number of times I am late for work: 0
 - Number of times I am late for class: 0
 - Number of times I am early for work (usually about 45 minutes, in fact): all shifts
 - Number of times I am early for class (at least 45 minutes): every class

Besides the much-needed grocery store run, the pros and cons of the two are obviously in favor of me not having a car. Who knew?

—by Ashley Kimmel

Thanks to NUVO for their permission to run this essay.

Bicycle Diary of a Big Girl

From March 2012 to October 2013, I wrote the column “Bicycle Diaries of a Big Girl” for NUVO.net, producing 50 articles. The column’s focus was on bicycling in Indianapolis as the city’s bike culture began to flourish. As a novice cyclist, I shared my trials and triumphs with readers, focusing not only on how to bike but also why. — *Katelyn Coyne*

Beginner’s guide: changing the world one pedal at a time

For two years, I felt trapped on the West side of Indianapolis. The location, close to family, seemed a good fit for a twenty-something starting her life during the Great Recession. But the sea of strip malls and fast food chains that consumed the landscape suffocated me. The smell of gasoline choked my lungs as I made the 30-minute trek to



Katelyn Coyne

anywhere. I hated the blazing sun blaring down on miles and miles of concrete supporting an infrastructure of middle America consumerism.

I yearned to live inside Indy’s cultural scene, to get out of my car and start walking. I found an apartment on the Old North side, only blocks from groceries, theaters, bars, shops, art galleries and more. Finally, I could choose my own adventure as I twisted through the city streets on foot.

One summer afternoon, I was on a stroll down the Mass Ave strip, when two cyclists zoomed past me. In the stagnant summer air, I felt a gust of wind in their wake, and it opened my eyes to a part of Indianapolis’ culture I had yet to consider: cycling! Environmentally-friendly travel with the added bonuses of exercise and the ability to get where I’m going faster— what a marvelous concept.

I wanted to join the in-crowd of people who cycle their way through life, who gather at bike hubs and have the inside scoop on living green and looking good while doing it. But just as my imagination was running wild with the possibilities of new found mobility that voice of nagging self-doubt whispered in my ear.

“Your rounded belly and big thighs will look ridiculous atop a slender bike frame. You’ll show up everywhere looking a hot mess, with helmet hair and sweat stains on your clothes. You’ve got a tiny apartment with no reliable storage for a bike. What if you get hit by a car? What happens when you go so slow motorists and cyclists alike pass you by, point and laugh? There is no way you’ll be able to make biking work for you.”

My hesitancy persisted; I kept my bicycling dreams secret for the next few months. But every time I turned the ignition on my car for a five-minute drive to the grocery, I felt it — warming guilt. Instead of becoming part of the solution, my insecurities had me perpetuating the problem. Eventually, I got to thinking — there must be others like me who want to cycle, but have a slew of excuses why not.

I decided to take the plunge, and pitched an idea to NUVO: a chronicle of my cycling adventures, complete with mishaps and misunderstandings, wild successes and epic failures. I would make myself into a model, a big girl on two wheels, who’ll exorcise her body image issues and social awkwardness through cycling. Operating under the pretense of “if I can do it, anybody can,” I started my research. I bought my bike. I reached out to experts, amateur cyclists and friends who inspired me. And now I proudly proclaim that I am an Indianapolis cyclist.

For the past six months, I’ve shared my adventures on NUVO.net in my blog entitled “The Bicycle Diaries of a Big Girl.” The power I feel after a hard ride, the bliss I feel after a joy ride, the responsibility to nature I feel after a commuting ride connects me to my community, the environment and myself in new and extraordinary ways. I’ve pushed past my self-imposed limitations. I’ve learned a slew of new vocabulary words. I’ve changed a flat tire. I’ve ridden tours of the city. I’ve discovered parts of Indy I never knew existed. And best of all, I’ve joined a growing community of like-minded citizens hoping to change the world one pedal at a time.

— by *Katelyn Coyne*

Reprinted with permission from NUVO

Green Fleet Initiative

In 2004, Fort Wayne became one of the first cities in Indiana to launch its own Green Fleet Initiative. Since then, Fort Wayne has consistently received statewide recognition for being one of the greenest fleets in Indiana. Larry Campbell, the fleet director, has overseen the operation since the beginning. Campbell is also a board member of The Greater Indiana Clean Cities Coalition. He has received awards for his leadership role in Fort Wayne and was on the cover of Government Fleet Magazine in 2012 for being the Public Sector Fleet Manager of the Year. The sole purpose of the fleet is to create a better and more sustainable life for the city of Fort Wayne. Campbell hopes to continue this motto by adding cleaner, more energy efficient vehicles for the city to use for public services.



Fort Wayne Green Fleet

The team uses B-20, a soybean based fuel, which creates fewer emissions and will allow drivers to obtain more miles per gallon. B-20 is utilized by all of the vehicles that run on diesel fuel within the Police, Fire, Utility, and Public Works Departments to help reduce the output of emissions into the air. Although hybrid cars have been used for quite some time, Campbell has recently been focusing on the hybrid truck. Idle reduction technology and biodiesel improvements have been made to the city's larger vehicles, such as the plow truck, to help maintain economic stability despite fluctuating gas prices. Fort Wayne Green Fleet has already partnered with many manufacturers and is always looking to expand. In the future, Campbell hopes to add more hybrids and electric vehicles to the city of Fort Wayne. The technology for electric vehicles has not developed enough to implement that approach. For now, the plan is to continue to make Fort Wayne a cleaner city, and to inspire others to do the same.

-by Aubrea Kobryn and Heather Gonzales

Walk and Bike to School Day

On Wednesday, Oct. 7, 2015, St. Thomas Aquinas students participated in the annual international event, Walk and Bike to

School Day. Students either walked or biked to school from home or from a walking school bus stop. The purpose of the event is to encourage physical activity and promote a cleaner environment. During the first 10 weeks of the 2015-16 school year alone, STA students have walked and biked to school over five hundred times.

On Walk and Bike to School Day, students walked to school on three different walking school buses. A "walking school bus" is a group of students, parents, and teachers who all walk to school together on a planned route. Walking school buses provide safe and convenient ways for students to walk to school. Student Sully Meyer said that he would much rather join a walking school bus in the morning because he gets to walk with his friends.

Each year, students look forward to the celebration that takes place on the morning of Walk and Bike to School Day. This year, several Butler cheerleaders and the University's beloved bulldog, Butler Blue, greeted students as they arrived at school. Students were rewarded with a healthy snack and a neon bike reflector promoting bicycle safety. Sixth grade walker, Mayan Stickel said, "I liked the festivities on the playground because it got kids psyched up about walking to school."

According to walkbiketoschool.org, "The entire community benefits from efforts to enable and encourage more children to walk or bicycle to school safely." The 2011 National Center for Safe Routes to School Report proved that personal vehicles driving children to school accounted for ten to fourteen percent of the personal vehicles on the roads in the morning. Less traffic congestion could lead to safer school facilities and creates improved surroundings for bicyclists and pedestrians.

Walking and biking to school has many benefits. According to auto.howstuffworks.com, cars are responsible for fifty to ninety percent of air pollution in urban areas. Walking and biking to



St. Thomas Aquinas students walk to school

Jim Poyser

school can reduce air pollution and help create a cleaner environment. Seventh grader, Elia Soria, said, "Protecting the Earth is really important to me. That's one of the reasons I love walking to school."

According to the American Heart Association, one third of children in the United States are either overweight or obese. Lack of physical activity is one of the primary causes of childhood obesity. Walking and biking to school are safe and enjoyable ways to improve childhood health. When asked about the reasons why walking and biking to school is important, STA teacher Mrs. Horvath replied, "There are several reasons why it is important for kids to walk and bike to school. It gives them a good, healthy start to the day, prepares their brains for learning, and helps them appreciate God's gift of nature."

—by Ella Gebke, 8th grade St. Thomas Aquinas School student

Cars as Weapons of Mass Destruction: A Quaker's Story

It was in 1913 when the Ford Motor Company's moving assembly line first started. At the time I'm sure a personal automobile was seen as a luxury item, for the rich only. Curious as to whether there were initial Quaker reactions against automobiles, Internet searches only revealed articles about Quaker State Motor Oil, and various Quaker auto sales companies!

Think of what has happened in just the 100 years since.

How could we think it was reasonable for every family to have at least one of these massive, complicated machines? How can we justify the tons of material needed to make each car? For a machine that sits idle such a large percentage of the time?

In the 1970's it was easy to see some of the effects of the use of millions of automobiles in the form of smog in high population areas. Although catalytic converters have since helped with the visible smog, they actually helped add even more carbon dioxide (CO₂) into the atmosphere when they converted carbon monoxide (CO) to CO₂. Carbon dioxide is a greenhouse gas, which means it helps trap the heat rising from the earth's surface, preventing its escape into space. This is why we have a planet with temperatures that support life. But burning all of that gasoline and dumping TONS of CO₂ into the air is resulting in higher atmospheric and ocean

temperatures. The hotter air holds more water vapor, resulting in droughts and changing, more severe, weather patterns. The oceans have also absorbed a great deal of CO₂, which combines with water to form carbonic acid. The more acidic water kills marine life. The hotter ocean waters add more water to the atmosphere, resulting in more intense rainfall.

The fact that CO₂ is invisible has made it so easy to ignore until recently, when the resulting effects could no longer be ignored. When some of us began to question burning all that gasoline, the fossil fuel industry invested millions of dollars to try to convince the general public otherwise, with notable success.

But the damages from this ill-considered mass accumulation of personal automobiles extend far beyond the pollution of our air, land and water. Death and mortality from respiratory illnesses and cancers are widespread. And the assumption that most people have access to personal automobiles has led to the paving of so much of the earth's surface, parking lots and garages, and bridges.

Also, the assumption of personal transportation has created very poorly designed cities and neighborhoods, and fractured communities, which has led to violence and contributed to poverty.

The insatiable demand for oil also led to the United States invasion of another country, and continuous war and terrorism on our part. George Fox admonished us to look for the seeds of war in our own lives. Is there any doubt about what he would say about personal automobiles? Do you really have any doubt?

Many of you know I decided it was wrong to own a personal automobile about 30 years ago, and have not owned one since. I had hoped that my example might lead others to consider their use of automobiles, but that did not happen, and I feel I should have been more assertive. I think we as Friends should have made a statement that might have had significant consequences if we had

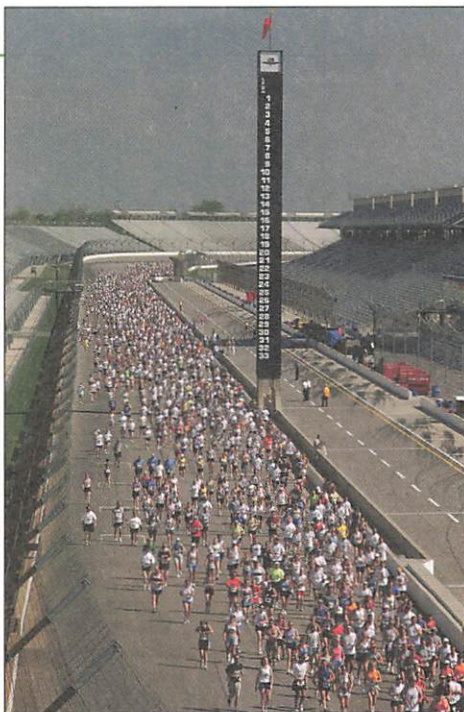


Photo provided by Jeff Kising

chosen to make this our witness back then.

It is painfully obvious that we must stop burning fossil fuel now if we are to avoid the extinction of the human race. We are out of time. We have to stop using personal transportation now. We have to lead the movement to embrace mass transit now.

Cars are the seeds of war. I ask you to join me in rejecting personal automobiles. I'm not really comfortable being this assertive now, but I regret not being assertive enough thirty years ago. Now is the time.

— *by Jeff Kisling*

Buying a Way Out

“Americans used to be ‘citizens.’ Now we are ‘consumers.’”

*Vicki Robin. Your Money or Your Life: Transforming your relationship
with Money and Achieving Financial Independence*

“The Earth, our home, is beginning to look more and more like an immense pile of filth. In many parts of the planet, the elderly lament that once beautiful landscapes are now covered with rubbish...These problems are closely linked to a throwaway culture which affects the excluded just as it quickly reduces things to rubbish...The climate is a common good, belonging to all and meant for all. At the global level, it is a complex system linked to many of the essential conditions for human life. A very solid scientific consensus indicates that we are presently witnessing a disturbing warming of the climatic system. In recent decades this warming has been accompanied by a constant rise in the sea level and, it would appear, by an increase of extreme weather events, even if a scientifically determinable cause cannot be assigned to each particular phenomenon. Humanity is called to recognize the need for changes of lifestyle, production and consumption, in order to combat this warming or at least the human causes which produce or aggravate it.”

-Pope Francis, Laudato Si, June 18, 2015



We've spent over half a century wasting the Earth's precious resources because of our abundance and carelessness. But wasting is going out of style, kind of like your grandfather's gas guzzler that smelled faintly of cigarette smoke and sported a compass on its shiny dash. We'll be self-policing our wastefulness, and we'll be peer-pressuring those who continue to waste. Eventually, as is happening elsewhere in the country, we'll enact public policy to spur conscientious use of materials. Many of us already carry reuseable tote bags wherever we go. We'll tuck into those bags food and beverage containers that we'll later use at stores and restaurants. We'll consume more locally produced items, because things trucked or shipped in from afar will have increased transportation costs and we are beginning to reclaim our pride in buying local. We'll repurpose and reuse things instead of buying them new, we'll fix and mend, and we'll recognize cheaply made clothing from countries that use slave labor for what it is: a waste of resources and human dignity. We'll appreciate vintage items in resale stores. We'll still buy things online, perhaps with less packaging. And once again, we will embrace frugality as a virtue, because we're Hoosiers who value and cherish this planet. This is the hope.

Right now, all over Indiana, other ways to shop are popping up. From labels on "Fair Trade" goods to kid's clothing swaps, there are options for the green-minded shopper. You can't visit any town or market without discovering the creativity of our talented new wave of business owners. They are tapping into a new wave of demand for DIY, refurbished, upcycled, and ethical goods.

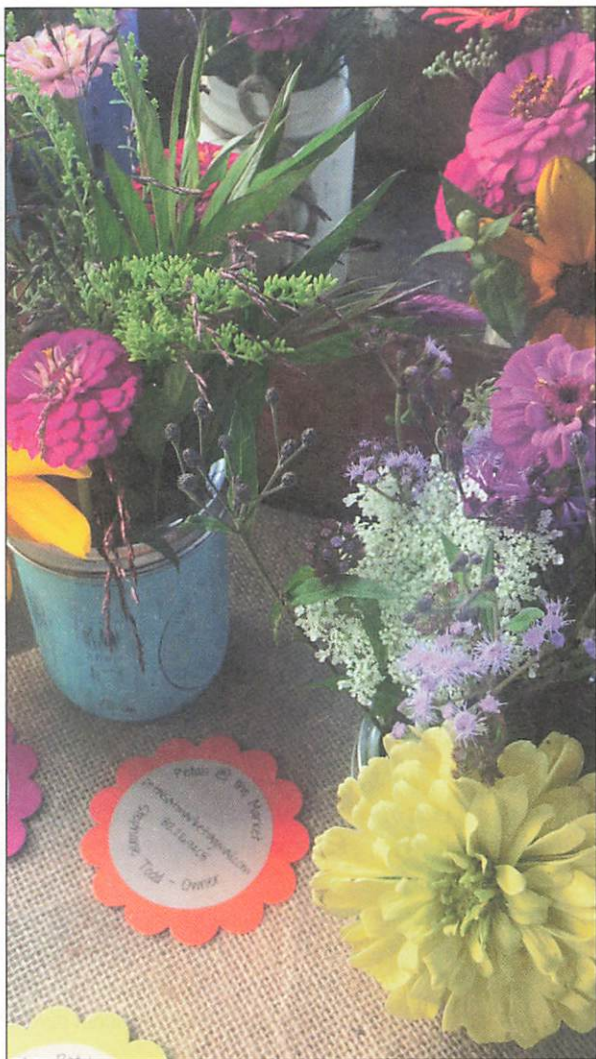
Petals @ the Market

One resident of Orange County is providing an especially attractive solution to buying flowers. We are learning that flying fresh flowers all around the globe isn't good for our planet (or frequently our workers) and even flowers grown in hothouses can have a huge carbon footprint. Local flowers that are part of our landscape are a lovely way to brighten your table sustainably. Petals @ the Market owner, Stephanie Todd, told us about her idea to make the most of her summer break as a teacher to sell flowers from her garden. She creates colorful and delicate arrangements with a little inspiration from Pinterest. For vases, she reuses old Ball canning jars that she gives a very shabby-chic lick of paint and a bow of twine to keep her

flowers hydrated. (You can bring your jars back to her when you're ready for more!) Ms. Todd grows all the blooms at her home and taught herself the art of arranging them. Each bouquet is unique and there are a variety of sizes from which to choose. The entire shop of flowers is a reflection that caring for our environment and communities can have beautiful results.

Check out Petals @ the Market on Summer Saturdays at the Orleans Farmers Market or contact them at petalsatmarket@gmail.com

-by Shannon Anderson



Flowers at Petals @ the Market

Shannon Anderson

White's Weaving

It is encouraging to see efforts to reduce textile waste by getting more life out of America's favorite fabric. This is just what Dean and Mary Ann White are doing with their weaving. At White's Weaving, they turn jeans bound for the landfill from Goodwill and Salvation Army into beautiful woven rugs.



White's Rugs

Shannon Anderson

Jeans line every used clothing store and donation center. The blue jean has become the standard American uniform, in part due to its durability and versatility. The average American owns about 7 pairs of jeans. Denim represents a \$15.4 billion industry, according to the NPD Group/Consumer Tracking Service. In the US, we throw away 12.4 million tons of textiles and footwear every year, by EPA estimates; that is about 68 pounds per household. Only 1.3 million tons are recycled, as rags, paper, insulation, or even building materials.

The Whites cut the jeans they reclaim into strips, removing buttons and rivets, and make a variety of sizes of rugs at their business right in Paoli, Indiana. They also pick up used chenille bedspreads which wind up as attractive fuzzy rugs in a variety of soft pastels. You can get in touch with the Whites at 812-723-2326 to inquire about purchasing your own rugs.

Keeping textiles out of landfills isn't just good waste management, it also helps fight climate change. If everyone in the US recycled their clothing instead of tossing it in the trash, it would save 30.6 million metric tons of carbon dioxide equivalent emissions per year. Recycling just one pair of jeans has the impact of recycling 69 plastic water bottles. And that's an impact we'd be thrilled to have.

—by Shannon Anderson

project, 270 tons of items that would have otherwise been waste have been diverted from landfills.

In addition to accepting and selling items students are getting rid of before they move out, H2H also accepts electronic waste.

“There is so much stuff we take for granted and just throw out, and we are trying to change that way of thinking,” said Jacqui Bauer, City of Bloomington Sustainability Coordinator. H2H has been successful in diverting items away from the landfill as well as achieving greater innovation to better fulfill the needs of volunteers, shoppers, and the environment. “There’s always something we can add to make it better. Our goal is to keep including people that can strategically partner with us,” said Maier.

Considering throwing out those old summer clothes? H2H wants you to know that you don’t have to wait until springtime. While the initiative was inspired by the high volume of waste at the end of every school year, the group views the sale as supplemental to year-round community reuse efforts. “We always need help getting the word out to students about how to donate their stuff. We aren’t about getting the stuff for H2H; we are about making sure it doesn’t end up in the landfill,” said Bauer.

Visit <http://sustain.indiana.edu/programs/hoosier-to-hoosier/donate.php> for more information on how to donate unwanted items. Just don’t throw it out!

-by Zoe Need and Bruna Oliveira

I, strawberry

In the wild, I am *Fragaria vesca*,
growing in low patches in
woodlands and along the Monon
Trail. I am an ancient food, brought
to gardens during the
Enlightenment and prized for my
sweet flavor, fragrance and
wholesome qualities.

When you raise me from seeds or
from sprouts, you gather my ripe,
juicy-red fruit in a wicker basket
and rinse me with cool water in the
kitchen sink. Sometimes you
purchase me in green paper-pulp
baskets from farmers' markets,
and sometimes you buy Giant
Mutant-Me's from California—my
white crowns aching to redden—in
clear plastic clamshell containers,
two for five bucks.

In a frozen Uncrustable peanut
butter "sandwich" I am altogether
unrecognizable—even though the
cardboard box has a picture of me.
And it beats everything that in fast-
food restaurants, I'm sold dirt-
cheap in everything from yogurt to
salad, tucked into a plastic or
Styrofoam container and handed
to you in a plastic bag.

I, strawberry, can nourish and
sustain you. Keep me true, and I
will be with you forever.

-Kelly Sharp

This chapter began with a quote from Pope Francis. One person applied the Pontiff's thoughts to the way she buys produce.

Don't Buy Trash

So here's the lesson I am taking from Pope Francis:

- 1. Buy food, not trash*
- 2. Buy only what you need and use everything you buy*
- 3. Consider the impact on the planet of every purchase you make*

I've spent the last couple of months re-examining my options when shopping for food, and I've discovered that it's not hard to vastly reduce the amount of waste my family produces if I start with wiser choices in the first place.

Buy food, not trash.

There are sweet peppers, and then there are the “stoplight” variety encased in a sleeve of non-recyclable cellophane to keep them clean. When I bring unpackaged peppers home, I'm going to wash them in a homemade veggie rinse of water, white vinegar and lemon juice that I keep in a spray bottle on my kitchen sink. They'll be at least as clean as the “stoplight” peppers. So, when I choose to throw a few peppers into my cart and then throw them into my reusable shopping bag—instead of choosing the pre-packaged variety and a paper or plastic shopping bag—I'm keeping at least two types of packaging out of the waste and recycling streams.

Buy only what you need and use everything you buy.

This week I bought four sweet peppers at the grocery store. (Because I didn't buy the stoplight variety, I was able to throw in an orange pepper with the green, yellow and red peppers). My goal was to make baked stuffed peppers, which is a family favorite. A secondary goal was to chop up the pepper tops to freeze for a batch of winter chili. My baked pepper recipe is vegetarian, and it is simple and easy to do after a long day at work.

Kelly's Baked Stuffed Peppers

Serves 4-6 as a main dish

- 4 sweet peppers
- Shredded cheese of your choice
- Chopped green olives with pimentos
- Red beans and rice with Cajun seasoning

Cut off the tops of the peppers and set them aside to chop later and freeze. Gut the peppers of their seeds and membranes, keeping any edible parts to throw in with the pepper tops. Slice peppers in half lengthwise, and set them onto a baking sheet. Meanwhile, prepare your red beans and rice. To save time (and because they're delicious), I use the 8-oz. package Vigo brand red beans and rice, but you can keep an additional item out of the waste stream by making your own rice and bean mixture from scratch. Put a handful of shredded cheese into each pepper half and top it with a generous teaspoon of chopped olives and pimentos. Then mound on each a generous portion of the rice mixture. If using the Vigo variety, you will use all the rice mixture on four peppers. Bake at 400° F. for 30 minutes or until the peppers are just soft, but not overcooked.

Consider the impact on the planet of every purchase you make.

The peppers I bought this week from Marsh came from Mexico, not from California, like the spotlight variety. But if I had shopped at a farmer's market, I might have been able to buy locally grown peppers that have a smaller carbon footprint. I've had mixed results with locally grown produce. Some things, like CSA and farmer's market salad, seem to keep in the refrigerator for a very long time—much longer than the grocery-store variety that comes from California. Other things, like organic apples, tend to go bad quickly. So you have to judge how soon you'll be able to use the items you purchase so you don't end up throwing things away. If you're like me, you only have one day a week set aside for shopping, and you have to plan meals and triage your food supply accordingly.

The last time I bought eggs at Whole Foods Market, the bagger at checkout told me that the brand I'd selected, Farmer's Hen House Grade A Organic Jumbo Brown Eggs, was the most

“sustainable” egg on the market. But eggs are tricky and the options are vast. Those eggs, from Kalona, Iowa have a larger carbon footprint compared to locally produced eggs, and they come in a paper-pulp container that is not recyclable. I could buy eggs from Indiana that come in styrofoam containers, and I can buy other out-of-state cage-free and organic eggs that come in plastic containers that I can recycle. If it were more convenient, or if I had more time, I’d buy eggs from the farmer’s market or a co-op and take the containers back for reuse, thereby adding nothing to the waste or recycling streams.

My first realization about the impact of packaging on the planet came years ago when the foil packets of tuna first came on the market. Never mind the question about whether you should be purchasing tuna at all—those non-recyclable foil packages are surely worse for the planet than a recyclable tin can.

And finally, it is a sad fact that even though you can walk into a market, purchase an apple and walk out with apple in hand, most of us bring our apples home in a plastic bag. Even worse, there’s a booming industry in apple slices sold in single-serve non-recyclable plastic bags that add even more trash to the waste stream. We have to say no to these newfangled conveniences if we’re going to get a handle on the “immense pile of filth.”

I do believe that by reforming the way we consume, by choosing to buy food and not trash, to buy only what we need and use everything we buy, and to consider the impact on the planet of each purchase we make, that we can make the world a better place for ourselves and for all people.

A word about choice:

If you’re lucky enough to be born in the developed world, and you are considering changing your shopping habits, you’re likely not among the 795 million people who go to bed hungry each night. You are also lucky enough to have the power of choice.

Choice is an act of freedom that is most often determined by how much money we make, where we live, and what we’ve been taught by our parents, communities and schools. To choose to shop and consume differently, we need to have choices to begin with. People confined by age or poverty or infirmity to food deserts and neighborhoods that lack life’s

necessities are understandably more focused on day-to-day survival than on whether to choose, for instance, the organic bananas over regular ones at 30 cents more per pound. If they even have access to bananas.

If you're still walking out of stores with those thin plastic shopping bags that litter our highways, poison our oceans and choke our wildlife, you have an obvious place to start. Carry reusable bags wherever you go, and use them. Ditto for anyone who is not recycling. Start now.

Those of us who have choices can make the greatest impact by how and where we spend our dollars. If we decide we want organic produce, or locally made products, or meat and dairy that doesn't contain hormones, then that's what we'll get. Even the corn lobby can't hold back the forces of change that are already upon us. If everyone would make a faithful effort to shop more mindfully, the changes we make will have a profound impact on the planet by reducing our contributions to the "immense pile of filth." It starts with us.

-by Kelly Sharp

Taking Out the Trash

“Ours is a culture and a time immensely rich in trash as it is in treasure.”

Ray Bradbury, Zen in the Art of Writing.

Six percent of the world's population lives in the United States. Yet, that six percent produces a whopping 30 percent of the world's trash. We throw things away at an alarming rate. We have come to realize, however, that there is no “away”. Our trash has to go somewhere. And that's creating a huge problem. Landfills are filling up. Our waterways are being fouled and our oceans contaminated. Incinerators produce toxins that harm our health. But across Indiana, people are taking steps to reduce the amount of trash they produce as well as convert it into something useful and sometimes beautiful. Here are some stories of people who are doing just that.



Shannon Anderson

We'll recycle almost everything

There are several ways to reduce our contribution to landfills and incinerators. Recycling is perhaps the most common. Many people bring their cans, bottles and newspapers to recycling places or have them picked up at the curb. Most area schools and many churches have a bin to receive paper. It's becoming commonplace. But a few people are recycling champs. One of them is Renee Sweany.

Renee Sweany

Hi. My name is Renée, and I'm a greenaholic.

It started 10 or more years ago. I wanted to start taking better care of my health, so I read a book. This particular book was about a doctor who was diagnosed with testicular cancer, hit rock bottom, was near death, decided to change his diet, healed himself with organic, healthy food, and lived to write a book. Don't ask me what it was called – unfortunately, I don't remember.

What I do remember is that I translated the message of the book to fit my own life: take care of the Earth and it gives us everything we need to take care of ourselves.

And so it began – probably first with buying organic fruits and vegetables because it's better for the environment and my health. Then maybe realizing that if I take my own shopping bag to buy those fruits and vegetables, I'm creating less waste. From there, it was probably a reusable mug for my soy chai addiction (an entirely different support group) and phasing out paper towels.

I'm not sure when it turned into an obsession, but it did. Fast forward to now when I feel immense guilt when the tasting room reaches for the plastic sample cup faster than I can say, "No, thank you!" – and the same amount of frustration when they say, "Oh, don't worry, we recycle." Or the total disdain I have for people who take a plastic bag for one or two items with the rationalization that they will reuse the bag to pick up dog poo.

Don't get me wrong, I'm all-in when it comes to reusing and recycling. But not when those acts are used as a band-aid to the excessive and inexcusable amount of waste that our entitled society has grown accustomed to creating. Sorry, did I go too far with that?

Seriously, though, my life has become plagued with constant, compulsive thinking about my green-ness. If I plug my phone in overnight, am I wasting electricity during those hours after my phone is fully charged? Is leaving a light on when we're away from home good for safety or a waste of electricity? Once I asked my electrical engineer dad to help me calculate how much energy we could save if we opened/closed our garage door once or twice less per day. And for years I've questioned which is worse: flushing a tissue down the toilet for our wastewater treatment plant to deal with or tossing it in the trash where it will eventually be burned in the incinerator. I currently go the trash route, if you're wondering.

I haven't used the excuse that I left my reusable shopping bags in the car or at home in years and I've been known to make fun of folks who still think that's an appropriate response. If I don't have a reusable mug with me, I don't get coffee to go. I may even silently judge friends who don't recycle or make other wasteful choices. Sitting in a meeting with disposable coffee cups and plastic water bottles gives me anxiety.

Please understand, I'm by no means perfect. I am also addicted to air travel and cheese (did you know that animal agriculture is the most environmentally destructive industry facing the planet; waste from a farm of 2,500 dairy cows = waste from a city of 411,000 people? Source: Cowspiracy). I'm too much a wimp to ride my bike if it's below 50 degrees outside. I have used Round-Up to kill bindweed that threatened to invade my garden. I recently bought an EPS foam cup of ice cream...for my dogs.

All this to say that no matter all the side effects of this condition, I'm proud of the direction my life has taken and I won't be engaging in any programs to rid myself of this addiction. My therapy is writing and, hopefully, helping others find ways they can green their own lives. I will always encourage you and anyone who will listen to reduce before you reuse and reuse before you recycle. I will continually seek one more way to cut back on my own waste and share my ideas, even if they're tiny, with you. Because I believe that individual efforts, no matter how small or large, add up and can have a huge impact on our planet.

-by Renee Sweaney

Recycling meets justice

Everyone knows where to recycle old newspapers and beer bottles. But what do you do with your old computer or that television that doesn't work anymore? One answer is to bring it to RecycleForce. This organization has been recycling "anything with an electrical cord" and in the process changing the lives of people who need a helping hand.

Recycle Workforce

The lifespan of computers is becoming shorter and shorter. That means a whole lot of old computers get thrown away. E-waste (short for electronic waste is becoming a very significant problem. They can't be tossed into a landfill because they contain mercury, zinc and other hazardous substances. An organization known as Recycle Workforce



Recycle Workforce employee

has come to the rescue. They collect everything from computers to microwaves to TV's to cellphones - in fact, almost anything with a cord attached. They then refurbish those items that can have some usefulness left. They extract scrap materials which can be used again and sell them. The amount that ends up in a landfill is dramatically reduced.

But what is most striking about Recycle Workforce is how they do this work. Men and women released from prison face a tough road. The rate of recidivism in Marion County is about 50%. A large factor in this "revolving door" is the inability of the recently incarcerated to find employment. Businesses are reluctant to hire a former felon. Recycle Workforce hires people that have just come out of the state's prison system to do this recycling work. They are given employment as well as training in needed job skills. It's a life changing experience for many. The result is a reduction by half in the rate of recidivism.



FORT WAYNE METALS

Turning knowledge into solutions.®

Fort Wayne Metals

Fort Wayne Metals, a northeast Indiana medical wire manufacturer, recycles and repurposes metal tonnage equivalent to the weight of 35 elephants a year. Fort Wayne Metals certainly has a positive impact on our environment!

Fort Wayne Metals began its Sustainability Initiative in February of 2008. Over time, this initiative has evolved into a much more holistic way of doing business. When receiving a tour of the company, we had the privilege of speaking with Melissa Twitchell, Kay Haggard and Korinda Walls, each of whom play a role in managing the Sustainability Initiative. When asked what challenges Fort Wayne Metals has met and overcome, they each agreed that the main challenge is change management, as Fort Wayne Metals hosts nearly 800 employees and a dozen buildings in the United States alone. By far the most positive outcome of the Sustainability Initiative, they said, has been the influence on employees and other businesses of pro-environmental behaviors. Importantly, the company has built partnerships with many community organizations to help spread their knowledge of sustainability best practices.



Fort Wayne Metals, medical wire manufacturing

Fort Wayne Metals takes pride in their employees, communicating this with their motto, "Our people are the source of our strength." From experience they have learned that their employees help them succeed, which is why they stress educating them on the positive outcomes of recycling and reducing waste. In the main production area are "spark boards". On these boards employees can post their ideas under the 'idea' category and watch them move to the 'progress' category, and finally, 'results' category. These boards help portray how their own ideas are put into action, which makes them feel connected to both the company, and the environment, turning knowledge into solutions, resulting in change, one project at a time.

-by Makaelah Stockel, Justin Schoeph, and Zach Williams

We'll compost all kinds of things

Some people look at a writhing mass of earthworms and say “Ewwwww.” Kathy Sipple looks at them and sees something beautiful.

Worms take garbage and turn it into a rich and healthy, totally organic fertilizer. They leave behind “castings,” a rich compost that enriches the soil and helps produce high quality vegetables and flowers. Gardeners consider worm castings to be akin to gold. A backyard compost pile will eventually produce this much valued fertilizer but some people have found easy ways to compost garbage without the wait or the sometime smelly compost heap. Here’s the story of one such person.

Transformational Magic: Creating Common Ground

“I kneel in front of my Worm Factory 360 compost bin and place my offerings of a banana peel and eggshells in the top tray. Once again I’m awestruck at the sight and scent of its contents. I peek inside the lower tray and marvel at finely crumbled bits of newly created moist earth the color of espresso beans as the rich, pleasant, earthy scent of compost wafts upward. Thousands of red wiggler worms (*Eisenia fetida*) perform transformational magic at my house in Valparaiso, Indiana every single day!

I remember my first encounter with the idea of vermicomposting at my local Earth Day celebration in 2008. “This soil is alive,” a man tells me as he carefully places a small bag into my outstretched hand. I speak with many exhibitors that day, but unfortunately cannot remember all this man says except for something about vermicastings, worms, and microbes. This interests me, as I’m beginning to awaken to the idea of living greener and more sustainably, but I don’t yet make the connection or understand its greatness.

A year later my new friend Amanda invites me to dine al fresco in her backyard garden. We enjoy a delicious Caprese pizza with tomatoes and basil picked fresh from her garden, and I admire the lush landscape she’s created and how healthy and vibrant her plants look. One thing puzzles me though: I don’t see a vegetable garden, just a garden. She’s cleverly integrated vegetable plants into the overall design. The result is stunning and delicious! “The secret,” she confides to me, is “worm poop! C’mon.” She then invites me, “lemme show you something!” She stops at a table in her three season room, just off her kitchen. She lifts the lid off a black plastic tower made of stacked trays that resemble a pagoda, and instructs me to place some food scraps from our plates underneath the shredded newspaper on the top tray. When she lifts

the shredded newspaper, I see underneath it huddled masses of squirming red worms! Awe is not my first impulse rather, it's more like disgust. A tomboy as a child, I baited my own hook when fishing, but thinking now



Kathy Sipple and her worms

about worms as inside the house cohabitants freaks me out a bit. "Remember how I told you I use organic fertilizer?" Amanda asks. "Well, these guys are my secret weapon. They eat my garbage and transform it into black gold that plants love!"

Suddenly I remember the bag of alive soil, and it all begins to make sense! I'm ready to start my own small scale permaculture revolution! Time to find some worms! My husband John graciously accepts our new housemates once I assure him they don't smell and will cause no problems. He gets used to using them as our "garbage disposal." It isn't long before the worms reward us with black gold and, after six months, we have about twenty gallons to use in our twelve by twelve foot community vegetable garden plot. I don't consider myself a green thumb, but this year our garden is wildly productive and stands out amongst the forty others.

Etymology fascinates me. I learn that the root words hum and human both come from the Latin humus, meaning earth and ground, and the Latin humanus which means man, and I become deeply aware of the connection between my soil and me. The worms compost our dog's hair, dryer lint, food scraps, and a little bit of our own DNA, I'm sure, ends up in there somehow as well. This rich compost yields nutritious vegetables that sustain our small household. The vegetable scraps return to the worm bin and return yet again to our garden as compost. The circle of life continues and for some reason I find this soothing beyond measure. My husband's quirky sense of humor takes a somewhat darker approach. "If ever I go missing, check the worm bin!" he warns friends. Me? I think that would be a pretty good way to go, knowing I'll be returned to the circle of life in a meaningful way. Interdependent creatures, we need one another to survive. Grateful for this elegant lesson my worms teach me in a thousand small ways each and every day, I bless the beautiful "common ground" they produce.

-by Kathy Sipple

Even apartment dwellers will compost

If you live on a farm, composting is easy. There's plenty of space for the compost pile. If you live on a suburban lot, it's a bit more challenging but still very feasible. You just have to take a little more care that unpleasant smells don't make their way to the neighbors. But what happens if you live in an apartment? Here's how Joyce Flight and her neighbors managed to compost their kitchen wastes.

“Look, Mom, a Clean Plate!”

A childhood memory – “Clean up your plate –remember the hungry children in China/India/Africa!” It didn't make much sense back then, but now it seems more relevant— with masses of people becoming migrants looking for work and for food, and with people in our own country trying to come to grips with a new style of life, based on less water and less petroleum-based energy.



Earth Mama Compost
www.earthmamacompost.com

My chief contribution to the continuing health of our nation has been recycling: paper, plastic, metals, and now food. Leftover food, that is! Left over on plates after dinner, and left over in the kitchen from preparing the meals: peels, pits, roots, leaves, eggshells, and coffee grounds. I live in a small apartment in a big complex. Large recycle bins take care of the paper, plastic, glass, and metals. Now, I also have a way to make my food waste useful. Some of my neighbors share a 5-gallon composting bucket that is picked up weekly by Earth Mama Compost. See info@earthmamacompost.com or call (317) 759-4589. That compost, after some enhancement, is delivered to a growing list of local urban farmers and large volume composting facilities.

My part is to fill the 5 quart sherbert container under my sink with orange and banana peels, egg shells, vegetable peels, roots, and leaves and the uneaten remnants of my meals. Every week or two, I carry my bit to the larger neighborhood bucket.

A compostable bag that fits nicely into the pail makes the job even nicer. This seemingly impossibly thin bag made out of cornstarch holds the juicy, decaying stuff until it is tidily placed, bag and all, in the shared neighborhood bucket. Visit www.gardeners.com or call 800-427-3363.

Mom is no longer checking, but I can honestly say, "See, Mom, my plate is clean."

-by Joyce Flight

We'll convert junk into jewels

Imagine you're taking a walk in the woods beside a gentle flowing stream. The green grass, singing birds and colorful flowers all conspire to produce a time of near rapture. But everything changes when you come across some old tires that have been cast into the water. Used tires have been a major problem in the past, but Green Tires Reclamation in Anderson is working to change that.

Green Tire Reclamation

Dan and Diana McKinzie have been selling tires for more than 10 years. In recent years they have become concerned about the disposal of worn out tires and decided to begin a tire recycling business.

Their business, Green Tire Reclamation, operates in Anderson, IN, and serves communities within a 100 mile radius. The business collects old tires, dismantles them and processes the rubber into a fuel that can be used in power plants. The metal parts of the tire are sold to a metal yard to be processed into new steel. Tires from passenger cars and trucks are accepted and processed for a small fee.

The McKinzies also furnish a valuable community service by providing jobs to individuals who have great difficulty finding employment. Dan was once given a chance when he was in that situation and wants to help others the way he was helped.

-by Dick Sprague

It's critical not to forget about all the liquid waste we send down the drain as part of our trash footprint. At the City of Fort Wayne's Water Pollution Control Facility, about a billion gallons of sewage comes through their system every year. Not only does this include, residential and commercial waste, but also drainage and storm-water from all over the area.

Fort Wayne Water Pollution Control: Methane Recapture

The first thing you see is all the gushing waste water coming in deep underground, 40-50 feet down, it travels through huge machines that pull out all the solids to be taken to landfill. Two of their biggest problems at this stage are wet-wipes and grease. Wet-wipes or baby-wipes that get flushed are a huge problem for the machines because they don't break



Fort Wayne water pollution control

apart easily and get caught. The second problem, grease, is something they've actually tackled head-on with a grease recycling program for restaurants that aims to keep the stuff out of the waste water AND gives the facility another alternative source of energy. The engineers stress, however, don't dump your grease, oils, and fats down the drain! If you have cooking oil, it's best to throw it in the trash or in small quantities it can be composted.

Doug Fasick, the Senior Program Manager of the City of Fort Wayne's Water Filtration Plant, and his team are making strides towards increasing the energy-efficiency of producing clean, municipal water. They are accomplishing this by using methane gas for independent energy production. The methane gas is a by-product that is created by microorganisms that eat away at the 'sludge' residue left behind by water waste. That methane is captured by the lids over the digesters and used for boilers that heat the buildings on site and to warm the digesters themselves. There is a pond for anaerobic and a pond for aerobic bugs. At the lab, scientists score samples of key organisms to indicate progress. Nematodes (worms) and ciliates, the

important eaters of bacteria, are an important marker of when the water is cleaned up. When the water is all “done” it’s released into the river. Doug Fasick points out that this finished water is cleaner when sampled than the river water itself.

Fasick has introduced two new generators for the consumption of excess methane gas at the plant that reduce green-house emissions and improve the energy-efficiency of the filtration process. These twin generators currently supply one third of the plant’s power needs and there is still excess methane that can be utilized for energy. But worry not, Fasick’s team is passionately pursuing the installation of additional generators to take full advantage of this readily available energy resource. They anticipate adding up to six generators to the line. They hope to become fully operational within the next 5 to 7 years. Fasick’s innovation offers farmers, who currently have limited options for disposing of their agricultural waste, a more affordable and environmentally sustainable option for agricultural waste disposal. The innovation also provides Fasick with more than enough methane gas to power his generators in the future. These innovations have the potential to spur both positive environmental and financial boons to the City of Fort Wayne and its surrounding area. Perhaps the most exciting part of this is that Doug Fasick and his team are hard at work to make these pivotal infrastructural alterations a reality on a timeline of only five years. If all goes according to plan, we can expect to see that the Methane Project will be producing more than enough power to keep itself sustained. What a model for other water waste plants to follow!

—by Brandon Barker and Nick Powell

We’ll make smarter decisions.

Everything we buy, everything we use, is someday’s trash. With improved composting, widespread, effective recycling programs, and conscientious shopping, we are getting smarter about waste. When the light finally clicks on for some, they start to see the many ways in which we create unnecessary trash, simply because we are unaware of what we’re doing. Awareness is then, an essential component to reducing our garbage footprint. In a reflexive moment, one slender tube, we’re adding huge piles of trash to landfills and oceans, and we can all stop today. It starts with a straw....

Straws Suck

In the face of the enormous challenges associated with the climate crisis, it's hard to know where to start. The collusion of business and government can be thwarting, and the sheer momentum of a culture seemingly hellbent on planetary destruction can be downright depressing.

What on earth to do?

I say: start small; start with a straw.

I don't know when it started for me. Perhaps it was seeing photos of the islands of plastic in our oceans. Perhaps it was finding out plastic never fully decomposes, it's a polymer that just breaks down into ever smaller and smaller elements, to be ingested by creatures all over the world. Perhaps it was learning that some 500 million straws are used in the U.S. every single day.

Perhaps it was simply that a straw need not exist in perhaps 95% of instances — perhaps a physical disability makes it necessary. Otherwise, they are a dirty little business.

I took this disdain for straws and came up with a visual pun one day: A strawbale made of plastic straws. With the help of the da Vinci Pursuit, an Indianapolis based organization that brings scientists and artists together, I created a strawbale in the fall of 2015.

Pizzology, a locally-owned group of restaurants in the Indy area, agreed to participate in collecting straws. Over the course of three or four weeks, Pizzology collected around 7000 straws for me. In the process, they became disgusted by the amount of straws they were using — and throwing out.



A strawbale of plastic straws

Jim Poyser

They have now officially announced to their employees that they will no longer be giving out straws to customers, unless specifically asked.

Now that's an outcome we can scale up to restaurants all over the state.

There's been plenty of pushback. Numerous people have said to me they use a straw because drinking from a glass mars their lipstick. My response: An arched eyebrow. Here's another pushback: I use a straw because I don't trust the restaurant has thoroughly cleaned the glass. My response: Why are you going to that restaurant? Finally, for those who say they really really really want to use a straw, I respond: Then buy a reusable straw and take it with you wherever you go.

It sounds simple, and it is. Start small and refuse the straw. Why? Because they suck.

—by Jim Poyser

CHAPTER 8

The Way We Educate

“In the end, we will conserve only what we love,
we will love only what we understand,
and we will understand only what we are taught.”

-Baba Dioum, Senegalese Conservationist

Schools, no matter whom they serve, are opportunities for Best Practices when it comes to creating the kind of world we want to live in. They are intentional communities whose constituents (students, teachers, parents, administrators, etc.) can collaborate on a culture that uses less, wastes less, and learns more about how to be good stewards for the planet. We envision schools as vital community centers, where everyone in the surrounding area can join together in not only making the world better for our youth, but more livable for all. There is much that young people have to teach us, and this chapter highlights a few of those youthful leaders.



Hands on Indiana, artist Marilyn Gatin, Interactive Project

This shows what I am thinking about.

This is about cutting down trees. Birds live in trees and they lose their homes.

We throw trash into the water where fish live.

There are less trees every day and 10 people are born every day and there is less air for us to breathe.

We sweep away spider webs where spiders live.

We drink up the water that fish live in.

This is an axolotl. They need cold water. [An axolotl is an amphibian also known as a walking fish or Mexican salamander.]

Do you love birds? You already know that birds live in trees but they also build nests. No more cutting down trees. Instead, dig a hole and put a tree seed and grow another tree.

I'm pretty sure animals are endangered from small birds to big whales.

When plants die, take their seeds and plant them back.

Worms need water so if you see a worm on the sidewalk, pick it up.

Help me and my animals.

Adelaide added that because the polar ice caps are melting, Santa might not have a place to live. That, indeed, would be a great tragedy. May we all join Adelaide in saving Santa's home and the rest of the planet.

—by Richard Clough



Ivy Tech Culinary Arts

Ivy Tech's Culinary Arts program in Indianapolis produces many of the area's finest chefs. They learn the art and science of preparing superb food from Chef Thom England who has worked at the school since 2008. Chef

England will teach them all about filling a plate with gourmet offerings. But just as importantly, all his students will come away with an awareness of the need to embrace environmentally sustainable practices in the operation of a restaurant.

Historically, restaurants have produced massive quantities of waste. Check a restaurant dumpster at the end of the day and you will typically find huge quantities of food waste and paper products. But at Ivy Tech, the curriculum includes a 53 point statement of objectives that requires students to know how to buy local products, secure alternatives to non-recyclable items, know how to compost and to develop an appreciation for a kitchen herb garden. As part of their training they will realize the cost of putting things in the dumpster as well as the water that goes down the drain. When these aspiring chefs have a restaurant of their own, they are unlikely to follow the wasteful practices of the past.

Ivy Tech operates two restaurants in the former Stouffer's Hotel building on Meridian St. Both follow principles of sustainability. Each kitchen has three bins for waste: one for recyclables, one for composting and one for the dumpster. The last one doesn't get much use. Chef England proudly points to their compacting dumpster and says, "We used to have to empty it every week. Now it's been eight months since we last had it emptied and it's still got some space."

A major reason that so little goes to the dumpster is "Oscar", a large machine that grinds up both animal and vegetable waste as well as paper products of all kinds. The result is a compostable material that goes into the gardens behind the school. These gardens produce herbs and vegetables that will head back to the kitchen.

The environmentally sound practices at the school's facility are a superb example of what an institution can do. But more importantly, Ivy Tech's Culinary Arts program will create awareness in the students of the need to do things differently. Chef England believes that this will transform the culinary world.

— by *Richard Clough*

Food. Farm. Future.

The invitation came in the mail. You read that right: snail mail. With a postage stamp.

On the invitation's cover: "Food. Farm. Future." ... with three illustrations: wheat, a farm tractor, and an outline of Indiana with a thought bubble suspended above. Inside, a handwritten note from Leah Sorg, a senior at Manchester Jr.-Sr. High School in North Manchester.

"Food. Farm. Future." had no Eventbrite, no link to a Web site, Facebook page, Instagram or Twitter account.

I'm surprised a carrier pigeon didn't deliver it to me.

I was invited to this event because I know this school well, having visited a number of times over the past year and a half. The AP Environment Science teacher behind this invitation is Jabin Burnworth. Jabin is an exceptional educator. You had one of these teachers when you were in school. The one who was deeply invested in your education, and in your trajectory. The one who knew your parents; knew who and what you cared about. You made career and life decisions based on what you learned from this teacher.



North Manchester students Rachel Brandenburg, Gabbi Wilcox, Zach Shenefield, Sydney Mattern, Makayla Mobley and Jacob Casper (left to right).

The Great Divide

Late last year, Purdue released research entitled "Agricultural stakeholder views on climate change: Implications for conducting research and outreach." A collaboration with Iowa State University, the authors, led by Purdue's Linda Stalker Prokopy, detailed a familiar, disturbing, predicament.

While the majority of climate scientists say humans are creating climate change through carbon pollution, only a tiny minority of Midwestern farmers — eight percent — agrees that climate change is mostly attributable to humans. Instead, according to this study, the majority of farmers either believe that changes in climate are mostly natural (25%) or say there isn't sufficient evidence to determine if the climate is even changing at all (31%).

On a global scale, we know 97% of climate scientists deeply understand the connection between greenhouse gases and climate change. The science is also clear that increasingly extreme weather will wreak havoc on our agricultural system. Yet there's a great divide between this scientific community and the very people growing the food that we eat.

Studies like Purdue's tend to put the onus on scientists to communicate better to the general populace, imagining, perhaps, that scientists have lots of extra time on their hands to come up with clever, non-threatening ways to massage their message

The question for many in the scientific community — and for those of us who are simply freaked out about our future — is how to get scientists and farmers together, to dialogue about our climate crisis, and determine ways to mitigate and adapt to climate change.

But this presentation, on March 25, in North Manchester, at the Junior High School, was not Jabin's doing. It was his students'. They devised and implemented it.

What they accomplished that evening can be replicated throughout the state and beyond.

North Manchester students Rachel Brandenburg, Gabbi Wilcox, Zach Shenefield, Sydney Mattern, Makayla Mobley and Jacob Casper (left to right).

But maybe we don't have to get scientists and farmers together.

Maybe we can rely on our kids.

Food. Farm. Future.

I walked into Manchester Junior High School just before the 7 p.m. start time.

North Manchester, for the record, is a rural community with a population around 6,000. It is located about two hours north of Indianapolis. The city of Wabash is just a few miles south; Fort Wayne is just under an hour away. The town itself is lovely, with mom & pop-owned shops and a quintessential, small-town feel.

I had visited this specific building once before. On Feb. 3, 2015, employees from the Indiana Department of Education and the Indiana State Department of Agriculture held a Farm2School meeting with the surrounding community.

Farm2School is a national initiative dedicated to getting locally sourced food into school cafeterias. The idea is that kids will eat better, less-processed food, learn about food miles and nutrition, and local farmers will enjoy an economic boost.

In attendance that day were over forty folks: farmers, school officials and Purdue Extension professionals, along with people like me, all of us interested in improving food systems in schools and supporting local economies.

North Manchester was picked for this Farm2School meeting because the high school cafeteria manager, Becky Landis, is a bit of an Indiana legend. She is deeply committed to Farm2School

practices — even before she learned of the program she was getting students to eat locally grown food in her cafeteria.

Her students eat local produce in their salad bar on a consistent basis. The students know about it and they know why it's important

Which brings us to their “Food. Farm. Future.” event.

Each year, as part of the environmental science curriculum, Jabin's students craft hand-written letters to their grandparents, asking them to describe what the land was like when they were young. In response, the grandparents write letters, sometimes including photos as well.

I'll pause here while you experience shivers running up your spine.

In a larger culture elders are often cast aside. In North Manchester, Indiana, they are respected and engaged.

This year for the first time, Jabin's students decided to turn these handwritten letters into a format for a public gathering to discuss the most critical issue of our time: climate change and the future of our civilization.

This massive subject, however, can best be addressed on a local level. And agriculture is both problem and solution when it comes to climate change.

This is where the students come in.

Let's get local

I entered the room immediately transfixed by these handwritten letters from the grandparents blown up to poster-size and affixed to the wall. [See sidebar for more on this room and building.] The letters talked about farming, but they also described the fun they had and how much slower life was in the old days. Many of the letters talked about the prices of items, how a candy bar cost a nickel.

Attendees read the letters on the wall and discussed them, pointing out particular sentences of note.

Also prominent at the entrance to the room was a hydroponic growing system, created by one of Jabin's students, an example of the future of farming the high schoolers would soon be addressing.

The 40 or so attendees were directed to our seats by Jacob Casper, and then Cole Isbell and Leah Sorg got up to read aloud

two letters from grandparents. One grandparent related how much time he'd spent outdoors, enjoying nature, fishing and exploring. The other letter was about growing up in coal country, going to school and having an hour for lunch to go into town and eat a massive meal for 50 cents.



To hear the grandparents' voices through the mouths of these teenagers was unexpectedly moving.

It set the stage for three powerpoint presentations, you guessed it: "Food. Farm. Future."

The students doing the "Food" section showed a stunning chart on the precipitous fall of the cost of food from a percentage-of-personal income: from 25% of personal income in the 1930s to less than 10% today. Plus, over that span of time, more food is grown in less acreage.

While acknowledging these ostensible success stories, students expressed their concerns over food quality, the use of growth hormones and antibiotics in Confined Animal Feeding Operations and its impact on human and farm animal health.

They also talked about food waste: Americans waste 40% of the food they buy. This waste ends up in landfills, rotting and creating methane, a dangerous global warming pollutant.

They ended up with a list of questions for the audience to ponder for a later discussion; e.g. 'Can we feed 9 billion people in a couple decades?'

Next up, the “Farm” students. Their presentation covered the vast changes in farming practices over last century to now, including the cost of a new tractor: from \$2,000 in 1960 to \$100,000 in 2015. Also detailed was the increasing use of pesticides on crops, and how CAFOs impact the local environment with runoff that can create harmful algal blooms.

Again, a list of questions to think about, questions like ‘How has the land changed as farms have grown larger?’

And now ... for the Future

Two students Makayla Mobley and Rachel Brandenburg presented on the “Future”, expressing their support for sustainable farming, including crop rotation, no-till farming, the use of cover crops and the practice of bi-cropping. They also talked about the hydroponic set up and the need for alternative growing systems to meet the needs of the future.

A slide entitled ‘What threatens the future of farming?’ led to further slides detailing the impact of climate change on agriculture. In just twenty years, said Makayla, Indiana has seen the shift in its zone designation on the USDA Plant Hardiness Zone Maps: we’ve gone from a Zone 5 to a warmer Zone 6.

Given overwhelming scientific consensus on human-created climate change, and the evidence in Indiana of its impacts, Jabin’s students sent a survey to 150 Indiana legislators.

Forty-one replied.

Of those responses, two-thirds responded, “yes” to the question: ‘Is climate change something Indiana citizens should be worried about?’ One-third said “no.”

In response to the question ‘Do you think climate change has harmful effects on the health of Indiana citizens? If not now, when?’ 46% said Hoosiers were being harmed now, while 2% said in ten years, 22% said in 50 years, 8% said in 100 years, and 22% said “never.”

Next, Rachel and Makayla introduced a video.

After reading Bill McKibben’s book *Eaarth*, student Devin Good reached out to the author to invite him to the event. The Vermont-based McKibben (*350.org*, plus author of numerous

books, e.g. The End of Nature) could not attend, but sent a five-minute video, detailing his deep concerns about climate change and the impact on farming, and thus our food supply.

The “Future” presentation ended with the slide: “We know how far we’ve come since our grandparents. Who knows what story we will tell our grandchildren. It’s up to us!”

Indeed it is. In a stroke of further brilliance, the students then dispersed the audience into small discussion groups to address their questions, and give feedback about the event.

Large group discussions are often unproductive, as the intimacy is robbed by the mob context. In smaller groups, the quiet ones can be involved; all voices can be heard.

In my pod, six adults and four students had a discussion mostly about the trajectory of farm practices over time — and the concomitant pressure upon the small farmer. We had a farmer in our group who had expanded his farm from 12 acres in his father’s day to 200 acres now. He is a small farmer, and we got learn from him how difficult it is to be a farmer on that scale in today’s agricultural sector.

One woman in our group suggested that eliminating animal agriculture was the way to go; our small farmer replied he needed animals to keep his farm going. It was a frank discussion; the students took notes the entire time for discussion in their subsequent classes with Jabin.

By and large our pod was geared toward sustainable farming. There were other breakout groups, I learned later, whose constituents included larger, more industrial-scale farmers. I wish now I had sat in those groups, to learn how this presentation had impacted them.

I know that “Food. Farm. Future.” impacted me dramatically, in terms of creating a model for how we can talk to each other across perceived areas of dispute.

Youth as educators

According to an article in the *New Republic*, “Avaaz, which helped organize the People’s Climate March in New York City last September, commissioned a poll from Ipsos on how 12-year-olds view climate change. Out of 1,002 eighth-grade students surveyed, 90 percent responded that climate change is real and it’s ‘significantly’ driven by human activity.”

North Manchester High School students would have been unsuccessful had they created an event overtly about climate change and agriculture. Instead they framed the gathering around something they love: family, neighborhood, community, space.

Students in the school study 'consensus science,' which is the collective judgement of a particular scientific community. Thus, they are learning about climate change, what causes it and what can address it. It turns out agriculture is both cause and solution, as sustainable farming practices can create healthy soil and healthy soil is a powerful means of sequestering carbon.

Think about it from their perspective. You're, say, 17 or 18. You know climate change is happening. You know your future is threatened by it. You know that the majority of the world is not arguing about it. You know your parents and grandparents may not grasp the science; they may even think it's trumped up science, perhaps even a hoax. You know your legislators are likely skeptical about it.

What would you do?

Would you decide to leave Indiana, take your college and university and adulthood dollars somewhere else?

Would you create discord in your family, your community?

Or would you gather everyone together to discuss, respectfully, even passionately, about a shared problem, and what has to be a shared solution.

Jabin's students accomplished the latter. Sure, they were singing to this choir — me — but I believe their model signals the next step forward. And so I call upon teachers, principals and community partners to stage their own version of Food. Farm. Future. in their own communities. Let's give these kids a chance to educate our communities, and in the process, give them a shot at a future worth looking forward to.

-by Jim Poyser

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Geoengineering Debate: Eighth graders in Decatur Township Face Off

On Tuesday, May 12, 2015 at 1 p.m., students from the Decatur Township School of Excellence (DTSE) gathered in a nearby community center to engage in a debate. Nothing particular noteworthy there. Junior high students often engage in the academically rich tradition of debate. It requires research, public speaking acumen — and quick-thinking skills to respond to your opposition.

What was unique about this debate was its subject matter: Geoengineering.

Here in Indiana, where climate change and global warming are not a daily discussion in the larger culture, these students tackled head on one of the more complex and thornier issues already facing the rest of planet.

Thirteen year-old, Alexis said, “I had a really good experience because it really helped me to learn more about geoengineering in a fun way.”



Middle school students debate at Decatur Township School of Excellence

Fourteen year-old Cordel agreed that it was fun, adding that it was also “long, hard [and] stressful.”

Eden, also 14, noted the fun factor of the debate, but had this to say as well: “The debate over geoengineering was very interesting to me. It opened up a lot of doors for me personally. I learned something new that I could share with others about our world, and it made me face my fear: speaking in public.

“When we started the learning process I was completely against it,” she added. “But all of

those facts I learned made me realize I was on a completely different side.”

The central resolution of the debate was: “Geoengineering is good for society.”

The students made the following statement in a brochure they created for the event: “Geoengineering is a topic that most of us knew nothing about until we began studying it. We are debating today about its positive and negative consequences to help bring awareness to the issues surrounding geoengineering in our society.”

One of the teachers involved in organizing the debate, Elizabeth Carpenter-Wilson, observed, “As the students learned more about geoengineering and climate change, many became concerned about the short and long term consequences. Some of the particular concerns were that many of the attempted geoengineering efforts have backfired. Also several students were alarmed that many of these activities have gone on without an informed or consenting public.

For those fuzzy on the subject of geoengineering, one group of students began the event with a presentation laying out the definition and the science. Basically, geoengineering is a large-scale engineering effort to mitigate climate change. It takes various forms, from employing ways of reflecting sunlight back into space (cloud whitening, painting building roofs white, etc.) to sequestering carbon created by the burning of fossil fuels. In one such sequestration action, iron fertilization in the ocean creates phytoplankton that is effective in sinking carbon dioxide.

As you can imagine, these large-scale mitigation actions are fraught with complexity: legal, economic, scientific— as well as justice factors such as unilateral geoengineering actions taken by a single individual, organization or country.

In a short time — about 40 minutes — DTSE students managed to present a lot of information. One group of six students took on the affirmative position, arguing that climate change urgency is so elevated that geoengineering is of immediate need.

The negative group argued that there was still time to change our fossil fuel emissions practices and that the dangers of geoengineering were too serious to risk.

Both groups had a chance to rebut each other, and both were able to successfully continue to argue their point of view. For the record, judges proclaimed that the affirmative group “won” the debate, and that win was based on the students’ ability to cite references for their assertions.

Jeffrey, aged 14, said, "I really thought the debate went well. I really thought that both sides did well. I also will say that even if one of the sides won, both won in my mind."

Fourteen year-old Chris added, "Even though I wasn't in the debate, I thought the people that were deserved to be. Overall, it was amazing."

A group discussion afterward was just as engaging as the students talked about their concerns about climate change, and how fascinating the subject of geoengineering was to them. Plus, there were other, more traditional benefits of this debate. "I'm a quiet person," said Alexis, "but this debate has helped me to gain more confidence."

Said Carpenter-Wilson, "This has been a great topic of study because it is intertwined with many other important topics. My students ... exceeded my expectations."

—Jim Poyser

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The Butler Way Guides Butler University to Substantial Sustainable Changes

On April 16, 2012 Butler University President, James Danko, signed the American College & University Presidents' Climate Commitment (ACUPCC) in reflection of The Butler Way – Butler's "long-standing commitment to selflessness and integrity." The ACUPCC commitments are mapped out in the Butler Sustainability and Climate Action Plan (BUSCA) as a guideline as it grows and implements its new strategic plan, Butler 2020.

The goal of the Butler Sustainability and Climate Action Plan is to achieve institutional climate neutrality by 2050 by mitigating campus greenhouse gas emissions associated with energy consumption of the university. The plan outlines current initiatives, strategies, and other goals set in place to reach the 2050 goal.

Some of Butler's major past initiatives include its two LEED Gold certified buildings (Howard L Schrott Center for the Arts and College of Pharmacy and Health Sciences Addition) and recently completed LEED Silver renovations to the Historic Hinkle Fieldhouse. All new construction and major renovations moving forward must meet at minimum a LEED Silver standard. Gradually, motion sensor lighting is being implemented in rooms with infrequent occupancy and LED lighting is being given preference in all new projects.

In 2010, the Center for Urban Ecology (CUE) Farm was first planted on campus and it has since tripled in size, diversified its crops, and introduced bee houses to facilitate pollination. Produce harvested supplies Butler's dining services and is sold to community members and local restaurants in Indianapolis.

Strategies broken down into education, research, and outreach all support Butler University's mission to have a commitment to high-quality education and creating a stimulating intellectual community. Education

strategies include conducting a university-wide audit of courses to allow for modification of courses that could fit into either sustainability-focused or sustainability-related categories. A research strategy is to encourage further research at sites on campus that include the CUE Farm, the Butler biodiesel production laboratory, and the campus green roof by providing

opportunities to present their research. Outreach strategies include revising Butler's sustainability website to reflect



current and future projects related to the initiatives and designing a sustainability newsletter to be published on a regular basis.

Sustainability goals outlined in the plan revolved around the topics of water, land use, waste, food, and purchasing. Each of these categories is broken into short and mid-term goals that are recognized as sustainable goals for which greenhouse gas emissions were not calculated as part of the BUSCA, but are goals for the betterment of the university as a whole. Some goals include replacing all fixtures with low or no-flow fixtures, decreasing the use of de-icers, pesticides, and fertilizers, implementing single-stream recycling, increasing real food (locally grown, environmentally beneficial, humane, and fairly traded) to 20 percent of total food purchased, and becoming a fair-trade university.

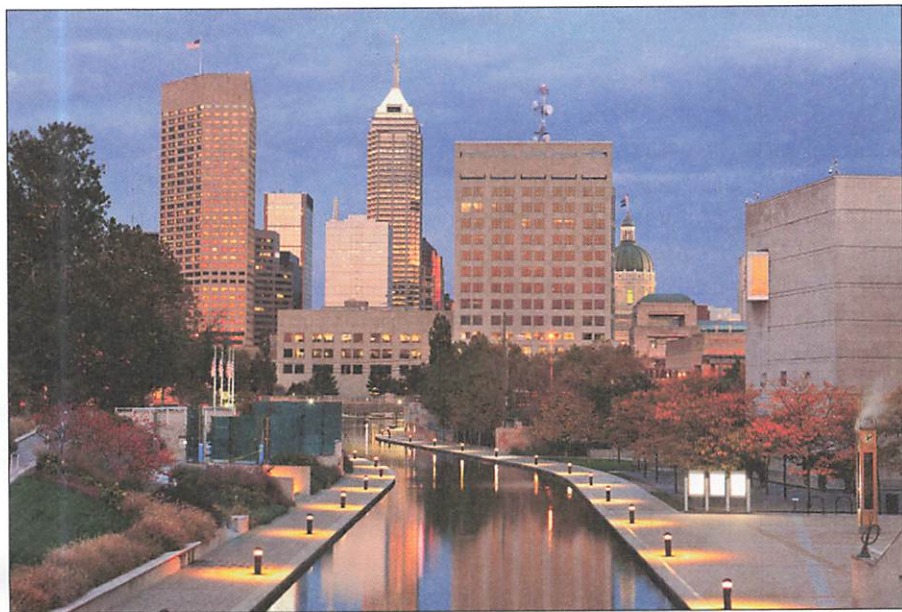
As President James Danko was the first Indianapolis university president to sign the ACUPCC he set precedence for other universities in the state of Indiana to do the same. With the contributions of 25 students, faculty, and staff the BUSCA has set a clear path of sustainability for the future of the university that can be, and should be, admired and reflected in other universities across the state.

—by Marisa Heiling

Doing the Job

“What are the implications for the way we view both ourselves and the way we live? In brief: in the coal energy culture—a culture of workers and production—you are your job. “I am what I make.” In an oil and gas energy culture—a culture of consumption—you are your possessions. “I am what I buy.” But in a renewable energy culture, you are what you conserve. “I am what I save and protect.” We aren’t used to thinking like this, because we can’t see where the money will come from. But in a culture of renewables, money will not be the only measure of wealth. Well-being will factor as an economic positive, too.”

*-Margaret Atwood “It’s Not Climate Change,
It’s Everything Change”*



In our path to more sustainable energy, Indiana isn't just going to see more wind turbines being built, but will be an active participant in the wind-power industry. We can expect to take part in manufacturing and assembly of these icons of the new Midwestern landscape. Training the workers who will build and maintain turbines is critical. At Amatrol, that's just what they're setting out to do.

Amatrol Inc.

Although Amatrol Inc. of Jeffersonville, Indiana, has been educating for technical skills since 1981, its green energy program is relatively new, beginning in 2010, the same year it was named Small Business of the



Year by both the Indiana Chamber of Commerce and Louisville's Business First. The company was approached by a manufacturer called Clipper Windpower, who needed skilled workers and wanted to see growth in the wind power industry overall. After developing training in with utility-scale wind technology, Amatrol then moved to large-scale solar, and finally residential solar, both photovoltaic and thermal.

In the U.S., Amatrol trains teachers in universities, community colleges, high schools, and vocational schools (including Ivy Tech in Indiana and the Kentucky Community and Technical College System), offering both curriculum and equipment. Amatrol's vice president of sales Joe Reid explains that there are 600,000 manufacturing jobs unfilled in the U.S. because of lack of workforce training for today's jobs.

Many nations are ahead of the U.S. in green energy. European countries, for instance, lacking our abundant fossil fuels, are forced to be more innovative. While large-scale wind power operations dominate and the U.S. and Canada, solar technology is more popular in locations where smaller-scale operations are needed. The cost-effectiveness of both technologies continues to improve steadily, but Reid predicted that geothermal's popularity may overtake them both.

In the U.S., utility-scale wind technology is limited not only by lack of trained technicians but also by an electrical grid that is inadequate to handle all that wind farms can provide it, as well as by a tendency to build only when tax credits are available. This means jobs come and go depending on the way the wind blows, so to speak, in Washington. It is not yet clear what

the smart grid will look like; therefore, it isn't yet clear what vocational skills will be needed to service it. Mr. Reid said the company hopes to see long-term changes in energy sources over time, with natural gas taking the place of coal as a transitional fuel.

The kinds of green energy jobs for which people will be training will continue to evolve. Amatrol tries to help build into their curriculum the wide-spectrum knowledge and flexibility that will enable workers to evolve alongside ever-developing technology.

-by Trisha Tull

Sustainability at City Hall in Terre Haute

In 2012 officials within the Institute of Community Sustainability at Indiana State University arranged for a meeting with Terre Haute Mayor Duke Bennett. The meeting resulted in the placement of an unpaid Sustainability intern in the Mayor's office.

"The Mayor was very excited and receptive in starting the conversation about sustainability at city hall," ISU Intern Steven Flowers said.

Flowers says right now officials within city hall are looking at low-hanging fruit items. Already the Mayor touts changing all of the stop lights to LED (light emitting diodes) lights.

LED lights take far less power to operate than their former counterpart. Flowers is working expanding the recycling program from the present individual offices to the nine fire stations and all buildings in the government campus. Having enough correct bins for each office is preventing this goal from being accomplished. Recently Flowers applied for a bin grant through Keep America Beautiful and hopes, if awarded, it will supply the city with enough bins to get them off to a good start.



Terre Haute, Indiana

Flowers started in his position in January and will conclude in May. His first accomplishment has been the organization of the first Mayor's Bicycle Ride, which took place on April 17th. The bicycle ride kicked off the Earth Day festivities at ISU. There the Mayor fielded questions and listened to opinions about the "bikeability" of Terre Haute from bicyclists. Flowers says these types of events help encourage alternative transportation and healthier lifestyles.

"Steven is going to try and set up a regular bike ride once a month. It will be a good way for everyone to get outside talking and to enjoy the wonderful trails Terre Haute has to offer at the same time," Terre Haute Mayor Duke Bennett said.

Flowers hopes his greatest accomplishment while interning in the Mayor's office will be to complete a greenhouse gas inventory of Terre Haute. He will look at what greenhouse gases the city is producing and create a baseline from that information. Once a baseline is created, he would like for a round table discussion to be formed in order to discuss how we can reduce our greenhouse gas emissions and create a climate action plan for the city's operations. As things progress the Mayor would eventually like to see a sustainability plan put in place.

"We need to make sure we are doing things as efficiently as we can to save the taxpayers' money and we need to be out front doing some leading edge things in the realm of sustainability," Mayor Bennett said.

Many larger cities across the U.S. have the position of Sustainability Coordinator within personnel. Mayor Bennett says it is unlikely the city would create such position as their budget continues to get cut year after year. Eventually, he thinks it will become a dual-duty role of someone already on staff.

"A lot of cities have the role of a sustainability coordinator and there is a lot of work to be done. Sustainability is something we all know about, but we don't always think about it at the right time. It is just putting into perspective the things we are already doing. For example, if we are putting in a road, why not see if there is a way we can make it a complete street. It is really important to add that perspective in the things we are already doing," Flowers said.

Mayor Bennett said he would like to have the consistency with working on sustainability topics and issues in the future. He hopes to partner with ISU or another local university next semester to carry the torch Flowers will leave burning.

—by Jane Santucci

Powering Sustainability in Indiana

At Cummins, we believe our employees' technical skills give us a competitive advantage. They enable our company to produce the cleanest, most fuel-efficient engines, generators and related components in the world while delivering the dependable power our customers need to succeed.



Kevin Brittain uses the power of numbers to help design products that use less raw material

We power trucks, trains, ships and more, delivering people and products faster, cleaner and more efficiently than ever before. Our engines work thousands of feet below the earth's surface and high in the mountains in some of the most demanding markets in the world. Our generators provide reliable backup power for critical endeavors such as schools, hospitals and some of the largest data centers on the planet. In short, we help power the interconnected world so many of us count on.

So sustainability, particularly environmental sustainability, is critical to Cummins' long-term growth and profitability.

Nowhere can you see this more clearly than in Seymour, Indiana. Just 20 miles south of Cummins' global headquarters in Columbus, the Seymour Engine Plant and the brand new High Horsepower Technical Center are hubs of productivity, innovation and sustainability.

PUTTING OUR KNOWLEDGE TO WORK

Kevin Brittain started getting into efficient design while an engineering undergrad at the University of Evansville in Evansville, Indiana. Today, the Applied Mechanics Engineer – Technical Specialist uses sophisticated computer software to look for ways to design some of the largest engines Cummins makes so they use the least amount of raw materials possible without impacting the durability and dependability customers rely on.

Analysis Led Design uses powerful software to enable our engineers to test an almost limitless

number of design variables before an engine ever uses a drop of fuel in a test cell. Britain takes that a step further by also using Numerical Optimization, mathematical calculations and related approaches, to help narrow those limitless possibilities to the ones most likely to succeed. He calls it producing “better designs, faster.”

By using lighter products, customers frequently get better fuel efficiency. Better fuel efficiency reduces carbon dioxide (CO₂), the primary greenhouse gas emitted through human activities.

“The focus of Design for Environment is to reduce our product’s environmental impact by making informed decisions in the design phase,” said Madeleine Fogler, who leads Cummins’ Design for Environment initiative. “Reducing material without compromising durability and reliability is one way to do that.”

CAPTURING ENERGY

Cummins’ operations in Seymour also demonstrate many of the sustainability practices used at the company’s plants around the world.

In order to meet Cummins’ environmental sustainability goals to reduce energy use, for example, the Seymour Engine Plant installed in 2014 two regenerative dynamometers, or regen dynos for short, to capture energy from high horsepower engines while they are being tested. The captured energy can help meet the plant’s overall electrical needs, which is good for the environment because it ultimately reduces CO₂.

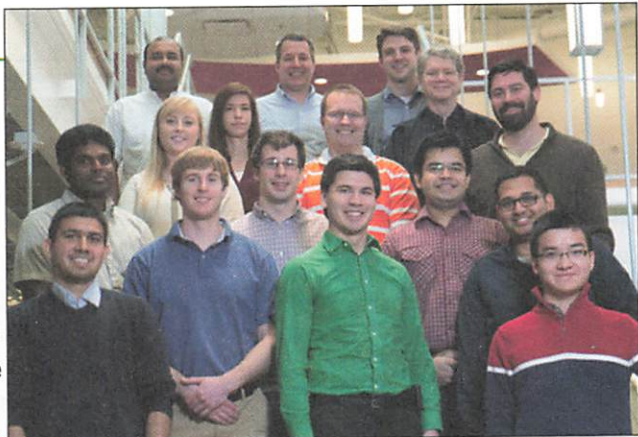
Cummins has many regen dynos at facilities around the world, but the ones installed at Seymour are the biggest at any location. The Seymour plant builds some of the largest engines Cummins produces – the QSK95, for example, is 8 feet tall and 14 feet long. High horsepower engines go through a lot of testing before they are released to customers, and that testing uses a lot of fuel.

The plant projects that the regen dynos, which came on line in 2015, will produce about 7,000 MWh of electricity in 2016 – the equivalent of about one month’s total electric bill. The regen dynos will result in the avoidance of about 4,800 metric tons of CO₂e (carbon dioxide equivalent) or about 10 percent of the plant’s annual greenhouse gas (GHG) emissions.

GETTING THE RIGHT WORKFORCE

This multi-faceted approach to sustainability demands the best employees in the world and

Cummins believes that starts with a diverse workforce. Diverse teams, working together, are more likely to arrive at innovative solutions for customers. That's part of the reason Cummins has taken a public stand on a host



Members of the High Horsepower Structural Analysis Team based at the High Horsepower Tech Center in Seymour, Indiana

of issues related to diversity, dating back to civil rights in the U.S. in the 1960s, opposition to apartheid in South Africa in the 1980s and most recently for LGBT rights in Minnesota and Indiana over the past four years.

In 2016, the company supported an effort to add LGBT civil rights protections to Indiana law. "About 50 percent of our employees have been with the company fewer than 5 years," explained Mark Osowick, Vice President of Human Resources Operations at Cummins, in written testimony submitted to the Indiana Legislature.

"Competition for these employees is intense – especially for those with the technical skills we need to compete in a complex and global economy," Osowick continued. "These workers expect and demand a diverse workplace."

That's certainly true of the team Brittain is part of in Seymour. They love working for Cummins because the company gives them a chance to learn new ideas from people of different backgrounds, and to put their skills to work in new and challenging ways.

"Our team is young, diverse and embraces new ideas and new methods," Brittain said. "We have members in the U.S., the U.K. and India and everyone has a passion for finding new ways to improve our products."

—by Blair Claflin and Lauren Kastner

TimeBank

Looking for a new way to literally spend your time? A web-based work sharing site that has found success in places around the country, is taking root in Indianapolis. TimeBank can be found at timebankindy.org.

When you need a specific service, you make a request to other participants for some of their time through the TimeBank. Those who fulfill the request get a "Time Bank Credit" which may be used later for a needed service. That service may be from anyone else in the TimeBank, not just from the person for which you provided a service.

Services can be housework, lessons, transportation, etc. You are able to post what services you provide on TimeBank and look up other affiliated providers to see what is available.

Digital ways of sharing and organizing services among neighbors and local institutions have become a popular part of the 'sharing economy.'

Indianapolis is a big city, geographically-speaking, so working within neighborhoods and within zones of neighborhoods, to get people signed up and accustomed to working together is a key focus for Laura Chatain, one of Indy TimeBank's supporters and organizers. "TimeBank is unique in that it makes a radical statement that everyone's time is equally valuable. Society says time is valued incrementally, but TimeBank goes against the grain of that way of thinking and increases access to resources for people who don't have cash," Laura says. Since participants are in turn are paying with time, the TimeBank changes the way people think about their skills and the value of their time.

If you have a small business, there is one small tax consideration. If you offer a professional service on TimeBank, you may need to account for your "hours" as credit in your income statements. So for many, this system works best if you are offering something other than what you do for a living. If you love to play chess, or babysit, you can offer these skills. You can post a specific request for help. You can donate hours to someone who can't reciprocate, or to thank someone.

Laura says that back when she had small children, she "would have given my right arm to be part of a babysitting program." This highlights the exceptional value of a badly-needed service: to the exhausted parent, a night off can be priceless. Parents routinely sacrifice taking a night out because they can't spare the cost of a babysitter. People already volunteer huge numbers of hours, it's a great way to track those hours. You can take your volunteer hours, and get credit

from your church or organization, to be able to spend those hours elsewhere.

“There’s a new awareness of the way we tend to see people who don’t have a lot of cash as needy rather than gifted,” said Laura. “What they have to offer, their time and experience, is just as valuable as others.” Seeing everyone as gifted individuals is a necessary revelation, she adds, “How often does anyone ask you about what your gifts are other than what you do for a living? How diminishing is that?”

These days, working adults devote many hours of the day to earning an income. For those individuals, TimeBank can reduce the need for cash as well as free up some time. For those folks who would prefer to pay with time, they’re able to put in hours that are more satisfying than what they may do to earn money.

Laura said she recently used TimeBank to help her get control of some invasive vines that had overtaken her yard. She said she “could not face it, so I posted on TimeBank asking for help getting rid of them.” Two guys responded and, assisted by Laura and her husband, got the job done in 2 hours. “Even though I had received the credits, it didn’t feel like I was paying, it felt like a gift.” These exchanges really do feel more like gifts, less like purchasing, which fosters a sense of community. Everyone talks about creating community, but it can be hard to do if everything is done on a cash basis. Creating this network of sharing and support where you live, instead of 10 miles away, is ideal, which is why the focus is on immediate neighborhoods. Creating community is really about making friends and being there for each other. “To be friends, it’s important to run into each other now and then randomly, rather than have to plan every interaction,” Laura points out.

In this way, TimeBank type interactions could help us feel less isolated while helping us get to know our communities better. Can it make our lives more sustainable? Laura suggests that there’s “a big difference between sustainability and individualism; the price we pay for sustainability is to consider our debt and responsibility to society. TimeBank acknowledges our indebtedness to our neighbors by asking us what their needs are.”

“We think we can exist alone, doing any old thing in perpetuity without consequences. This is not sustainable. We need each other.”

-by Shannon Anderson

CHAPTER 10

Better Together

“If you want to go quickly, go alone, but if you want to go far, go together.”

-African Proverb

Many Hoosiers throughout this book have forged green paths and set new expectations for how individuals can live sustainably. They have helped us by lighting the way forward. To truly protect our state and our world however, we will need to go even further and get everyone on board. We need not just individuals but communities committed to living greener lives. Here in Indiana, there are some special places demonstrating how communities can play an essential role in shaping the sustainable future.



Shannon Anderson

Broadway Street, Gary Indiana

Englewood Community Church and Englewood Community Development Corporation

“Love your neighbor” is a core Christian belief. For some it means having good feelings about the people over the back fence or in the upstairs apartment. For Englewood Community Church, as stated in their mission statement, “love of neighbor takes the form of affordable housing, economic development and comprehensive community development.” The result is that one part of Indianapolis looks quite different than it did a few years ago.



Tlaolli Restaurant

Under the leadership of Pastor Mike Bowling, Englewood sought to make their Near Eastside neighborhood a more livable place. In the midst of unemployment, high crime and substandard housing, they wanted to make a difference. A sign in the church office reads, “And the Word became flesh, and moved into the neighborhood.” To this end, the church formed the Englewood Community Development Corporation (ECDC) and called Joe Bowling, the pastor’s son, to be its director. They then set about transforming the area.

The results have been quite impressive. The ECDC took possession of a long vacant public school building and transformed it into the Commonwealth, a 32 unit mixed income apartment building complete with gym and rooftop sports arena. Tenants include people of varied backgrounds and economic status, including both a college professor and people who previously lived on the street.

When a young woman moved into the Commonwealth, she stated that she had a dream of opening a restaurant. ECDC went to work with her, locating the needed resources and helping her through the many details necessary to start a business. The result was the Tlaolli, a

restaurant now selling Mexican food just south of the church on Washington St. This is just one of several area small businesses assisted by ECDC.

Among many other projects, ECDC has a homeowner repair program and lawn mowing service that not only provides lawn care to neighbors but employment opportunities at the same time.

Work was recently begun to convert an old, unused 61,000 square foot warehouse into an urban “farm” which grows crops hydroponically inside the building. When completed, it will be a year-round source of organic produce, using a high-tech system of growing plants on a liquid solution rather than soil. Such a method uses 90% less water. The project accomplishes several goals. It will bring food to a neighborhood where fresh produce is hard to find. It will provide employment for the neighborhood as well as eliminate an eyesore from the area helping it become a more pleasant place to live. ECDC was a key player in developing this project.

A visitor to the corporation’s offices can’t help but notice the nearby presence of children – lots of them. They are attending the Daystar childcare program which has boomed and now serves over 200 children with 30 employees. Parents can go to work in the knowledge that their children have a safe, healthy place for their children. This, too, is an ECDC project.

More than providing social services, the church seeks to bring people together. There are weekly meals open to the whole community. A community garden not only encourages locally grown produce but allows neighbors to get to know each other. And Sunday worship is a gathering place for many who live in the neighborhood.

True community may be a casualty of our age. People often know little about their neighbors. Neighbors often live in one place, work in another and go to yet other areas to shop, go to church and engage in recreation. Living in close proximity does not make a neighborhood. Englewood Community Church recognizes the importance of true community in transforming an area into a neighborhood where people live not because they have to but because they want to.

—by Richard Clough

Save Maumee

Since 2005, the Save Maumee grassroots organization has been working to protect and preserve the upper portion of the Maumee River and its surrounding ecosystems. The organization is entirely run through the volunteer efforts of Save Maumee

supporters. Abigail King is Vice President and founder of the organization. After moving

into a home along the river with her son, Canaan, Ms. King learned that the Maumee River failed to meet the water quality standards set by the federal government. She felt a civic duty to her community to change something. Over the past ten years, Save Maumee volunteers have removed 26,000 pounds of trash from the rivers, planted over 2,000 native trees, distributed 1,000 pounds of native seeds along the rivers, and installed over 16,000 square feet of erosion control mats along river banks.



Ms. King dries seeds in her garage which have been collected this year from Eagle Marsh. The seeds, which include native plants such as bee balm, mountain mint, sumac and senna, will be planted along the rivers next spring to prevent erosion.

Community awareness and support has been vital to Save Maumee's accomplishments. Save Maumee regularly conducts Earth Day events and sponsors a Canoe Clean-Up event every year. In 2014, during a nine day trip, twenty volunteers traveled 141 miles down the Maumee River to record point source pollution from leaky pipes and raise awareness through education in seven communities downstream. Despite the active participation by citizens in the community, Ms. King often faces meetings full of apathetic local industry spokesmen and government officials. Save Maumee actively advocates for pollution reduction in the river, which provides drinking water for 11 million people. Sewage continues to be discharged whenever more than a tenth of an inch of rainfall occurs. Fertilizer from the fields surrounding the watersheds also runs off into the river making it unsafe for swimming or fishing, causing fish consumption advisories. Currently the organization works to implement the Upper Maumee Watershed Management Plan, which is a snapshot of current water quality that enters the river. The group

continues to work as a 100% volunteer organization. They educate the community about the water quality of the local rivers at monthly meetings. "There are many things you can live without," Ms. King says, "but water isn't one of them."

—by Meghan Wiseman and Nick Dutiel

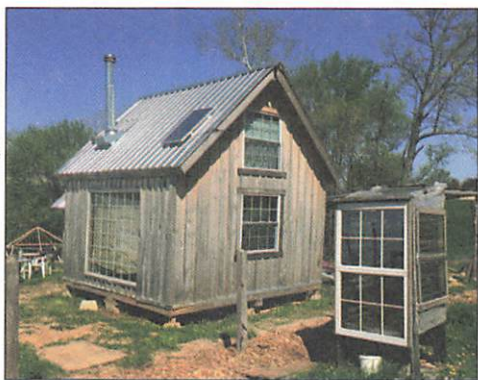


On a wider scale, there is one county in Indiana that is creating something very special. Incorporating food security, health and wellness, waste reduction, care for their fellow Hoosiers, and strong sense of connection and cooperation, Orange County is demonstrating how a committed network of people can have a tremendous impact.

Orange is the New Green

Down in Orange County, Indiana, about an hour south of Bloomington, something special is happening. Most folks head straight for the stately hotels in French Lick, the golf course or the casino. But you'd be missing out on the fantastic community that calls the county home. If you stop by the sparkling fountain in the square of Orleans on a Saturday morning in the summer, you will see a farmers market in action. At first, you will see the usual elements of a market, vendors with produce, vendors with crafts, soaps, breads... but look a little longer and you start to see the story unfold. Meet the organizers behind Orange County HomeGrown and you can envision the potential here.

The Orleans Farmers Market springs into action every Saturday in summer (8am-12pm) in the Orleans Park and every



Living Roots Eco Village

Tuesday on the French Lick Town Green (1:30-5pm). The vision of the organizers, Orange County HomeGrown, has shaped this weekly event into a social happening not to be missed, busy with regulars and visitors, live, local music wafting through stalls.

The farmers market is just the beginning of what Orange County HomeGrown.

They launched the Lost River Market and Deli in Paoli to offer local goods on a regular basis and provide a place for local farms to distribute their produce. It's also a great place for locals to meet for lunch. Additionally, HomeGrown sponsors river clean up activities and even water quality monitoring.



Lost River Deli Market

There are really great things happening at this Farmers Market: we met some of the sustainable vendors back in Chapter 6, Petals on the Market and White's Weaving. Here is a peek at some of the other ways the Market is a force of community sustainability:

It started modestly enough, as these things often do. It was a card table full of books for sale, just something to sell to raise some money for the Orleans Farmers Market, says Bob Turner. He and his wife Debbie have worked in not-for-profits for many years and when they realized the



Mobile book sale

market needed some development support they donated their own books and started a book sale.

And the donations kept coming in, more used books, more interest in picking out books. So the idea for the mobile library was formed. A church in Louisville gave them a big boost with books leftover from their sale and they've recovered thousands of books from solid waste centers saving them from the landfill. Bob designed a trailer to make storing and setting up all these books at the market easier. Students

in the welding class cut up a horse trailer and the carpentry co-op at the local high school

helped craft the finished project. Tripods stored under the trailer and panels on the side come together make tables for the crates of books tucked away in the center. More books are hidden along the built in bookshelves on both sides of the trailer. Thus, a horse trailer metamorphosed into a mobile book store. It's an amazing creation that allows all these books to be available to the folks at the Orleans Farmers Market on Saturdays all summer long.

They currently have about 4,000 books. You can get one for a dollar or by trading in two of your own books. Kids always get a free book from the kids' wagon. They've sold over 23,000 books, given 5,000 away to kids, and in total have turned over (with trades) around 35,000 books in their several years in operation. It's a major literacy program for the county in one little trailer.

Outside of the Farmers Market, Orange County seems ripe with examples of community-driven sustainability. From farms to stores, protecting forests to protecting people, here are just a few examples of this new green effort:

There are no shortages of places to get great local produce in Indiana but Orange County is growing something extra special these days. We visited the Living Roots EcoVillage, a 75 acre farm near Patoka Lake which is not just a farm but a true community of people who care about sustainable farming. When we arrived, they were busy planting asparagus and hops while the hens were happily feasting on the grubs from the recently tilled soil right behind the planting. EcoVillage founding member and farm leader, Michael Hicks, gave us a tour of their fields, greenhouses, and facilities. The diversity of produce they are growing is only matched by the care taken to use recycled, repurposed, or green materials at every level of the operation. Clever solutions for starting seeds early in their warmed seed greenhouse-within-a-greenhouse to an impressive deer fence show their determination to having lots of offerings for farmers markets and their CSA program this summer. The farm offers workshops, farming and healing arts programs, as well as natural building apprenticeships for those interested in learning from their community. They even have a monthly potluck (every third Sunday, tour at 5, dinner at 6pm!).

The Community Garden in Paoli is a wonderful example of shared responsibility and education. A visitor finds kids planting and harvesting, working their own plots of vegetables, and excited to share their experiences in the garden. There are rows and rows of beans, a huge patch of pumpkins, and a round herb garden.

In Orange County, a network of caring individuals has taken bold steps to care for their fellow

Hoosiers directly. The Jubilee Community Health Clinic in Paoli provides uninsured or underinsured individuals with affordable vital medical care and free services. The Mercy Kitchen feeds around 250 people a month for free. Even their Habitat for Humanity program is an overachiever; making 25 houses ready for families in an area that is not near any large population center is impressive undertaking.

The Lost River Market and Deli is a great place where locals can get their hands on some of the fruits of their community. The Market is full of local produce, fresh baked-goods, a delicious salad bar, hot food bar, and even locally made soaps, lotions, and snacks. Their membership crossed 1,000 people this past summer, a remarkable achievement for being situated in a town of 3,659 people.

Lazy Black Bear

Andy Mahler's home in the forest is a very special place, a very community-driven place. It's called "Lazy Black Bear" and it came into his life in pretty bad shape. The rustic, partly-open air house, sits at the end of a long winding driveway, at the end of a long, rising dirt road, out in the woods outside of Paoli. Lots of work has been done on the house, but it retains its character, and it fits into its setting perfectly. The perimeter is made of old metal conduit spools, repurposed into an artistic and eco-smart fence. There's a big open air kitchen and a dining area, full of assorted mismatched tables and chairs. There are barns, small coops for the



Living Roots Eco Village Team



Lost River Coop and Deli

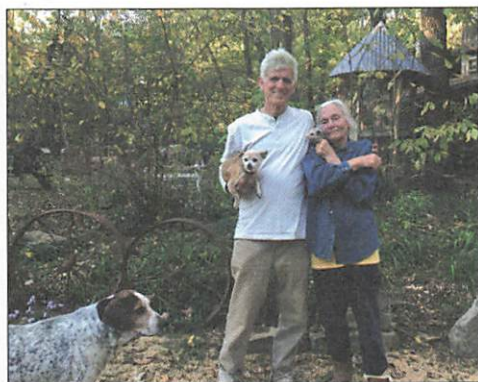
rescued possums (yes, there's a possum rescue on site) and lots and lots of trees.

The original property was about 79 acres, but Andy bought 40 more adjacent to that, and then another 120 acres from a neighboring farmer. An elderly neighbor sold 25 acres to him when she decided she did not want to see any more trees cut down, and so Lazy Black Bear became the 269 acre personal-forest-preservation project that it is today.

Heartwood

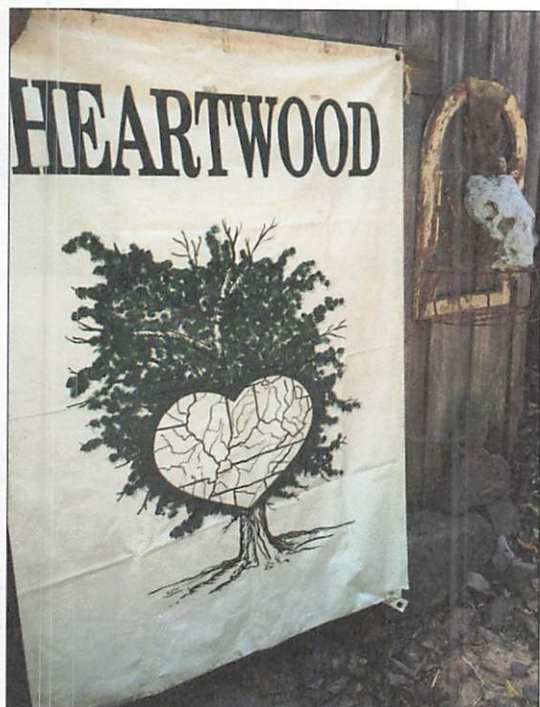
Old growth forests are a treasure, their big trees are able to sequester double the amount of carbon dioxide that young trees can. In the fight against rising carbon dioxide, forests are our champions. Yet, in the past 200 years of our State, we have clear-cut 76% of our forested land.

Advocates normally find themselves in alliances by State or County, but Heartwood is a little different. Their borders align with that of the Appalachian Forest. They are primarily a grassroots network of volunteer activists promoting forest protection, but they have grown into



Andy Mahler and Linda Lee

something that looks a little more like a big family, people who share a mutual affection for the wilderness and each other. Founded in 1991, their network initially extended from Indiana, into Ohio, Illinois, Kentucky, and Missouri. They have since expanded to include an a multi-state region, adding Michigan, Mississippi, Pennsylvania, Arkansas, West Virginia, North Carolina and Virginia. They are most concerned with “at risk” national forests. Their “family” includes over 100 member organizations, with an incredible span and range of skills and interests.



Heartwood’s “Forest Watch” program guards public lands, especially National Forests, and springs into action when rules are being flaunted or forests harmed. They initiate legal challenges against the Forest Service, educate the public about commercial logging in our public forests, and monitors timber sales, controlled burns, oil and gas drilling, coal mining, among many other issues that threaten healthy forests.



Heartwood family gathering

When the Forest Service puts out their official Forest Plans and open them to public comment, their volunteers are ready to weigh in and they have made strides to include climate change as

part of the narrative. Their activists are extremely knowledgeable about their community, their forests, and the process of engaging State agencies.

The Heartwood family meets biannually at a Spring Heartwood Forest Council event and an Autumn Reunion.

You can find more information www.heartwood.org

PHJC Center at Donaldson

The Poor Handmaidens of Jesus Christ are a religious order of women based in Donaldson, Indiana who feel called to “listen prayerfully, live simply, and serve joyfully.” As part of their commitment to serving others, they also profess that “we believe all life on the planet is sacred and deserves respect and protection.” The PHJC sisters are advocates for justice as well as incredibly active in serving others. Their ministries include elder care, health care, education, arts, immigration assistance, child care, agriculture, and spiritual support. Their undertakings are impressively diverse and display a level of care and attentiveness that has been nurtured through generations of sisters devoted to their core principles.

At their MoonTree Studios and Lodge they are connecting people with art and nature as well as demonstrating a living example of sustainability. Everything from cleaning products to waste handling is carefully thought out. Composting, rain gardens planted with prairie plants, rain water collected from roofs for gardening, passive solar energy use, a small wind turbine that generates up to one third their needs, and implementation of permaculture principles set the MoonTree Studios apart as a model of what can be done when love of earth meets devotion to care.

The PHJC has numerous ministries, all rich with examples of sustainable behavior, from small details like using cloth rags instead of disposable products, to larger decisions such as operating greenhouses and using fuel-efficient transportation that is coordinated to reduce trips. In every decision, from what kind of floor scrubber to get, to buying supplies in ways that use the least packaging, they are caring for the young and old in the spirit of “good for the land, good for you.”

Hoosier Interfaith Power & Light: Miracles Happen

For the last two and half years, I have been fortunate enough to be part of some of the biggest environmental victories in Indiana's history. As organizing director for Hoosier Interfaith Power & Light, a faith rooted and interfaith organization responding to climate change, I have seen some miracles happen.

I have seen our movement transform congregations into energy-efficient, solar powered houses of God. Places of worship that are now examples to the rest of the community about what is possible. Hoosier Interfaith Power and Light offers innovative workshops and resources to congregations to help them find practical ways to use energy wisely, lowering their utility bills in their facilities and in their members' homes.

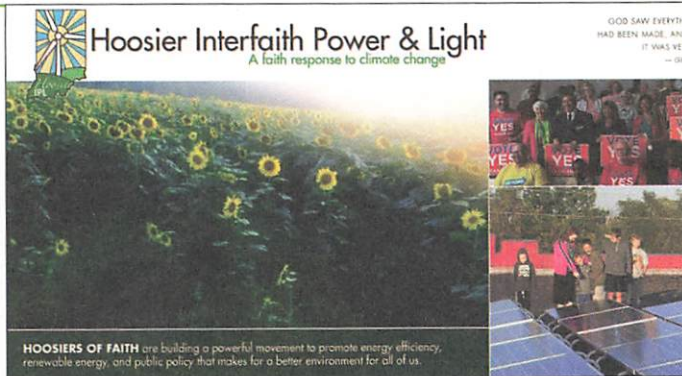
I have seen hundreds of people make real efforts to cut their own energy usage dramatically, both freeing up money and saving the planet. I have even seen our movement shut down a coal plant in Indianapolis that was directly harming our kid's health and our planet's well-being. I was told numerous times that this was an impossible dream.

I have seen a ragtag team of neighborhood activists and congregational leaders save the future of solar power for Indiana over the objections of some of the finest dressed powerbrokers at the Indiana Statehouse. Just in 2016, my three daughters, ages 7, 5, and 3, along with about twenty other Hoosier kids, helped lead a press conference that highlighted a bad piece of legislation that was on the verge of passing and making it harder to keep our water clean, our air healthy, and our public health safe. The kids won by the way, over perhaps the desire of Indiana's most notorious antienvironmental lawmaker and the wishes of a legion of special interest lobbyists.

And now, in Indiana's bicentennial year, faith communities are working together in northern Indiana and demanding that Indiana-Michigan Power do the right thing for the future and begin making massive investments in renewable energy instead of wasting billions of dollars on the dirty, dangerous, and expensive Rockport Coal Plant.

I'll take a step back though, and tell you my Indiana story.

There was a study last year that ranked each county by natural beauty. Indiana was pretty lowranking on this chart, and my home of Hendricks County came in almost dead last. What



I found amusing is that Ventura County, California ranked first and that my Indiana-born grandparents after World War II decided to move back home, deciding against buying a farm in postwar Oxnard, California, perhaps the prettiest place in the world.

As my grandma Flo would say, perhaps quoting Dorothy, there is no place like home.

When I posted this story on Facebook, a friend from Hamilton County, Indiana, which was only a few slots nicer than us down here in Hendricks County, quoted Wendell Berry, “There are no unsacred places; there are only sacred places and desecrated places.”

In Indiana, the environment often doesn't get talked about. In fact, our state seal is basically a pioneer with an ax, chopping down an old growth forest and chasing a buffalo into an unknown future. Yep, a well meaning guy taking a sacred space and desecrating it.

I am a child of the pioneer's ax, though a later rendition of the tree-cutter from the state seal. I grew up in an old 1880s farmhouse in northeastern Hendricks County, a farm built out of a wetland drained by Irish immigrants in the 1840s that is now some of the finest farmland around. It is a farm that my wife and our daughters live on now too, but our house was built in the early 1990s.

This is sacred land to us. A sacred homeplace that my grandparents came back from California to be part of.

It is my great hope someday that this land that is sacred to our family becomes full of the possibilities of God's creation. That it and Indiana itself becomes a place where environmental desecration is restored to wholeness.

Wetlands are restored, forests and the wild places are expanded, and the climate protected. Small, organic farms everywhere nourishing us and the world. Meanwhile, everything needing

electricity is both energy efficient and solar and wind powered.

This is the sacred Indiana that we are all praying and fighting for. Like I said, I have already seen miracles happen.

-by Mike Oles III

Interfaith Earth Care Coalition, Fort Wayne

When I met Patty Griest at her church, First Presbyterian, she told me a story about a field and how she came to own it. I was so in love with this story that the next morning I got up early and typed it all out without stopping. It started like this:



"Patty Griest was not going to give up on that empty field. She had her eye on an old corn field across from her lake house in Steuben County and she wanted to grow a forest there. After agreeing to a purchase of 10 acres in 2007, she began to plant Indiana hardwoods, some that she seeded herself, "my babies," she calls them, with clear affection for some of the saplings that she added in with the trees she sourced from the state nursery in Bloomington. She has planted around 5,000-6,000 trees now. "The first oak are gorgeous now," she is happy to report. This ambitious undertaking is part of a growing movement to protect and expand Indiana's forests, to reclaim the tree diversity and quantity our land once had. Patty told me about a butternut tree on her cottage's property, it died about 15 years ago, but while cleaning up the tree area where it once stood a couple of years ago, she kept finding butternuts. She put them in water, planted the ones that sank, and grew 4 or 5 baby butternuts that are now over 15 feet tall, resurrected from 12-13 year old seeds. From the scale and size of this ambitious project, you could imagine that Patty would be an imposing figure, but she's very petite senior citizen."

I hadn't met Patty to talk about trees only, but also to hear about her work with the Interfaith Earth Care Coalition. If it wasn't enough to reclaim a whole field, she was also serving an instrumental role in uniting houses of worship, a truly interfaith web of concerned Hoosiers on the environment. So I had to include that in the story:

"She loves trees though, and she is active in the Interfaith Earth Care Coalition through her church, First Presbyterian of Fort Wayne. When I sat down with her, they were nearing

completion on converting their small dining room into a center for sustainability. Any church or faith can get involved in the IECC, dedicated to raising awareness of environmental issues

and providing resources for caring for the planet. The IECC has an impressive list of 31 different faith

communities, representing different religious traditions. At First Presbyterian, they have taken on very serious energy efficiency goals, making a full-building audit of their power use. They are diverting waste by recycling glasses with the Lions Club, collecting clothes donations, and they offer educational resources on sustainability. They host workshops on environmental issues. At a recent gathering, they heard from author Kelsey Timmerman, about the globalization of food and his book 'Where am I Eating?'



I've been back to First Presbyterian and I'm happy to report the Sustainability Center is complete! I asked Patty if we could send this article about her and the Interfaith Earth Care Coalition to the newspapers, she wasn't keen to be the hero of the story. I thought Patty was so inspirational, but she wanted to make sure that we focused on the Coalition. Even more than she knows how to plant trees, she knows that communities coming together are necessary in this work toward a livable future.

The IECC, you could say, was born in October 2013, when an Ad Hoc committee was formed including Joan Coslow, Patty Griest and David McCants of First Presbyterian Church, Agnee Conner and Sandy Moliere of Plymouth Congregational Church. They were advised by Rev. Terry Anderson of Interfaith Homeless Network and Michael Spath of ICMEP. They contacted people who had previously expressed interest in environmental issues in their communities and held their first general meeting February 2014. The IECC recognizes "the commonality of all faith communities in traditions of caring for our planet earth," and that those with "mutual concerns would be uniquely situated to take the leadership in a local endeavor to help create a healthier environment and have a much greater impact for changes than would single entities working alone." IECC works to bring faith communities a renewed focus on energy conservation, waste reduction, sustainable food practices, conserving natural resources, participation in community activities, and advocacy.

This is how communities change the story. This story, our story. Since I first met Patty, I've

watched a lot of folks, even talented organizers struggle with building community. We want to accomplish BIG things. We want more people to be involved and to do more. We want to create the vibrant community that will work for the sustainable vision. You simply cannot do that alone. You can plant a single tree, you can plant hundreds of trees, but it takes hundreds of years, as Patty says, to build a forest. Our mission, our path to sustainability is a forest.

And so while Patty is a hero to me for planting trees, she is absolutely right that the web of connections we are part of take a role that is the most interesting part of this story, and have the most profound impact. So, I hope she'll forgive me for making her story into the story she wanted me to tell, but not in the way she expected!

"Patty will be planting one special tree this spring, a Tree of Hope, in conjunction with our program to plant trees all over Indiana in celebration of the Bicentennial and as a commitment to a more sustainable future. When we told her about the project, she agreed it was right up her alley, she just has to decide which tree. The wonderful folks of the Interfaith Earth Care Coalition will be planting Trees of Hope this spring also. If you are out and about in Fort Wayne, you may see them. And if you run into Patty Griest, ask her how her babies are."

<http://interfaithearthcarecoalition.weebly.com/>

-by Shannon Anderson

The Greening of Middletown

In 2014, a group of students at Ball State University began work on a short documentary to tell the story of sustainability in "Middletown," America by interviewing, researching, and discussing the future of their town. This is not the first time that Muncie has taken the role of a quintessential American town. In the late 1920s, a husband and wife team of social scientists, Robert and Helen Lynd, selected the city of Muncie to investigate life in industrial America. They lived embedded in the community for 18 months, collecting data, joining churches and organizations, having dinner parties, and participating in civic life. The result was a book called "Middletown: A Study in Modern American Culture," published in 1929. It quickly became required reading for all sociologists.

The film students at Ball State, under the guidance of Professor Jeanette Castillo, recorded interviews with community members, faculty at their university, the Mayor, environmentalists, faith leaders, and organizers. They compiled historical and contemporary endeavors into a short documentary that is deeply about Muncie, but has echoes of many towns in the Rust Belt. What

happened here when industry left?

Kelli Huth, Director of Immersive Learning at BSU said, "I'm very excited about the storyline that talks about Muncie going from green to rust back to green because I think it's absolutely possible for it to happen. We are very lucky in the Midwest to have the natural resources we have."



The film was screened at the Muncie Civic Theater in April of 2015, and all summer around Muncie. Every screening was followed by a discussion because this short film really is a question to its audience: What's next and how do we, as a community, get there?

Mayor Dennis Tyler, featured in the film, emphasized, "Get involved for all the right reasons, get involved to make a positive difference. There's nothing wrong with raising issues, and there's nothing wrong with speaking out. But always speak out to be part of the solution, not part of the problem."

The common theme in the film is that in order to be successful, communities need to come together around shared values of conservation and stewardship to transition to a resilient way of life. Muncie is facing many of the same challenges that towns all over America face: unemployment, self-sufficiency, access to local food, maintaining infrastructure, promoting tourism, and planning for the years ahead.

Naturally, the conversation didn't stop with the film, and many of the folks who are featured in it have been working towards an ambitious goal of a carbon-neutral Muncie, perhaps the first town in Indiana to think about taking that bold and necessary action. It is a long journey, begun with a few steps, but with hope for the future and a determination that is characteristically Hoosier.

Charles Mason, a resident of Muncie, says at the end of the film, "If you value human life, if you might recommend it to the next generation, if you hope to have children of your own, if you think the human experience is basically worthwhile, then pay attention to the environmental movement. Join those who are trying to preserve the world because we are totally a part of the natural world. Your deepest roots are in nature, no matter who you are, where you live, or what kind of life you lead. You remain irrevocably linked with the rest of creation."

Explore Sustainable Indiana contains the heirloom seeds of a livable future; a legacy to be celebrated and a path forward. Everything we need to live sustainably in Indiana can be found within the covers of this book and for that all Hoosiers can be justly proud.

What we want – clean air, clean water, responsibly grown food, and cohesive communities – we can have. And it's cost effective. We simply have to adopt and replicate the solutions already tested.

A common temptation is to conclude that the troubles of the world are just too big to solve. Indeed, climate change is a daunting challenge. Doubts and fears are natural. But, the trailblazers celebrated in these pages found the courage to take risks to achieve something substantial.

In reading the book you might have noticed some common threads: vision, collaboration, a sense of purpose, perception of opportunity, and just plain grit. In fact, hardly anything succeeds these days without these attributes, especially collaboration. Be sure to connect with others in getting started or moving, what you are already doing, to a new level. The outcomes will be better and you will be building essential community in the process.

As stated in the Earth Charter, “the future at once holds great peril and great promise.” Inaction assures peril but action, of the kind in this book, is our hope for a promising future. Each one of us and all of us together have a part to play in how it all turns out. For our children's children let's get this done.

—John Gibson
State Coordinator
Sustainable Indiana 2016

Legacy Hall of Fame

Legacy Climate Solutions

This list of over 200 climate solutions has been compiled for the Bicentennial and their stories can be found at www.sustainableindiana2016.org. There are undoubtedly more such stories across Indiana and they will be added to our website as we learn of them and their stories become available.

REGION ONE: Lake, Porter, LaPorte, Saint Joseph, Elkhart, Starke, Marshall, Kosciusko, Newton, Jasper, Pulaski and Fulton counties

- ♦ Javiers Bistro, Javier Mendez, South Bend.
- ♦ Kankakee Wetlands Organic Gardens, Judith Rubleski, South Bend
- ♦ Krueger Middle School, Vera Jones, Michigan City
- ♦ Shirley Heinze Land Trust, Valparaiso
- ♦ Clay Bottom Farm, Ben Hartman and Rachel Hershberger, Goshen
- ♦ Monroe Park Co-op, Our Lady of the Road Volunteers, South Bend
- ♦ Recycle Granite, Julie Rizzo, Schererville
- ♦ Johnson's Farm, Hobart
- ♦ Marilyn's Bakery, Hobart
- ♦ Earthcure Natural Farm, Rob and Rebecca North, Rochester
- ♦ Michiana Green Pages, Jackie Smith, South Bend
- ♦ Indiana Dunes National Lakeshore, Chesterton
- ♦ Elkhart County Jail, Elkhart
- ♦ Lucid Energy, Goshen
- ♦ Peacemakers Academy, Steve Thomas, Goshen
- ♦ Constant Spring, Goshen
- ♦ Child's Play Organic Lawns, Granger
- ♦ Purple Porch Cooperative, Inc., Greg Koehler, South Bend
- ♦ Unity Gardens, Sara Stewart Uzelac, South Bend
- ♦ Prairie Winds Farm, Robert and Charlotte Wolfe, Lakeville

REGION TWO: Lagrange, Steuben, Noble, DeKalb, Whitley, Allen, Huntington, Wells, and Adams counties

- ♦ DeCamp Gardens, Pam and Jim DeCamp, Albion
- ♦ Ivy Tech North Community Garden, Fort Wayne
- ♦ ePermaculture Farm, Caleb Fiechter, Wells County
- ♦ Friends of the Third World, Jim Goetsch and Marian Waltz, Fort Wayne
- ♦ Mustard Seed Furniture Bank, Suzie Jordan, Fort Wayne
- ♦ One Bag at a Time, Lisa Foster, Fort Wayne

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- ◆ Three Rivers' Natural Grocery Food Cooperative, Fort Wayne
 - ◆ Moss Construction Cost Management, St. Auburn
 - ◆ Solomon Farm Park Farmers' Market, Renee Baines, Fort Wayne
 - ◆ Historic West Main Street Farmers' Market and INDOOR Winter Farm Market, Chris Shatto, Fort Wayne
 - ◆ Urban Farming Collective, Ephraim Smiley, Fort Wayne
 - ◆ Trees Indiana, Carol Cavell, Fort Wayne
 - ◆ Fort Wayne Metals, Korinda Walls, Fort Wayne
 - ◆ Fort Wayne Green Fleet, Larry Campbell, Fort Wayne
 - ◆ Interfaith Earth Care Coalition, Megan Sutton, Fort Wayne
 - ◆ Fort Wayne Rain Garden, Mary Jane Slaton, Fort Wayne
 - ◆ Save Maumee, Abigail King, Fort Wayne
 - ◆ Allen County Solid Waste Department, Jodi Leamon, Fort Wayne
 - ◆ Water Pollution Control Plant "Methane Project", Doug Fasick, Fort Wayne

REGION THREE: Grant, Blackford, Jay, Delaware, Randolph, Henry, Wayne, Rush, Fayette, and Union counties

- ◆ COPE Environmental Center, Alison Zajdel, Centerville
- ◆ Green Roofs, Ball State/Minnetrista/Ball Memorial Hospital, Muncie
- ◆ CHILD ADULT RESOURCE SERVICES/Beyond I Can Gallery & Gift Shop, Nancy Barnett, Muncie
- ◆ BSU Students' Permaculture, Faye Lichtsinn, Muncie
- ◆ Ball State University Geothermal Heat System, Mike Luster, Muncie
- ◆ John XXIII Retreat Center, Sister Joetta Huelsmann, Hartford City
- ◆ First Christian Church Community Garden, Hartford City
- ◆ Payne's Restaurant, Gas City
- ◆ Taylor University Green Energy Programs, Kevin Crosby, Upland
- ◆ Red-Tail Land Conservancy, Barry Banks, Muncie
- ◆ Muncie Bureau of Water Quality, John Craddock, Muncie
- ◆ Downtown Farmstand, Dave Ring, Muncie
- ◆ Ball State University, "The Greening of Middletown," Immersive Learning, Kelli Huth and Jeanette Castillo, Muncie
- ◆ Solar in Muncie, Youth Opportunity Center/Unitarian Universalist Church /Kennedy Library/
- ◆ Cornerstone Center for the Arts/Shافر Chapel A.M.E. Church
- ◆ Richmond Farmers' Market, Advisory Team, Richmond
- ◆ Gollither Farms, Brian Gollither, Cambridge

REGION FOUR: Franklin, Decatur, Ripley, Dearborn, Jennings, Ohio, Switzerland, Jefferson, Scott, Clark and Floyd counties

- ◆ SunWind Power Systems, Jeremy Coxon, Floyds Knob
- ◆ Amatroll Green Energy, Joe Reid, Jeffersonville
- ◆ Michaela Farm, Sisters of St. Francis, Oldenburg
- ◆ Auto Be Yours, Steve and Jenny Woodruff, Scottsburg
- ◆ Mid-America Science Park and Stray Light Optical Technologies, Bill Graham and Joe Pearson, Scottsburg
- ◆ Wake the Farm Up, Ande and Lauren Schewe, Milan
- ◆ Clearing House of Jefferson County, Molly Dodge, Madison
- ◆ Venture Outbusiness Center, Small Business Incubator, Madison
- ◆ Historic Downtown Farmers Market since 1809, Dave Adams, Madison
- ◆ Paul Hassfurder, Naturalist/Artist/Musician, Madison
- ◆ Langeland Farms, Patty (Redding) Fischer, Greensburg
- ◆ Food and Growers Association of Laughery Valley and Environs, Kathy Cooley and Michael Hood, Batesville
- ◆ Walhill Farm and Restaurant, Peter Hillenbrand, Batesville
- ◆ Off the Grid Home, Don Lamping, Oldenburg
- ◆ Margaret Mary Health Hospital, Batesville
- ◆ Historic Renovation of 1848 Eleutherian College, Nick Ellis, Jefferson County

REGION FIVE: Monroe, Brown Bartholomew, Lawrence, Jackson, Orange, Washington, Crawford, Perry, and Harrison counties

- ◆ Library on Wheels, Bob and Debbie Turner, Orleans
- ◆ Floral Footprints: Petals @ the Market, Stephanie Todd, Orleans
- ◆ White's Weaving: A new life for old denim, Dean and Mary Ann White, Orleans
- ◆ The Hinkle-Garton Farmstand, Daisy Garton, Bloomington
- ◆ Solar Systems of Indiana Inc., Bloomington
- ◆ The Vincent and Elinor Ostrom Workshop in Political Theory and Policy Analysis, Elinor Ostrom, Bloomington
- ◆ Indiana Hydroelectric Project, Tom Feldman, Lawrence County
- ◆ Natural Building Group, Bloomington
- ◆ Center for Sustainable Living, Lucille Bertoccio and Rhonda Baird, Bloomington
- ◆ The Community Bicycle Project, Bloomington
- ◆ Pay As You Throw, Scott Morgan, Bloomington
- ◆ Lost River Market & Deli, Debbie Turner and Co-op Board, Paoli
- ◆ Double Oak Farms Green Grocery, Columbus

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- ◆ EcoSource, Inc., Michael Greven, Columbus
 - ◆ Bloomington Playwrites, Sonja Johnson, Bloomington
 - ◆ SIREN, Bloomington
 - ◆ Bloomington Farmers' Market, City Hall, Bloomington
 - ◆ Bloomingfoods Co-op, Meg Torrence, Bloomington
 - ◆ Green Acres Neighborhood Ecovillage, Bloomington
 - ◆ Reinvest IU, Bloomington
 - ◆ Hoosier to Hoosier Community Sale, Bloomington
 - ◆ Bicycle Friendly Community and Campus, Bloomington
 - ◆ Certified Walk Friendly Community, Bloomington
 - ◆ National Award Winning Transit System, Hybrid Buses, Bloomington
 - ◆ Semi-Finalists for Georgetown University Energy Prize, Bloomington
 - ◆ Free Residential Recycling System, Bloomington
 - ◆ Award-Winning City Parks System, Bloomington
 - ◆ Turtle Trails, Kristina Seastrom, Nashville
 - ◆ Pam Raider, Green Communicator, Nashville
 - ◆ Interior Mythos, Michael May, Bloomington
 - ◆ Keeping Hill Eco-Housing, Tim Grimm, Columbus
 - ◆ IU Traditional Arts, Jon Kay, Bloomington
 - ◆ Permaculture Suburban Farmstead, Peter Bane and Keith Johnson, Bloomington
 - ◆ Environmental Interior Design, Jan Bannister, Columbus Ivy Tech Community College

REGION SIX: Knox, Daviess, Martin, Gibson, Pike, Dubois, Posey, Vanderburgh, Warrick, and Spencer counties

- ◆ Mulberry Creek CSA, Glenn, Gail, Maggie Shourds, Rockport
- ◆ Steckler GrassFed Organic Family Farm, Jerry and Marsha Steckler, Dale
- ◆ Oaklyn Library, Pam Locker and Dr. Chris Hochwender, Oaklyn
- ◆ Tin Man Brewing Co., Nick Davidson, Evansville
- ◆ Verde Partners, Jenny and Rick Lambie, Wadesville
- ◆ Evansville Area Creation Care, Carol Oglesby and Shane O'Neill, Evansville
- ◆ The Granola Jar Café and Bakery, Nealie and Ryan Anthony, Evansville
- ◆ Adele's Naturally Inc., Faye Gibson, Evansville
- ◆ Green Tree Plastics, Brent Grafton, Evansville
- ◆ Mumford Hills Livestock, Mike and Sandy Mumford, Griffin
- ◆ Off the Fence Farms CSA, Gwen McTaggart, Evansville
- ◆ Stonewall Farms CSA, Bobby Cannon, Mt. Vernon
- ◆ Little Arts, Inc, Katie Field, Evansville
- ◆ Seton Harvest CSA, Daughters of Charity, Evansville

- ◆ Dandy's Green Cleaning, Tasha Long, Evansville
- ◆ Soap Solutions, Evansville
- ◆ Elbert's Natural Food Market, Evansville
- ◆ New Harmony and Artisans Market, Steve Cochran, New Harmony
- ◆ Historic Newburgh Farmers Market, Carol Schaefer, Newburgh
- ◆ Vanderburgh County Farm Bureau Farmers Market, Patty Davis, Evansville
- ◆ New Harmony Soap Company, Jim and Stephanie Spann, New Harmony
- ◆ Farmer's Daughter Bakery and Café, Sarah Wolfe, Princeton
- ◆ Evansville-Area Trails Coalition, Drew Hays, Evansville
- ◆ Wesselman Nature Society, John Scott Foster, Evansville
- ◆ Morton Solar, LLC, Brad Morton, Evansville
- ◆ River City Food Co-op, Lisa Sutton, Evansville
- ◆ Newburgh Library, Newburgh
- ◆ Natural Blessings, Vincennes
- ◆ Vincennes Community Garden, Jen Holscher, Vincennes
- ◆ Whole Sun Designs, Ryan Zaricki, Wadesville
- ◆ Natural Meadow, Jasper Campus of Vincennes University, Jasper
- ◆ Patchwork Central, John and Amy Rich, Evansville

REGION SEVEN: Greene, Sullivan, Owen, Clay, Vigo, Putnam, Parke, Vermillion, Fountain, and Montgomery counties

- ◆ ISU Conservation Champion, Stephanie Krull, Terre Haute
- ◆ Oakley Observatory at Rose-Hulman, Terre Haute
- ◆ Covered Bridge Festival, Dixie Kunze, Parke County
- ◆ Litter Pickers by Bicycle, Rance Fuqua and Walter Baldauf, Terre Haute
- ◆ Ditzler Orchard, Judy Ditzler, Terre Haute
- ◆ Greener Scenes Aquaponics, Mat Pollom, Terre Haute
- ◆ Rain or Shine Momma, Linda McGurk, Fountain County
- ◆ Green Minds, Linda McGurk, Kay Hunter, Alinda Dickinson, Fountain County
- ◆ Baesler's Market, Casey Baesler, Terre Haute
- ◆ Turtle Rescue, Amber Slaughterbeck, Saint Mary-of-the-Woods
- ◆ Vigo County Library Recycling Champs, Ashley Wadsworth, Terre Haute
- ◆ Union Hospital Community Garden, Patti Weaver, Terre Haute
- ◆ City Hall, Duke Bennett and Steven Flowers, Terre Haute
- ◆ Putnamville Correctional Facility, Michael Callahan, Putnamville
- ◆ The Swiss Connection, Alan, Mary and Kate Yegerlehner, Clay County
- ◆ TREES Inc., Terre Haute
- ◆ White Violet Center for Eco-Justice, Lorrie Heber and the Sisters of Providence, Saint Mary-of-the-Woods

-
- ◆ Terre Food Cooperative, Robyn Morton, Terre Haute
 - ◆ Bates Family Farm, Jerry Bates, Cloverdale
 - ◆ Greencastle City Parks and Recreation, Roderick Weinschenk, Greencastle
 - ◆ Turn to the River, Mary Kramer, Terre Haute
 - ◆ Dobbs Memorial Park and Nature Center, Carissa Lovett, Terre Haute
 - ◆ Community Gardens with Children, Shitka Bhattacharya, Terre Haute
 - ◆ Our Green Valley Alliance for Sustainability, Terre Haute

REGION EIGHT: Boone, Hamilton, Madison, Hendricks, Marion, Hancock, Morgan, Johnson, and Shelby counties

- ◆ Mayfield Green Housing Project, Frankie Morton, Indianapolis
- ◆ Hands On Indiana, Marilyn Gatin, Indianapolis
- ◆ Solar Roof, Ray Wilson, Indianapolis
- ◆ Urban Forests, Kevin Smith, Anderson
- ◆ Eskenazi Hospital, Sidney and Lois Eskenazi, Indianapolis
- ◆ The Butler Way, President James Danko, Indianapolis
- ◆ IUPUI Sustainable Focus, Indianapolis
- ◆ Make Change Indy, Rachel Skelton, Indianapolis
- ◆ The Children's House, Mary Sexson, Indianapolis
- ◆ NERKA Faith Farm, Niki, Eli, Rick, Karen, and Amanda Hersberger, Anderson
- ◆ Blue Indy Electric Car Share, Indianapolis
- ◆ Garden on the Go, IU Health, Indianapolis
- ◆ Campus Kitchen, IUPUI, Indianapolis
- ◆ Garden of Eat'in, Chris Dobbins-Guill, Fortville
- ◆ Apple of His Eye Orchard, Dick and Jude Sochacki, Anderson
- ◆ Peaceful Grounds, Linda Profitt, Indianapolis
- ◆ Ivy Tech Culinary Arts, Thom England, Indianapolis
- ◆ White River Hiking-Biking Trail, Kevin Smith, Anderson
- ◆ Indy Urban Acres, Tyler Gough, Indianapolis
- ◆ Pogue's Run Grocer, Nathan Roberts and Allen Walker, Indianapolis
- ◆ Green Tire Reclamation, Daniel and Diana Mckenzie, Anderson
- ◆ Fall Creek Watershed Partnership, Leslie White, Hamilton/Hancock/Madison/Marion
- ◆ Counties' Water Conservation Districts
- ◆ Unleavened Bread Cafe, Elease Womack, Indianapolis
- ◆ Echo Automotive, Anderson
- ◆ Seed and Nut Gathering, Greg Spencer, Anderson
- ◆ Freewheelin' Community Bikes, Nancy Stimson and Jennifer Cvar, Indianapolis
- ◆ Harvestland Year Round Farm, David Robb, Lapel

- ◆ Robin Run Green Team, Bob Glass, Indianapolis
- ◆ We are Madison County, Luke Renner and David Neidert, Pendleton
- ◆ Good Earth Natural Foods, Bob Bennington and Rudy Nehrling, Indianapolis
- ◆ Crooked Creek Farmers Market, Crooked Creek CDC, Indianapolis
- ◆ Hoosier Farmers Market Food Hub, Roy Ballard, Greenfield
- ◆ Indy Reads, Travis DiNicola, Indianapolis
- ◆ The Bicycle Hospital, Charles Squires, Indianapolis
- ◆ IPS Center for Inquiry Magnet Schools, Christine Collier, Indianapolis
- ◆ Time for Three, Zach DePue, Nick Kendall and Ranaan Meyer, Indianapolis
- ◆ Katz & Korin, Sally Franklin Zweig, Indianapolis
- ◆ Big City Farms, Matthew Jose, Indianapolis
- ◆ Buckskin Bikes, Ben Orcutt, Anderson
- ◆ TF Publishing, Jim Purcell, Indianapolis
- ◆ Kheprw Institute, Imhotep Adisa, Indianapolis
- ◆ IPL Green Power Option, Glenn Livers, Indianapolis
- ◆ Training, Inc., Peggy Frame, Indianapolis
- ◆ Urban Recycle, Carol Wellman, Speedway
- ◆ Bicycle Garage Indy, Randall Clark, Indianapolis
- ◆ Jobs With Justice, Indianapolis
- ◆ Endangered Species Chocolate, Wayne Zink, Indianapolis
- ◆ Global Gifts, Sam Carpenter, Indianapolis
- ◆ Traders Point Creamery, Jane Kunz, Zionsville
- ◆ Peace Learning Center, Tim Nation, Indianapolis
- ◆ Irvington Green Initiatives, Irvington Development Organization, Indianapolis
- ◆ Indianapolis Rain Garden Project, American Society of Civil Engineers, Indianapolis
- ◆ Center for Urban Ecology, Butler University, Indianapolis
- ◆ Hoosier Roadside Heritage Program, INDOT
- ◆ Indiana Renewable Energy Association (InREA), David Hippensteel and Mac Williams, Indianapolis
- ◆ Hoosier Interfaith Power and Light
- ◆ Broad Ripple Brew Pub, John Hill, Indianapolis
- ◆ Indiana Outfitters, Eric Stallsmith, Indianapolis
- ◆ Salon Orange, Indianapolis
- ◆ Recycle Force and Work Force, Inc., Indianapolis
- ◆ Goose the Market, Chris, Eley, Indianapolis
- ◆ Efromyson Conservation Center, Mary McConnell, Indianapolis
- ◆ Energy Efficient Home, Bernard Lee, Fortville
- ◆ Indiana Grown, Indiana Department of Agriculture, Indianapolis
- ◆ Wetland Eco Lab, Marian University, Indianapolis
- ◆ Benedict Inn and Conference Center, Beech Grove

REGION NINE: Benton, Warren, White, Cass, Miami, Wabash, Tippecanoe, Carroll, Clinton, Howard and Tipton counties

- ◆ Home Arts, Foy Spicer, North Manchester
- ◆ Hawkins Family Farm, Jeff, Kathy, and Zachary Hawkins, North Manchester
- ◆ Childrens Circus, Linda Cawood, Peru
- ◆ Purdue Master Gardeners Program, Rosie Lerner, West Lafayette
- ◆ Graduation Pledge of Social and Environmental Responsibility, Manchester College
- ◆ Purdue Eco-House, Kevin Rodgers and Eric Holt, West Lafayette
- ◆ Food Waste Digester, Purdue University and City of West Lafayette collaboration
- ◆ Public Events Recycling Initiative, Jim and Becky Miller, Battleground
- ◆ Lone Balsam Farmstead, Rod and Janet Glover, Russiaville
- ◆ Boswell Community Garden, Michelle Scherer, Boswell
- ◆ Joyfield Farm, Cliff and Arlene Kindy, North Manchester
- ◆ Purdue Solar Racing, West Lafayette
- ◆ Swift Enterprises, Brian Stirm, West Lafayette
- ◆ Middle Eel River Watershed Initiative, Terri Michaelis, Manchester College
- ◆ Benton County Wind Farms, Jimmy Bricker, Fowler
- ◆ Wabash River Keeper, Rae Schnapp, W. Lafayette
- ◆ Purdue Green Roof, Civil Engineering Student Advisory Council, West Lafayette
- ◆ RDM Aquaculture, Karlanea and Daryl Brown, Fowler
- ◆ Kokomo City Parks, Randy Morris, Kokomo
- ◆ Hemp Circle Industries, Brandon Pitcher, Kokomo

LEGACY CLIMATE-RESILIENT COMMUNITIES

Institutions or municipalities that have documented substantial progress toward resiliency by a mix of collective and individual practices are listed here. Most of these places have also been honored by the Indiana Association of Cities and Towns (IACT) as exemplary “Green Communities.” There may be others worthy of this recognition and they will be added to our website roster as they become known to us.

- ◆ *City of Whiting, Mayor Joseph Stahura*
- ◆ *City of Cedar Lake, Town Administrator Jill Marr*
- ◆ *Town of Munster, Town Manager Dustin Anderson*
- ◆ *Town of Dyer, Town Administrator Rick Eberly*
- ◆ *City of South Bend, Mayor Pete Buttigieg*
- ◆ *PHJC Center at Donaldson, Provincial Sister Nora Hahn*
- ◆ *City of Goshen, Mayor Allan Kauffman*
- ◆ *City of Fort Wayne, Mayor Tom Henry*
- ◆ *City of Muncie, Mayor Dennis Tyler*
- ◆ *City of Union City, Mayor Bryan Conklin*
- ◆ *City of Fishers, Mayor Scott Fadness*
- ◆ *City of Noblesville, Mayor John Ditslear*
- ◆ *City of Carmel, Mayor Jim Brainard*
- ◆ *Town of Cicero, Clerk Treasurer Jan Unger*
- ◆ *City of Westfield, Mayor Daniel Knapik*
- ◆ *City of Lafayette, Mayor Tony Roswarski*
- ◆ *Robin Run Village, CEO David Pruett*
- ◆ *City of Indianapolis, Mayor Joe Hogsett*
- ◆ *Englewood Christian Church and Englewood Community Development Corporation,
Rev. Michael Bowling, Joe Bowling and David Price*
- ◆ *City of Bloomington, Mayor John Hamilton*
- ◆ *Orange County, Commissioner Don Brewer*
- ◆ *Living Roots EcoVillage, Founder Michael Hicks*
- ◆ *City of Evansville, Mayor Lloyd Winnecke*
- ◆ *City of Greencastle, Mayor Sue Murray*

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Sustainable Indiana 2016 began with the formation of "Transition Teams" that were made up of local sustainability leaders and practitioners in each Region of the state. Their names are too numerous to list here but their advice and support breathed life into the project's early vision.

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—John Gibson, State Coordinator

—Judy Voss, Deputy State Coordinator

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– The Earth Charter Indiana Staff

A Letter to Future Hoosiers

I'm Sorry

I'm sorry we didn't do enough to challenge and bring an end to the destructive whirlwind we called modern life

I'm sorry our ecology wasn't deep enough and our initiatives weren't green enough

I'm sorry we relentlessly drilled holes into the deepest depths of our mother to exploit her of finite fossil fuels, only to burn holes in the highest heights of our ozone,

A willful ignorance like sticking a metal fork in a socket in the name of infinite growth

I wonder when our own breath will be considered pollution?
CO2 won't help sustain life anymore but instead add fodder to the fire chamber, greenhouse of hell we will come home

We never put out an amber alert for the vanishing glaciers who disappear like missing kids on CNN

I fear the day when weather patterns mimic biblical plagues like El Nino air pressure is a column of fire, the irony of the name El Nino is it means Child of Jesus

I cringe at the idea of a 70 degree Christmas in the midwest because a sunny winter here means sheer devastation elsewhere,

Most feel safe in the moment but karma will conjure a perfect storm of political unrest and bad habits, a tailor-made catastrophe that will seal our fate like the polar bear who had to grow gills or how we'll all be environmental refugees forced to inhabit the Pacific Ocean Garbage Patch, giant continental size trash island, floating so out of balance even the horizon becomes crooked

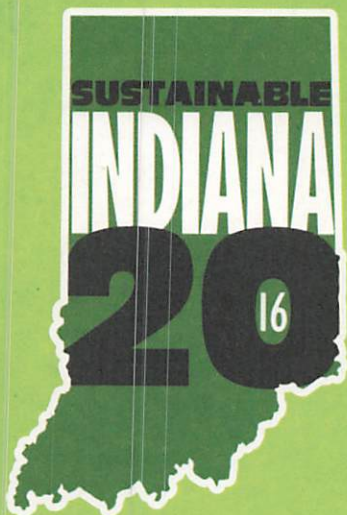
I'm sorry we never stopped the billowing smoke stack of empty rhetoric, the maddening cacophony of compounded interests, lies and blind greed

My only hope is that this insanity is not accepted by you, I'm sorry our actions and lack of courage has already sealed your fate, please learn from our mistakes

Despite utter peril remember one thing, you all will have your window of opportunity to challenge the shallow power of those who rule, a chance to politically edit a pre-written prophecy and find your voice, don't be defeated by the past's lack of humanity, bloom where planted even if the soil is toxic, we must strive to create a world where we can embrace the role of being true stewards and the abundant love of our mother

—by Mathew Davis

Sustainable Indiana 2016 is a **Indiana Bicentennial Legacy Project of Earth Charter Indiana**. Our mission has been to collect and celebrate stories of people who are taking the lead on a sustainable future in Indiana. This book contains some of those stories, for Hoosiers and by Hoosiers, to serve as a guide to a future that gives us a deeper and healthier connection to our environment and each other.



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