Carytown Composting Plan
Prepared for the Carytown Merchant’s Association
The Carytown Composting Plan could not have been completed without the wisdom, knowledge, and guidance of the many stakeholders and experts interviewed, and the Professors who offered advice and criticism. Each person spoken to offered help and clarity on a complex topic and it is thanks to each of you that this plan has taken shape. Thank you all so very much.

I would like to give special thanks to my panel. Thank you for your hard work helping with the completion of this document.

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Composting is, in broadest terms, the biological reduction of organic wastes to humus. Whenever a plant or animal dies, its remains are attacked by soil microorganisms and larger soil fauna and are eventually reduced to an earthlike substance that forms a beneficial growing environment for plant roots. This process, repeated continuously in endless profusion and in every part of the world where plants grow, is part of the ever-recurring natural process that supports all terrestrial life. The entire composting process is difficult to contemplate in its full dimensions. Let’s just say that compost and composting are, like air, essential of life.

The Rodale Book of Composting (pg 1)
Executive Summary

Food waste is now the number one material entering landfills. When broken down anaerobically in landfills this organic waste produces methane, a powerful greenhouse gas. This plan seeks to divert food waste that would be headed for landfills from a particular area and to cycle it back into the natural food system through composting.

The Carytown Composting Plan has been prepared for the Studio II class in Spring 2013 as the last requirement of the Masters of Urban and Regional Planning program. Carytown is a shopping district located in the Museum District in the city of Richmond, Virginia. The Carytown Merchant’s Association is a non-profit organization consisting of business owners located in Carytown. The Carytown Composting Plan envisions an area in which restaurants within the shopping district divert compostable waste from the waste stream and begin mutually collecting compost. There is currently no collective composting or recycling plan and restaurants each handle waste management individually.

This plan is written with the help of stakeholders consisting of restaurateurs and professional composters. The knowledge of these key individuals has been invaluable to understanding this complex issue. In addition to stakeholder interviews a survey was conducted to determine the number of restaurants willing to participate in a composting plan. Practical trials were done at two restaurant locations to get a better understanding of the amount of compost coming out of area restaurants. The findings from this research directly influenced the recommendations for Carytown composting.

The key to successful composting relies upon organization, reliability of service, and community education and support. The Carytown Merchant’s Association, to initiate a communal composting program, will need to form a subcommittee and appoint a leader to organize the composting plan. Reliability of pick-up must be guaranteed to ensure ongoing maintenance and participation. Using a professional hauler will guarantee ongoing service. Finally, education will be a pivotal component to creating a culture of composting. Educating current and future participants is necessary for ongoing success of the program.

This plan is meant to serve the Carytown Merchant’s Association and the Carytown shopping district but could be used as a model for other shopping districts with multiple food service locations. This plan for communal composting can be applied elsewhere in the region. The Richmond region in the future could begin composting and recycling in a successful zero waste campaign and this plan could be a pivotal component to success.
Introduction
Purpose and Goals

The Carytown Composting Plan is written to fulfill the Studio II requirements for completion of the Masters of Urban and Regional Planning degree in the Douglas L. Wilder School of Government and Public Affairs at Virginia Commonwealth University. It was prepared between August 2012 and May 2013 for the Carytown Merchant’s Association (CMA) under the guidance of Raul Cantu, President of the Carytown Merchant’s Association. The CMA is a nonprofit organization consisting of businesses in Carytown governed by a board of business owners. Members include retail shops, restaurants, and grocery stores.

There are three main goals of the Carytown Composting plan: strengthening community ties, supporting local businesses, and reducing the impact of businesses on the environmental. This plan would provide positive publicity for the Carytown restaurants and grocery stores by demonstrating a commitment to the community and the environment.

The Carytown composting plan strengthens community ties by bringing local business owners together to discuss and find solutions to a common problem. It lets restaurant owners meet and form relationships with people in the community who care about environmental sustainability. It also gives restaurant owners a connection to the other side of the food equation, growers.

The composting plan supports local businesses by including an element of recognition to businesses trying to do the right thing environmentally. It showcases participating businesses and highlight the Carytown district for its efforts to be environmentally sustainable. The plan also utilizes small scale local businesses to collect the compost and provides an important material to local food growers.

The composting plan reduces the impact of businesses on the environment by diverting compostable waste from the regular waste stream. The plan will prevent the organic material that is now going to landfills from breaking down anaerobically and producing large amounts of methane by letting it break down aerobically in the natural composting process.

The CMA wants the composting plan because of its ability to strengthen community ties and support local businesses. The CMA is continuously looking for opportunities to work within the community to support local businesses and the composting plan is an opportunity to have a positive influence in the community by reducing the environmental impact of their businesses. The CMA is particularly concerned about solutions to issues accompanying composting. An important goal of this plan is to identify problems that could arise from the composting plan in the Carytown area and determine potential solutions to them. Through many interviews it has been determined that the CMA is particularly concerned with reliability of service, costs, pests, smells and reactions from neighbors. The purpose of this plan is...
to address each concern and find solutions that are a natural fit to the needs of each business in the association.

The CMA needs a composting plan because there are many aspects that will be difficult to navigate and a central plan for the CMA as a whole will be easier to implement than if each business attempts this on their own. The goal is to tie the community together while closing a waste loop. The plan is to get the restaurants in Carytown to separate compostable waste from their regular waste stream. Three methods have been determined as possibilities for composting. The first of these are partnerships between restaurants and local growers creating a closed loop system where food waste is used to bring about new urban produce growth. The second method is to collect compost at the Carytown Farmers market so it may be taken by local growers and community members. The third method is to hire a professional compost hauler. This is the most reliable method and the method best used to implement composting within the community as a whole. While this is the method recommended by the plan, each method has its merits and should be considered in certain situations that will be discussed. This plan is written to solve any problems or concerns participants could have with composting. The Carytown Composting Plan will use participation and knowledge from local experts and businesses to determine needs and best fit solutions to concerns presented by collective composting.
Carytown is a shopping district located in the Museum District of Richmond, VA. Carytown consists of 229 boutiques, restaurants, and specialty shops, over one hundred of which are locally owned. Within the Carytown area there are 4 major grocery stores, 30 casual dining locations, 7 fine dining restaurants, and 10 coffee and/or dessert shops. The Cary Court shopping center was one of the first strip shopping centers in central Virginia, opening in 1938. Cary Court was a success and quickly expanded along Cary Street. Many of the current stores were previously homes but the buildings lining Cary Street today are all businesses.

The Carytown Merchant’s Association is a nonprofit organization consisting of businesses in Carytown governed by a board of business owners. A letter to members regarding the new development including the Fresh Market grocery store states that “The Carytown Merchants Association supports economic growth that respects the integrity and historical significance of the commercial and residential community.” The board also works to promote and market Carytown shops through events such as the Watermelon Festival and the Carytown Beer and Wine Festival.

The Carytown Merchant’s Association has not tried collective composting before, but individual locations such as

Figure 2, Map of Carytown

Figure 3, Satellite Image of Carytown
Martin’s grocery are currently composting in compliance with a mission of sustainability. This plan in Carytown will support local businesses and will provide positive publicity to Carytown by supporting their mission of positive, local, economic growth and playing a role in strengthening the community.

Carytown business owners are interested in the local community and local food and have begun a seasonal outdoor weekly farmers market. This market has been located at 3300 West Cary St and runs on Sundays from 10-2. This year it has relocated to the Wells Fargo parking lot at 3201 W Cary Street. The mission of the Farmer’s Market is stated on its Facebook page. “The Carytown Farmer’s Market goal is to promote and enhance the unique character of Carytown while providing residents and visitors healthy alternatives grown by local farmer’s or made by area artisans. We aim to accomplish this by incorporating educational, commercial and social activities to make the market vital to the overall success to the area”.

The mission of the market is similar to the mission of this composting plan. The composting plan would promote character of Carytown by adding another level of cohesion through a joint effort towards sustainability. It promotes a healthy environment by helping to create rich soils to grow healthy food. This plan also incorporates educational, commercial and social activities by teaching benefits of composting, supporting businesses and creating opportunities to form new relationships.
Food waste is now the number one material going into landfills. The EPA estimates that around thirty five million tons of food waste was delivered to landfills and incinerators. (EPA, 2010) As much as fifteen percent of food waste going to landfills is coming from restaurants. This organic material breaks down anaerobically producing methane as a bi-product of decomposition. Methane is a greenhouse gas 21 times more powerful than carbon dioxide. Food waste in landfills is a serious issue that needs to be addressed.

Compost can be used as a highly valuable, nutrient rich way to improve soil for growing food. Compost improves soil quality by preserving plant nutrients to the advantage of the eco-system. It reduces the need for chemical fertilizers that are made out of non-renewable resources and can have negative consequences by polluting waterways through runoff. Compost also improves soil texture making it easier for soils to breathe and better hold moisture, making gardens increasingly drought resistant. Compost can make growing local food easier. (Rodale, pg 13)

Local food has become a number one trend in restaurants and is likely to continue to be very popular. With these facts in mind the Carytown Composting Plan is written to deal with large scale issues in a sustainable way. The Carytown Composting Plan will support businesses by contributing to trends such as local food and sustainability.
There are two primary planning theories directly influencing the approach of this plan, collaborative planning and local urban food planning. This plan is very sensitive to stakeholder interests. John Bryson writes in “What to do when Stakeholders Matter” about stakeholder identification and analysis. Bryson defines a stakeholder as any person, group, or organization who affects or is affected by the achievement of an organization’s objectives. This article primarily deals with the ability to determine who is a stakeholder. Through this article it was established who needs to be spoken with to determine the direction of the plan. The goal of determining and including stakeholders is to create public value. Bryson writes that plans fail, and by this he means fail to be implemented, because “decision makers failed to attend to interests and information held by key stakeholders” (Bryson, 2004, pg 23). Bryson believes that networks of stakeholders are and will continue to be extremely powerful and effective in decision making. The article explains the need to build “a winning coalition around proposal development, review, and adoption” (Bryson 2004, pg24). Success means satisfying stakeholder interests. This article specifically prompts the determination of key interests and issues that will make this plan a success by accessing knowledge of expert stakeholders.

The Carytown Composting Plan is about creating a closed loop in which wastes help to produce new goods. Urban food systems are an important but often overlooked aspect of planning. This plan is an example of local action in response to a global problem of unsustainable economic development. Farms use fertilizers to produce a product. Left over produce is thrown into the waste stream and allowed to decompose in a landfill further contributing to the waste problem. In the new closed loop, farm waste is reused back at the farm to put nutrients back into the soil. William McDonough writes in “Cradle to Cradle: Remaking the Way We Make Things” about commerce occurring within natural systems. Compost has a host of benefits to soil quality, water filtration, and also as a valuable resource that is wasted when left in a landfill. Tim O’Riordan’s “Globalism, Localism, and Identity” summarizes the movement of local identity and action as a way of acting on global issues. Local projects can influence local governments to transition towards a culture of sustainability that can influence economic and social advantages for individual localities. This work directs the project to seek to influence the community at large and be a working model away from dumping organic waste in landfills. The composting plan seeks to provide a way to strengthen community ties to influence a culture of sustainability. This plan describes a way to “create civic empowerment and local solidarity” (O’Riordan 2001).

“The Roadmap to Sustainability”, a sustainability plan by the City of Richmond, has several useful and relevant sections. The
plan actively seeks to encourage the development of community gardens and farmers markets increasing the accessibility to locally grown, healthy food. A goal for the city under Economic Development is to “Make local, healthy and sustainable food accessible and affordable” (Roadmap 2011, pg21). While the city does not currently have Green Business Districts it specifically suggests creating them and suggests “business improvement district funds could be used for…composting plans” (Roadmap 2011, pg 28). While a green business district will not have bearing on this particular plan, if this plan is successful it could be a model in the future for green business districts to follow. Supporting community gardens and networks of farmer’s markets is part of the city’s plan for sustainable economic development. The composting plan could directly contribute to local community farms and potentially to the Carytown farmer’s market. Another city objective is to “protect and enhance Richmond’s water resources” (Roadmap 2011, pg 48). The city wants to adopt best management policies to protect the water including an organic fertilizer policy. Compost can protect Richmond’s water resources by acting as a natural filtration system and by not adding pollutants to the water in runoff. Finally, the city has an objective to “improve the city’s solid waste system” (Roadmap 2011, pg 56). A composting program will reduce the waste flowing into the waste stream and breaking down in our landfills.

Anne Darby conducted her Studio II project based on the local food movement and the role of planning within it. She conducted many stakeholder interviews to better understand a very complex issue. Carytown Composts will take the approach of collaboration and stakeholder interviews to understand the concerns and barriers to the composting plan and to address issues and barriers to composting within the plan document, making implementation a simple and desirable process. Darby makes a compelling argument to support local foods and a local food system. One hopes that the composting plan will make food cheaper and easier to produce within the area and support the local community and economy. Darby’s work shows that dollars spent on local food remain in the community longer and local food helps to create urban to local linkages. Darby’s plan was written in 2008 and progress has been made with the availability and perceptions of local food. Because the local food movement has seen a rise in esteem and value a composting plan for Carytown to support local food production could produce significant public relations benefits for the participating restaurants and grocery stores. Darby specifically cites restaurants as facing barriers in the local food movement. Addressing these barriers will greatly contribute to the desirability of a plan that promotes their use. Partnerships between farmers and restaurants will promote linkages and relationships that will make the use of locally sourced options a more obvious and accessible choice.
Roadmap to Document

The conclusion of this introductory section lists a number of research questions that were explored to create this document. Each question has been framed as a piece of the puzzle to deal with the complex issue of composting.

The second section of this document describes the methodology and research done to understand this complex issue. Research on precedent communities was done to gain a better understanding of what has been done elsewhere regarding compost. A description of stakeholder interviews with a list of interviewees is provided to understand different perspectives on composting. A survey in Carytown was conducted and a description of its methodology is provided. Finally, practical trials were performed at two Carytown restaurants providing insight into the amount of waste produced.

The third section of this document details findings from the research and methodology section and possible solutions to issues. This section follows the list of research questions to ensure all issues and stakeholder concerns are addressed.

The final section addresses recommendations for the CMA to successfully achieve a composting program among the restaurants in Carytown. The first goal in recommendations deals with organization within the CMA to put the composting plan into action. The second goal details reliable waste management and the negotiation of the contract with a professional hauler. The third goal discusses promoting Carytown and the values of composting. This goal is about creating a culture that supportive of composting and environmental sustainability.

A conclusion describes how this plan can serve as a model for other regional shopping districts. It explains how composting is a piece of the larger environmental sustainability puzzle. It also challenges the community to strive towards constant improvement in reaching new sustainable goals.
Several key questions are addressed by this document. Research questions deal with needs of the businesses that could participate in the plan.

• How has composting been dealt with in other communities? Precedent examples of communities and businesses that compost are examined in order to get an idea of how a project such as this can be effectively done.

• What are the main concerns and barriers to a successful composting plan?

• Who would participate in the composting plan? Composting would not be a good fit for every restaurant. Some restaurants would be too small or not have enough compostable items, while others may simply not want to participate. Determining buy-in will be an important factor to determining compost amounts.

• What advice do professional composters have for a composting plan in the Richmond region? Advice from those with experience will be crucial to understanding all needs to create quality compost.

• What would be the legal issues involved? This is especially important to avoid any inquiries from the Health Department or the Virginia Department of Environmental Quality (DEQ). Legal issues would need to be understood from the outset and be dealt with in an effective and efficient manner.

• What would be the best way to adequately deal with pests and smells? The last thing any business owner wants is turning off customers or upsetting neighbors. Ensuring issues are dealt with before they become problematic is imperative to the success of this plan.

• What would be composted and how could the process of collection and maintenance be seamlessly integrated into daily operations? Most kitchens and preparation areas are small and restaurant and grocery store workers have little time. There would need to be a simple and effective method for dealing with the diversion of food waste from the waste stream.

• How much compostable waste would be produced by restaurants on a daily and weekly basis? Knowing amounts of compostable waste produced will help determine the number of bins needed by restaurants.

• What would be the best and most reliable method for compost pick-up? There have been recycling projects in the past that relied on volunteers to pick up the recyclables. Eventually this led to issues because there was little service reliability. With food waste it is even more important that service is reliable because it can end up having negative effects such as bad odor and attraction of pests.
Methodology
Overview of Methodology

To complete this plan many different methods of research needed to be employed. An examination of precedent communities was completed to examine how composting is being conducted elsewhere with composting. Interviews were conducted with stakeholders both producing and receiving organic compostables, including composting experts. A survey was conducted to determine the volume of restaurants able and willing to participate in a composting plan. Research was also done to discover the legal issues surrounding the composting issue. Laws and codes were studied from the Health Department, the Department of Environmental Quality, and the Environmental Protection Agency.

Precedent Communities

Research was conducted into several precedent communities that have begun composting programs. San Francisco, CA; Denver, Co; and Minneapolis, MN were chosen. For each of these communities documents were read on their website and either phone or e-mail interviews were conducted with officials responsible for the city’s composting efforts.

The goal of researching each city was to determine who is composting, how the compost is being collected, the costs of the program, and what is done with the compost once collected. Additionally, information on how issues such as pests and odors have been dealt with was gathered.
Stakeholder and Informational Interviews

Stakeholder analysis has determined key individuals to speak with in order to gain valuable information. This is a collaborative process of finding information from stakeholders and experts to determine the rules, regulations, and needs of all involved as well as creative solutions that can be used in the process. To determine answers to a complex issue many people were interviewed. Interviews were conducted with composting professionals and experts, stakeholders and restaurateurs, gardeners and farmers, and government officials. Each interview revealed a picture of the needs, requirements, and preferences behind putting a composting plan in Carytown into place.

Composting professionals and experts were interviewed to identify potential methods for composting and ways to avoid common barriers to composting. Restaurateurs were interviewed to better understand the needs of participating restaurants and concerns and barriers. Gardeners and farmers were interviewed to gain knowledge of farming needs and to understand if there is a need for compost on farms. Finally government officials were spoken with to understand issues of legality surrounding the restaurant composting issue.

List of Interviewees

Composting Professionals

Leanne Spaulding: Project Coordinator, US Composting Council
Marshall Hall: Co-owner, Natural Organic Processes Enterprise
Emily Sanders: Sales Manager, Wrecycleit (www.wrecycleit.com)

Stakeholders and Restaurateurs

Officer Patrick Warner: Organizer of the Carytown Farmer's Market
Raul Cantu: Owner, Nacho Mama’s
Paul Heitz: Owner, Amour Bistro
John Foster: General Manager, Baker’s Crust Carytown
Nate Gutierrez: Founder, Don’t Look Back
John Sydnor: Executive Director, Enrichmond Foundation
Brittany Hubbard: Manager, Cartwheels and Coffee
Kate Ruby: Market Manager, St. Stephen’s Farmer’s Market

Gardeners and Farmers

Kristi Orcutt: Children’s Garden Program Developer, Lewis Ginter Botanical Garden
Robert Watkins: Owner, Watkins Nursery
Danny Finney: Teacher, Builder, Compost Manager, Tricycle Gardens
Krissy Etz: Market Coordinator, Farm to Family bus

Government Officials

Jason Miller: Land Protection and Revitalization Program Manager, VA DEQ
Justin Williams: Director, Office of Waste Permitting and Compliance, VA DEQ
A survey was conducted in Carytown over the course of a week. Restaurant managers were given a description of the plan and asked to answer questions on an iPad regarding their level of interest in participating if such a plan were agreed upon. Eleven restaurants said they would want to participate while another four responded that they might want to participate. Many restaurants did not respond to the survey.

This survey was important to gauge interest and understand the number of locations willing to participate, in turn helping to determine the ability to follow through with a composting plan by better understanding mass of compost and level of buy-in.

In addition to determining the number of restaurants interested in a composting plan, restaurants were asked if they would participate in practical trials to determine amounts collected. 6 restaurants agreed they would be willing to participate in practical trials but only 2 were able to participate when the time came.
Practical Trials

To determine the amount of compost being produced at different locations in Carytown, restaurants participated in practical trials. Practical trials were conducted at Baker’s Crust and Don’t Look Back. Baker’s Crust ran trials March 7-9 and Don’t Look Back ran a week long trial March 1-7.

A description of the plan was given to restaurant managers and kitchen staff to educate the workers on the compost collection process. Bi-lingual visual reminders such as posters and stickers on the collection bins were given to kitchen staff as a reminder of what could and could not be collected.

During trials, these restaurants collected their pre-consumer kitchen vegetative waste. The resulting collection was weighed to determine how much compostable waste could regularly be expected in production. The trials allowed a better understanding of expectations regarding kitchen compost production.

After the trials were completed several questions regarding ease of composting, concerns and overall reactions to the process were addressed with participants. Questions were asked of kitchen staff and managers to learn reactions and lessons for the future.

Figure 10, Composting Poster
Findings
How has composting been dealt with in other communities?

San Francisco, CA

San Francisco has mandatory composting and recycling for all households and businesses. The city has a goal of net zero waste by 2020. Restaurants and businesses must provide separate bins for patrons to sort their waste and must recycle and compost themselves. All to-go items such as containers must be certified compostable. Fines result if businesses fail to follow these rules.

San Francisco’s ability to strive for zero waste is made easier by existing infrastructure. There is reliable pick up of wastes and businesses have no need to worry about unreliability. The lesson learned from San Francisco is that strong government support and dependable infrastructure make composting and recycling easy to implement. Additionally, clear placement of bins and education aid in San Francisco’s composting success. Richmond does not currently have the infrastructure needed to implement large scale composting but on a smaller scale lessons from San Francisco can be applied.

Denver, CO

Denver was chosen as a precedent community because it has a new program being piloted in neighborhoods addressing concerns that have been previously voiced by stakeholders. At the moment there are only 2,500 homes being serviced. Each household that signs up for composting is given a 65 gallon cart to fill with food, soiled paper, and yard waste. Only what is in the bins can be picked up. Households are given smaller indoor collection pails with lids to collect scraps until they are ready to go into the carts. Pick up costs residents $9.75 per month. Compost is picked up weekly and taken to a commercial composting facility where it is shredded and left to break down naturally in wind rows (a method where organic materials are put into long rows and turned regularly to decompose aerobically). Compost is then sold by the commercial facility to landscapers and farmers. The website is helpful in addressing such things as smell and what can and cannot be composted. Compost will have an odor but it will not be different from the odor already emanating from trash. This is the same material that was already being
collected it is now just going to a different collection bin. Pests are unlikely to be any different than those already expected around garbage collection bins. With a tight fitting lid and thick plastic these issues may even be minimized. Denver's case study looks at a residential plan but is similar to Carytown in that a specific area, a neighborhood, is being looked at.

Minneapolis, MN

Minneapolis is a precedent community because it has the most similar model to what this plan hopes to accomplish. A business called Eureka Recycling is responsible for compost and recycling collection from local restaurants. Currently there are about 40 restaurant participating in compost collection through Eureka Recycling. Recycling and compost is picked up and hauled to commercial facilities.

Eureka deals with many of the issues that are considered key to this plan. Eureka provides bins and education, key components to the behavioral changes required for composting. Eureka provides educational materials and training to restaurants that enter contracts with them. Pricing is based on pick-up schedules. Depending on need, Eureka can pick up once or multiple times a week. Eureka addresses odors and pests by using thick, durable bins and cans to maintain cleanliness. Most importantly, Eureka is entirely reliable due to a contract. The business itself depends on reliability.

The situation with Eureka differs from that of Carytown because each restaurant is on an individual contract and in different parts of town. The Carytown compost plan seeks to treat Carytown as a single district that will begin composting and a single contract will be negotiated.
What are the main concerns and barriers to a successful composting plan?

Interviews with restaurant owners, managers and kitchen managers provided insight into key concerns and issues. There were several common threads in each of these interviews. Restaurateurs were concerned with pests, odors, intuitive processes, costs, and service reliability.

Pests and odors were always mentioned as a concern. Pests and odors can contribute to a perception of uncleanliness. Pests can also be a nuisance to get rid of once in a building. Relationships with neighboring businesses are also very important and a perception of uncleanliness could harm these relationships. Dealing with this issue is a top priority to composting.

Having an intuitive method of dealing with the sorting of waste would also be very important. Restaurants often have very busy staff who do not have time to be carefully sorting materials during busy times. The issue of what and how to compost is complex; what is being sorted will depend on who is receiving the compost. Some places will only be able to take fruits and vegetables while other places will be able to take all organic material including soiled paper. Behavioral changes will be asked of employees and a certain level of training and awareness will be required of all involved. Determining the best method of pick up for a restaurant will be based on how much compost it produces on average. It will be important to find the right fit for participating restaurants to make the process as streamline as possible. Cost was also brought up in multiple interviews. Restaurateurs can operate on narrow profit margins and an expensive new system would not be a viable option. Research into composting options was directed with an eye towards cost neutral methods.

Finally, reliability of pick-up is paramount to any restaurant’s successful and ongoing participation in any composting plan. Service reliability has the potential to solve many issues but without reliability could cause many problems that could even result in health code violations. A reliable way to remove compostable material from the premises is hugely important to ensuring pest and odors are dealt with and compost is not sitting for an extended period of time. In each stakeholder interview, reliability of pick-up was brought up as being a central issue and barrier to composting.

Each issue was repeatedly mentioned as a concern. As such, these concerns informed inquiries with professional composters and compost receivers. Each issue needs to be addressed in any method of composting for the success of this composting plan.
Who would participate in the composting plan?

The survey was used to determine the number of restaurants interested in participating. The plan was described to each manager or owner and then they were asked whether or not their restaurant would be interested in participating. Almost every restaurant in Carytown was entered and asked to participate in the survey over the course of about a week. Many restaurants did not have the appropriate manager available to answer questions but gave tentative answers that they would want to compost but would need to confirm with a superior. The response rate of restaurants willing and able to give definite answers was low at only 28%.

The survey provided an opportunity to speak with many managers and owners, hear concerns, and popularize the idea. While concerns were often expressed, the overall reaction was positive. Only one restaurant said with certainty that they would not like to participate in any form of composting project siting their small kitchen and lack of food that was not pre-packaged.

The overwhelmingly positive response of those able to give a definitive answer likely means a critical mass of restaurants in Carytown would be willing and able to participate in a communal composting plan provided concerns and barriers are overcome.

Survey Results

Definite Participants
- Mezzanine
- The Water Grill
- Amour Bistro
- Cartwheels and Coffee
- Carytown Bistro
- Selosa Boutique Deli
- Don’t Look back
- Coppola’s Deli
- Bonvenu
- Mom Siam
- Baker’s Crust

Possible Participants
- New York Deli
- Xtra’s
- Secco
- Can Can

Practical Trial Participants
- Don’t Look Back
- Baker’s Crust

Figure 13, Survey Results
What advice do professional composters have for a composting plan in the Richmond region?

Many composting professionals were interviewed to discover the best methods and tips for compost collection from homes and restaurants. Questions were asked with stakeholder concerns in mind. Composting can be a complex issue but with the right knowledge it can be done easily.

Professional composters overwhelmingly argued in favor of a paid professional hauler to collect compost and deliver it to a commercial composting facility. They said compost needs to be picked up with absolute reliability at least once a week to prevent odors, pests, and overflowing containers. Paying for the service means added reliability. Waste management is a service that every restaurant needs and it is not a service that can be obtained for free without reliability issues. Using a commercial composting facility also means more materials can be composted.

Bins used for compost collection should be made of thick, sturdy, non-absorbent material to prevent odors and pest attraction. Compostable liners should be placed in cans to aid in keeping cans clean. Lids are needed to prevent pests from getting in the compost. These lids can be vented to help gases that are produced as the compost begins to break down escape. A professional hauler should provide the correct number of bins for collection to the restaurant.

Composting can be complex for the individual or organization handling the compost recipe. Getting the right mix of materials is important to ensuring good soil quality. A composter will want the right mix of carbon and nitrogen. This means getting a balance of green and brown waste. Paper and cardboard are great for getting the right balance and composters will want to collect these items from restaurants along with food waste. These materials are also useful in preventing odors. Pest and odor management are described in detail later in this document. Because this can be complicated a professional hauler is again a good option because a permitted facility will be equipped to handle the balancing of materials needed.

Champions of composting were quick to point out how crucial it is to compost. Soil quality, methane production in landfills, and runoff from fertilizers were all cited as important reasons to compost. Making composting a priority is very important. With this in mind, most professional composters stressed the importance of education and outreach in composting to change priorities and policies. Creating a culture of composting will be important to the future of composting in the region. Policy changes to make it easier should be campaigned. Incentives to compost should be asked for such as green business tax credits and green business district tax incentives.
There are two sides to the legality of restaurant composting. Restaurants need to be concerned with Health Department regulations and composters need to be concerned with the Department of Environmental Quality.

**Restaurants**

The Health Department code for businesses does not mention composting specifically so this would fall into the section on waste and recycling. Outdoor containers must be on a non-absorbent surface such as asphalt. Receptacles themselves need to be “durable, cleanable, insect- and rodent-resistant, leak proof, and non-absorbent”. Indoor bins may be used to collect waste until it is taken outside. When not in use, indoor receptacles should have lids. (Virginia Health Code Food regulations, 2010)

**Composters**

The DEQ handles permitting for waste facilities. Composting facilities are now listed with other waste facilities and have strict permitting requirements that small scale urban growers could never meet.

There are several exemptions to the permitting process that can help get through these hurdles. Code 9 VAC 20-81-95(D) (7) exempts “composting of preconsumer food waste and kitchen culls generated onsite and composted in containers designed to prohibit vector attraction and prevent nuisance odor generation.” This specifically permits composting of the material types discussed previously. The bins to collect compostable waste would allow restaurants to collect the preconsumer food waste.

Composters such as small farmers are exempt from needing to permit their composting operation because there is an exemption for composting yard waste. Yard waste in this case can be defined as pre-consumer kitchen culls that is specifically non-meats, fats and dairies. Exemption form Y-W 4 can be found on the DEQ website allowing individuals to compost without a permit.
What would be the best way to adequately deal with pests and smells?

Pests and odors have continuously been cited as a major concern for restaurateurs when it comes to composting. Odors and pests are a serious concern because they can effect the perception of cleanliness, drive away customers, and upset neighboring businesses. For these reasons, concerns regarding pests and odors must be addressed.

After speaking with professional composters it has been determined that compost will smell but no worse than odor currently found at dumpsters. There are methods to ensure that odors and pests attraction are minimized. These methods include proper containment bins, cleanliness, the proper mix of materials, and regular pick-ups.

If a professional hauler is utilized, they will usually provide outdoor containment bins that are in compliance with laws. If a restaurant is using its own containers, the purchaser needs to ensure that thick, durable, non-absorbent plastic bins are bought. Secure lids are also required by law and needed to deter pests and cover odors. If a restaurateur purchases bins, a ventilation system can be created in the lid bin by making small puncture holes and securing a filter to the underside. This will allow gases to escape but hold in odor and particulates.

Compost bins should be kept clean. Indoor collection bins should be rinsed regularly. The larger outdoor bins should be lined with compostable plastic bags. Compostable plastic bags can be purchased through most regular restaurant suppliers. These bags will aid in keeping collection bins clean and helping to prevent odors and pest attraction.

The proper mix of materials can minimize odor. Carbon and nitrogen need to be put together in the proper mixture to create optimal soil. Paper, cardboard, coffee, and wood stove ash can all be added to compost to minimize smell and get the proper pH balance. While this can be complicated for a restaurant to navigate, communal collection and professional composters will be able to work with the materials gathered.

Regular pick-ups are the most important factor in mitigating odors and pests. Compost should be picked up at least once a week. The options for regular, reliable pick-up are discussed in more detail in the findings and recommendations section.

Figure 15, Common Pests
What would be composted and how could the process of collection and maintenance be seamlessly integrated into daily operations?

The option for what is collected to be composted depends on the method of pick-up selected. These methods for pick-up are discussed in greater detail later in this document. If partnerships are utilized or compost is collected at the Carytown farmers market only preconsumer green waste can be collected. If a professional hauler is used, all organic waste, paper, and cardboard can be collected. No matter which option is utilized staff needs to be educated on what can and cannot be collected.

Education was repeatedly cited during stakeholder interviews as imperative to a successful composting operation. Composting requires behavioral changes and as such strong leadership, visual reminders and ongoing education for current and incoming staff is important. It is important to have a leader in the kitchen to demonstrate composting and be a composting role model. This person is also responsible for reminding staff about composting and training new staff in the process. The visual reminder printed in multiple languages should be placed where it can be seen by all kitchen staff. A class to train people and give staff an opportunity to ask questions is a great way to accomplish behavioral changes. Additionally training material should be provided to new hires.

Because compost collection requires behavioral changes, minimize change wherever possible. Keep collection bins in similar locations as current trash collection areas. This will minimize change and make compost collection feel more natural. Keep trash collection bins in a central location to make the decision to throw something out a more conscious decision.
How much compost would be produced?

Baker’s Crust

Baker’s Crust is a large restaurant located at 3553 W Cary St. It is an American-French Fusion restaurant. The practical trials at Baker’s Crust resulted in a large amount of compostable waste produced very quickly. In only three days, 179lbs of compostable waste was produced. Kitchen staff participated in sorting preconsumer kitchen waste during food preparation into the labeled buckets. Serving staff participated by placing spent coffee grounds into the labeled buckets. More buckets were needed throughout the first day than were originally provided and additional buckets were brought out.

Feedback from kitchen staff, management, and serving staff was overwhelmingly positive. Kitchen staff reported that sorting compost did not add extra time into their food preparation. Serving staff reported that taking out the trash was easier at the end of the shift because coffee grounds can be very heavy. Management was also pleased with the results. The large amount of food waste was somewhat surprising to management and composting became something the general manager decided he would like to do in the future. No problems were reported at the end of the trials. Additionally a sense of pride in doing the right thing for the environment was reported by several staff people. Staff felt a sense of accomplishment at doing the right thing and were dismayed to learn that this waste after being weighed was only going to be thrown out. A manager ended up taking the compostable waste home to use in her personal compost heap.

Practical Trial Results

Baker’s Crust

March 7th: Total weight: 54lbs
   Coffee grounds: 10lbs
   Kitchen: 44 lbs

March 8th: Total weight: 70lbs
   Coffee grounds: 10 lbs
   Kitchen: 60 lbs

March 9th: Total weight 55 lbs
   Coffee grounds: 10 lbs
   Kitchen: 40 lbs

Don’t Look Back

March 1-7: Total weight: 55 lbs

Figure 17, Chart of Composting Weight from Trials
Don’t Look Back

Don’t Look Back is an intimate taco restaurant located at 2929 W Cary St. Don’t Look Back was approached early about participating in practical trials and the management was highly receptive to the idea. Don’t Look Back has a much smaller kitchen than Baker’s Crust. Both the manager and the owner were open to composting.

The kitchen here ran the practical trials for an entire week. All compost was collected in a central location instead of multiple buckets. The entire week of preconsumer kitchen preparatory waste only resulted in 50lbs of compostable waste total. The owner and staff had a positive response. There were no complaints of difficulty, confusion, pests, or smells. All staff interviewed were pleased about the project and would like to continue with it in the future.

Lessons Learned

Each kitchen and restaurant has unique needs and a vastly different output of compostable waste. Larger restaurants can produce in a day what smaller restaurants produce in a week. Practical trials are a very good way to discover what each restaurant will need as far as number of bins, signage, and training. There is value in composting to each restaurant, even those with limited space and minimal waste, from feelings of pride in participation.
Stakeholder interviews have revealed three options for reliable pick-up, forming partnerships between individual restaurants and local growers, using the Carytown Farmer’s market as a collection point and using a professional hauler. Each method has advantages and disadvantages. The methods and their consequences are discussed below.

**Individual Partnerships**

In this method partnerships are formed between individual restaurant and local growers. Restaurants and growers will enter into an agreement where the restaurant will be responsible for collection and the grower will be responsible for pick-up. A compost user or grower will decide with the restaurant the best days and times for pick-up of compost.

Advantages include a high level of flexibility. Partnerships enable growers and vendors to find a schedule that fits both partners’ needs. Additionally, partnerships form relationships between producers and vendors. As the relationship grows, restaurants may see a benefit to purchasing locally grown produce from partners helping to support the local economy and the urban food industry. The disadvantage to forming partnerships is a lower level of reliability. The partnership effort is based on voluntary pick-up. Relationships can sour if one side does not follow through. Restaurants are also responsible for all training and bin maintenance inside the restaurant.
Carytown Farmer’s Market

Using the Carytown Farmer’s market as a pick-up point for compost is another option. Officer Patrick Warner is the Carytown Farmer’s Market Coordinator. The Carytown Farmer’s Market runs Sundays 11:00am to 3:00pm April 14 through December 15. Composting would only take place during the months the market operates. On market days restaurants would deliver their compost to the market at a central collection point. A sign would mark the compost as free compostable material. Compost would be received on a first-come, first-serve basis and any leftover compost will be discarded into regular trash collection bins.

An advantage to this option is that it is highly reliable during the market season. Additionally, back yard composters can take compostable material to enrich garden soils. This means the local community can get involved in the composting project along with local food growers and vendors. This is also a highly visible way of composting providing good environmental publicity to Carytown and the CMA. There would also be no charge to restaurants for this method of composting. A disadvantage is that compost will need to be transported to the market on a weekly basis by a staff member of the restaurant. This can be made easier by attaching wheels to the bin or placing the bin in a wagon. Compost can also smell, especially in the summer months and could be a turn off to shoppers. Another disadvantage is that the market does not run year round and because composting involves behavioral changes, falling in and out of the habit may be difficult.
Professional Hauler

Another composting option: Hire a professional hauler to take compost to a permitted facility. This option involves the CMA entering into a group contract with a professional hauler to have compostable waste picked up on a regular basis on a mutually agreed upon day of the week. The hauler would provide and clean bins. A good hauler will also provide educational materials and classes.

There are many advantages to a professional hauler. It is the most reliable and stress free option because there is a contract between the parties ensuring compostable pick-up. A larger percentage of waste can be collected because a permitted facility can accommodate all organic material, not just pre-consumer green waste. Compostables at permitted facilities can take paper, cardboard, and all foods including meats from both pre and post consumer sources. Many haulers not only provide bins, but also education and educational materials. At least one local hauler serves as a middle-man by collecting compostable material, composting it, and providing it to local growers helping local economies and promoting environmental goals. The disadvantage to a professional hauling service is that there would be an associated cost however in many cases restaurants may be able to reduce their trash pick-ups and a professional hauler can be cost neutral. A group contract can be negotiated to make this option even more affordable. Another disadvantage is that the professional hauler is also a less visible method of composting providing no free publicity to Carytown and the CMA.
Recommendations
The CMA is in a unique position because it is an organized group of business owners who have the ability to negotiate a composting plan that will be advantageous to all the restaurants in Carytown. The following recommendations begin with goal one, the process of organizing within the CMA. This includes forming a subcommittee and appointing a point person who will be passionate about the program and work to make it a success. Goal two describes what should be negotiated in the contract with a professional hauler and how to ensure a positive ongoing relationship with the hauler. The goal three deals with ensuring ongoing participation within Carytown by helping to create a culture of composting beyond the limits of Carytown.

Several options were considered for the best method to reliably collect compostable material from restaurants. Each method had its own distinct advantages and disadvantages. While individual partnerships between restaurants and local growers or a central, weekly collection point at the Carytown Farmer’s Market where compost may be taken on a first-come, first-serve basis are good options, ultimately the best option for collective CMA wide composting is to hire a professional hauler to take materials to a permitted composting facility. This is because reliability of pick-up is the number one issue in ensuring a working, healthy and clean ongoing process. The professional hauler also gives the CMA as a whole the power to negotiate a group contract. Using a professional hauler also sets the path for eventually being a “green business district” as planned for in the City of Richmond’s Roadmap to Sustainability.

Elements of the other options for reliable pick-up should be utilized to benefit from their various advantages. The publicity of the Carytown Farmer’s Market will be important for publicizing the composting plan and creating a culture of composting in Richmond. The advantage of forming relationships with local growers from individual partnerships is also an important piece of the composting puzzle. Certain professional haulers will serve as intermediaries by collecting compostable materials, composting it meeting all legal regulations and then providing to local growers. These haulers will be the best options because they will help provide a point of contact between restaurants and growers.
Carytown Composting Plan

Vision Statement

Carytown has become the first “Green Business District” in Richmond. All coffee shops, casual and fine dining restaurants, and grocery stores are now composting and recycling. The region has become known for its commitment to the environment. There is strong regional pride in the unique character of Carytown.

Goal 1: Organize and prepare within the CMA to begin the composting process.

Objective 1.1: Hold a CMA meeting to discuss composting. This could be an action item at a regularly scheduled CMA meeting or a meeting unto itself held at a different time.

Strategy 1.1.1: At this meeting form a subcommittee of volunteers to help organize and manage the composting process.

Strategy 1.1.2: Within the subcommittee appoint a leader to be the point person and another person to be the treasurer. The point person will be the main point of contact for the restaurateurs and the hauler. The treasurer will handle monetary collection and hauler payments.

Strategy 1.1.3: Create an account for the money used to pay the hauler to be managed by the treasurer.

Objective 1.2: Hold a meeting with all restaurant owners and general managers and the composting subcommittee of the CMA.

Strategy 1.2.1: Use this meeting to educate and inform restaurateurs. Have a prepared presentation covering what the CMA hopes to accomplish by composting and what would be required by each restaurant.

Strategy 1.2.2: Use this meeting to make a list of important needs that must be met in a contract with a professional hauler. Brainstorm with restaurateurs and the subcommittee the list and record what is said to be discussed and negotiated later.
Strategy 1.2.3: At the end of this meeting pass a sign-up list around to all restaurateurs. Have them list their name, restaurant name and e-mail address. This will serve as the basis for the list of participants. Others can still join this list.

Objective 1.3: Follow up with the restaurateurs and the subcommittee to take the next steps in organizing.

Strategy 1.3.1: Create a dedicated e-mail and e-mail list to be checked regularly and managed by the sub-committee leader. This e-mail and e-mail list will be the main point of communication between all participating restaurants, the sub-committee and eventually the hauler. Add all restaurateurs that signed up at the meeting to the e-mail list.

Strategy 1.3.2: Send an e-mail out the day following the meeting with meeting minutes and the next steps.

Strategy 1.3.3: Have each restaurant that signs up to participate complete a week long practical trial sorting materials and recording the weight of material collected each day. This will allow the subcommittee to determine how many bins are needed.

Strategy 1.3.4: Create an online survey managed by the subcommittee leader that asks restaurateurs the weight of collected material each day. This will create an easily manageable online database of how much compostable waste each restaurant is producing and will make it easier to relay information to a hauler.

Goal 2: Enter into a group contract with a professional hauler.

Objective 2.1: Have the subcommittee meet with and interview potential professional haulers to discuss the possibility for a partnership and a contract.

Strategy 2.1.1: Use the list of important needs created during the meeting in Strategy 1.2.2 to negotiate with the hauler what will be needed in the contract.
Strategy 2.1.2: Ensure the professional hauler will enter into a group contract and provide a group rate. The rate should be based upon the number of bins needed and the frequency of waste pick-up needed. Refer to the online survey from Strategy 1.3.4 during the interview to give the hauler a clear picture of what will be needed from them.

Strategy 2.1.3: Ensure the professional hauler will provide education to composters. The hauler should be able and willing to provide training to restaurant employees about what can and cannot be composted. This can be done at a single meeting or multiple meetings. The hauler should also provide training materials, such as pamphlets, to restaurants to give to new hires brought on after the training meeting. Yearly training should also be negotiated as refresher courses.

Strategy 2.1.4: Hire a professional hauler to provide bins and bin care for each participating location. The online survey will provide a clear picture of the compostable waste coming out of restaurants. The amount should determine how many bins will be needed. The hauler should provide bin care such as cleaning and maintenance of outdoor bins as well as replacement of damaged bins.

Strategy 2.1.5: Use a hauler that can handle all organics, not just preconsumer vegetative waste. This will make it easier to sort the material and more material will be able to be composted greatly reducing the amount of waste that is being sent to the landfill.

Objective 2.2: Determine payment structure for the hauler from the restaurants. Currently each restaurant is independently paying for waste management. The group contract should mean only a single check is given to the contract hauler.

Strategy 2.2.1: Base the payment structure on the number of bins each restaurant receives. The number of bins needed will have been determined by the practical trials. This structure will mean restaurants with more waste will be paying a larger percentage of the hauling costs.
Strategy 2.2.2: Payments should be made monthly. Have an automatic e-mail reminder sent out to all participants that their payments are due.

Objective 2.3: Ensure grievances are addressed between restaurants and haulers. To ensure the long term health of the composting program their needs to be a method of clear communication between the CMA, the participating restaurants and the hauler.

Strategy 2.3.1: Communicate grievances to the CMA composting subcommittee and point person through e-mail. Explain in detail what the issue is and what needs to be done differently or how the restaurant would like to see the issue resolved.

Strategy 2.3.2: Through e-mail, check to see if other restaurants are experiencing similar grievances or if the grievance is an isolated incident.

Strategy 2.3.3: Have the point person communicate this information to the hauler. Decide what the options are for change and relay these back to the restaurant/s.

Strategy 2.3.4: Hold a yearly meeting with participating restaurants and the hauler to discuss what is working and what is not. Use this as an opportunity to discuss any changes that should be made to the hauling contract or any upgrades that need to be done.

Goal 3: Create a culture of composting within Carytown and beyond its boarders to promote the values of the program

Objective 3.1: Use the resources of the professional hauler and the subcommittee to prepare informational and educational material for new and existing businesses in Carytown.

Strategy 3.1.1: Prepare a handbook explaining the composting program for new restaurants that move into Carytown and want to join the composting program.
Strategy 3.1.2: Use the yearly meeting discussed in Strategy 2.3.4 to provide an opportunity for new businesses to ask questions and give input to the program.

Strategy 3.1.3: Prepare a multilingual visual reminder to be placed in kitchens to remind staff of the materials that can and cannot be composted.

Strategy 3.1.4: Use educational material to promote realistic expectations of odors through education. Compost will smell, especially in the hot summer months. However, the odor should be the same as that currently found at dumpsters.

Strategy 3.1.5: Use educational material to promote cleanliness and best practices for pest and odor management such as using compostable bin liners and cleaning indoor collection bins regularly.

Strategy 3.1.6: Encourage each restaurant to appoint a point person to champion composting in the restaurant. This person will be responsible for new hire compost training and will be a role model for correct composting behavior.

Objective 3.2: Promote the composting program to the community.

Strategy 3.2.1: Use the subcommittee to create a logo for the participating restaurants to display in their windows.

Strategy 3.2.2: Explain the program and its benefits on the official Carytown “Mile of Style” website. Explain the logo and what it means for visitors who may want to choose a “green restaurant”

Strategy 3.2.3: Select three smaller restaurants to collect only pre-consumer green waste and use this at a stand at the Carytown Farmer’s Market. Use this stand to explain the process and invite growers and residents to take the compost on a first-come, first-serve basis to use on in their home heaps or gardens. Display the logo and provide informational, compostable pamphlets.
**Strategy 3.2.4:** Use events such as the Watermelon Festival and the Carytown Beer and Wine Festival to promote the composting initiative. Set up a table at the festivals explaining the plan with brochures and logos.

**Objective 3.3:** Promote policy changes within the City of Richmond to create a region wide culture of composting.

**Strategy 3.3.1:** Petition the city for a zero waste initiative focusing on recycling and composting.

**Strategy 3.3.2:** Petition the city to designate “green business districts”, such as those described in the *Roadmap to Sustainability*, and to make Carytown a green business district.

**Strategy 3.3.3:** Begin a composting group that does education, community service and outreach through community gardens, schools and parks. Provide food donated from participating restaurants to promote the restaurants while also promoting composting.

**Strategy 3.3.4:** As composting grows in popularity and recognition, demand for composting infrastructure will increase. As infrastructure increases petition for the addition of recycling and composting bins along the streets in Carytown. Get businesses that specialize in to-go items to use compostable to-go containers, plastic-wear and bags. Advertise the program on the new bins.
Conclusion
Composting is one step towards environmental sustainability. Sustainability is commonly defined as meeting the needs of the present without harming the ability of future generations to meet their own needs. Creating a culture that supports composting is a piece of changing people’s mind-sets on resource cycling.

This plan is written to provide a method by which Carytown can begin to successfully collect compostable waste and divert it from landfills. It is a highly localized solution to one particular large scale environmental issue. The plan however could be used in other business districts in the greater Richmond area.

This plan provides solutions to barriers that face a business district in composting. As such it could be applied to other business district or wherever groups of restaurants are located near one another. Other areas in Richmond that could be appropriate for a composting plan include the Shops and Libbie and Grove, the restaurants in Shockoe Bottom, and Church Hill as it grows into the “Bakery District”.

This plan seeks to go beyond the scope of one district beginning to compost. It seeks to be the first step towards a culture of composting in Richmond. It seeks to point out opportunities for publicity and methods to petition the City of Richmond for a more supportive stance on composting. As the culture surrounding composting improves, infrastructure will as well. A culture of composting supports job growth by promoting green industries such as professional haulers, restaurants, and urban gardeners. It also gives individuals access to information on composting.

Composting is a return to using a natural process of cycling nutrients back into the soil. It seeks to remind people that we do not live outside of nature’s natural processes but must operate within them. This plan is a call to move back to a system that has been occurring naturally since the first plant life began growing on this planet. It seeks to move the area in a sustainable direction without harming the prosperity of the shopping district by actually promoting a unique and unified community ready to tackle a difficult subject.

This plan envisions a Carytown that goes beyond composting to become the first “green business district” in the city. As environmental sustainability becomes a more prominent issue, Carytown should continue to seek new and innovative ways to address large scale environmental issues. Each store has a part to play and the Carytown Merchant’s Association is in a unique position to address these ongoing issues as a unified group. This plan is an opportunity to start a movement in Carytown that will strengthen community ties, support local businesses, and reduce the environmental impact of doing business.
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List of Interviewees can be found on page 15 of this document
Carytown Composting Plan

Master of Urban and Regional Planning

Campbell

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Figure 3, Satellite Image of Carytown: Google Earth Image

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Figure 21, Carytown Farmer's Market 2012:  

Figure 22, Carytown Farmer's Market 2013:  http://wotbn.net/new-weekly-carytown-farmers-market-starts-today/

Figure 23, Natural Organic Process Enterprises Vehicle: Image from Marshall Hall

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