

# **HOW TO DESIGN A SCHOOL RECYCLING PROGRAM**

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# **How To Design a School Recycling Program**

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## **SECTION 1: INTRODUCTION**

### **1.1 Background**

The Tulane University Student Chapter of the American Society of Civil Engineers (ASCE) piloted a recycling program in the fall of 1999. Based upon project interest surveys distributed in August of 1999 to local schools, ASCE chose St. Stephen as a target school for the project and has offered its services to design a recycling program for St. Stephen's campus. School staff members expressed an interest in recycling recoverable paper waste products generated by their classrooms, library, offices, and cafeteria. The primary project goals beyond solid waste diversion from landfill storage facilities include educational awareness, awareness of how a program operates, operational effort reduction and cost optimization.

The design of the St. Stephen recycling program was completed in three phases:

- Development of Design Constraints.
- Development of Design Recommendations.
- Development of the Final Report and Operations Manual.

The scope of this project was the complete design process, from gathering design data to developing specification manuals to aiding the clients in program start up. Our plans for this project are based on the success of the pilot program. Being that recycling at St. Stephen School was successful, ASCE decided to offer similar services annually to different schools throughout the New Orleans area to increase recycling and public awareness about the benefits of recycling. For two consecutive years ASCE has received the Aaron S. Allen Grant, and has received the attention of the Mayor's Committee of Environmental Affairs. As our project has grown, so have our goals. Instead of designing recycling programs one school at a time, the City of New Orleans has encouraged us to design one large project that could benefit multiple schools.

By making professional contacts and using the knowledge gained throughout the design project, ASCE has already aided in the improvement of Tulane's own campus recycling program. The ASCE program is directed towards helping Tulane establish sustainable recycling throughout New Orleans.

### **1.2 The Importance of Recycling**

Did you know that eighty-three percent of household garbage goes to landfills? A landfill is an area that has been dug for the sole purpose of storing trash. When thinking of trash do you just think of stuff that is produced from day to day? The average American produces four pounds of trash per day; however, there is much more trash

produced each day. Every division of our society contributes to the garbage problem. Think about how much your school alone produces. Then think about the companies, institutions, communities, governments, and so on. Now think about your household. A simple thing that no one even thinks about recycling is your compost, yard trimmings and food waste. Did you know that this type of waste takes up twenty-five percent of America's municipal solid waste? The point is that we must each do our part in an effort to better the environment.

### **1.3 The Benefits of Recycling**

There are many benefits to recycling. The number one reason that people think of to recycle is to conserve landfill space. For every ton of paper that is recycled, we save three cubic yards of landfill space. In 1996, the United States recovered more than forty-four percent of all used paper. But there are so many more reasons to recycle than this. It also saves the city and businesses money that would otherwise pay for landfill space. It also reduces air and water pollution that could be a product of the production of new materials. Recycling also conserves limited natural resources, and reduces the demand for energy and the need for raw materials needed to produce goods. Recycling is also an economy booster. It generates jobs that will have a positive impact on the local economy.

### **1.4 The Significance of School Recycling**

Primary and secondary schools could possibly be the most important place to recycle. Students learn best by example and action. If at a young age, children are taught about recycling, and expected to do so on a day-to-day basis, a student will grow up with a greater understanding of the responsibility of recycling. Eventually it will be second nature and the students will look for a recycling bin before seeking out a trash bin. Children are used to learning new things everyday; therefore, they are easier to teach than adults. In some cases students could be better teachers too. A great way to increase recycling in homes is through the students. Some families don't even know that curbside recycling exists. By educating the students at school, the education more often than not continues into the homes.

## **SECTION 2: STARTING A PROGRAM**

Starting recycling at your school is not as hard as you might think it is. There are seven basic steps that you can follow to achieve the type of recycling program that will support to your school's needs:

1. Select a Program
2. Research Possible Vendors
3. Systematize a Management Team
4. Determine What to Recycle
5. Organize a Collection and Storing System
6. Create a Budget

7. Select a Bin
8. Choose a Recycling Company
9. Education

## 2.1 Selecting a Program

The selection process is the most important step. One should choose a program that fits the school's needs and abilities. Consider how much money the program will cost, how much does the school produce, is the community interested in getting involved, and who will be in charge of the success of the project. Think about how much time the planning and operation will take. Are you thinking of a long-term recycling program, or one time program? There are four types of recycling programs that have proven to be successful across the nation. The following programs are arranged from the least demanding to the most:

- a. The production of a one-time or occasional recycling drive.
- b. Establish community collection points at the school.
- c. Establish an ongoing account with a local recycling center.
- d. Set up an ongoing in-school recycling program.

### **a) Production of one-time or occasional recycling drive.**

If your school is interested in recycling, but does not have the time or funds to organize an ongoing program, this might be your best option. If your school is interested in a recycling drive for purely educational purposes, or to raise some money, one could run a semi-annual recycling drive. A student organization or club could organize the recycling drive so that teachers and parents help out. Students could collect recyclables from their own homes and neighbors and bring them to school on a specified recycling day. On this day, the school could designate a collection spot in a gym or an auditorium where volunteers could sort the recyclables. At the end of the drive either sponsors or parents could transport the recovered materials to a recycling company.

### **b) Establish community collection points at the school.**

This type of program is demanding on a school and the surrounding community. Because a school is a focal point in a community it is a great place to set up recycling. This program could generate significant monies from the recycling of cans and other goods. The school must establish a collection point and publicize it to the community. Before exploring an ongoing program like this, it is recommended that you have a test drive much like program number one. This way you could test your community to see how receptive they are to recycling. Remember that your levels of recycling will vary. However, this type of program could be very profitable.

The first step of this program would be to locate a drop-off place at the school. The collection point must be one that is easy to access for the community, which at the same time does not serve as a distraction to the students. A parking lot is ideal. Find a volunteer who is willing to supervise the recycling area, otherwise people will just dump the recyclables in an unorganized manor. Second, ask yourself who is going to do the transporting. Either establish a deal with a local recycling company to take away the recoverable, or have teachers or parent volunteers be responsible for the transportation. The success of a program like this is very dependant on the community. It is recommended that you publicize your program. Possibly put up flyers advertising your program, get a local newspaper to write an article about your great recycling efforts, make announcements at PTA meeting, or local churches. Have the parents' club advertise for the school. The important thing is that the community becomes aware that recycling is available at the school.

For over ten years Tulane University has had this type of recycling program. The contract is with Southeast Paper Recycling Co. They furnish Tulane with a six foot by six foot by six foot, seventy-nine cubic yard dumpster for the collection of newspaper. The dumpster is located outside of Tulane's parking garage and is easily accessed by both Tulane and local residents. Once a month the recyclables are picked up and weighed by Southeast. Tulane is then paid seventy-five cents per hundred pounds that are collected. Local residents are very pleased with the recycling, they are able to recycle and at the same time donate money to Tulane University. In addition to this, there are many elementary to high schools that are successful in these programs. Southeast Paper Recycling said that the elementary schools are normally very successful because of the excess parent involvement. Schools that are known for their successful recycling include: Fountain Blue, Mandeville Junior High, Madisonville Junior High School, Our Lady of the Lake, Mater Dolorosa, and Cabrini Hogh School.

**c) Establish an ongoing account with a local recycling center.**

This type of program would be most beneficial for a community that does not have city curbside recycling. An ongoing account must be established through the school with a recycling company. The school can organize a contract with a recycling company so that people can drop off recyclables at their convenience and the school is credited.

This type of program is a great way for a school to make extra cash and promote saving the environment. It also minimizes the stress of a full recycling program-- however, it is still important that the school continue doing some recycling. Even if it is just cans or white paper, at least the students will be exposed to recycling on a daily basis.

Multiple schools do occasional drives similar to this type. They most commonly use Vista Fibers. If a school or an organization has a need for money, they often hold this type of drive. It is fairly easy to organize and it takes no coordination with a recycling company. Once you have all of your recyclables, you can drop them off at Vista Fibers at anytime within business hours.

**d) Set up an ongoing in-school recycling program.**

An ongoing recycling program is a big commitment. The success of a program like this is very dependent on the people who are running it. It is necessary that at least one person in the school is dedicated to the long-term responsibilities of the program. This program demands a central storage unit. This is a space that is large enough to house recycling totes for the recyclables in between pickups. In addition to this, it also requires adequate funds for the program and student involvement. This program maximizes the schools and community recycling abilities.

Although this is the most demanding program, it is also the most rewarding. Ideally this program would offer all possibilities for recycling, such as recycling in the classrooms, libraries, computer rooms, cafeteria, copy rooms, teachers' workrooms, and offices. This particular program is dependent on the actions of the whole school, and can be used as a great educational tool. The students will learn what can and can't be recycled and even acquire responsibility for the recycling. For a program to thrive in a school it is most important to get the students involved. If the students are of an age where they can do the recycling, it is recommended that they do. Let the students in each classroom transport the recyclables to the central storage unit or hall containers. It will teach them a greater respect for the recycling effort as a whole. An in school program will promote recycling in everyday lives as it becomes part of the normal school day routine.

Legacy Project has multiple ongoing in-school contracts. Legacy provides the school with 104 gallon totes, and they pick the paper up as needed for free. They only accept white paper, and if must follow their regulations. Because the trips and bins are a money investment for Legacy, the schools do not get paid. These programs are the most successful. Where as the average recycling company will charge for school recycling.

## **2.2 Research Possible Vendors**

Although choosing a recycling company is listed as the last step, it too is very important. After you select a program, you should look at your company options. This way you will have some boundaries to follow as you design your program. To see a summery of the leading recycling companies in New Orleans for the year of 2001 please refer to Table 1 (Recycling Company Survey Results). You will notice that all companies vary. You

need to establish a company contact. Ask them for some advice on creating a program, problems they have had in the past with school recycling, and if their recycling information has changed recently. This will make creating your program run much smoother and the transition to recycling easy. Because vendor information is always subject to change, I recommend that you consult the New Orleans Office of Environmental Affairs or the web site for recycling information listed on Appendix A to find the latest information. Here is a list of recycling vendor information:

**RECYCLING COMPANY CONTACT INFORMATION**  
(New Orleans, LA)

**BFI**

**837-8950**

804 L&A Rd.  
Metairie LA 70001  
Fax: 504-837-7957  
85\$/month; up to 5 95 gallon totes are provided  
Collection once a week  
Accepts: office paper, newspaper, magazines, and cardboard

**DUNCAN PAPER CO**

**861-1951 or 837-2654**

No charge for either: 500 lb white paper or 2000 lb newspaper  
\*\*\* If meet requirements for 1, other is free  
No bins available  
Collection is based on a schedule that the school will develop based on when it meets weight requirements.  
Accepts: Newspaper (includes magazines and phone books)  
White paper  
Some cardboard if flattened

**ELLIS RECYCLING**

**649-2940**

151 Industrial Dr.  
Slidell  
Drop off only, Accepts everything plastic, glass and rubber.  
Buys computer paper.

**LEGACY RECYCLING**

**865-7220**

105 gal toter no charge if full  
Collection every 2 weeks  
Accepts: White paper only

**SOUTHEAST PAPER RECYCLING CO**

**733-1954**



Newspaper only  
Fill bin once a month = 3,200 lb  
No cost for pick-up or bins

**SOUTHERN SCRAP MATERIAL CO.** **942-0340**  
Buy back aluminum cans and aluminum materials.

**STANCO SOLID WAISTE** **893-0322**  
Terry L. Lacombe  
69015 Hwy 59  
Mandeville LA 70471  
Fax: 504-809-1713  
Accepts for drop off only: newspapers, metal cans, car batteries, cardboard, plastic bottles, and glass.

**UPTOWN RECYCLING** **523-8485**  
Buy back aluminum cans and aluminum materials.

**VISTA FIBERS** **822-9403**  
Accepts for drop off only: newspapers, plastic bottles, glass, and cardboard. Pays for aluminum cans and white computer paper.

**WASTE MANAGEMENT** **949-3333**  
8 yd can costs 75\$/month  
Collection once a week  
Accepts corrugated cardboard only

## 2.3 Systematize a Management Team

Who is going to run the program? It is recommended that a club or organization start the program or run it. If the school already has an environmental club, it would be a great addition to their activities. The important thing is that the students have a sponsor who is interested in recycling and can make all the outside contacts for the students. Make announcements at a meeting and put up flyers around the school to draw students who are interesting in helping out. Possibly even have a short informational presentation about the importance of recycling.

It is important that your team be interested in running the program--the success of a project of this sort depends upon those involved. Your team could consist of students, teachers, janitors, parents, and even volunteers. If you choose to use students make sure that you keep them interested and make it fun for them. Possibly plan a field trip to a recycling center as a reward for their efforts. As long as the team is committed it does not matter who it is. However, the selection of a coordinator is very important. The team

coordinator should either be a club sponsor, head of science or environmental department, or someone who is thoroughly interested and enthusiastic about recycling and the environment.

## **2.4 What Should be Recycled?**

Selecting what to and what not to recycle is very dependent on what your school produces, what kind of program you have decided to use, and the recycling companies. Make sure that you consult the chart as to what companies will and will not accept. If you are only doing in-school recycling, you are limited to what the school produces. However, if you are extending your recycling program to the community, just remember that you will be responsible for whatever is recycled. It would be wise to limit the recycling or distribute a flyer of acceptable and unacceptable things to recycle. The more that you allow, the harder it will be to sort and transport the recyclables.

Safety is also important. When you are dealing with recyclables that are unclean such as cans, make sure that gloves are used to sort them. In addition, if your recycling program demands on campus storage make sure that your central storage space for messy recyclables (bottles and cans) is in a safe place. You do not want an insect problem to result from your recycling containers.

## **2.5 Collecting and Storing System**

This step is most important to the production of program number four. The desired method of collecting recyclables depends on how much the school is willing to recycle. Refer to Appendix b. the Operation and Maintenance Manual to see examples of a working program.

A central storage location is very important. When selecting a central storage unit, make sure that it fits the needs of the school, there are a few things to keep in mind. What is the size of the area and how many totes will need to be stored? How large are they? Last are they accessible? Can a recycling company or car easily access this location?

## **2.6 Find a Proposed Budget**

How much money will be needed? Needs for funding include the price of the bins and totes and possible recycling fees. First, find out if the school has any funds for this sort of project. Next, does your club or organization have excess funding? If not, try the parents' club. This would be a great way for the parents to get involved and learn about your new project.

## **2.7 Bin Selection**

For an ongoing recycling program, these are the proposed bin and toter sizes:

- 20 gal: temporary storage of white paper for each classroom
- 30 gal: temporary storage of white paper for offices
- 45 gal: temporary hallway, copy room, and teachers' workroom storage of white paper.

After reviewing the design requirements established by the quantification test, recycling collector choice, and project criteria, ASCE identified several waste storage needs and visited container suppliers to inventory the availability of storage bins. Each possible bin was evaluated according to the project criteria. Please refer to the Appendix b. Section 2 to see the documentation. Some ideas for bin purchasing are K-Mart and Home Depot.

## 2.7 Choose a Recycling Company

The table below is a matrix of information on local New Orleans recycling companies. Please make your selection carefully.

**Table 1**  
**Recycling Company Survey Results**

Company	Bin Supply		Waste Accepted									Collection Frequency	Bin Rental and Pick Up Fees
	Contracts w/ Schools	Room Size	Storage Size	Aluminum	Glass	Plastic	Mixed Paper	White Paper	Magazines	Cardboard	Newspaper		
BFI	X	X	X	X	X	X	X	X	X	X	X	4/month	85\$/month-building
Duncan Paper Co.	X							X		X	X	weight	500 lbs white or 2000 lbs newspaper
Legacy Recycling	X		X					X				2/month	Free/104 gal paper
Southeast Paper	X	X								X	X	1/month	Pick up or drop off
Vista Fibers *				X	X	X	X	X	X	X	X		Will not pick up
Waste Management	X	X								X		4/month	75\$/month
Uptown Recycling				X									Will not pick up

\* Please remember that this handbook was written in the spring of 2001. This information is subject to change. Please contact the individual companies.

## 2.8 Education

To ensure a successful recycling program, it is recommended that you educate the children about the environment and the needs for recycling. Please refer to Appendix C or the web at <http://www.tulane.edu/~eaffairs/williamslessons.pdf>. This is an example of a lesson plan created by a Xavier University student for second and third graders.

### SECTION 3: HOME RECYCLING

The city of New Orleans provides curbside recycling through BFI. We recommend that you place your recycling bin on the curb after 6:00 pm the night before your recycling day. Please do not put your recycling bin on the curb until it is at least three quarters full. If you need a recycling bin please call the city's Department of Sanitation at 299-3670, or if you need a recycling pick-up schedule call BFI at 837-8940.

Here is a list of what the city of New Orleans will recycle and how to prepare them for curbside pick up:

	Newspaper	Plastic	Cans	Glass	Cardboard
<b>YES</b>	Newspaper, Magazines, Telephone books, Catalogs, and Paper bags only	Any plastic and food beverage container With a 1 or 2 on bottom	Aluminum, tin and steel cans	Glass food and beverage containers of all colors	Clean, unsoiled corrugated boxes. Must have corrugation ridges between paper sheets
<b>HOW</b> *	Please: Place in paper bag along side of bin	Please: Rinse and drain completely; flatten if possible and remove caps	Please: Rinse, drain completely, flatten if possible	Please: Rinse, drain completely, remove caps	Please: flatten if possible and place in paper bag
<b>NO</b>	No: junk mail or other types of paper	No: Plastic bags, automotive or chemical containers	No: Foil, pie tins, siding, or chemical cans of any type	No: Ceramics, drinking glasses, light bulbs, plate glass, tempered glass, crystal or other non food or beverage containers	No: Cereal or paper paste board type boxes

## **APPENDIX A**

# **ENVIRONMENTAL WEB PAGES**

## ENVIRONMENTAL WEB PAGES

### The Louisiana Environment

- Alliance for Affordable Energy
  - [www.gnofn.org/~all4nrg](http://www.gnofn.org/~all4nrg)
- Coalition to Restore Coastal Louisiana
  - [www.cecl.org](http://www.cecl.org)
- Lake Pontchartrain Basin Fund
  - [www.saveourlake.org](http://www.saveourlake.org)
- Louisiana Coast Restoration
  - [www.lacoast.gov](http://www.lacoast.gov)
- Louisiana Environmental Action Network (LEAN)
  - [www.leanweb.org](http://www.leanweb.org)
- Louisiana Environmental Information
  - [www.tulane.edu/~bfleury/envirobio/enviroweb.html](http://www.tulane.edu/~bfleury/envirobio/enviroweb.html)

### Environmental Groups and Information Sites

- American Society of Civil Engineers (and Environmental)
  -
- Earth Day Network
  - [www.earthday.net](http://www.earthday.net)
- Earth's 911 (General information on recycling and what to recycle.) \*\*
  - [www.1800cleanup.org/locator.asp](http://www.1800cleanup.org/locator.asp)
- EcoNet
  - [www.igc.org/igc/gateway/enindex.html](http://www.igc.org/igc/gateway/enindex.html)
- Envirolink
  - [www.envirolink.org](http://www.envirolink.org)
- Environmental News Network
  - [www.enn.com](http://www.enn.com)
- Environmental Protection Agency (EPA) \*\*
  - [www.EPA.gov](http://www.EPA.gov)
- Free the Planet!
  - [www.freetheplanet.org](http://www.freetheplanet.org)
- GrassRoots Recycling Network \*\*
  - [www.grrn.org](http://www.grrn.org)
- Greenpeace
  - [www.greenpeace.org](http://www.greenpeace.org) or [www.greenpeaceusa.org](http://www.greenpeaceusa.org)

- Louisiana Department of Environmental Quality \*\*
  - [www.dep.state.la.us/](http://www.dep.state.la.us/)
- National Recycling Coalition
  - [nrc-recycle.org](http://nrc-recycle.org)
- Recycling Information (New Orleans recycling information) \*\*
  - [new-orleans.la.us/cnoweb/recycle/index.html](http://new-orleans.la.us/cnoweb/recycle/index.html)
- Resource Recycling
  - [www.resource-recycling.org](http://www.resource-recycling.org)
- Scorecard (Toxic Release Inventory Information)
  - [www.scorecard.org](http://www.scorecard.org)
- State PiRGs
  - [www.pirg.org](http://www.pirg.org)
- The Environment: A Global Challenge
  - <http://library.thinkquest.org/26026/index.php3>
- The Tulane University Green Club \*\*
  - [www.tulane.edu/~greenclub](http://www.tulane.edu/~greenclub)
- The Tulane University Environmental Information Site \*\*
  - [green.tulane.edu](http://green.tulane.edu)
- Think Earth Organization (A great teaching tool.) \*\*
  - [www.thinkearth.org](http://www.thinkearth.org)

## APPENDIX B

# OPERATION AND MAINTENANCE MANUAL



# **Operations and Maintenance Manual**

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## **SECTION 1: INTRODUCTION**

The proposed St. Stephen recycling program will involve the collection of recoverable white paper wastes generated in the school classrooms, offices, and library. A recycling collection company will reclaim the recycled materials collected by the St. Stephen program. The proposed program has been designed for sustainability and efficiency, and includes a program for educational awareness about the benefits of recycling. The Tulane Student Chapter of the American Society of Civil Engineers (ASCE) designed the program with a philosophy that the sustainability and success of the project relies on the enthusiasm of the St. Stephen staff and the interaction of the children. Involving the children in the operation of the recycling program is intended to instill responsible waste management ethics and increase student involvement with and excitement about recycling. This Operation and Maintenance Manual outlines recommended procedures to be used in support of the proposed St. Stephen recycling program.

## **SECTION 2: FIRST YEAR PROGRAM START-UP PROCEDURES**

### **2.1 Recycling Collection Company Contract**

Once the proposed program has been approved, St. Stephen staff will develop a contract with the chosen recycling collection Service Company. At the time of this report, the recommended recycling collection service provider is Legacy Project. During the contract development, ASCE will provide design support to the two parties through meeting participation as necessary. It will be the responsibility of St. Stephen staff to initiate the contracting process once the recycling program is approved.

A formal collection schedule should be developed between St. Stephen and Legacy Project paper as a part of the program contract development. ASCE recommends that schedule development team consider the following:

- St. Stephen produces the required amount of white paper, 104 pounds, for free collection services once every 2 weeks.
- Collection of recycled material will be unnecessary during the summer and winter vacations.
- Recycling collections should not be taken on weekdays during the hours of 7:00 AM to 8:00 AM and 2:30 PM to 3:30 PM. These are heavy traffic times and it may not be possible to access the central storage unit.
- Collection of recycled material may need to occur weekly near the close of the school year to remove the large amount annual school materials.

ASCE recommends that a recycling schedule be created based on St. Stephen school year and holidays. Both Legacy and St. Stephen should reach an agreement on the calendar.

### **2.2 Equipment Acquisition**

After performing a quantification test and doing research on waste, ASCE decided that the appropriate bin sizes are 20 gal bins, 30 gal bins, and 50 gal totes. Because St. Stephen is not able to provide the money for purchasing the bins and totes, ASCE acquired these bins through money donations from companies that are involved in environmental issues.

### **2.3 Educational Support**

To support the proposed recycling program, members of ASCE visited the St. Stephen campus during the Fall 2000 school semester to teach the student body about the benefits of recycling. Each classroom was given a 10-15 minute lecture describing the purpose of recycling and informing the students about the use of their recycling program. Realized and actual benefits of the educational support include more recycling by the students and a reduction of contamination in the collected recoverable wastes.

### **2.4 ASCE Responsibilities**

ASCE will continue to support the St. Stephen recycling program during its first year of operation. ASCE responsibilities include the following:

- Assisting St. Stephen and the recycling company with contract development.
- Assisting St. Stephen with equipment acquisition.
- Providing an educational foundation to St. Stephen students about recycling that will support the sustainability and operation of the program.
- Design and Operational adjustments.

Once the contracted recycling company begins a routine collection of St. Stephen recoverable materials, an ASCE representative will conduct a visual inspection of the recycling program during a monthly campus visit for the remainder of the 2000/2001 school year. During the visual inspection, the ASCE representative will walk through the St. Stephen campus to make sure that the bins are being used and emptied properly and that the bins are not overflowing. The results of this inspection will be used to make design and operational adjustments to the recycling program as necessary.

## **SECTION 3: NORMAL PROGRAM OPERATIONS**

### **3.1 St. Stephen Responsibilities**

It is the responsibility of St. Stephen School to collect the recycled material produced throughout the campus and to store it in the central storage unit. In addition to recoverable waste collection and transfer, St. Stephen will be responsible for sorting the collected wastes into the groups of recycled material accepted by the recycling collection company. The normal operation of the recycling program includes the following two groups of procedures:

- 1) Student classroom recycling representative
  - a. Each classroom will have a recycling representative for the week that will be chosen according to procedures set forth by the teachers of each individual classroom.
  - b. The recycling representative will sort the contents of the classroom recycling bin into the appropriate hall storage bins during the last ten minutes of class on Monday and Thursday of each week. There will be one bin for white paper only.
- 2) Eighth grade recycling collectors
  - a. Eighth grade recycling collectors will be chosen each week according to procedures set forth by the teachers of each individual classroom.

- b. At the end of each Friday as a part of the exploratory curriculum, the recycling collectors will be responsible for transporting the recycled materials from the two hall bins, two offices, library, and the copy room to the central storage unit. This transfer of recyclables will occur under the direction and supervision of the St. Stephen recycling program coordinator (currently Mrs. Foster).
- c. The students will transfer the recycled materials from the hall bins and offices into the respective storage totes.

If a designated recycling representative or recycling collector is sick or on vacation, it is the responsibility of the teacher to make sure that the recycling program operations continue. This can be accomplished by either of the two following recommended program options:

- 1) The teacher selects a new student who will perform the duties of the missing student.
- 2) The teacher performs the duties of the missing student.

### **3.2 Legacy Project Responsibilities**

Legacy Project will be responsible for the collection of recycled materials sorted and stored by St. Stephen in the central storage unit. Collection of the recyclables will occur as designated in a contract between St. Stephen and Legacy. Recommended procedures for the collection of recycled material by Legacy include:

- 1) Remove the filled storage totes from the central storage unit located on Chestnut Street.
- 2) Empty the storage totes.
- 3) Replace the totes in the central storage unit so that they are ready to be refilled by St. Stephen program operators.
- 4) Quick inspection of the transfer site to recover any litter caused by the transfer process.

Based on the St. Stephen waste production rates determined by the quantification test, ASCE recommends that Legacy Project collect recycled material at St. Stephen once every two weeks. The actual collection frequency will be dictated by the schedule developed in the contract between St. Stephen and Legacy. Currently Legacy Project is in the Uptown area on Tuesday mornings.

### **3.3 ASCE Responsibilities**

After the first operational year of the St. Stephen recycling program, the 2000/2001 school year, ASCE will not be directly involved in the program operation.

### **3.4 Yearly Fall Start-up Procedures**

Each year, at the beginning of the fall semester, the proposed St. Stephen recycling program will need to be reinstated. To ensure the sustainability of the proposed program, ASCE recommends the following program start-up procedures:

- 1) The recycling program coordinator (currently Mrs. Foster) should review the St. Stephen contract with the recycling collection company and make adjustments as necessary to ensure that it meets the school's collection needs.
- 2) A site reconnaissance of the St. Stephen campus should be made to verify that all of the collection bins are available, functional, and placed in the proper location.
- 3) Each classroom teacher should implement his or her recycling representative and recycling collector choice program.

- 4) Each classroom teacher should provide their students with an educational review of the benefits of recycling and instructions regarding the operation and use of the St. Stephen recycling program. In years to come, another alternative could be for the eighth grades to educate the younger students on recycling.

ASCE also recommends that the program coordinator (currently Mrs. Foster) compose a formal letter evaluating the status of the St. Stephen recycling program during the program start-up phase for the first 5 years of program operation (2001-2006). This letter to be sent to ASCE could then be used by ASCE, to improve the design process used for other school recycling programs. The letter would also notify ASCE of any emerging concerns or problems within the St. Stephen program that may require remediation through further design assistance.

## **SECTION 4: MAINTENANCE**

### **4.1 Equipment Maintenance**

The responsibility of recycling bin and toter upkeep will be shared by all of the program users including St. Stephen staff members, St. Stephen students, and Legacy Project. collectors. Specifically, teachers will be responsible for their classroom bins and should notify St. Stephen maintenance staff when the bins need to be cleaned or replaced in excess of the normal cleaning and inspection schedule. St. Stephen maintenance staff will have the following obligations with regard to equipment maintenance and upkeep:

- Clean the bins as requested by classroom teachers.
- Inspect each of the bins and toters twice per year for structural failure and excessive wear and tear at the beginning of each school year and at the end of each winter break.
- Clean the bins twice per year as regular maintenance at the beginning of each school year and at the end of each winter break. Cleaning needs will probably not exceed washing the bins and toters down with a wet towel.

### **4.2 Equipment Replacement**

If bins and toters are damaged the St. Stephen maintenance staff should be notified immediately, and the damaged equipment should be replaced. It is recommended that the replacement equipment be the same size and color as the damaged equipment to maintain program consistency. To ensure uninterrupted program continuation, ASCE recommends that St. Stephen maintenance staff have one or two, depending on storage space limitations, extra containers of each type on hand in the event of bin or toter failure.

## **SECTION 5: EDUCATIONAL SUPPORT**

To support the proposed St. Stephen recycling program, ASCE recommends the implementation of an annual formal recycling educational program at St. Stephen to educate students about the purpose, benefits, and logistics of recycling. A sample recycling educational curriculum developed for third graders or younger by Eman Williams, who currently works at the Mayor's Office of Environmental Affairs, is included in the recycling program recommendations technical memorandum as Appendix C.

St. Stephen has also been active in the Audubon Zoo "Zoo-to-do" Festival each year. Last year they presented art projects made out of recycled material for a school-wide competition. ASCE recommends the continuation of this and other extra activities centered on recycling and reuse education to ensure student enthusiasm and participation in the St. Stephen recycling program.