

GENTILLY RESIDENT'S GUIDE TO DO IT YOURSELF SOIL CLEAN UP USING NATURAL PROCESSES

Written by the Common Ground Relief Meg Perry Healthy Soil Project

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Introduction

Hurricane Katrina brought many challenges to the residents of New Orleans. Part of the rebuilding process is not only repairing our structural homes, but our land as well so that we come home to a safe, healthy place to live and thrive. Toxic soil clean up is important to the rebuilding process.

Every city in the US is heavily contaminated by chemicals that are potentially deadly. The greater New Orleans area also has a history of oil and chemical industries that generate and store thousands of tons of toxic chemicals. When hit by the floodwaters and hurricane winds of both Katrina and Rita, many of these chemicals floated out of their storage locations and into peoples' homes in adjacent neighborhoods. These toxic spills will create long-term health risks to people in contaminated areas unless soil and water are fully cleaned up.

Fortunately while clean up must take place on a large scale, there are things we can do immediately and inexpensively to make our homes, yards, parks, and schools safer places.

Easy and Natural Toxic Soil Clean Up

The most common way to clean up toxic soils is to have the contaminated layer of ground removed. This requires contractors and can be extremely costly. Fortunately, natural processes can also break down or extract toxins from the soil. Cleaning up soil this way is inexpensive and you can do most of the work on your own.

There are several kinds of toxins that contaminate the soil in areas of New Orleans. Each can be dealt with in a different way. Some contaminants can be broken down by bacteria and fungi. Heavy metals, which cannot be broken down, can be extracted by certain plants. As these plants remove toxins from the soil they store them in their roots, stems, or leaves. That way when you remove one of the plants from the ground and dispose of it carefully you are removing a small amount of poison from your land over time making the soil safer for our communities simply through gardening.

The Common Ground team is pleased to support interested residents with the information, resources, advice, materials, training, and in some cases even start-up labor, so that we can together use these natural processes to make New Orleans safe.

Soils

What might be in your soils

The sediment deposited by flood waters contains unsafe levels of certain contaminants: arsenic, diesel fuel and other petrochemicals, heavy metals, phthalates (chemicals used to soften plastics), polyaromatic hydrocarbons (PAHs), and pesticides.

While all flooded areas have high contamination levels, many areas in particular have reasons for concern. These include the Gert Town area surrounding the Thompson-Hayward Chemical Reformulation Plant, the Agricultural Street Landfill area, and the area affected by the Murphy Oil Refinery in St. Bernard Parish. Other areas of concern include New Orleans East and the ___ ward (near golf course). In order to create a healthy environment, it is important to know where these toxins came from, and how they will affect you.

Arsenic levels in New Orleans were high before the storm, with a Louisiana background acceptable level much higher than the EPA acceptable level. A lot of the arsenic came from uses of chemicals in households- herbicides, insecticides (historically used in cotton production), pesticides, and even some fertilizers people apply to supposedly improve the health of their soil. It is a concerning heavy metal that can increase risk of cancer, cause damage to the brain and nervous system, and cause harm to the reproductive system and genetic material.

Lead contamination was high in New Orleans even before Katrina from the historic use of lead paint, leaded gasoline, and emissions from garbage incinerators. These spread during the flooding as well as new sources of lead from flooded car batteries. Lead may cause damage to the brain and nervous system, cause reproductive problems, and developmental disorders. Lead poisoning symptoms include a decline in intellectual ability. Lead exposure is particularly dangerous for children!

Petrochemical contamination includes diesel fuel, crude oil, and compounds from petroleum production. These contaminants come from oil spills and the flooding of cars and underground fuel storage tanks. The Murphy Oil refinery released 1.05 million gallons of crude oil during Katrina, a spill larger than that of Exxon Valdez in Alaska. Various canals and 1800 homes in an area of 1 square mile were affected. Exposure to crude oil can cause skin problems if the sediment gets on bare or broken skin. Short contact with crude oil for short periods may cause respiratory infections, itchy, red, sore, peeling skin and increases with sun exposure. One of the dangers of petrochemicals is the existence of PAHs and Organo Chlorines.

Polycyclic aromatic hydrocarbons (PAHs) which are serious compounds also present in other sources. High levels of PAHs can increase risk of cancer, cause reproductive problems and organ damage. PAHs in New Orleans come from soot and petroleum,

pesticides, and the burning of garbage at landfills, such as the now-closed Agriculture Street Landfill. The Agriculture Street Landfill was partially removed from the Superfund site list after being capped with clay in 1997- 2002. When it became a superfund site a main concern was the carcinogenic polynuclear aromatic hydrocarbons (cPAHs), lead, and arsenic. It is not known how the flood disturbed the site.

Persistent Organic Pollutants (POPs) include pesticides and herbicides such as DDT, aldrin, dieldrin, and toxophene. These chemicals degrade very slowly, stick to soil, and can travel long distances attached to dust particles. They can enter the bloodstream through breathing contaminated air or touching contaminated soil and can take weeks to years to exit the body. Exposure to small amounts over a long time can result in a build up of the toxins on the body. Exposure to moderate amounts over time causes headaches, dizziness, irritability, vomiting, uncontrollable bowel movements, and autoimmune diseases. Due to the flooding of the Thompson Haywood Pesticide Chemical Company site in Gert Town, EPA testing following Katrina revealed high levels of banned Persistent Organic Pollutants (POPs) in the community.

Other Heavy Metals:

Chromium contamination may come from steel, leather, and textile industry as well as coal combustion and waste disposal. Too much chromium can cause skin rashes, nose irritations, upset stomachs and ulcers, respiratory problems, weakened immune system, kidney and liver damage, alteration of genetic material, lung cancer or death.

Cadmium ends up in the soil from mining of zinc, lead, and copper. Manufacturing, waste combustion, and burning fossil fuels also contribute. Cadmium strongly binds to organic matter in soil making earthworms and microorganisms susceptible to poisoning.

How to find out- soil testing and available maps

Soil Testing

The most exact way to learn about which toxins are in your soil is to collect some soil from your land, using a special test kit, and have it tested at a testing center. The results, when you receive them, will tell you how much of each toxin you tested were in your soil sample.

Easy to use test kits are available from Louisiana State University Agriculture Centers, or at Common Ground's distribution center at the corner of Pauline St. and N. Claiborne in the 9th Ward or 1700 Deslone in the Lower 9th Ward. The free kits include a small box with directions to follow. The box should be filled up with soil scraped from the surface using a plastic spoon from a sealed package and non-powdered latex gloves. You can choose to have samples from different areas in your plot analyzed separately at a larger cost or collect soil from different areas in the same box. Fill out the form with the kit. Under desired analysis we recommend testing for the AgCenter Routine, Oil, and the second metal category (Zinc, Arsenic, Cadmium, Lead). For each box this will cost \$15.

While the Agriculture Center will tell you about important metal levels such as lead and arsenic, it does not test for other chemicals of concern. If you would like extensive tests

at greater costs, contact a private company such as those listed in the resources section of this booklet.

Maps and Resources

Another option is to use tests that have already been done all over the New Orleans area by various groups including the Environmental Protection Agency, the Louisiana Bucket Brigade, and the Natural Resource Defense Council. These tests have been mapped so that you can access the data and look at what chemicals have been found in your area. We recommend that you use this booklet and treat your soil based on these groups' information about specific toxins in your area. We have included a map of _____ in this booklet. More data is available at:

www.deq.louisiana.gov, click the "News" icon, scroll to "Hurricane Information", and click "Sediment sampling maps". From here, find your zip code and click to find out about specific concerns for your neighborhood.

Natural Resources Defense Council:

<http://www.nrdc.org/legislation/katrina/katrinainx.asp>

Louisiana Bucket Brigade:

<http://www.labucketbrigade.org/katrina/index.shtml>

How To Read Your Results

The soil tests that you receive will give you only numbers and it will be up to you to interpret these results. You can use the charts in the index of this booklet to compare your results to the standards set by various agencies. Any value above the numbers given, usually in parts per million, are considered unsafe. We recommend using the Canadian Agriculture standards, which regulate what levels of toxins in the soil are safe to grow food on. The Louisiana RECAP standards are what the government is using to determine which areas must be cleaned up in order for residents to return. We believe these threshold levels to be too high for residents' safety.

Strategies for Cleaning up Your Soil

Plants (Phytoremediation)

Plants are one of the main ways to remove toxins from your yard and to improve soil health. All plants naturally absorb nutrients from the soil and store them in their roots, shoots, and/or leaves. Some absorb toxins in significant amounts- these are called hyper-accumulators and are most useful in restoring your soil. Certain plants absorb certain toxins. When you know what's in your soil you can start to plant according to what you want to remove. Listed below is a planting guide and how to plant most successfully is explained in a step-by-step guide later in this handbook. Because these plants are absorbing toxic substances, throw them in the garbage or treat as toxic waste when they are full-grown. Do not eat plants used to treat soil!

Some of the best hyper-accumulators are sunflowers and Indian mustard greens. Sunflowers extract lead but do not store any in their seeds so they are safe to eat! This is rare. Indian mustard removes both lead and arsenic in different conditions. If Indian mustard (*Brassica juncea*) specifically isn't available, any mustard greens are another option. A chart of what plants to use is below, with the most effective plants listed first for each poison.

Plants that take in Heavy Metals

Lead	Sunflower, Indian Mustard, Peas, Asiatic dayflower
Arsenic	Indian Mustard, Brake Fern, Lambsquarters
Chromium	Indian Mustard, Spinach, Carrots
Selenium	Indian Mustard
Cadmium	Radish, Indian Mustard, Pea, Corn, Spinach, Carrot
Nickel	Indian Mustard, Spinach, Carrot
Zinc	Indian Mustard, Spinach, Carrot
Copper, Manganese, Iron	Spinach, Carrot

Mushrooms and Fungi (Mycoremediation)

Mushrooms are decomposers, meaning that they break down dead things in the environment. In the same way that mushrooms decompose they break down petrochemicals and pesticides into non-toxic substances. Certain toxins are broken down better by certain mushrooms. The Oyster mushroom is particularly useful for the toxins we are trying to get out of the soils of New Orleans. By growing the mycelia (the underground part of the mushroom) in a sterile environment we can produce a great deal of mushrooms and grow them on a bed of woodchips. The enzymes that the mushrooms produce break down the toxins we are targeting.

Bacteria

Compost Tea

Compost Tea is a water based brew made of millions of air loving microorganisms which can be applied to soils, plants and flood sediment to boost the bacterial health of those areas and begin to detoxify the soil. By adding naturally occurring bacteria into the soil we can jump start the natural process of breaking down toxins. Compost tea can be especially effective in breaking down petrochemicals. It is also an important first step in preparing toxic sites for growing plants that will take up some of the city's most abundant heavy metals.

Compost tea is easy! It's made from worm castings, dechlorinated water, molasses and air. Compost tea kits can be found at Common Ground's Pauline Street Distribution Center for check-out. A complete how-to booklet is included in the kit. Please call Kathryn at 406-431-8337 for more information about our compost tea lending program or for further details on how to set up a brewing station of your own.

Efficient Microbes and Mold

“EM”, a liquid containing helpful bacteria, is being used for mold abatement and remediation in many Common Ground house-gutting projects. When EM is sprayed in an untouched moldy house and left for a day the house becomes much safer and cleaner for crews to enter. EM has been found to be an effective remedy when sprayed on a house gutted and scrubbed (cleaned with a brush and frequently changed solution of vinegar and borax water) or gutted and pressure washed. This group of bacteria kills and prevents further mold growth. While bleach also kills mold it has been shown to be less effective at keeping the mold from growing back over time.

For more information about Common Ground’s EM project, contact Carolina at (360) 223-0929 or Loulou@riseup.net. EM can be ordered at emdisasterrelief.net

Step by Step Clean Up

To begin toxic-soil clean up:

Places to find supplies are listed in the index of this booklet

Step1: Soil test and evaluation

Use test results or already existing data to determine which toxins you wish to treat for. Treat chemicals with the highest toxicity or for those that you have the resources to treat most immediately.

Step 2: soil preparation

If the soil is dead or compacted begin by aerating the soil. When there is air in the soil beneficial bacteria (and other beneficial organisms like worms) can thrive and plants can grow. This can be done by piercing the soil with a garden fork or shovel but don’t turn the soil because this may bring toxic substances to the surface. If grass or other plants are already flourishing you may not need to aerate the soil. Wear at least a paper respirator when working in the soil as lead dust is common in many New Orleans neighborhoods. Then spray compost tea to increase the amount of beneficial bacteria.

Step 3: Treating for Toxins

Treating for high levels of heavy metals like lead and arsenic

Rotation of processes: Different soil conditions are needed for the removal of metals such as lead (cationic metals) and metals such as arsenic (anionic metals)- that is, they cannot both be removed at once. Soil must be acidic (low pH) for removal of lead and other cationic metals to work well. Soil must be basic (high pH) for removal of arsenic and anionic metals to occur. This means that if you have both lead and arsenic in your soil, you will need to remove the toxins in several steps, rotating between acidic soil conditions and basic conditions to remove both toxins from your soil.

-For Lead, Antimony, Barium, Cadmium, Copper, Mercury, Thallium, Zinc
(cationic metals)

When trying to extract this group of heavy metals lower the amount of acid in the soil- it's pH level- by adding coffee grounds, organic sulfur or pine needles. The best plants to use are Indian mustard and sunflowers. Indian mustard will also uptake selenium, sulfur, nickel, zinc and copper. Plant seeds as directed, covering your lawn, water and tend normally. When plants are grown spray compost tea around each plant a week before harvesting because this makes metals available to be absorbed by plants. Harvest and carefully discard in plastic bags that will go to the dump or be treated as toxic waste. Do not eat the mustard greens!

-For Arsenic and Chromium (anionic metals)

These two metals must be removed in more basic conditions (higher pH) using thinly spread Phosphorous in some organic form such as bat guano or agricultural lime. Distribute Indian mustard seeds to uptake toxins. With the resources mushrooms are applied in this step.

Because these metals are best extracted in opposite conditions when both are present start first with the metals that are most highly concentrated. If both arsenic and lead are present, with higher concentrations of lead, for example, lower the pH and plant lots of sunflowers and Indian mustard to absorb lead. When these plants are fully grown harvest and throw them away. The next crop of Indian mustard should be in beds of high pH to treat for arsenic. Raising the pH to extract arsenic will also help immobilize lead.

Treating soils for fuels and oils

Be sure to follow steps 1 and 2. Application of aerated compost tea is particularly important. Aeration is the best first step for breaking down large amounts of fuels because it encourages the growth of beneficial bacteria that will multiply and speed up this process.

Step 3: If you have the resources, apply fungi such as oyster mushrooms to break down fuels. Spreading compost (see "general tips for gardening in the city section") will also break down many of the petrochemicals, which are complex organic compounds.

Step 4: Retest soils and continue applications until the toxins have been reduced to safe amounts. It is impossible to predict how long this will take using these methods because of ever-changing soil conditions, however it will probably require many repetitions.

Treating for other dangerous substances

The soil may also contain toxic levels of industrial and chemical residue. Many of these chemical compounds can cause cancer. But testing for them is expensive and must

be done by a private lab. However, you can use the suggested sources in “maps and resources” sections to look at mapped areas that have already been tested and locate your neighborhood. If you suspect these toxins are in your soil, the following applications can be used to begin to treat your soils. These methods will help, but they will not fully eliminate the health risks these toxins pose.

Organo Chlorines (persistant pesticides like PCBs)	Pumpkin, Zucchini, Tall Fescue, Rye, Spearmint, Oyster Mushrooms and Turkey Tail Fungi
DDT	Indian Mustard, Pumpkin, and Zucchini
PAHs (polycyclic aromatic hydrocarbons)	Fescue, Small Bluestem, Big Bluestem or Indiangrass and Oyster Mushrooms

*Grasses will cover the whole yard, grow rapidly, and can be cut, removing toxic chemicals and grow again to extract toxins.

Tips: General Practices to increase soil health and personal safety

Personal Safety:

- Avoid direct contact with sediment. Touching sediment with bare hands, getting into your mouth or eyes, or breathing the dust could be hazardous.
- Wear protective clothing, such as Tyvek suits or coveralls, goggles, covers for boots and shoes, gloves, respirators (such as N95 masks). As the soil is toxic, when working in the soil you want to protect your self from direct contact, and breathing in the dust. This protective gear can be purchased at most hardware and home-improvement stores. Some protective gear can be found at distribution centers.
- When you're finished with any work that puts you in contact with sediment- either indoors or outdoors- immediately discard your Tyvek suit. This is a single-use item. Do not wear them in your car or bring them home. A respirator, however, can be re-used if the interior is kept clean.
- If you have asthma, other respiratory or cardiac conditions, or immune system conditions, you would be safer staying out of flooded areas, due to mold, particles, and sediment that are in the air.
- Do not bring young children into flooded areas, where they might touch sediment and then put fingers into their mouths.

Use of Pesticides and Termiticides

Commercial products for killing termites contain arsenic, as does all wood which is treated to prevent termite damage. This is how the majority of the arsenic, which is currently contaminating New Orleans yards, got there, even before the flood.

As you rebuild, you may want to consider buying locally grown wood that has not been artificially treated with termiticides, as locally grown woods are able to resist termites naturally and do not need arsenic treatments. Look in a phone book for local lumber companies and ask to be sure that the wood you are buying is untreated. (Pressure treated wood is a known source of arsenic). To further reduce the risk of termite infestation, also try to build your house so that its wooden parts do not touch the earth or concrete. Do not mulch next to the house or allow plants to grow within three feet of its walls. Keep moisture away from your house as much as possible by running gutter and drip lines far from the walls.

To treat for an infestation you already have, you can use boric acid, diatomaceous earth, and natural pyrethrins, all of which are available from Laughing Buddha Nursery in Metairie. You can also order termite products from Environment Sensitive Pest Control (512-754-7774 or 512-847-0909). To read further about termite-resistant building practices, visit <http://www.greenbuilder.com/sourcebook/termite.html>

General Guidelines for healthy gardening in the city:

There are some basic things you can do to make your soil safer and healthier. One of the most important things is to have a ground cover- something growing on the soil. This will hold down soil reducing dust with toxic particles that people can breath in. Plants also help water to be absorbed into the soil, and are very important during hurricane season. A yard full of weeds is better than nothing growing at all!

Organic gardening practices focus on soil health. They reduce the amount of toxins put into the soil (many of the toxins we see have been put into the soil through fertilizers and pesticides) and naturally increase beneficial bacteria that break down toxins and make environments in which plants can grow. Places where gardens already existed before the storm, such as the Common Ground Garden site, were healthier and able to recover quicker from the effects of Hurricane Katrina. This is why we have been able to grow food on this plot. Some general guidelines for growing in New Orleans are:

1. Make and/or add compost. Compost is broken down organic materials such as food scraps, leaves, straw, sawdust, and manure that become very healthy soil. Not only is compost a good way to keep food and yard waste out of a landfill (where it becomes contaminated), but it also returns nutrients to the soil and improves soil structure, something that is badly needed in much of New Orleans' soil as it is dredged and/or brought in as infill. Putting compost in your soil adds the beneficial bacteria needed to make it healthier. It has been proven that compost breaks down DDT, PCPs, and other PAHs. Compost can easily be made by letting certain foods decompose, or can be bought at stores.

For more information on beginning a compost visit <http://www.howtocompost.org/> For more information about why compost is an important first step in bioremediation visit

<http://www.natureswayresources.com/resource/infosheets/bioremediation.html>

2. Locate your vegetable garden at least ten feet away from heavily traveled roads and old painted structures. It appears that past high levels of air-borne lead may have settled on building surfaces and been washed off with rain so all soil near foundations of old buildings in large cities should be suspected of high lead levels.

2. Add lots of organic matter like composted yard wastes and composted manure to your garden area. These improve the health of your soil while helping to keep dust and dirt from blowing into the air. Also mulch and plant groundcover in your yard to stabilize the soil to keep dirt from becoming airborne.

3. Grow mostly fruiting crops (peas, beans, tomatoes, peppers, eggplant, squash, cucumbers, corn, etc.) -- these are safest because most plants don't store toxins in their fruits. Avoid eating the roots, stems or leaves of plants if your soil has high toxin levels. Do not plant greens- broccoli, kale, mustard greens, spinach and lettuce are some of the common greens that take up toxins. Cabbage is the safest of leafy crops.

4. Discard old, outer leaves of vegetables before eating; always peel root crops; wash all produce thoroughly with 1 tablespoon vinegar per 1-1/2 quarts of water.

5. Wash hands well after gardening, especially before eating. Make sure small children do not eat garden soil.

The Common Ground Meg Perry Healthy Soil Project

The Common Ground Collective is a non-profit formed in the wake of Hurricane Katrina to provide immediate aid in Gulf Coast region, as well as long-term support in rebuilding their communities in just and sustainable ways. In the months following Katrina, this grassroots, volunteer organization, has grown to over 50 organizers with a network of over 1700 volunteers providing relief to more than 50,000 residents in four Parishes- Orleans, St. Bernard, Plaquemines, and Terrebonne. Common Ground operates four distribution centers, free medical clinics, emergency home repair, legal and eviction defense work, free computer and phone access, a women and children's center, and other related projects. One of these projects is the Meg Perry Healthy Soil project, a team focused on ways that the community can restore itself to health using the safest, most practical methods. The team is working on test sites in high-risk areas in Gent Town, the Lower 9th Ward, the 9th Ward, Gentilly, and soon Murphy Oil in St. Bernard's Parish. Our work includes researching information pertinent to soil and community restoration, and making the resources available to support residents in cleaning up their homes. A connected project is focused solely on environmental data analysis and mapping for community access. We are constantly developing more effective ways to achieve these goals. Presently we offer:

- Supplies at distribution centers (seeds, soil test kits, etc.)
- Compost tea lending library

- Soil analysis and next steps advising
- Information and resources

For more information call Emily at (504) 913-5635 or Randy (914) 980 8458

The Sun Done Community Garden in Gentilly

At the corner of St. Dennis and Havanah Common Ground is working in the Parkway Partners Sun Done Community Garden. This soil has been tested, treated, and is safe to eat food from! We offer plant starts for your own garden, fresh food, and conduct Healthy Soil Project work from this site. We welcome visitors and workers- we frequently have volunteers working in the garden. Join us for lunch on Wednesdays, or for Sunday open houses.

For more information contact Emily at (504) 913-5635 or Ashley at (610) 256-1774.

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Resources:

Soil Testing Standards

Metal	Canadian Agriculture Standard (ppm)	Louisiana RECAP Standard
Arsenic	14	
Cadmium	1.6	
Chromium	120	
Copper	20	
Lead	60	
Mercury	0.5	
Nickel	32	
Selenium	1.6	
Zinc	220	

For more environmental health information:

- Natural Resources Defense Council: www.nrdc.org
- Louisiana Bucket Brigade: www.labucketbrigade.org
- Louisiana Environmental Action Network: <http://LEANWEB.org>
- Advocates for Environmental Human Rights (504) 919-4590
- Environmental Protection Agency www.epa.gov/katrina

- Physicians for Social Responsibility- Louisiana (504) 324-5545

Further information about natural healthy soil strategies:

- Compost: <http://www.howtocompost.org/>
- Mushrooms: Mycelium Running by Paul Stamets
- The Rhizome Collective- www.rhizomecollective.org

- US Geological Survey intro to bioremediation:
<http://water.usgs.gov/wid/html/bioremed.html>

For more information about soil testing data:

www.deq.louisiana.gov, click the “News” icon, scroll to “Hurricane Information”, and click “Sediment sampling maps”. From here, find your zip code and click to find out about specific concerns for your neighborhood.

Natural Resources Defense Council:
<http://www.nrdc.org/legislation/katrina/katrinainx.asp>

Louisiana Bucket Brigade:
<http://www.labucketbrigade.org/katrina/index.shtml>

Soil Testing Labs:

Louisiana State University Agriculture Center
LSU Ag Center
Cooperative Extension Service
US Dept. of Agriculture
PO Box 25100
Baton Rouge, LA 70894-5100

Regional Director
LSU AgCenter Crescent Region Office
6640 Riverside Drive,
Suite 200
Metairie, LA 70003-7110
(504) 838-1170, 1171 or 1172
(504) 838-1175 (fax)
Location: Jefferson Urban Office

Private Testing:

Analytical and Environmental Testing Inc.

1717 Seaboard Dr.
Baton Rouge, LA 70810
(800) 634-1930 or (225) 769-1930
www.aetesting.com

Perkin Elmer
45 William Street
Wellesley, MA 02481-4078, USA
Telephone 781-237-5100
(800) 767-4000 x 3023
(225) 907-3334

Local Resources

Parkway Partners
1137 Baronne St. New Orleans, LA 70113
telephone- 504-620-2224
info@parkwaypartners.com
contact: Mario Travella, Horticultural & Community Liason, (504) 813-7895 or mariotravella@yahoo.com

The New Orleans Food and Farm Network
New Orleans Food and Farm Network
320 Webster Street
New Orleans, LA 70118
www.noffn.org

Southern Sustainable Agriculture Working Group
Ssawg.org
Regional Supply Stores

Laughing Buddha Nursery
4516 Clearview Pkwy
Metairie, LA
(504) 887-4336
www.laughingbuddhanursery.com

Urban Organics
2805 St. Claude Ave
New Orleans, LA
(504) 945-8845

Tack in the Park
1001 Filmore Ave
New Orlean, LA
(504) 286-3063

For more leads contact Mario Travell at
Parkway Partners