附件一：ARI(Advanced Recovery Inc.)簡介

Now that the EPA has begun monitoring CRT disposal. It is more important than ever for you to consider practical, affordable landfill alternatives. Only by allowing Advanced Recovery to completely recycle all of your equipment can you be assured that the EPA standards will be followed — and that you're doing the best thing for the environment.

Let Advanced Recovery tackle your Recycling Needs.

We even offer nationwide insured transportation service to pick up and move leased and surplus computers. Just ask us for a quick price quote. Perhaps the President of Advanced Recovery — Mark Rea Sr. — puts it best when he says;

"We must challenge ourselves to recycle all things, even those which appear to be unrecyclable"

ADVANCED RECOVERY
INCORPORATED
A DIVISION OF ARI INDUSTRIES, INC.

LOCATIONS

Newark NJ:
973-485-9100 • Facsimile-973-485-8844

Port Jervis NY
845-858-8809 • Facsimile-845-858-8848

Fairmont NC
910-628-8803 • Facsimile-910-628-6341

Printed on Recycled Paper

www.ariind.com
e-mail: info@ariind.com

take one worry out of the environment

Recycle

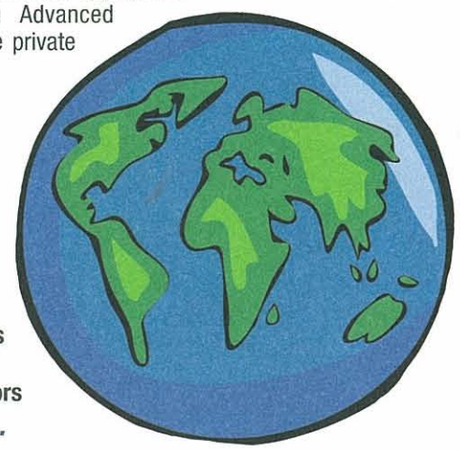
COMPUTERS, ELECTRONICS,
FERROUS & NON FERROUS METAL

ADVANCED RECOVERY

CRA Member
EPA Approved NJDEP Approved

Advanced Recovery, provides a worry-free alternative to environmental liability.

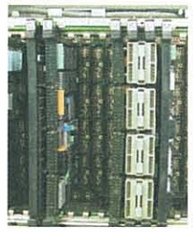
We are registered with the EPA and appropriate state agencies, allowing Advanced Recovery to serve both the private and government sectors.



We recycle ALL electronic components.

- **CPU's • Circuit Boards**
- **Integrated Circuits**
- **IC's • Peripherals**
- **Computer Mainframes**
- **Peripherals • Printers**
- **Test Equipment**
- **Central Processing Units**
- **Telephone Systems**
- **Wire & Cable • Processors**

If it's not on this list... please contact us.

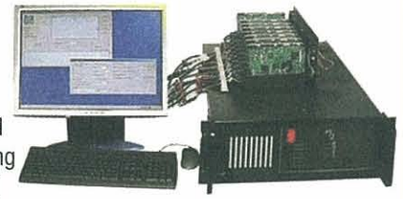


While the rapid advances in technology have raised productivity to an all-time high, the life cycle of computer and electronic equipment has dwindled down to as little as two years. Sooner or later, this obsolete equipment ends up as "high-tech trash" in a landfill—a permanent rest stop on the information super-highway. Each year, over 10 million PCs, workstations and mainframes are being added to a landfill.

The following information illustrates why proper recycling of any electronics is so important. A single discarded cathode ray tube (CRT) in a computer monitor contains traces of phosphorus, cadmium and 6-8 lbs of LEAD. These hazardous materials are sealed to protect users, but they will leach out in a landfill once the CRT is broken—and eventually find their way into the public water supply. Also, when the glass is crushed in a trash-compacting facility, the lead-bearing particles become an airborne hazard.

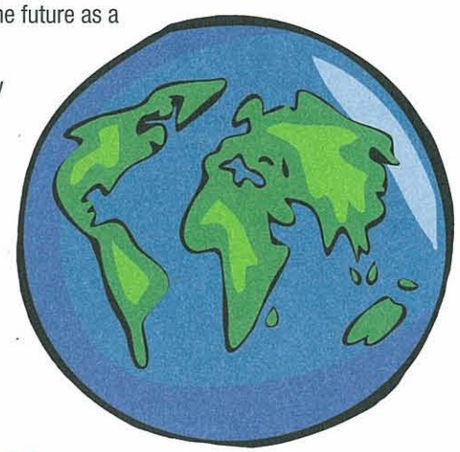
That's why, beginning in 1992, the Environmental Protection Agency (EPA) closely monitors CRT disposal methods. In 1993, the EPA began targeting companies that dispose large quantities of CRTs through landfills or incineration. Additionally, many state and local regulatory agencies are now monitoring the disposal of CRTs and other computer equipment.

Reformatting Hard Drives...



We offer the reformatting of hard drives using the DOD format. If hard drives destruction is mandated we physically destroy the hard drive and the material is sent to a refinery. Advanced Recovery is a recycling company dedicated to meeting the environmental and security challenges of the future as a world-class organization.

We are a recycling company dedicated to meeting the environmental challenges of the future with a world-class organization. We provide recycling services to manufacturers, developers, governments & financial institutions.



Recycling over 300 tons of equipment monthly.

Over 600,000 pounds of computer equipment is "dumped" at our facility each month. We salvage circuit boards, print heads, semiconductors, and other valuable scrap materials, and reclaim precious and semiprecious metals.

We remarket ICs worldwide as well. If you have surplus new and used ICs, simply fax us a list of the ICs you have, and we'll provide you with a quote. If we do not salvage material for reuse, or export it, we recycle it for use in other products. These include glass, plastics, steel, aluminum and copper wire – everything from the tiniest bolt to the entire plastic casing. In fact 99.97% (by weight) of every machine is reused.

Non Ferrous & Ferrous Metals Purchases.

Aluminum, Stainless, Copper, and Brass in any form.

Metal price subject to Market Conditions.

866-794-8050 North East and Midwest US

877-628-8001 South Eastern US

附件二：紐澤西州環境保護部簡報

State of New Jersey
Department of Environmental Protection

Solid and Hazardous Waste Management Program
Bureau of Recycling and Planning
www.recyclenj.org

Dana Lawson
Recycling and Market Development Unit

(p) 609.984.3438
(f) 609.633.1112

(e) dana.lawson@dep.state.nj.us

Summary

- Universal Waste (general)
- Batteries
- Fluorescent Bulbs
- E-Waste Legislation

Universal Waste (UW)

- Used oil
- Antifreeze
- Thermostats
- Latex paints
- Lamps (bulbs)
- Oil-based finishes
- Batteries
- Mercury containing devices
- Consumer Electronics

UW continued

- Allows materials that would normally be managed as a hazardous waste to be properly handled under less stringent requirements for recycling.
- The rules can be found on the Solid & Hazardous Waste Rule Page. Select the "RECYCLING REGULATIONS - N.J.A.C. 7:26A-1" link:
  http://www.state.nj.us/dep/dshw/resource/rules.html
- If a company manages UW in New Jersey and wishes to engage in processing activities such as demanufacturing, shredding, monitor crushing, etc., then that company must apply for and receive a Class D Recycling Center Approval from the Department prior to commencing operations.

UW continued

- Technical Manual for obtaining a Class D Recycling Center Approval (a compressed Microsoft Word document):
  http://www.state.nj.us/dep/dshw/resource/classdmat.zip
- The Universal Waste guidance material available on our program's website is detailed, and draws directly from both state and federal regulations. In addition, New Jersey companies that manage Universal Waste can be listed on our website:
  http://www.state.nj.us/dep/dshw/lrm/uwaste/uwindex.htm

Batteries

- Domestically manufactured non-rechargeable alkaline (AAA, AA, C, D and 9 volt) batteries made after 1994 no longer contain mercury
- NJDEP encourages recycling wherever possible, alkaline batteries are not a listed hazardous waste under the Resource Conservation and Recovery Act (RCRA) and can be thrown away in the garbage
- Options to throwing the batteries in the trash include
  - Jewelers, pharmacists or battery retailers
- NJDEP recommends rechargeable batteries wherever possible

Batteries continued

- New Jersey bans the disposal of mercuric oxide batteries, nickel-cadmium and sealed lead rechargeable batteries.
- Manufacturers are required to accept the financial responsibility for the environmentally sound collection, transportation, recycling or proper disposal of used dry cell batteries.
- The Rechargeable Battery Recycling Corporation (RBRC) is a non-profit, public service organization created by the rechargeable battery industry and dedicated to the recycling of rechargeable batteries.

RBRC contact info

- Todd Ellis

Northeastern Regional Account Manager
Rechargeable Battery Recycling Corporation
(678) 419-9990 x227
www.RBRC.org
tellis@rbrc.com

Fluorescent bulbs

- NJ requires all commercial, industrial and institutional facilities to handle all Hg-added lamps failing the toxicity characteristic leaching procedure (TCLP) for Hg of .2 milligrams per liter as a universal or hazardous waste
- The Department encourages all generators of Hg containing lamps to manage them as Universal Waste recyclable material.
- The Department is still collecting data on statewide fluorescent lamp recycling but expects to see between **260-300 tons** reported as recycled in **2008.**
- Fact sheet for Fluorescent bulbs:
  http://www.nj.gov/dep/dshw/lrm/uwaste/uwmerc.lamps.htm

Consumer Electronics

- any appliance used in the home or business that includes circuitry. Consumer electronics includes the components and sub-assemblies that collectively make up the electronic products and may, when individually broken down, include batteries, mercury switches, capacitors containing PCBs, cadmium plated parts and lead or cadmium containing plastics. Examples of consumer electronics include, but are not limited to, computers, printers, copiers, telefacsimiles, VCRs, stereos, televisions, and telecommunication devices." The adopted amendments to the Universal Waste Rule were effective on December 17, 2002
- General information on Universal Waste Consumer Electronics regulations in NJ: http://www.state.nj.us/dep/dshw/lrm/uwaste/uwelfact.htm

Consumer Electronics

- New reporting category

2006

– 5,418 tons reported recycled in NJ

2007

– Dept. began paying $7/ton
– 8,357 tons reported recycled in NJ

Electronics continued

- In January 2009 Governor Jon S. Corzine signed the "Electronics Waste Recycling Act" P.L.2008, c.130 (the Act) into law.
- The law requires original equipment manufacturers to establish a collection, transportation and recycling system, either independently or jointly, for the recovery of covered electronic devices (CED).
- Consumers must be able to recycle CED for free.

Consumer Electronics cont

- Covered Electronic Device
  - desktop or personal computer,
  - computer monitor,
  - portable computer,
  - or television sold to a consumer

Electronics continued

- The Act requires, among other things, that the Department draft rules for manufacturers of covered electronic devices sold in or into the New Jersey.
- The rules will require that electronic waste recycling is available to all NJ consumers and that spent electronics are recycled in compliance with all state, local and federal laws.

Electronics continued

- Each manufacturer must submit a plan for a safe, convenient and environmentally sound recycling system for handling its share of covered electronic devices.

The plan should include a description of:

- Methods for collection
- Processes that will be used (authorized recyclers, etc.)
- Methods that will be used to report recover/recycling rates
- End Markets from point of delivery to final disposition, domestic and global
- Systems to ensure environmentally sound end of life management of CED
- Plans to publicize services

Electronics continued

- General info for electronics recycling

  http://www.state.nj.us/dep/dshw/recycling/Electronic_Waste/index.html

For more information

Dana Lawson
Principal Environmental Specialist
New Jersey Department of Environmental Protection
Solid and Hazardous Waste Management Program
Bureau of Recycling and Planning

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(609) 984 3438

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dana.lawson@dep.state.nj.us

附件三：紐澤西州電子廢棄物管理法

CHAPTER 130

AN ACT concerning electronic waste management, and amending, supplementing and repealing various sections of P.L.1987, c.102 and P.L.2007, c.347.

BE IT ENACTED *by the Senate and General Assembly of the State of New Jersey:*

1. Section 2 of P.L.2007, c.347 (C.13:1E-99.95) is amended to read as follows:

C.13:1E-99.95 Definitions relative to electronic waste management.

2. As used in sections 1 through 21 of P.L.2007, c.347 (C.13:1E-99.94 et seq.) and section 3 of P.L.2008, c.130 (C.13:1E-99.96a):

"Authorized recycler" means a person who: (1) engages in the manual or mechanical separation of covered electronic devices to recover components and commodities contained therein for the purpose of re-use or recycling; or (2) changes the physical or chemical composition of a covered electronic device by deconstructing, size reduction, crushing, cutting, sawing, compacting, shredding, or refining for the purpose of segregating components, and for the purpose of recovering or recycling those components, and who arranges for the transport of those components to an end user.

"Brand" means symbols, words, or marks that identify a covered electronic device, rather than any of its components.

"Business concern" means any corporation, association, firm, partnership, sole proprietorship, trust or other form of commercial organization. "Business concern" shall not include a small business enterprise.

"Cathode ray tube" means a vacuum tube or picture tube used to convert an electronic signal into a visual image.

"Computer" means an electronic, magnetic, optical, electrochemical, or other high-speed data processing device performing logical, arithmetic, or storage function, and may include both a computer central processing unit and a monitor, but the term shall not include an automated typewriter or typesetter, a portable handheld calculator, a portable digital assistant, or other similar device.

"Consumer" means a person who purchases a covered electronic device in a transaction that is a retail sale. "Consumer" shall not include any business concern purchasing covered electronic devices.

"Covered electronic device" means a desktop or personal computer, computer monitor, portable computer, or television sold to a consumer. A "covered electronic device" shall not include any of the following: (1) an electronic device that is a part of a motor vehicle or any component part of a motor vehicle assembled by, or for, a vehicle manufacturer or franchised dealer, including replacement parts for use in a motor vehicle; (2) an electronic device that is functionally or physically a part of a larger piece of equipment designed and intended for use in an industrial, commercial, or medical setting, including diagnostic, monitoring, or control equipment; (3) an electronic device that is contained within a clothes washer, clothes dryer, refrigerator, refrigerator and freezer, microwave oven, conventional oven or range, dishwasher, room air conditioner, dehumidifier, or air purifier; or (4) a telephone of any type unless it contains a video display area greater than four inches measured diagonally.

"Department" means the Department of Environmental Protection.

"Local government unit" means any county or municipality, or any agency, instrumentality, authority or corporation of any county or municipality, including, but not limited to, sewerage, utilities and improvement authorities, or any other political subdivision of the State.

"Manufacturer" means any person: (1) who manufactures or manufactured covered electronic devices under a brand that it owns or owned or is or was licensed to use, other than a license to manufacture covered electronic devices for delivery exclusively to or at the order of the licensor; (2) who sells or sold covered electronic devices manufactured by others under a brand that the seller owns or owned or is or was licensed to use, other than a license to manufacture covered electronic devices for delivery exclusively to or at the order of the licensor; (3) who manufactures or manufactured covered electronic devices without affixing a brand; (4) who manufactures or manufactured covered electronic devices to which the person affixes or affixed a brand that the person neither owns or owned nor is or was licensed to use; (5) for whose account covered electronic devices manufactured outside the United States are or were imported into the United States, provided however, if, at the time such covered electronic devices are or were imported into the United States, another person has registered as the manufacturer of the brand of the covered electronic devices pursuant to subsection b. of section 9 of P.L.2007, c.347 (C.13:1E-99.102), then paragraph (5) of this definition shall not apply; or (6) a person who assumes the obligations and responsibilities for any manufacturer pursuant to paragraphs (1) through (5) of this definition.

"Market share" means a television manufacturer's national sales of televisions expressed as a percentage of the total of all television manufacturers' national sales based on the best available public data.

“Monitor” means a separate video display component of a computer, whether sold separately or together with a computer central processing unit and computer box, and includes a cathode ray tube, liquid crystal display, gas plasma, digital light processing, or other image projection technology, greater than four inches measured diagonally, and its case, interior wires and circuitry, cable to the central processing unit, and power cord.

“Obligation” means: (1) the return share in weight, identified for an individual manufacturer, as determined by the department pursuant to subsection a. of section 12 of P.L.2007, c.347 (C.13:1E-99.105); or (2) the market share, identified for an individual television manufacturer, as determined by the department pursuant to subsection c. of section 3 of P.L.2007, c.347 (C.13:1E-99.96).

“Orphan device” means a covered electronic device for which no manufacturer can be identified, or for which the original manufacturer no longer exists.

“Person” means an individual, trust firm, joint stock company, business concern, and corporation, including, but not limited to, a government department, partnership, limited liability company, or association.

“Portable computer” means a computer and video display greater than four inches in size that can be carried as one unit by an individual, including a laptop computer.

“Program year” means a full calendar year beginning on or after January 1, 2011.

“Purchase” means the taking, by sale, of title in exchange for consideration.

“Recycling” means any process by which materials which would otherwise become solid waste are collected, separated or processed and returned to the economic mainstream in the form of raw materials or products. “Recycling” shall not include energy recovery or energy generation by means of incinerating electronic waste whether apart or in combination with other wastes.

“Registrant” means a manufacturer of covered electronic devices that is in full compliance with the requirements of this act.

“Retail sales” means the sale of covered electronic devices through sales outlets, via the Internet, mail order, or other means, whether or not the retailer has a physical presence in this State.

“Retailer” means a person who owns or operates a business that sells new covered electronic devices in this State by any means to a consumer.

“Return share” means the proportion of covered electronic devices for which an individual manufacturer is responsible to collect, transport, and recycle, as determined by the department pursuant to subsection a. of section 12 of P.L.2007, c.347 (C.13:1E-99.105).

“Return share in weight” means the total weight of covered electronic devices for which an individual manufacturer is responsible to collect, transport, and recycle, as determined by the department pursuant to subsection a. of section 12 of P.L.2007, c.347 (C.13:1E-99.105).

“Sale” or “sell” means any transfer for consideration of title, including, but not limited to, transactions conducted through sales outlets, catalogs, or the Internet, or any other, similar electronic means, and excluding leases.

“Small business enterprise” means any business which has its principal place of business in this State, is independently owned and operated, and employs the equivalent of fewer than 50 full-time employees.

“Television” means a stand-alone display system containing a cathode ray tube or any other type of display primarily intended to receive video programming via broadcast, having a viewable area greater than four inches measured diagonally, able to adhere to standard consumer video formats and having the capability of selecting different broadcast channels and support sound capability.

“Video display” means an output surface having a viewable area greater than four inches when measured diagonally that displays moving graphical images or a visual representation of image sequences or pictures, showing a number of quickly changing images on a screen in fast succession to create the illusion of motion, including, if applicable, a device that is an integral part of the display and cannot be easily removed from the display by the consumer that produces the moving image on the screen. A “video display” typically uses a cathode ray tube, liquid crystal display, gas plasma, digital light processing, or other image projection technology.

2. Section 3 of P.L.2007, c.347 (C.13:1E-99.96) is amended to read as follows:

C.13:1E-99.96 Registration for television manufacturers; fee, annual report, recycling program.

3. a. Beginning on January 1, 2010, and each January 1 thereafter, each manufacturer of televisions offered for sale for delivery in this State shall register with the department and pay a registration fee of $5,000. Each television manufacturer’s registration and renewal shall include a list of all of the brands under which its televisions are sold.

b. Each registered television manufacturer shall submit an annual renewal of its registration to the department and pay to the department a registration renewal fee of $5,000 by January 1 of each program year. Each registered television manufacturer’s renewal shall include an annual report.

c. In addition to reporting all brands under which its televisions are sold, regardless of whether the brand is owned or licensed, the registered television manufacturer's annual report shall include the total number of all new televisions sold in the State in the previous program year. The department shall determine a registered television manufacturer's market share.

d. A registered television manufacturer shall inform the department, in writing, as soon as it becomes aware that it will cease selling televisions in the State.

e. By June 1, 2010, each registered television manufacturer or group of registered television manufacturers shall submit a plan to the department to collect, transport and recycle used televisions based on the television manufacturer's market share. Every plan shall be filed with a television manufacturer's annual registration, and shall include:

(1) Methods that will be used to collect the used televisions including proposed collection services;

(2) The processes and methods that will be used to recycle recovered used televisions including a description of the recycling processes that will be used, including the name and location of all authorized recyclers to be directly utilized by the plan;

(3) Means that will be utilized to publicize the collection services, including specification of a website or toll-free telephone number that provides information about the registrant's recycling program in sufficient detail to allow consumers to learn how to return their used televisions for recycling, including limitations placed by collection sites on the number of used televisions permitted for drop-off by consumers; and

(4) The intention of the registrant to fulfill its obligation through its own operations, either individually or with other registered television manufacturers, or by contract with for-profit or not-for-profit corporations, or local government units.

The department shall hold confidential any information obtained pursuant to this subsection when shown by a registered television manufacturer that the information, if made public, would divulge competitive business information, methods or processes entitled to protection as trade secrets of the registered television manufacturer.

Recovered used televisions shall not be sent to prisons for recycling either directly or through intermediaries and nothing in this section shall be construed to allow for the recycling of used televisions by prisoners. Any person committed to a jail, prison, or other institution for the detention of persons charged with or convicted of an offense shall be disqualified from being an authorized recycler.

By January 1, 2011, each registered television manufacturer or group of registered television manufacturers shall commence its used television recycling program to implement and finance the collection, transportation, and recycling of used televisions. The used television recycling program shall accept all types and all brands of used televisions, including orphan devices.

f. Each registrant's plan or plan jointly submitted by a group of registrants shall be reviewed to determine its compliance with subsection e. of this section and approved by the department. The department may reject the plan, in whole or in part, and may impose additional requirements as a condition of approval.

g. If a registered television manufacturer fails to comply with all the conditions and terms of an approved plan, the registered television manufacturer shall be prohibited from selling or offering for sale televisions in this State.

h. Registered television manufacturers that collect, transport, and recycle used televisions in excess of their market share may sell credits to another registrant or apply that excess to the following year's recycling program.

i. Nothing in this act is intended to exempt any person from liability the person would otherwise have under applicable law.

C.13:1E-99.96a Preparation of plan, annual report by department.

3. a. The department shall prepare a plan every three years that: (1) establishes used television per-capita collection and recycling goals; and (2) identifies any necessary State actions to expand collection opportunities to achieve the used television per-capita collection and recycling goals. The plan shall be posted on the department's Internet website and submitted, pursuant to section 2 of P.L.1991, c.164 (C.52:14-19.1), to the Legislature.

b. The department shall prepare an annual report, which shall be posted on the department's Internet website and submitted, pursuant to section 2 of P.L.1991, c.164 (C.52:14-19.1), to the Legislature.

The annual report shall include the following:

(1) Progress toward achieving the overall annual total recovery and recycling goals described in the plan prepared pursuant to subsection a. of this section; and

(2) An evaluation of the effectiveness of existing used television collection and processing infrastructure.

c. The used television recovery and recycling program implemented to effectuate the provisions of P.L.2007, c.347 (C.13:1E-99.94 et al.) and its associated regulations shall be fully audited by an independent,

certified public accountant at the end of each calendar year and the audit report shall be submitted, pursuant to section 2 of P.L.1991, c.164 (C.52:14-19.1), to the Legislature.

4. Section 6 of P.L.2007, c.347 (C.13:1E-99.99) is amended to read as follows:

C.13:1E-99.99 Noncompliance by manufacturer, prohibition from sales.

6. a. Any manufacturer that is not in compliance with all financial and other requirements of this act shall be prohibited from selling or offering for sale in this State a covered electronic device.

b. Beginning on January 1, 2011, it shall be unlawful for any person to sell or offer for sale in this State a new covered electronic device from a manufacturer that is not in full compliance with the requirements of this act.

c. Beginning on January 1, 2011, the department shall maintain a list of all manufacturers in compliance with the requirements of this act and shall post the list on the department's Internet website.

d. Sellers of covered electronic devices in or into the State shall consult the list established by the department pursuant to subsection c. of this section prior to selling covered electronic devices in this State. A seller shall be considered to have complied with this responsibility if, on the date that the covered electronic device was ordered from the manufacturer or its agent, the manufacturer was listed as being in compliance on the aforementioned website.

5. Section 7 of P.L.2007, c.347 (C.13:1E-99.100) is amended to read as follows:

C.13:1E-99.100 Labeling of electronic device required.

7. Beginning on January 1, 2010, a manufacturer or retailer may not sell or offer for sale a covered electronic device in this State unless the covered electronic device is labeled with the manufacturer's brand, and the label is permanently affixed and readily visible.

6. Section 8 of P.L.2007, c.347 (C.13:1E-99.101) is amended to read as follows:

C.13:1E-99.101 Compliance with Directive 2002/95/EC.

8. Beginning on January 1, 2011, no person shall sell or offer for sale in this State a new covered electronic device, including a television, if the covered electronic device is prohibited from being sold or offered for sale in the European Union on or after its date of manufacture due to the concentration of one or more heavy metals in the covered electronic device exceeding its maximum concentration value, as specified in the Commission of European Communities' Decision of August 18, 2005, amending Directive 2002/95/EC (European Union document 2005/618/EC), or as specified in a subsequent amendment to the Directive.

7. Section 9 of P.L.2007, c.347 (C.13:1E-99.102) is amended to read as follows:

C.13:1E-99.102 Collection of sampling information by department; registration; fee; TV exception.

9. a. (1) By January 30, 2012, and by each January 30 thereafter, the department shall:

(a) have completed an auditable, statistically significant sampling of covered electronic devices collected from consumers in this State during the previous program year. The sampling information collected shall consist of a list of brands of covered electronic devices and the weight of covered electronic devices that are identified for each brand. The department's sampling shall be conducted in accordance with a procedure established by the department and may be conducted by a third-party organization including an authorized recycler, to be determined by the department. The department may, at its discretion, be present at the sampling and may audit the methodology and the results of the third-party organization. The costs associated with the sampling shall be recovered from the fees paid by manufacturers to the department; and

(b) determine the total weight of covered electronic devices, including orphan devices, collected from consumers in this State during the previous program year.

(2) If a manufacturer or group of manufacturers conducts its own sampling of covered electronic devices, the manufacturer or group of manufacturers shall submit a report to the department annually by March 1, beginning the year after the program is initiated. The report shall include:

(a) the results of an auditable, statistically significant sampling of covered electronic devices collected from consumers in this State by the manufacturer or group of manufacturers during the previous program year. The sampling information reported shall consist of a list of brands of covered electronic devices and the weight of covered electronic devices that are identified for each brand; and

(b) the total weight of covered electronic devices, including orphan devices, collected from consumers in this State by the manufacturer or group of manufacturers during the previous program year and documentation

verifying collection and recycling of such devices.

b. By February 1, 2010, and each January 1 thereafter, each manufacturer of covered electronic devices offered for sale for delivery in this State shall register with the department and pay a registration fee of $5,000. Any manufacturer to whom the department provides notification of a return share and return share in weight pursuant to subsection a. of section 12 of P.L.2007, c.347 (C.13:1E-99.105) and who has not previously filed a registration shall file a registration with the department within 30 days of receiving such notification from the department. Each manufacturer's registration and renewal shall include a list of all of the manufacturer's brands of covered electronic devices.

The provisions of this section shall not apply to any manufacturer or retailer of televisions offered for sale for delivery in this State.

8. Section 10 of P.L.2007, c.347 (C.13:1E-99.103) is amended to read as follows:

C.13:1E-99.103 Requirements for manufacturer provided with return share in weight greater than zero, TV exception.

10. a. By June 1, 2010, each manufacturer to whom the department provides, by April 2, 2010, a return share in weight that is greater than zero shall submit a plan to the department to collect, transport and recycle covered electronic devices.

b. Each manufacturer to whom the department provides, by February 15, 2012 or by February 15 of any year thereafter, a return share in weight that is greater than zero shall, by March 15 of that year, comply with the requirements of subsection a. of this section.

c. An individual manufacturer submitting a plan pursuant to subsection a. of this section shall collect, transport, and recycle its return share in weight.

d. A group of manufacturers jointly submitting a plan pursuant to subsection a. of this section shall collect, transport, and recycle the sum of the obligations of each participating manufacturer.

e. Every plan shall be filed with a manufacturer's annual registration, and shall include:

(1) Methods that will be used to collect the covered electronic devices including proposed collection services;

(2) The processes and methods that will be used to recycle recovered covered electronic devices including a description of the recycling processes that will be used, including the name and location of all authorized recyclers to be directly utilized by the plan;

(3) The processes and methods that will be used to recycle recovered covered electronic devices which originated from transactions between business concerns;

(4) Means that will be utilized to publicize the collection services, including specification of a website or toll-free telephone number that provides information about the manufacturer's program in sufficient detail to allow consumers to learn how to return their covered electronic devices for recycling; and

(5) The intention of the registrant to fulfill its obligation through operation of its own plan, either individually or with other manufacturers.

The department shall hold confidential any information obtained pursuant to this subsection when shown by a manufacturer that the information, if made public, would divulge competitive business information, methods or processes entitled to protection as trade secrets of the manufacturer.

Recovered covered electronic devices shall not be sent to prisons for recycling either directly or through intermediaries and nothing in this section shall be construed to allow for the recycling of covered electronic devices by prisoners. Any person committed to a jail, prison, or other institution for the detention of persons charged with or convicted of an offense shall be disqualified from engaging in the manual or mechanical separation of covered electronic devices to recover components and commodities contained therein for the purpose of re-use or recycling.

f. Each manufacturer's plan or plan jointly submitted by a group of manufacturers shall be reviewed to determine its compliance with subsection e. of this section and approved by the department. The department may reject the plan, in whole or in part, and may impose additional requirements as a condition of approval.

g. If a manufacturer fails to comply with all the conditions and terms of an approved plan, the manufacturer shall be prohibited from selling or offering for sale in this State a covered electronic device.

h. Manufacturers that collect, transport, and recycle covered electronic devices in excess of their obligation may sell credits to another registrant or apply that excess to the following year's recycling obligation.

i. (Deleted by amendment, P.L.2008, c.130)

j. (Deleted by amendment, P.L.2008, c.130)

k. Nothing in this act is intended to exempt any person from liability the person would otherwise have under applicable law.

l. The provisions of this section shall not apply to any manufacturer or retailer of televisions offered for

sale for delivery in this State.

9. Section 11 of P.L.2007, c.347 (C.13:1E-99.104) is amended to read as follows:

C.13:1E-99.104 Information provided by retailer relative to recycling.

11. a. A retailer shall provide information provided by the department that describes where and how to recycle the covered electronic device and opportunities and locations for the collection or return of the device, including limitations placed by collection sites on the number of covered electronic devices permitted for drop-off by consumers, through the use of a toll-free telephone number and website, information included in the packaging, or information provided accompanying the sale of the covered electronic device. This information shall be provided in clear written form in English and any other languages deemed to be primary languages by the State Department of Education.

b. Beginning January 1, 2011, a retailer shall only sell covered electronic devices from registrants. Retailers shall consult the list posted on the department's Internet website pursuant to section 6 of P.L.2007, c.347 (C.13:1E-99.99) prior to selling covered electronic devices in this State. A retailer shall be considered to have complied with this responsibility if on the date that the covered electronic device was ordered from the manufacturer or its agent, the manufacturer was listed as being in compliance on the aforementioned website.

10. Section 12 of P.L.2007, c.347 (C.13:1E-99.105) is amended to read as follows:

C.13:1E-99.105 Determination of return share for manufacturer; TV exception; annual report.

12. a. (1) The department shall determine the return share for each program year for each manufacturer by dividing the weight of covered electronic devices identified for each manufacturer by the total weight of covered electronic devices identified for all manufacturers. For the first program year, the return share of covered electronic devices identified for each manufacturer shall be based on the best available public return share data from the United States, including data from other states, for covered electronic devices from consumers. For the second and each subsequent program year, the return share of covered electronic devices identified for each manufacturer shall be based on the most recent samplings of covered electronic devices conducted in this State pursuant to subsection a. of section 9 of P.L.2007, c.347 (C.13:1E-99.102).

(2) The department shall determine the return share in weight for each program year for each manufacturer for whom a return share is determined pursuant to paragraph (1) of this subsection by multiplying the return share for each such manufacturer by the total weight in pounds of covered electronic devices, including orphan devices, collected from consumers the previous program year. For the first program year, the total weight in pounds of covered electronic devices shall be based on the best available public weight data from the United States, including data from other states, for covered electronic devices from consumers. For the second and each subsequent program year, the total weight in pounds of covered electronic devices shall be based on the total weight of covered electronic devices, including orphan devices, determined by the department pursuant to subsection a. of section 9 of P.L.2007, c.347 (C.13:1E-99.102).

(3) By April 2, 2011, the department shall provide each manufacturer for whom a return share is determined pursuant to paragraph (1) of this subsection with its return share and its return share in weight for the first program year. Annually thereafter, by February 15, beginning in 2013, the department shall provide each manufacturer for whom a return share is determined pursuant to paragraph (1) of this subsection with its return share and its return share in weight for the second and subsequent program years.

b. (Deleted by amendment, P.L.2008, c.130)

c. (1) The department shall ensure that at least one electronics collection opportunity is available in each county throughout the State and in such a manner as to be convenient, to the maximum extent practicable and feasible, to all consumers in the county.

(2) The department shall ensure that collection sites do not place unreasonable limits on the number of covered electronic devices permitted for drop-off by consumers.

d. (1) Beginning on January 1, 2011, the department shall maintain a list of registrants and the brands reported in each manufacturer's registration, and post the list on the department's Internet website that is updated at least once a month.

(2) The department shall organize and coordinate public education and outreach.

e. The department shall prepare a plan every three years that: (1) establishes per-capita collection and recycling goals; and (2) identifies any necessary State actions to expand collection opportunities to achieve the per-capita collection and recycling goals. The plan shall be posted on the department's Internet website and submitted, pursuant to section 2 of P.L.1991, c.164 (C.52:14-19.1), to the Legislature.

f. The department shall prepare an annual report, which shall be posted on the department's Internet website

and submitted, pursuant to section 2 of P.L.1991, c.164 (C.52:14-19.1), to the Legislature.

The annual report shall include the following:

(1) The total weight of covered electronic devices collected in the State the previous calendar year;

(2) Progress toward achieving the overall annual total recovery and recycling goals described in the plan prepared pursuant to subsection e. of this section;

(3) A complete listing of all collection sites operating in the State in the prior calendar year, the parties that operated them, and the amount of material by weight collected at each site;

(4) An evaluation of the effectiveness of the education and outreach program; and

(5) An evaluation of the existing collection and processing infrastructure.

g. The program implemented to effectuate the provisions of this act and its associated regulations shall be fully audited by an independent, certified public accountant at the end of each calendar year and the audit report shall be submitted, pursuant to section 2 of P.L.1991, c.164 (C.52:14-19.1), to the Legislature.

h. The provisions of this section shall not apply to any manufacturer or retailer of televisions offered for sale for delivery in this State.

11. Section 13 of P.L.2007, c.347 (C.13:1E-99.106) is amended to read as follows:

C.13:1E-99.106 Maintenance of Internet website, toll-free number listing recycling sites; review of goals, fees.

13. a. The department shall maintain an Internet website and toll-free number complete with up-to-date listings of where consumers can bring covered electronic devices for recycling under the provisions of this act.

b. (Deleted by amendment, P.L.2008, c.130)

c. No more frequently than annually and no less frequently than biennially, the department shall review, at a public hearing, the covered electronic device recycling goals and registration fees. Recommended changes to the covered electronic device recycling goals and registration fees shall be included in the annual reports required pursuant to section 3 of P.L.2008, c.130 (C.13:1E-99.96a) and subsection f. of section 12 of P.L.2007, c.347 (C.13:1E-99.105).

d. No fees or costs may be charged to consumers for the collection, transportation, or recycling of covered electronic devices. Any authorized recycler may charge fees to schools or local government units for the reasonable costs incurred by the authorized recycler for the collection, transportation, or recycling of covered electronic devices.

12. Section 15 of P.L.2007, c.347 (C.13:1E-99.108) is amended to read as follows:

C.13:1E-99.108 Recycling of covered electronic devices; compliance with laws; performance requirements.

15. a. Covered electronic devices collected through any program in this State shall be recycled in a manner that is in compliance with all applicable federal, State, and local laws, regulations, and ordinances, and shall not be exported for disposal in a manner that poses a significant risk to the public health or the environment.

The provisions of this subsection shall apply to the collection and recycling of used televisions.

b. The department shall establish performance requirements for collectors, transporters, and authorized recyclers. Every collector, transporter, and authorized recycler shall, at a minimum, demonstrate compliance with the United States Environmental Protection Agency's Plug-In to eCycling Guidelines for Materials Management as issued and available on the United States Environmental Protection Agency's Internet website in addition to any other requirements mandated by federal or State law. The department shall maintain an Internet website that shall include a list of collectors, transporters, and authorized recyclers that it has determined have met these performance requirements.

13. Section 16 of P.L.2007, c.347 (C.13:1E-99.109) is amended to read as follows:

C.13:1E-99.109 Used covered electronic device, disposal as solid waste prohibited.

16. On and after January 1, 2011, no person shall knowingly dispose of a used covered electronic device, or any of the components or subassemblies thereof, as solid waste.

14. Section 17 of P.L.2007, c.347 (C.13:1E-99.110) is amended to read as follows:

C.13:1E-99.110 Enforcement; violations, penalties.

17. a. The State, including the Attorney General and the department, shall be authorized to initiate independent action to enforce any provision of this act, including failure by a manufacturer to remit the registration fee required pursuant to section 3 of P.L.2007, c.347 (C.13:1E-99.96) or section 9 of P.L.2007, c.347 (C.13:1E-

99.102), or any fee required pursuant to subsection b. of section 18 of P.L.2007, c.347 (C.13:1E-99.111) to the department. Any funds awarded by the court shall be used first to offset enforcement expenses. Money in excess of the enforcement expenses shall be deposited into a separate account, and shall be dedicated for use by the department solely for the purposes of administering and enforcing the provisions of this act and any rules or regulations adopted pursuant thereto.

b. Any person who violates the provisions of this act shall be subject to a penalty of not less than $500 nor more than $1,000 for each offense, to be collected in a civil action by a summary proceeding under the "Penalty Enforcement Law of 1999," P.L.1999, c.274 (C.2A:58-10 et seq.), or in any case before a court of competent jurisdiction wherein injunctive relief has been requested. The Superior Court shall have jurisdiction to enforce the provisions of the "Penalty Enforcement Law of 1999" in connection with this act.

If the violation is of a continuing nature, each day during which it continues constitutes an additional, separate, and distinct offense.

The department may institute a civil action for injunctive relief to enforce this act and to prohibit and prevent a violation of this act, and the court may proceed in the action in a summary manner.

c. Violations of the act include, but are not limited to:

(1) the sale of a new covered electronic device by any person that is not in full compliance with the provisions of this act;

(2) the use of a qualified collection program to recycle covered electronic devices not discarded within the State, or region as provided in section 19 of P.L.2007, c.347 (C.13:1E-99.112);

(3) the knowing failure to report or accurately report any data required to be reported to the department pursuant to this act; and

(4) the non-payment of any fee required pursuant to this act.

15. Section 18 of P.L.2007, c.347 (C.13:1E-99.111) is amended to read as follows:

C.13:1E-99.111 Rules, regulations; fees to cover department costs.

18. a. (1) The department shall adopt, pursuant to the "Administrative Procedure Act," P.L.1968, c.410 (C.52:14B-1 et seq.), rules and regulations as are necessary to effectuate the purposes of P.L.2007, c.347 (C.13:1E-99.94 et al.) and section 3 of P.L.2008, c.130 (C.13:1E-99.96a).

(2) The department shall adopt rules and regulations, in accordance with the provisions of section 8 of P.L.2007, c.347 (C.13:1E-99.101), that prohibit a new covered electronic device from being sold or offered for sale in this State if the covered electronic device is prohibited from being sold or offered for sale in the European Union on and after its date of manufacture, to the extent that Directive 2002/95/EC, adopted by the European Parliament and the Council of the European Union on January 27, 2003, and as amended thereafter by the Commission of European Communities, prohibits that sale due to the presence of certain heavy metals.

(a) The department shall exclude from the rules and regulations the sale of a new covered electronic device that contains a substance that is used to comply with the consumer, health, or safety requirements that are required by the Underwriters Laboratories or federal or State law.

(b) In adopting rules and regulations pursuant to this subsection, the department may not require the manufacture or sale of a new covered electronic device that is different than, or otherwise not prohibited by, the European Union under Directive 2002/95/EC, adopted by the European Parliament and the Council of the European Union on January 27, 2003. The department shall use, in addition to any other information deemed relevant by the department, the published decisions of the Technical Adaptation Committee and European Union member states that interpret the requirements of Directive 2002/95/EC.

b. The department may, in accordance with a fee schedule adopted as a rule or regulation pursuant to the provisions of the "Administrative Procedure Act," establish and charge reasonable fees for any of the services to be performed in connection with this act, which shall cover the full costs incurred by the department for the review of plans and for other costs incurred by the department for implementation of this act.

16. Section 19 of P.L.2007, c.347 (C.13:1E-99.112) is amended to read as follows:

C.13:1E-99.112 Establishment of organizations, compacts.

19. The department is authorized to participate in the establishment and implementation of a regional, multi-state organization or compact that is consistent with the requirements of P.L.2007, c.347 (C.13:1E-99.94 et al.) and section 3 of P.L.2008, c.130 (C.13:1E-99.96a).

17. Section 20 of P.L.2007, c.347 (C.13:1E-99.113) is amended to read as follows:

C.13:1E-99.113 Intent of act; implementation of national program.

20. The provisions of P.L.2007, c.347 (C.13:1E-99.94 et al.) and section 3 of P.L.2008, c.130 (C.13:1E-99.96a) are intended to govern all aspects of the collection and recycling of covered electronic devices as those terms are defined in section 2 of P.L.2007, c.347 (C.13:1E-99.95). Upon a determination by the Department of Environmental Protection of an equivalent national program to collect or recycle covered electronic devices, the Commissioner of Environmental Protection shall notify, in writing, the Governor, the President of the Senate and the Speaker of the General Assembly, and the members of the Senate Environment Committee and the Assembly Environment and Solid Waste Committee, or their successors, of this determination.

The provisions of this act shall expire 60 days after the date of the notification required pursuant to this section or within the timeframe provided by federal law, as appropriate.

The department shall provide notice in the New Jersey Register of any determination made pursuant to this section, and shall take any administrative action necessary in order to implement the national program.

18. Section 21 of P.L.2007, c.347 (C.13:1E-99.114) is amended to read as follows:

C.13:1E-99.114 Report posted on website, to Legislature by January 1, 2014.

21. By January 1, 2014, the department shall prepare a report, which shall be posted on the department's Internet website and submitted, pursuant to section 2 of P.L.1991, c.164 (C.52:14-19.1), to the Legislature, assessing the success or failure of the electronic waste management system implemented pursuant to the provisions of P.L.2007, c.347 (C.13:1E-99.94 et al.) and section 3 of P.L.2008, c.130 (C.13:1E-99.96a) relative to the statutory management of covered electronic devices in other states, including jurisdictions that have adopted a producer responsibility model versus those that have adopted an advance recovery fee approach, or both, with respect to the recycling of used televisions and other covered electronic devices.

19. Section 3 of P.L.1987, c.102 (C.13:1E-99.13) is amended to read as follows:

C.13:1E-99.13 District recycling plan.

3. a. Each county shall prepare and adopt a district recycling plan to implement the State Recycling Plan goals. Each district recycling plan shall be adopted as an amendment to the district solid waste management plan required pursuant to the provisions of the "Solid Waste Management Act," P.L.1970, c.39 (C.13:1E-1 et seq.) and subject to the approval of the department. Each district recycling plan may be modified after adoption pursuant to a procedure set forth in the adopted plan as approved by the department.

b. Each district recycling plan required pursuant to this section shall include, but need not be limited to:

(1) Designation of a district recycling coordinator;

(2) Designation of the recyclable materials to be source separated in each municipality which shall include, in addition to leaves, at least three other recyclable materials separated from the municipal solid waste stream;

(3) Designation of the strategy for the collection, marketing and disposition of designated source separated recyclable materials in each municipality;

(4) Designation of recovery targets in each municipality to achieve the maximum feasible recovery of recyclable materials from the municipal solid waste stream which shall include, at a minimum, the following schedule:

(a) The recycling of at least 15% of the total municipal solid waste stream by December 31, 1989;

(b) The recycling of at least 25% of the total municipal solid waste stream by December 31, 1990; and

(c) The recycling of at least 50% of the total municipal solid waste stream, including yard waste and vegetative waste, by December 31, 1995; and

(5) Designation of countywide recovery targets to achieve the maximum feasible recovery of recyclable materials from the total solid waste stream which shall include, at a minimum, the recycling of at least 60% of the total solid waste stream by December 31, 1995.

Within 24 months of the effective date of P.L.2007, c.311 (C.13:1E-96.2 et al.), each district recycling plan shall be modified to include the designation of a district certified recycling coordinator.

For the purposes of this subsection, "district certified recycling coordinator" means a person who shall have completed the requirements of a course of instruction in various aspects of recycling program management, as determined and administered by the department; "total municipal solid waste stream" means the sum of the municipal solid waste stream disposed of as solid waste, as measured in tons, plus the total number of tons of recyclable materials recycled; and "total solid waste stream" means the aggregate amount of solid waste generated within the boundaries of any county from all sources of generation, including the municipal solid waste stream.

c. Each district recycling plan, in designating a strategy for the collection, marketing and disposition of designated recyclable materials in each municipality, shall authorize municipalities that adopt a recycling

ordinance pursuant to subsection b. of section 6 of P.L.1987, c.102 (C.13:1E-99.16) to limit the collection of designated recyclable materials to specified operating hours in order to preserve the peace and quiet in neighborhoods during the hours when most residents are asleep.

d. A district recycling plan may be modified to require that each municipality within the county revise the ordinance adopted pursuant to subsection b. of section 6 of P.L.1987, c.102 (C.13:1E-99.16) to provide for the source separation and collection of used dry cell batteries as a designated recyclable material.

e. (Deleted by amendment, P.L.2008, c.130)

20. Section 6 of P.L.1987, c.102 (C.13:1E-99.16) is amended to read as follows:

C.13:1E-99.16 Municipal recycling system.

6. Each municipality in this State shall, within 24 months of the effective date of P.L.2007, c.311 (C.13:1E-96.2 et al.), designate one or more persons as the municipal certified recycling coordinator. For the purposes of this section, "municipal certified recycling coordinator" means a person who shall have completed the requirements of a course of instruction in various aspects of recycling program management, as determined and administered by the department. Each municipality shall establish and implement a municipal recycling program in accordance with the following requirements:

a. Each municipality shall provide for a collection system for the recycling of the recyclable materials designated in the district recycling plan as may be necessary to achieve the designated recovery targets set forth in the plan in those instances where a recycling collection system is not otherwise provided for by the generator or by the county, interlocal service agreement or joint service program, or other private or public recycling program operator.

b. The governing body of each municipality shall adopt an ordinance which requires persons generating municipal solid waste within its municipal boundaries to source separate from the municipal solid waste stream, in addition to leaves, the specified recyclable materials for which markets have been secured and, unless recycling is otherwise provided for by the generator, place these specified recyclable materials for collection in the manner provided by the ordinance.

c. The governing body of each municipality shall, at least once every 36 months, conduct a review and make necessary revisions to the master plan and development regulations adopted pursuant to P.L.1975, c.291 (C.40:55D-1 et seq.), which revisions shall reflect changes in federal, State, county and municipal laws, policies and objectives concerning the collection, disposition and recycling of designated recyclable materials.

The revised master plan shall include provisions for the collection, disposition and recycling of recyclable materials designated in the municipal recycling ordinance adopted pursuant to subsection b. of this section, and for the collection, disposition and recycling of designated recyclable materials within any development proposal for the construction of 50 or more units of single-family residential housing or 25 or more units of multi-family residential housing and any commercial or industrial development proposal for the utilization of 1,000 square feet or more of land.

d. The governing body of a municipality may exempt persons occupying commercial and institutional premises within its municipal boundaries from the source separation requirements of the ordinance adopted pursuant to subsection b. of this section if those persons have otherwise provided for the recycling of the recyclable materials designated in the district recycling plan from solid waste generated at those premises. To be eligible for an exemption pursuant to this subsection, a commercial or institutional solid waste generator annually shall provide written documentation to the municipality of the total number of tons recycled.

e. The governing body of each municipality shall, on or before July 1 of each year, submit a recycling tonnage report to the New Jersey Office of Recycling in accordance with rules and regulations adopted by the department therefor.

f. The governing body of each municipality shall, at least once every six months, notify all persons occupying residential, commercial, and institutional premises within its municipal boundaries of local recycling opportunities, and the source separation requirements of the ordinance. In order to fulfill the notification requirements of this subsection, the governing body of a municipality may, in its discretion, place an advertisement in a newspaper circulating in the municipality, post a notice in public places where public notices are customarily posted, include a notice with other official notifications periodically mailed to residential taxpayers, or any combination thereof, as the municipality deems necessary and appropriate.

The governing body of a municipality that adopts a recycling ordinance pursuant to subsection b. of this section may limit the collection of designated recyclable materials to specified operating hours in order to preserve the peace and quiet in neighborhoods during the hours when most residents are asleep.

21. Section 1 of P.L.2007, c.347 (C.13:1E-99.94) is amended to read as follows:

C.13:1E-99.94 Short title.

1. Sections 1 through 21 of P.L.2007, c.347 (C.13:1E-99.94 et seq.) and section 3 of P.L.2008, c.130 (C.13:1E-99.96a) shall be known and may be cited as the "Electronic Waste Management Act."

Repealer.

22. The following are repealed:

Sections 4 and 5 of P.L.2007, c.347 (C.13:1E-99.97 and 13:1E-99.98);

Section 14 of P.L.2007, c.347 (C.13:1E-99.107).

23. This act shall take effect immediately.

Approved January 12, 2009.

附件四：安大略省廢電子電機設備計畫

Final Revised (Phase 1 and 2) Waste Electrical and Electronic Equipment (WEEE) Program Plan

July 10, 2009

Preamble to the Final Revised (Phase 1 and 2) WEEE Program Plan

CHANGES FROM THE PHASE 1 WEEE PROGRAM PLAN

The *Final Revised (Phase 1 and 2) Electrical and Electronic Equipment (WEEE) Program Plan* ("Revised Program Plan") **replaces** the *Final Phase 1 Waste Electrical and Electronic Equipment (WEEE) Program Plan* ("Phase 1 Plan") as approved by the Minister of the Environment on July 10, 2008. Ontario Electronic Stewardship (OES) has revised the approved Phase 1 Plan to:

1) Include the second phase of WEEE materials, as scheduled in the Minister's Program Request Letter (dated June 11, 2007); and,
2) Reflect new information gathered since the approval of the Phase 1 WEEE Program Plan.

The following are some key changes from the approved Phase 1 WEEE Program Plan:

1. *Material Categories and Definitions*
   New materials have been added, and some material categories have been revised into sub-categories for greater precision in OES' cost models and fee-setting calculations. Material categories and definitions are outlined in Section 2.0.

2. *Steward Self-Management Option*
   The Steward self-management option has been incorporated into the Final Revised WEEE Program Plan to allow for Stewards who already operate, or are interested in operating closed-loop end-of-life management systems for their EEE products, to participate under the Program. Specific conditions apply, and are outlined in Section 4.4 and illustrated in Figure 4.1.

3. *Modified Direct Ship Option*
   A modified Direct Ship option has been included to more clearly address the requirement from some generators of WEEE who for security reasons are not able to send material through the Program's consolidation system. The revised approach allows for greater flexibility in the collection and management of WEEE under the Program and responds to direct feedback from some large volume generators of WEEE. Specific conditions apply, and these are outlined in Section 4.5 and illustrated in Figure 4.1.

4. *Increased Flexibility for WEEE Generation and Collection Sites*
   OES has increased flexibility for WEEE generators and collection sites under the Revised Program Plan by broadening the sorting and packaging requirements to allow for OES-approved containers, and by allowing for WEEE generation sites that do not qualify to be approved collection sites, to still participate under the Program. Section 4.5 contains greater detail on the OES WEEE collection system.

5. *Modifications to the Fee-Setting Methodology*
   In order to accommodate a new management option under the Program, the fee-setting methodology has been revised to include the calculation of a Program Compliance fee. Stewards approved by OES to operate a self-management program will still be required to

pay the Program Compliance Fee to cover some of the common costs assessed to all Stewards. Stewards whose products are managed wholly under the OES management system are required to pay the all-in per-unit Steward Fee. Section 8.0 contains more detailed information on these revisions.

6. *Changes to OES Electronics Recycling Standard (ERS) and Recycling Guidance Document*
   In the original Plan, the OES ERS did not require the removal of batteries, mercury bulbs, or ink and toner cartridges from WEEE prior to processing. In accordance with changes to the EPSC standards (on which the OES Standards are based), language has been revised to require that batteries, mercury bulbs, and ink and toner cartridges be removed from WEEE prior to mechanical processing. The revised OES ERS and Guidance Document are located in Appendix 7a and 7b.

7. *Changes to the OES Reuse and Refurbishment Standard*
   OES has revised the language in Section 4.6 of the Reuse and Refurbishment Standard regarding the testing and verification of the functionality of WEEE for export. This change is intended to address previously unclear language that might have allowed for 'working' WEEE to be shipped to foreign markets for processing instead of reuse. The language within the Terms and Conditions for these sites has built in enforcement criteria as well.

Revisions reflect consultation with stakeholders throughout the Revised Program Plan development process.

CONSTANT ELEMENTS MAINTAINED FROM THE PHASE 1 WEEE PROGRAM

The Revised WEEE Program Plan that OES submitted to Waste Diversion Ontario (WDO) and the Ministry of Environment (MOE) on July 10, 2009 encompasses both Phase 1 and Phase 2 WEEE.

While some elements of the Phase 1 WEEE Program Plan were modified, there are key elements of the Phase 1 WEEE Program Plan that have not changed, and continue to apply under the Final Revised (Phase 1 and Phase 2) WEEE Program Plan.

- Designation of Stewards and Discharging Steward Obligations under the WDA
- Steward Registration and Reporting Procedures
- OES Compliance and Enforcement Procedures
- Requirements for Program Rules as per the WDA

The Phase 1 WEEE Program Plan can be found on the OES website, at the following link:
www.ontarioelectronicstewardship.ca/pdf/plan/program_plan_march31_08.pdf

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LIST OF ACRONYMS

ACES	Atlantic Canada Electronics Stewardship
AMO	Association of Municipalities of Ontario
ARMA	Alberta Recycling Management Association
C of A	Certificate of Approval (issued by MOE)
CSR	Corporations Sharing Responsibility
DfE	Designing-for-Environment
EBR	Environmental Bill of Rights
EEE	Electrical and Electronic Equipment
EOL	End-of-Life
EPSC	Electronic Product Stewardship Canada
EPR	Extended Producer Responsibility
ERS	Electronics Recycling Standard
ESABC	Electronics Stewardship Association of British Columbia
IC&I	Industrial, Commercial & Institutional
IEB	Investigations and Enforcement Branch (of the MOE)
IFO	Industry Funding Organization
ISP	Industry Stewardship Plan
MHSW	Municipal Hazardous or Special Waste
MOE	Ministry of the Environment
MTS	Material Tracking System
OECD	Organization for Economic Co-operation and Development
OEM	Original Equipment Manufacturer
OES	Ontario Electronic Stewardship
P&E	Promotion and Education
PDA	Personal Digital Assistant
RCC	Retail Council of Canada
R&D	Research and Development
REOI	Request for Expression of Interest
RFP	Request for Proposal
SO	Stewardship Ontario
SWEEP	Saskatchewan Waste Electronic Equipment Program
TDGA	Transportation of Dangerous Goods Act
VoIP	Voice over Internet Protocol
WDA	Waste Diversion Act
WDO	Waste Diversion Ontario
WEEE	Waste Electrical and Electronic Equipment

GLOSSARY OF TERMS

Accessibility targets
Standards set under the approved OES WEEE Program Plan that will be continuously monitored to ensure that all Ontarians are provided with an adequate level of service to effectively manage their WEEE, including those living in high density, rural and northern communities.

Assemblers
Stewards that manufacture and/or assemble in Ontario branded or unbranded EEE products obligated under the Program, from components sourced from a variety of suppliers.

Available for recycling
The estimated quantities of designated WEEE potentially available for recycling and/or end of life management and after any reuse or refurbishment activities have taken place. The estimated quantities available for recycling are based upon the estimated life span of the original product and their subsequent discard rates.

Certificate of Approval (C of A)
Certificate of Approval is a control document issued by the Ontario Ministry of the Environment that sets out operating conditions for a waste management system or a waste disposal site. C of As are required under the authority of s. 27 of the *Environmental Protection Act*.

Collector(s)
A private, non-profit, or municipal organization that has entered into an agreement with OES for the collection of designated WEEE.

Collection incentive payments
Weight based payments offered by OES to approved collectors to collect designated WEEE under the Program.

Collection targets
The projected quantities of designated WEEE to be collected on an annual basis under the Program.

Consolidation facility
A location used to receive and bulk WEEE from collection agents and for subsequent transport to a primary processor.

Contingency funds
Funds approved by the OES Board of Directors on an annual basis to offset potential shortfalls in Program financing due to such factors as higher than the projected annual Program costs used for the purposes of Steward fee-setting; the potential for Steward non-payments resulting from non-compliance or bankruptcies; potential legal liabilities; and additional Program activities that may be required to meet established Program targets. Also known as reserve funds.

Depot
Refers to a permanent facility where residents can drop off materials. Hours and periods of operation may vary from one facility to another.

Disassembly
The first step in the end-of-life management of designated WEEE by manually removing and separating individual components such as plastics, metals, batteries, mercury switches or other categories.

Discard rate
The estimated rate at which individual designated WEEE will be made available by generators for potential collection through the Program.

Diversion
The management of designated WEEE, through reuse, refurbishment, disassembly and/or recycling, instead of disposal into landfills or incinerators.

GLOSSARY OF TERMS

Downstream Processor
An entity that receives material from a primary recycler for additional processing and/or disposal. This includes entities that:

- Bulk and blend materials that are sent to other vendors for additional processing;
- Shred and separate materials that are sent to other vendors for additional processing;
- Process materials into new products;
- Process materials to recover metals, energy, and other resources;
- Disposal by landfill and/or incineration with or without waste to energy recovery;
- Any other contracted party that handles, processes or disposes of materials on behalf of the primary recycler.

Electrical and Electronic Equipment (EEE)
A device that requires an electric current to operate, and is specified by the Minister's Program Request Letter for which Stewards must report and pay fees to OES according to the Program Rules.

End-of-Life (EOL) Management
The physical process of permanently altering WEEE, such that in can no longer be re-furbished or re-used in its original form.

Fee-setting methodology
The calculations used to set Stewards Fees by EEE product categories as set out in the Revised Program Plan.

Gaylord boxes
A standard size of durable cardboard box (48" x 40" x 36" or 120 cm x 100 cm x 90 cm) that fits on a standard shipping pallet.

Generator
The final user of designated WEEE that makes the product(s) available for reuse, recycling or disposal. This includes individual consumers who have WEEE at their home, as well as users who have WEEE at an industrial, commercial or institutional (IC&I) establishment.

Industry Funding Organization (IFO)
An Industry Funding Organization is the organization with designated responsibility for implementing the diversion plan for the designated material. The IFO has the ability to recover fees from Stewards to cover the costs of implementing and operating the diversion program and to contribute to associated costs of WDO and MOE.

Industry Stewardship Plan (ISP)
Following approval by the Minister of a Program Plan developed by an IFO for a designated waste, an industry Steward for the designated material may elect to submit an Industry Stewardship Plan (ISP) to WDO. Upon approval of the ISP by WDO, the industry Steward is then responsible to implement the ISP and is exempt from the obligation to submit fees to the IFO responsible for implementation of the diversion program for the designated waste.

Lifespan
The estimated period of time during which designated EEE will be in productive use and therefore not available for collection under the Program.

Manufacturer of non-branded WEEE
A Person (other than a Refurbisher), which uses branded or unbranded components with or without value-added additional processing to create EEE.

Materials and Material Categories
The term "materials" refers to the constituents of EEE and WEEE, e.g. plastic, glass, metal, etc. Groups of EEE and WEEE are referred to as "material categories".

Obsolete WEEE
WEEE technologies that are no longer supplied or sold for consumer use.

GLOSSARY OF TERMS

OES Electronics Recycling Standard
The minimum operating standards that OES service providers must meet and maintain in order to contract for reuse, refurbishment or end-of-life processing services under the Program.

OES Reuse and Refurbishment Standard
The minimum operating standards that OES service providers must meet and maintain in order to contract for reuse and/or refurbishment services under the Program.

Orphan waste
Orphan waste is WEEE that results from EEE sold or otherwise distributed in Ontario where the brand owner, first importer or assembler of these products is no longer conducting business in Ontario or whose brands, assets or liabilities have not been acquired by another Steward as defined under the Program.

Primary Processing
The first point in the WEEE management chain that undertakes any of the following upon receipt of WEEE: receiving from OES, sorting, dismantling, disassembly, shredding or any other material processing activity, preparing material for further downstream processing and disposal. Processing can include manual and/or mechanical activities.

Recycling
The processing of WEEE by manual or mechanical means for the purpose of resource recovery.

Recycler
An organization that processes WEEE, first by disassembly to remove or reduce hazards then further processing the disassembled components into streams that can be further processed in order to further recover specific components within the same organization or sent to downstream processors for use as a raw material in another process, or, where 3Rs options are not available or technically feasible, for use in an energy recovery process or, managed through disposal.

Reduction
Design changes to reduce the volume, mass, variety or types of materials, parts, components, packaging or other elements used in the production, sales and distribution of designated EEE in Ontario.

Redistribution
The return of WEEE to consumers through reuse and refurbishing activities.

Refurbish (Refurbishing)
The internal testing, troubleshooting, disassembly or physical modification to WEEE, part removal and replacement or repair of non-functioning or obsolete parts (not including consumable items such as batteries, toners, fusers, etc.) for the purpose of product or part repair and/or redistribution and creation of a waste stream that requires further Downstream Processing or disposal.

Refurbisher
An organization that refurbishes WEEE.

Reuse
The provision of functioning WEEE to another user for its intended purpose, without hardware repair or modification, and where the reuse activities are limited to non-intrusive operation verification, cleaning, replacement of consumable items such as batteries, toners, fusers, etc.; data and other information clearing and software installation.

Reuse organization
An organization that provides functioning WEEE under the Program to another user for its intended purpose, and whose operational activities are limited to non-intrusive operation verification, data clearing, and software installation.

GLOSSARY OF TERMS

Reuse targets
The annual quantitative targets set out in the approved OES WEEE Program Plan for the reuse and refurbishment of designated WEEE.

Round-Up Service
Special one-time, full-service, 'turnkey' collection events that are fully sponsored and supported by OES. OES provides all P&E, labour, and equipment required to conduct the event and transport collected WEEE for EOL processing.

Self-Managed Program (or Steward Self-Management)
A Self-Managed Program (or Steward Self-Management) means a program approved by OES under which a Steward operates its own collection and recycling program with respect to a particular material category or categories of WEEE.

Smelting
Smelting, or chemical reduction, is a form of extractive metallurgy which is the practice of extracting metal from ore, purifying it, and recycling it. Smelting is the chemical reduction of ore or metal bearing waste in order to liberate the desired metal.

Special Events
Collection events offered by municipalities, Stewards and/or retailers at which residents can drop-off WEEE for EOL management. Special events range in frequency from one to several events per season, at the discretion of the Steward/Retailer.

Stewards
Under the WEEE Program, Stewards include brand owners, first importers and/or assemblers of non-branded products for sale and use in Ontario that result in WEEE. Stewards are obligated to pay fees under an approved waste diversion program.

Steward Fees
Fees assessed by an IFO on Stewards under an approved waste diversion program as set out in the approved Program Rules.

Successive Product Technology
This applies the costs associated with the management of obsolete WEEE collected under the WEEE Program to the Steward fees for the obligated EEE device that followed and/or replaced, totally or in part, the function or intended purpose of the obsolete WEEE device, as specified in the Phase 1 and Phase 2 Product Definitions.

Supplied
Means sold, leased, donated, disposed of, transferred the possession or title of, or otherwise made available or distributed for use in the Province of Ontario; Supply and Supplies have similar meanings.

Surplus funds
Funds collected by OES in any given Program year in excess of the financial requirements of the corporation in that Program year, with allowance for a prudent reserve fund. In general these funds will be used to offset Steward's fee rates in the following Program year.

Transportation of Dangerous Goods (TDG)
Refers to the regulated transportation requirements as defined in the *Transportation of Dangerous Goods Act* (TDGA).

Transporter
An organization that ships sorted WEEE to be further processed.

GLOSSARY OF TERMS

WEEE
A device that is waste, that requires an electric current to operate, and is designated by the Minister's Program Request Letter under the Program for which Stewards must report and pay fees to OES according to the Program Rules.

WEEE Diversion and Recovery Infrastructure
The sum of the collection, reuse, refurbishing and recycling facilities and activities available for managing designated WEEE under the Program.

WEEE Generation
The sum of the designated WEEE discarded by final end users on an annual basis under the Program.

WEEE Generator
The final user of designated WEEE that makes the product(s) available for reuse, recycling or disposal. This includes individual consumers who have WEEE at their home, as well as users who have WEEE at an industrial, commercial or institutional (IC&I) establishment.

This document **replaces** the *Final Waste Electrical and Electronic Equipment (WEEE) Program Plan* (referred to as the "Phase 1 Plan") as accepted by the Minister of the Environment on July 10, 2008.

1.0 Introduction

This document describes the Ontario Electronic Stewardship (OES) plan to responsibly manage waste electrical and electronic equipment (WEEE) in the province of Ontario. The *Final Revised (Phase 1 and 2) Waste Electrical and Electronic Equipment Program Plan* ("the Revised Program Plan") will track specified supplies of electrical and electronic equipment (EEE) into Ontario and manage specified WEEE from the point of generation through to final processing. The Revised Plan encompasses forty-four product types, including display devices, computers, printers, cellular phones, cameras, and audio and video equipment.

On July 10, 2008, the Minister of the Environment approved the *Final Waste Electrical and Electronic Equipment (WEEE) Program Plan* (referred to as the "Phase 1 Plan") submitted by Waste Diversion Ontario (WDO) on behalf of the industry funding organization (IFO) called Ontario Electronic Stewardship (OES). The approval of the Phase 1 Plan initiated two parallel activities: first was the development and launch of the province-wide WEEE collection, transportation and processing system on April 1, 2009; second was the data collection, consultation and planning required for the Revised Program Plan.

Under the Phase 1 Plan and the Revised Program Plan, brand owners, first importers and assemblers of electrical and electronic equipment (EEE) are designated as Stewards. OES discharges Stewards' obligations under the Waste Diversion Act (WDA) by developing, implementing, operating, and funding the Program.

The Revised Program provides convenient opportunities for individual consumers and businesses to reuse and recycle their end-of-life (EOL) electronic items, supported by a comprehensive promotion and education program to encourage Ontario consumers and businesses to participate in the program where they live and work. Financial incentives will be provided for organizations that collect, transport, and process WEEE to encourage collection of as much WEEE as possible for reuse and recycling.

Achieving the goals and objectives set out in the Revised Program Plan will help to ensure that the Ontario WEEE collection, reuse and recycling program operates with the highest environmental standards.

1.1 Program Objectives

As directed by the Minister of the Environment, the Revised Program Plan has been developed in accordance with the *Waste Diversion Act, 2002* (WDA), to achieve the following objectives:

- To promote reduction, reuse and recycling of WEEE generated by the residential, industrial, commercial and institutional (IC&I) sectors.

- To financially support and expand a WEEE collection system of depots and collection services, which are provided by municipalities; reuse, recycling, waste management and

charitable organizations; as well as collection events hosted by retailers, municipalities and OES.

- To more than double the current Ontario recycling rate for WEEE, while diverting significant quantities of toxic materials (such as lead and mercury) from landfills and the environment.

- To implement vendor qualification requirements, including the first WEEE reuse standard in North America, to ensure WEEE is processed in a safe and environmentally sound manner that satisfies local, provincial, national and international obligations including the *Basel Convention on the Trans-boundary Movements of Hazardous Wastes and Their Disposal*.

- To track and audit WEEE from the point of collection through to its final destination, including verification of processing, in order to confirm program performance in relation to accessibility, collection, reuse and recycling targets.

- To educate Ontario residents about the opportunities to manage WEEE properly through a province-wide promotion and education campaign.

- To undertake research and development activities to identify additional opportunities to reduce, reuse and recycle WEEE.

- To encourage Stewards to initiate measures designed to reduce wastes resulting from their programs, increase recyclability of products, and increase use of recycled content of products.

- To shift the costs of managing WEEE from generators and the general tax base to the producers and distributors of electrical and electronic equipment in Ontario.

- To be consistent with the Canadian Council of Ministers of the Environment *Canada-Wide Principles for Electronics Product Stewardship*[1] including but not limited to:
    - Responsibilities associated with management of WEEE are primarily borne by producers of the products.
    - Programs will report on performance, specify objectives and targets, and be transparent in financial management.
    - WEEE is exported from Canada for recycling only at facilities with a documented commitment to environmentally-sound management and fair labour practices.

1.2 Background

The *Ontario Waste Diversion Act, 2002* (WDA) empowers the Minister of the Environment to designate a material for which a waste diversion program is to be established. Once the Minister has designated a material through a regulation under the WDA, the Minister directs Waste Diversion Ontario (WDO) to develop a diversion program.

[1] Canada-Wide Principles for Electronics Product Stewardship can be found at http://www.ccme.ca/assets/pdf/eps_principles_e.pdf

WDO, a non-crown corporation, was established under the WDA to develop, implement and operate waste diversion programs for a wide range of materials. To date, the Minister has requested diversion programs for Blue Box Wastes, Used Tires, Waste Electrical and Electronic Equipment (WEEE) and Municipal Hazardous or Special Waste (MHSW). WDO is required by the Act to develop the waste diversion plan for the designated waste in co-operation with an Industry Funding Organization (IFO).

On December 20, 2004, the Minister filed a regulation under the WDA designating WEEE, and on, June 11, 2007, WDO Board of Directors received a Final Program Request Letter from the Minister of the Environment requesting a diversion program for WEEE. The Program Request Letter required WDO to establish an IFO for WEEE. It also outlined program requirements and requested a consultation plan, and can be found in Appendix 3.

On September 20, 2007, Ontario Electronic Stewardship (OES) was incorporated, and on October 17, 2007 it was approved by WDO as the IFO for WEEE. OES is responsible for developing and implementing the WEEE Program Plan, in co-operation with WDO.

The Addendum to the Minister's Program Request Letter prescribed obligated WEEE to be implemented in two phases, with reference to future phases of the program. Consultation and development of the Phase 1 Plan began in the summer of 2007. On July 10, 2008, the Minister approved the Phase 1 Plan, and the Program commenced on April 1, 2009. The complete Phase 1 WEEE Program Plan and Consultation Report can be found on the OES and WDO websites.

The Minister's Program Request Letter specified the timing for Phase 2 to be 12 months after approval of the Phase 1 Program Plan. Therefore the submission deadline for the Revised (Phase 1 and 2) WEEE Program Plan is July 10, 2009. If approved, the Revised (Phase 1 and 2) WEEE Program Plan will **replace** the Phase 1 Program Plan approved on July 10, 2008. The original Phase 1 Plan has been revised to:

1) Include the second phase of WEEE materials, as required in the Minister's Program Request Letter (dated June 11, 2007); and,
2) Reflect new information gathered since publication of the Phase 1 Plan.

1.3 Materials Obligated Under Phase 1 and 2 of the WEEE Program

Table 1.1 outlines the list of 44 materials grouped into eight categories of Phase 1 and 2 materials that OES will manage under the Revised Program. These materials are outlined in greater detail in Section 2.0.

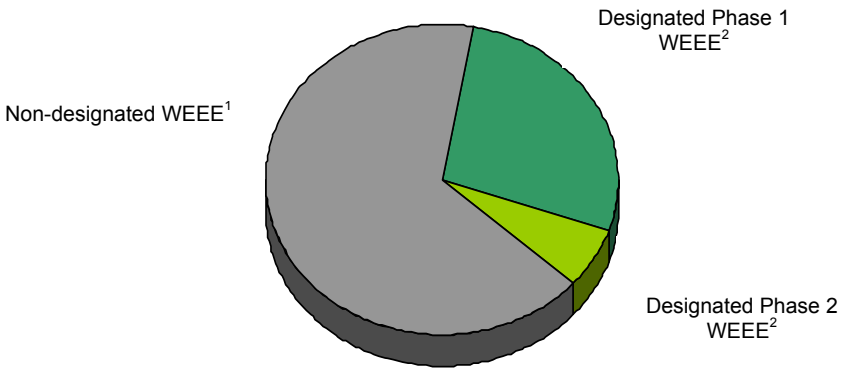
Table 1.1: Materials Obligated under the Revised Phase 1 and 2 WEEE Program

Program Plan Material Categories	Phase 1 and 2 Materials included Ontario Regulation 393/04
Display Devices	Schedule 2 15. Monitor (CRT) 16. Monitor (LCD) 17. Monitor (Plasma) Schedule 4 15. Television (CRT) 16. Television (LCD) 17. Television (Plasma) 18. Television (Rear Projection)
Desktop Computers	Schedule 2 9. Computer terminal 13. Microcomputer 14. Minicomputer 18. Personal computer (Desktop)
Portable Computers	Schedule 2 20. Personal computer (Laptop) 21. Personal computer (Notebook) 22. Personal computer (Notepad)
Computer Peripherals	Schedule 2 5. CD-ROM drive 6. Computer disk drive 7. Computer keyboard 8. Computer mouse Schedule 3 11. Modem
Printing, Copying and Multi-Function Devices	Schedule 2 10. Copier 25. Printer 27. Computer flatbed scanner 29. Typewriter Schedule 3 6. Fax machine
Telephones and Telephone Answering Machines	Schedule 3 17. Telephone (Cordless) 18. Telephone (Wire line) 20. Telephone Answering Machine
Cellular Devices and Pagers	Schedule 2 23. Personal Digital Assistant (cell-enabled) Schedule 3 12. Pager 16. Telephone (Cellular)
Image, Audio and Video Devices	Schedule 2 19. Personal Handheld Computer 23. Personal Digital Assistant (Non-cell-enabled) Schedule 4 1. Amplifier 2. Audio Player (tape, disk, digital) 3. Audio Recorder (tape, disk, digital) 4. Camera (film, tape, disk, digital) 5. Equalizer 10. Preamplifier 12. Radio 13. Receiver 14. Speaker 19. Tuner 20. Turntable 21. Video player or projector (tape, disk, digital) 22. Video recorder (tape, disk, digital)

All Phase 1 and Phase 2 materials supplied into the Ontario market, including those supplied to individual consumers and to industrial, commercial and institutional (IC&I) users, are included in the Revised WEEE Program Plan. This includes all Phase 1 and Phase 2 materials sold, leased, donated or otherwise distributed for use in Ontario. Please refer to Section 2.1 for more information on the revised material categories.

Based upon the results of WDO's WEEE Study Report (2005), Figure 1.1 below illustrates the approximate proportion of tonnes of WEEE materials that are covered under the Revised WEEE Program Plan in Phase 1 and 2. Please note that WDO WEEE Study only included residential WEEE generation, and does not include copiers.

Figure 1.1: Phase 1 and 2 WEEE Materials as a Proportion of Designated WEEE



1) As specified in O. Reg. 393/04 (See Appendix 1)
2) As specified in the Minister's Program Request Letter (See Appendix 3). This data does not include copiers.

1.4 Designation of Phase 1 and 2 Stewards

The Minister's Program Request Letter (Appendix 3, dated June 11, 2007) specified that the proposed funding rules should designate and define Stewards under the Program.

Stewards are designated as the brand owners, first importers and/or assemblers of non-branded products for sale and use in Ontario that result in WEEE.

Under the WDA, WDO is responsible for developing, implementing and operating the program. WDO meets this responsibility through OES. Stewards are responsible under the WDA for complying with the Rules contained in the OES Program Plan.

Stewards can discharge their legal obligations through registering and complying with the rules of OES, which has been designated as the IFO for WEEE by regulation.

1.4.1 Discharging Steward Obligations under the WDA

Brand owners, first importers and assemblers of EEE are able to discharge their legal obligations under the WDA through registering and complying with the Rules of OES, which has been designated as an IFO for WEEE by the regulation.

Note that individual brand owners, first importers and/or assemblers (or additional collectives thereof) who wish to take direct responsibility for managing their obligations under the WDA can apply to WDO (or, if WDO does not approve the plan, to the Minister) for approval of an Industry Stewardship Plan (ISP) as provided for under Sections 34(1) and 34(2) of the WDA respectively. The process for creating an ISP is described in the following section.

1.4.2 Industry Stewardship Plan (ISP)

Following approval by the Minister of a Program Plan developed by an IFO for a designated waste, a Steward or group of Stewards for the designated material may elect to submit an Industry Stewardship Plan (ISP) to WDO. Stewards who wish to establish an Industry Stewardship Plan under the WDA will be required to make application to WDO for approval to implement and operate their program.

Under the WDA, WDO may approve an ISP if WDO is satisfied that the plan will achieve objectives that are similar to or better than the objectives of the waste diversion program for the designated waste that has been approved by the Minister. If WDO does not approve an ISP, the applicant may submit the ISP to the Minister for approval.

Upon approval of an ISP by WDO or the Minister, the applicant is then responsible to implement the ISP and Stewards that are part of the ISP are then exempt from the obligation to submit fees to the IFO responsible for implementation of the approved program for the designated waste.

All Phase 1 and 2 EEE Stewards will be required to register with and pay fees to OES unless and until an ISP is approved[2]. The requirements for an ISP have been set out by WDO[3].

1.5 Other Provincial WEEE Programs

When the Phase 1 Program commenced on April 1, 2009, Ontario became the fifth Canadian province to implement a WEEE program. The four other provincial programs are briefly summarized in Table 1.2 below.

Many of the brand owners and retailers across Canada are obligated under some or all of these provincial WEEE programs.

As IFO for the largest WEEE program in Canada, OES has an interest in working with existing programs to coordinate efforts and program elements where practical and appropriate. Key areas where OES is working with the other provincial programs include common definitions, baseline data on supply of EEE into the market, data inputs for estimating quantities of WEEE available for collection, and common fee-setting principles where these are consistent with the WDA and the Minister's Program Request Letter for a WEEE Program.

[2] For Phase 1, no applications for an ISP were submitted to WDO.
[3] See www.wdo.ca/content/?path=page81+item38390

Table 1.2: Other Provincial WEEE Programs

Province	Start Date	Operating Authority
Alberta	July 1, 2004	Alberta Recycling Management Authority (ARMA): www.albertarecycling.ca
Saskatchewan	February 1, 2007	Saskatchewan Waste Electronic Equipment Program (SWEEP): www.sweepit.ca
British Columbia	August 1, 2008	Electronic Stewardship Association of British Columbia (ESABC): www.esabc.ca
Nova Scotia	February 1, 2008	Atlantic Canada Electronic Stewardship (ACES): www.aces.ca

1.6 Plan Development and Consultation Process

To support the Revised Plan development, WDO and OES have been consulting with Stewards and stakeholders through a series of workshops (with simultaneous webcast) and stakeholder meetings. The first three versions of the Revised Program Plan were posted for public comment by OES, and two versions were posted for public comment by WDO. The schedule of postings was as follows:

- Draft Revised (Phase 1 and 2) Waste Electrical and Electronic Equipment (WEEE) Program Document for Consultation – posted on January 21, 2009
- Draft Preliminary Revised (Phase 1 and 2) Waste Electrical and Electronic Equipment (WEEE) Program Plan – posted on April 23, 2009
- Draft Preliminary Revised (Phase 1 and 2) Waste Electrical and Electronic Equipment (WEEE) Program Plan – posted on May 20, 2009
- Draft Final Revised (Phase 1 and 2) Waste Electrical and Electronic Equipment (WEEE) Program Plan – posted on June 12, 2009

On June 12, 2009, OES submitted the Draft Final Revised (Phase 1 and 2) WEEE Program Plan to WDO for review, and posted the Draft Final Revised (Phase 1 and 2) WEEE Program Plan on its website. The WDO also posted the Draft Final Revised (Phase 1 and 2) WEEE Program Plan on its website. Once the Draft Final Revised (Phase 1 and 2) WEEE Program Plan was submitted to WDO, affected stakeholders and members of the public were directed to submit comments directly to WDO if they believed the Draft Final Revised (Phase 1 and 2) WEEE Program Plan did not adequately take into account comments submitted during the consultation process. WDO considered any such comments when it was evaluating whether to request that OES modify the Draft Final Revised (Phase 1 and 2) WEEE Program Plan.

A full description of the consultation process – the comments received by OES prior to May 7, 2009, and whether and how these comments were addressed in the Program Plan – is provided in the companion document, *Final Report on Consultation to Support the Development of the Revised (Phase 1 and 2) Waste Electrical and Electronic Equipment Program Plan.*

1.6.1 Revised Plan Development Milestones and Timeline

PHASE 1

June 11/07	Final WEEE Program Request Letter from the Environment Minister to WDO
June 26/07	Consultation workshop/webcast #1
August 13/07	Clarification Letter on WEEE Diversion from the Ministry of the Environment to WDO
October 12/07	Consultation workshop/webcast #2
January 14/08	Posting of Draft Phase 1 Preliminary Program Plan
January 24/08	Consultation workshop/webcast #3
February 11/08	Posting of OES Program Plan Development Consultation Paper
March 31/08	Submission of Final WEEE Phase 1 Program Plan and Consultation Report to WDO
July 9/08	Approval of WEEE Phase 1 Program Plan by the Environment Minister
April 1/09	Phase 1 implementation

REVISED PHASE 1 and 2

December/08	Survey distributed to industry members to assess current Phase 2 WEEE activities
January 21/09	Posting of Program Plan documents for workshop/webcast #1
February 4/09	Consultation workshop/webcast #1
April 23/09	Posting of Draft Preliminary Revised (Phase 1 and 2) WEEE Program Plan for public comment
April 30/09	Consultation workshop/webcast #2
May 20/09	Posting of updated version of Draft Preliminary Revised (Phase 1 and 2) WEEE Program Plan and Consultation Report for public review
June 12/09	Delivery of Draft Final Revised Plan and Consultation Report to WDO for distribution to WDO board
July 10/09	WDO submission of the Final Revised (Phase 1 and 2) WEEE Program Plan to Minister

2.0 Material Profiles and Definitions

2.1 EEE Material Categories under the Revised Program Plan

The Revised Program Plan introduces some modifications to the EEE material categories[4] defined in the Phase 1 Program Plan. OES made these modifications based upon experience gained since the approval of the Phase 1 Program Plan, as well as the operational experience of other provincial programs[5]. The key factors influencing this decision include, but are not limited to:

- Reflecting a policy decision to allocate the cost of managing some WEEE no longer supplied into the market to the successive technology
- Increasing convergence of technology that enables the same device to be used for multiple functions
- Changing sales trends expected to result in significant increases or decreases in projected sales for some products with significant implications for fee-setting

These factors primarily affect the existing Phase 1 Program Plan EEE categories. These categories have been modified as described below:

- Computer monitors and televisions combined under a single Display Device category.
- Combine desktop printers, copiers and multifunction printing devices under a single category.
- Refine scope of other EEE material categories.

The rationale for the modifications is outlined in the following sections.

2.1.1 Successive Technology

The volume of WEEE available for collection includes both WEEE clearly attributable to an existing Steward, and obsolete WEEE. Obsolete WEEE refers to WEEE technologies that are no longer supplied or sold for consumer use. An example would include eight-track tape players, which have been successively replaced by four-track tape players, portable CD players and now digital music devices. Costs associated with managing obsolete WEEE technology will be applied to the successive product technology under the Program.

The policy of assigning these costs to successive product technology allows OES to apply the costs associated with the management of obsolete WEEE collected under the Program to the Steward fees for the obligated EEE device that followed and/or replaced, totally or in part, the function or intended purpose of the obsolete WEEE device, as specified in the Phase 1 and Phase 2 Product Definitions.

[4] The term “materials” refers to the constituents of EEE and WEEE, e.g. plastic, glass, metal, etc. Groups of EEE and WEEE are referred to as “material categories”.

[5] These changes to the Phase 1 categories arise from experience in Ontario and from implementation of three other industry-led WEEE programs: Electronics Stewardship Association of British Columbia (ESABC), Saskatchewan Waste Electrical Equipment Program (SWEEP) and Atlantic Canada Electronic Stewardship (ACES).

2.1.2 Convergence of Technology

Under the approved Phase 1 Program Plan, televisions supplied into Ontario were differentiated from monitors for the purposes of fee-setting on the basis that televisions contained a television tuner, while monitors did not. However, recent design and technological advancements for both televisions and monitors have blurred these lines and there is no longer sufficient reason to maintain these as differentiated categories.

For example, most commercial display equipment, such as large display units in retail stores, public events, sports facilities and airports are technically monitors given that they do not have an embedded television tuner. However, monitors now being sold at retail or by manufacturers directly are designed and marketed as dual use equipment with the addition of the television tuner. From a handling and recycling perspective, there is little or no difference in recycling a 19" LCD computer monitor as compared to a similar sized LCD television.

For the purposes of the Revised Program, OES believes that combining monitors and televisions into the same EEE material category will improve reporting, administrative, and communication efficiencies for affected Stewards.

2.1.3 Changing Consumer Preferences and Trends

A recent study commissioned by ESABC, SWEEP, and ACES[6] highlights changing consumer trends and preferences related to the sales of televisions and monitors. The material categories for the Final Revised Program Plan reflect this trend, and others.

2.2 EEE Material Categories

OES has established Phase 1 and 2 Material Categories that encompass all of the forty-four designated Phase 1 and 2 EEE materials as set out in the Minister's Final Program Request Letter. The material categories are grouped into 8 major material categories and 14 sub-categories. These categories were developed to account for how WEEE is generated, how WEEE is handled, the diversion and disposal channels and technology, and the corresponding differences in diversion and cost.

Table 2.1 summarizes the material categories of Phase 1 and 2 materials that OES will manage under the Revised Program. The following sections provide brief descriptions of each of the eight material categories and sub-categories.

[6] InterGroup Consultants. "Analysis of Environmental Handling Fee Schedules for Selected, Regulated, Industry-led, End of Life Electronics Recycling Programs in Canada". March 26, 2009.

Table 2.1: Comparison of OES Material Categories and Ontario Regulation 393/04

EEE Material Categories for Reporting Purposes		Phase 1 and 2 Materials included Ontario Regulation 393/04
Material Category	**Material Sub-Category**	
Display Devices	Display Devices ≤ 29“ Screen	Schedule 2 15. Monitor (CRT) – *Phase 1* 16. Monitor (LCD) – *Phase 1* 17. Monitor (Plasma) – *Phase 1* Schedule 4 15. Television (CRT) – *Phase 1* 16. Television (LCD) – *Phase 1* 17. Television (Plasma) – *Phase 1* 18. Television (Rear Projection) – *Phase 1*
	Display Devices > 29” Screen	
Desktop Computers		Schedule 2 9. Computer terminal – *Phase 1* 13. Microcomputer – *Phase 1* 14. Minicomputer – *Phase 1* 18. Personal computer (Desktop) – *Phase 1*
Portable Computers		Schedule 2 20. Personal computer (Laptop) – *Phase 1* 21. Personal computer (Notebook) – *Phase 1* 22. Personal computer (Notepad) – *Phase 1*
Computer Peripherals		Schedule 2 5. CD-ROM drive – *Phase 1* 6. Computer disk drive – *Phase 1* 7. Computer keyboard – *Phase 1* 8. Computer mouse – *Phase 1* Schedule 3 11. Modem – *Phase 2*
Printing, Copying and Multi-Function Devices	Desktop and Portable Printing, Copying and Multi-Function Devices	Schedule 2 10. Copier – *Phase 2* 25. Printer – *Phase 1* 27. Computer flatbed scanner – *Phase 2* 29. Typewriter – *Phase 2* Schedule 3 6. Fax machine – *Phase 1*
	Floor-Standing Printing Devices	
	Floor-Standing Copying and Multi-Function Devices	
Telephones and Telephone Answering Machines		Schedule 3 17. Telephone (Cordless) – *Phase 2* 18. Telephone (Wire line) – *Phase 2* 20. Telephone Answering Machine – *Phase 2*
Cellular Devices and Pagers		Schedule 2 23. Personal Digital Assistant (cell-enabled) – *Phase 2* Schedule 3 12. Pager – *Phase 2* 16. Telephone (Cellular) – *Phase 2*
Image, Audio and Video Devices	Personal/ Portable Image, Audio and Video Devices	Schedule 2 19. Personal Handheld Computer – *Phase 2* 23. Personal Digital Assistant (Non-cell-enabled) – *Phase 2* Schedule 4 1. Amplifier – *Phase 2* 2. Audio Player (tape, disk, digital) – *Phase 2* 3. Audio Recorder (tape, disk, digital) – *Phase 2* 4. Camera (film, tape, disk, digital) – *Phase 2* 5. Equalizer – *Phase 2* 10. Preamplifier – *Phase 2* 12. Radio – *Phase 2* 13. Receiver – *Phase 2* 14. Speaker – *Phase 2* 19. Tuner – *Phase 2* 20. Turntable – *Phase 2* 21. Video player or projector (tape, disk, digital) – *Phase 2* 22. Video recorder (tape, disk, digital) – *Phase 2*
	Home/ Non-Portable Image, Audio and Video Devices	
	Home Theatre in a Box (HTB)	
	Aftermarket Vehicle Image, Audio and Video Devices	

2.3 Phase 1 and 2 EEE Definitions and Descriptions

For the purposes of the Revised Program, OES has modified each of the EEE material definitions under the approved Phase 1 Program Plan, to promote efficiency in Steward reporting of EEE, EOL management of WEEE in Ontario, and harmonization with other provincial WEEE programs.

2.3.1 Display Devices

The definition for Display Devices under the Revised (Phase 1 and 2) WEEE Program Plan is outlined in Table 2.2. The Display Devices category is a new category that combines the 'Monitors' category with the 'Televisions' category from the Phase 1 WEEE Program Plan. This is to account for changing sales patterns, consumer preferences, and technological convergence.

Sales trends suggest that markets for televisions with screen sizes greater than 29" are expanding, while sales of televisions with smaller screens (≤ 29") are declining. Although monitors and televisions were originally distinct products purchased for different purposes and applications, this is increasingly no longer the case. Due to technological convergence there is currently little or no difference between a new television and a new monitor, other than the user application.

Most large format commercial displays are technically a monitor as they do not have a television tuner. However, in substance they are the same technology as a large screen television. This study also suggests that consumers are replacing older cathode ray televisions (CRT – which had a limit on the screen size of approximately 32") with new, flat panel televisions that have larger screen sizes.

To account for this change, the Program combines monitors and televisions into a single category called Display Devices. Stewards will be required to report display devices differentiated by screen size only, in two categories: ≤29" screen or >29" screen sizes.

Table 2.2: Material Definition – Display Devices

EEE Material Category for Reporting Purposes		Phase 1 and 2 Materials Definition	Includes	Excludes
Category	**Sub-category**			
Display Devices	≤ 29" screen	A device that displays an image, using a variety of technologies including CRT, LCD, plasma and rear-projection.	• Computer monitors • Professional display monitors • Closed circuit monitor screens • Televisions • Dual television and computer monitors • All-in-One (AIO) computers: a display device with an embedded computer	• Displays that are embedded into non-Phase 1 and 2 products where the display is not the primary product.
	> 29" screen			

2.3.2 Desktop Computers

The definition for Desktop Computers under the Revised (Phase 1 and 2) WEEE Program Plan is outlined in Table 2.3. The Desktop Computers category in this Plan is the same as the Desktop Computers category that was approved in the Phase 1 WEEE Program Plan.

Table 2.3: Material Definition – Desktop Computers

EEE Material Category for Reporting Purposes	Phase 1 and 2 Materials Definition	Includes	Excludes
Desktop Computers	Desktop Computers refer to desktop computers that contain a central processing unit (CPU) and that are designed to be utilized on a work surface and require standard alternating current (AC) power plug for a primary source of power.	• Desktops • Computers • Computer terminals • Desktops acting as servers • Thin clients • Microcomputers • Minicomputers	• Computer terminals that are embedded into non-Phase 1 and 2 products • Portable computers • Products classified as Computer Peripherals under this Plan • All-in-one (AIO) computers: a display device with an embedded computer

2.3.3 Portable Computers

The definition for Portable Computers under the Revised (Phase 1 and 2) WEEE Program Plan is outlined in Table 2.4. The Portable Computers category in this Plan is the same as the Portable Computers category that was approved in the Phase 1 WEEE Program Plan.

Table 2.4: Material Definition – Portable Computers

EEE Material Category for Reporting Purposes	Phase 1 and 2 Materials Definition	Includes	Excludes
Portable Computers	Portable Computers refer to portable computers that contain a Central Processing Unit (CPU) and that can operate using a self-contained battery or using an external AC/DC adaptor.	• Laptops • Notebooks • Notepads • Tablet PCs	• Computer terminals that are embedded into non-Phase 1 and 2 products • Personal handheld computers (included in Image, Audio and Video Devices category) • Personal digital assistance (PDAs) (cell-enabled included in Cellular Devices category; non-cell-enabled included in Personal/Portable Image, Audio and Video category) • Products classified as Computer Peripherals under this Plan • Other handheld electronic devices

2.3.4 Computer Peripherals

The definition for Computer Peripherals under the Revised (Phase 1 and 2) WEEE Program Plan is outlined in Table 2.5.

The Computer Peripherals category has been expanded from the Phase 1 WEEE Program Plan to incorporate the addition of modems under Phase 2 of the Program. For the purposes of this Program Plan, modems are considered to be a specific networking device that acts as a modulator-demodulator for encoded signals to be communicated over telephone or cable lines.

Table 2.5: Material Definition – Computer Peripherals

EEE Material Category for Reporting Purposes	Phase 1 and 2 Materials Definition	Includes	Excludes
Computer Peripherals	Computer peripherals refers to external, as well as integrated modems, disk drives, optical drives, computer mouse and keyboards that are added, or attached, to a computer in order to expand its functionality. A modem refers to a device that encodes digital computer signals into analog/analogue telephone signals and vice versa and allows computers to communicate over a phone line or cable connection.	• Replacement computer component and standalone products that are sold to the end user • CD-ROM, DVD, HD-DVD and BluRay drives • Floppy-disk drives • Computer mouse • Computer keyboards • Wired cable, DSL, and ADSL modems • Wireless modems	• Computer peripherals that are supplied as replacement parts under a warranty and non-warranty service repair arrangement • Internal components contained within the original desktop or portable computer at the time of supply • Components that are supplied as replacement parts under a warranty • Components for non-warranty service repair arrangements • Speakers, cameras, microphones, headphones (included in the Image, Audio and Video Devices category) • Internal components contained within the original desktop or portable computer at the time of supply • Routers • Network hubs • Satellite networking devices • Telephony devices (i.e. VoIP devices)

2.3.5 Printing, Copying and Multi-Function Devices

The definition for Printing, Copying and Multi-Function Devices under the Revised (Phase 1 and 2) WEEE Program Plan is outlined in Table 2.6. With the introduction of Phase 2, the Printing, Copying and Multi-Function Devices category required modification from the Phase 1 WEEE Program Plan in order to incorporate floor-standing printing, copying and multi-function devices. For the purposes of reporting and fee-setting, the Program differentiates between desktop and portable devices, and floor-standing devices, for several reasons:

- Desktop and portable printing, copying and multi-function devices are sold through channels (e.g. retail) that are very different from the channels through which floor-standing printing, copying and multi-function devices are sold (e.g. business-to-business; leasing).
- At end-of-life, desktop and portable printing, copying and multi-function devices are collected and recycled through channels (e.g. depots and event-based collection) that are very different from the channels through which floor-standing devices are collected and recycled (e.g. OEM take-back / replacement programs).
- The management costs attracted by desktop and portable printing, copying and multi-function devices are significantly different from the end-of-life management costs of floor-standing devices, which often require specialized transport equipment, and may contain confidential hard drives that must be removed for secure destruction.

The Program includes printing, copying and multi-function devices that are used in commercial applications, however large-scale production printers and copiers, such as those used in newspaper and industrial applications, are excluded, as described in Table 2.6.

Table 2.6: Material Definition – Printing, Copying and Multi-Function Devices

EEE Material Category for Reporting Purposes		Phase 1 and 2 Materials Definition	Includes	Excludes
Category	**Sub-category**			
Printing, Copying and Multi-Function Devices	Desktop and Portable Printing, Copying and Multi-Function Devices	Printing, copying and multi-function devices, utilizing all printing technologies, designed to be handheld or to reside on a work surface and that can print on media with dimensions up to 48" wide. Copiers and/or multi-function devices classified as Segment 1 or Segment 2; Copier and/or multi-function devices that are designed to reside on a work surface that are not classified as Segment 1 or Segment 2. Includes models that are able to utilize an optional floor-stand.	• Desktop or portable computer scanners • Desktop printers • Portable PC-free photo printer • Typewriters powered by AC power plug or by internal battery unit • Camera dock printers • Desktop label, barcode, card printers • Point of Sale (POS) receipt printers • Handheld printers such as calculators with printing capabilities or label makers • Desktop multi-function or "all-in-one" devices • Desktop copiers or copy & print devices • Models which are able to utilize an optional floor-stand	• Desktop printing devices capable of performing additional non-printing functions such as copying or faxing • Printing devices that are embedded into non-Phase 1 and Phase 2 products, where the printing device is not the primary product • Non-electronic typewriters • Printing devices capable of printing on media with dimensions greater than 48" wide
	Floor-Standing Printing Devices	Printing devices, utilizing all printing technologies that are floor-standing models and that can print on media with dimensions up to 48" wide.	• Floor-standing office printers • Floor-standing graphics printers • Floor-standing wide-format printers	• Floor-standing printing devices capable of performing additional non-printing functions such as copying or faxing • Printing devices that are embedded into non-Phase 1and 2 products, where the printing device is not the primary product • Newspaper and industrial printing devices • Printing devices capable of printing on media with dimensions greater than 48" wide • Models which are able to utilize an optional floor-stand
	Floor-Standing Copying Devices	Copier and/or multi-function devices classified as Segment 3, Segment 4 or Segment 5 Copier and/or multi-function devices that are floor-standing models that are not classified as Segment 3, Segment 4 or Segment 5.	• Floor-standing multi-function or "all-in-one" devices that perform different tasks such as copy, scan, fax, print • Floor-standing copiers • Floor-standing Copy and Print devices • Floor-standing wide-format copiers and/or multi-function devices	• Floor-standing devices that only perform printing functions • Newspaper and industrial copying and/or multi-function devices • Copying and/or multi-function devices capable of printing on media with dimensions greater than 48" wide • Models which are able to utilize an optional floor-stand

The copiers and multi-function products market utilizes a unique classification system that is based on the printing speed of the device. This classification system is also indicative of the size and application of the copier/multi-function device, and the Program has incorporated the industry's classification system into the material category definitions. Table 2.7 outlines the segment classification system for Copiers and Multi-Function Devices.

Table 2.7: Description of Copiers and Multi-Function Devices Segment Classification

WEEE Program Category	Segment	Approximate Speed (PPM: Pages per Minute)	Common Application
Desktop	1	0 - 20 PPM	Personal/Home Office
	2	20 - 30 PPM	Small Offices
Floor-Standing	3	30 - 50 PPM	Small to Medium Offices
	4	50 - 70 PPM	Medium to Large Offices
	5	70 - 90 PPM	Very Large Offices
Excluded	6	> 90 PPM	Commercial and/or production applications

2.3.6 Telephones and Telephone Answering Machines

The definition for Telephones and Telephone Answering Machines under the Revised (Phase 1 and 2) WEEE Program Plan is outlined in Table 2.8. This category was introduced with Phase 2 and represents a new material category under the Program.

In accordance with Regulation 393/04 and with the Minister's Program Request Letter, this category only refers to those telephones that require a physical connection with either a telephone or cable wire-line. Telephone accessories (such as headsets and hands-free accessories) have not yet been designated by the Minister and thus are excluded from the Plan.

Table 2.8: Material Definition – Telephones and Telephone Answering Machines

EEE Material Category for Reporting Purposes	Phase 1 and 2 Materials Definition	Includes	Excludes
Telephones and Telephone Answering Machines	A telecommunication device with a handset or headset that is used for the transmission of sound (most commonly speech) between two or more people using a variety of technologies including wire-line telephones, and Voice over Internet Protocol (VoIP). Also includes telephone answering machines that are installed alongside, or incorporated within a wire-line telephone.	• Wire line telephones, including rotary and touch-tone technologies • Cordless telephones requiring an electrical base station/handset cradle for battery charging and wire-line network connection • VoIP phones • Answering machines that utilize cassette-based or digital recording technologies	• Telecommunication equipment developed for embedded use in motor vehicles or any type • Commercial-grade "pay phones" • Voicemail/answering machine devices that utilize a centralized or networked system • Telephone accessories including headsets and hands-free accessories

2.3.7 Cellular Devices and Pagers

The definition for Cellular Devices and Pagers under the Revised (Phase 1 and 2) WEEE Program Plan is outlined in Table 2.9. This category was introduced with Phase 2 and represents a new material category under the Program.

This category includes only communication devices that use cellular networks to communicate (i.e. "cell-enabled"). Similar handheld devices that are not cell-enabled may be included in the Image, Audio and Video Devices category (see section 2.3.8).

Table 2.9: Material Definition – Cellular Devices and Pagers

EEE Material Category for Reporting Purposes	Phase 1 and 2 Materials Definition	Includes	Excludes
Cellular Devices and Pagers	A handheld communication device that utilizes cellular networks to transmit voice or data signals. Includes cell-enabled Personal Digital Assistants (PDAs)	• Cellular phones • Cellular phones offering camera, video recording and/or audio functions • Smart phones (cell-enabled) • Palmtop computers (cell-enabled) • Cell-enabled PDAs utilizing touch-screen technology • Cell-enabled handheld devices • Pagers	• Satellite phones • Wireless devices that do not utilize cellular networks to operate • Non-cell-enabled PDAs (Included in Personal/ Portable Image, Audio, and Video Devices category)

2.3.8 Image, Audio and Video Devices

The definition for Image, Audio and Video Devices under the Revised (Phase 1 and 2) WEEE Program Plan is outlined in Table 2.10. This category was introduced with Phase 2 and represents a new material category under the Program.

The costs associated with the EOL management of image, audio and video devices can vary greatly, largely due to size differences. To ensure that Steward Fees reflect the actual costs to manage end-of-life Image, Audio and Video Devices of varying sizes, the Program differentiates between four distinct sub-categories as outlined in Table 2.11.

Table 2.10: Material Definition – Image, Audio and Video Devices

Phase 2 Material Categories		Phase 1 and 2 Materials Definition	Includes	Excludes
Category	**Sub-category**			
Image, Audio and Video Devices	Personal/ Portable	Personal and/or portable devices that can transmit, record and/or playback an image, audio, or video using a variety of technologies including mechanical, optical and digital technologies. Personal and/or portable peripheral audio devices that enable audio playback.	• Audio cassette players and/or recorders • Combination cassette recorders and players • CD players and/or recorders • Digital Video Disk (DVD) players and recorders • MP3 Players • Other Digital Audio Players/ Recorders (DAP) • Video cassette players (VCRs) and/or video projectors • Analog and digital video cameras and recorders • Turntables (Record Players and gramophones) • AM/FM Radios • Digital and non-digital cameras, including webcams • Digital picture frames • Digital projectors • Home stereo amplifiers • Speaker systems, including computer speakers • Home stereo systems • Handheld personal computers • Devices commonly called Ultra Mobile PCs (UMPC) that utilize a touch-sensitive screen between 4" and 7", and that can operate the same software as a standard computer (i.e. Windows) • PDAs that are not communication-enabled or cellular compatible	• CD-writing drives contained within, or replacements parts for Desktop and Portable Computers • DVD-writing drives contained within, or replacement parts for Desktop and Portable Computers • Non-audio optical disk-players • Optical disk drives included in the Computer Peripherals materials category • Webcams embedded in Desktop Computers and Portable Computers • Cameras embedded in devices for which the primary function is not to record an image/video • Cell-enabled PDAs • Devices for which the primary design and function are for video-gaming purposes (As designated in Section 5 of O. Reg. 393/04) • Global Positioning Systems (GPS) for both portable and aftermarket vehicle installation • Home/Non-Portable video-gaming devices • Satellite, Cable, and Digital transmitters and receivers • Headphones and ear-buds
	Home/Non-Portable	Home and/or non-portable devices that can transmit, record and/or playback an image, audio, or video using a variety of technologies including mechanical, optical and digital technologies. Home and/or non-portable peripheral audio devices that enable audio playback.		
	Home Theatre in a Box (HTB)	Bundled combinations of devices that can transmit, record and/or playback an image, audio, or video using a variety of technologies.	• Home theatre image, audio and video equipment sold as a package/bundle with a single point-of-sale SKU • Includes peripheral audio devices	• Home theatre image, audio and video equipment sold as a package/bundle with more than a single point-of-sale SKU (Report separately) • Home Theatre bundles that include televisions
	Aftermarket Vehicle	Audio and video devices for installation in motor vehicles aftermarket.	• Vehicle speakers • Vehicle radios • Vehicle CD players • Vehicle DVD/BluRay Players and screens	• Audio and video equipment embedded in original equipment manufacturer (OEM) supplied motor vehicles of any type

Table 2.11: Description of Image, Audio and Video Devices Sub-Categories

Image, Audio and Video Sub-Categories	Description
Personal/Portable	Designed to be carried; able to operate using a self-contained battery or using an external AC/DC adaptor.
Home/Non-Portable	Designed to reside and/or be utilized on a surface; requires standard alternating current (AC) power plug for primary source of power.
Home Theatre in a Box (HTB)	Bundled packages with varying number and type of Home/Non-Portable Image, Audio and Video Devices; recorded at retail point-of-sale (POS) as one sale item. Note: this does not include bundles that have televisions.
Aftermarket Vehicle	Any Image, Audio and Video Players and Recorders device designed for individual sale and aftermarket installation into automobiles, boats, motorcycles, and other motor vehicles.

For the purposes of reporting and fee-setting, the Revised Plan differentiates among Image, Audio and Video devices into four sub-categories for several reasons:

- The cost to manage EOL Image, Audio and Video Devices varies greatly based on the size of the device. Amalgamating the costs for various sizes of these materials for fee-setting purposes could result in proportionately higher fees on smaller devices, and proportionately lower fees on larger devices.
- Distinguishing EOL Personal/Portable Image, Audio and Video Devices from other WEEE allows for new opportunities to expand OES WEEE collection points for these items to increase accessibility for generators. There is potential for increased diversion and Program operating efficiencies as a result.
- Many Personal/Portable Image, Audio and Video Devices contain either a single-use or rechargeable battery that must be removed prior to processing, in accordance with OES' Electronics Recycling Standard (ERS). Please refer to Section 4.3.1.
- Many Stewards and retailers are unable to track the number and types of units included in bundled Home Theatre in a Box (HTB). These HTB sales are recorded as one sales unit. OES was required to make assumptions about the number, types and weights of units typically included in HTB transactions to ensure that the Steward Fee assessed on this sub-category of EEE reflects the end-of-life management costs for these devices under the WEEE Program.

2.4 Interpreting Definitions of EEE for Reporting Purposes

The rapid pace of innovation and convergence in technology means that, increasingly, EEE devices are being designed to perform functions that meet more than one obligated material category definition under the Revised Program Plan. The following discussion applies to those products that meet more than one obligated material category definition, but have not been assigned to a specific material category (for the purposes of reporting and assessing Fees).

In the event that a Steward is uncertain of how their EEE device should be reported because it meets the definitions of more than one material category, the Steward should proceed according to the following process:

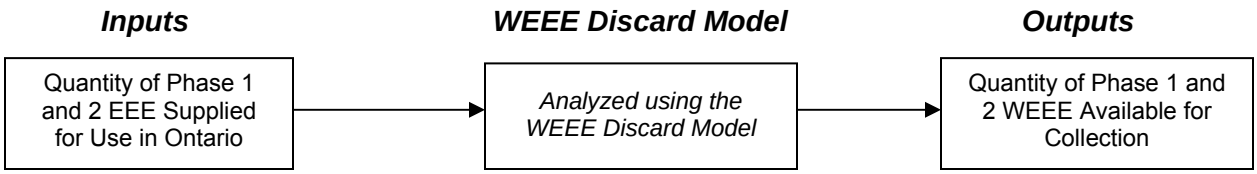
1. The Steward will read the material categories to determine if their EEE device has or has not been assigned to a single material category.
2. If the Steward's EEE device has not been assigned to a single material category, and if the EEE product meets more than one definition, the Steward will review each material category definition and declare to OES all of the material categories that apply to the EEE product.
3. The Steward will report and remit fees for the material category that is most reflective of how the device will be managed under the WEEE program. For instance, an all-in-one monitor with embedded computer would be reported as a display device.
4. The Steward may submit a request to OES to review their product and determine the most appropriate material reporting category.
5. OES will review the product category designation and assign the product to the material category that most closely reflects the product's EOL management requirements and processing costs.
6. Once the Steward has requested a review of the Fees and material category, OES will initiate a review process.

If, after the OES review process, the Steward disputes OES' ruling on the appropriate material category for the EEE device in question, the Steward may initiate the dispute resolution process as outlined in Schedule A of Section 11: Rules for Stewards with Respect to Payment of EEE Fees.

3.0 Baseline Data

Section 9 of the Addendum to the Minister's Program Request Letter requires OES to provide a breakdown of the quantity of EEE items supplied for use in Ontario, and an estimate of the quantity of each WEEE generated under the Program that is available for collection. The resulting data is used to develop the collection and diversion targets for the first five years of the program.

This section outlines the information on the quantity of EEE supplied for use in Ontario, and the quantity of WEEE available for collection under the Revised Program. Please note that data on WEEE available for collection serve as the foundation of the Revised Program's collection and diversion targets, as detailed in Section 5 of the Revised Program Plan.



For the purposes of the Revised Program Plan, 'baseline data' refers to the following, as outlined below:

Baseline for Phase 1 Materials	Projects annual data based on the growth rates from "Baseline" to "Year 1" for Phase 1 materials from the Final Phase 1 WEEE Program Plan.
Baseline for Phase 2 Materials	Reflects best available data as verified against established provincial WEEE programs.

3.1 Quantity of Phase 1 and 2 EEE Supplied for Use in Ontario

This section describes the methods used to determine the estimates of EEE supplied for use in Ontario.

3.1.1 Method for Gathering Data on Phase 1 and 2 EEE Supplied for Use in Ontario

The approved Phase 1 WEEE Program Plan used data and weights for EEE Supplied for Use in Ontario based on extrapolated Alberta Recycling Management Association (ARMA) data (based on data from 2004 to 2007). The data used for estimating baseline Supplied for Use in Ontario was adjusted up by 20% for Ontario due to a projected higher concentration of commercial business activity, as compared to Alberta. These data represented the best available information at the time of the Phase 1 Plan development.

After the Phase 1 Program Plan was approved by the Minister, industry-managed WEEE programs in three other provinces (ESABC, SWEEP, and ACES) commissioned InterGroup to conduct two new studies to analyze the quantities of WEEE to be managed, as well as the

expected EEE environmental handling fees. One of these studies focused on Phase 1 EEE[7], while the other study focused on Phase 2 EEE[8], and both were used by OES as the primary source of data to estimate the quantity of Phase 1 and 2 EEE Supplied for Use in Ontario.

3.1.2 Results – EEE Supplied for Use in Ontario

EEE supplied for use in Ontario is measured in two ways: total number of units, and total weight in tonnes. Table 3.1 presents the baseline and projected units of EEE supplied into the Ontario marketplace. Projected units are based on compound annual growth rate assumptions that were determined from historic data.

Note that baseline units reflect a 3% reduction to original baseline data to take into account the economic downturn experienced in the last half of 2008 and early 2009. The future projections reflect a conservative increase of only 1% in the number of units Supplied for Use in Ontario in Year 1.

Table 3.1: Revised Quantity of EEE Supplied for Use in Ontario (Units)

Material Category		EEE Supplied in Ontario (000s units)					
		Baseline	Year 1	Year 2	Year 3	Year 4	Year 5
Display Devices	Computer Monitors	*1,053*	*1,064*	*1,074*	*1,096*	*1,129*	*1,163*
	Displays <18"	*127*	*128*	*129*	*132*	*136*	*140*
	Displays 18-29"	*437*	*441*	*445*	*454*	*468*	*482*
	≤29" Screen Total	1,616	1,632	1,649	1,682	1,732	1,784
	Displays >29-45"	*684*	*691*	*698*	*712*	*734*	*756*
	Displays >45"	*200*	*202*	*204*	*208*	*214*	*221*
	>29" Screen Total	884	893	902	920	948	976
Desktop Computers		1,374	1,388	1,401	1,430	1,472	1,517
Portable Computers		1,536	1,551	1,567	1,598	1,646	1,695
Computer Peripherals		1,872	1,891	1,910	1,948	2,007	2,067
Printing, Copying & Multi-Function Devices	Desktop and Portable Printing, Copying and Multi-Function Devices	3,518	3,553	3,588	3,660	3,770	3,883
	Floor-Standing Printing Devices	8	8	8	8	9	9
	Floor-Standing Copying Devices	8	8	8	9	9	9
Telephones and Telephone Answering Machines		4,383	4,427	4,471	4,561	4,697	4,838
Cellular Devices and Pagers		4,764	4,812	4,860	4,957	5,106	5,259
Image, Audio & Video Devices	Personal/Portable	2,410	2,434	2,458	2,508	2,583	2,660
	Home/Non-Portable	2,893	2,922	2,951	3,010	3,100	3,193
	Home Theatre in a Box (HTB)	319	322	325	332	342	352
	Aftermarket Vehicle	286	288	291	297	306	315
Phase 1 Materials Total*		10,800	10,908	11,017	11,238	11,575	11,922
Growth			***1.0%***	***1.0%***	***2.0%***	***3.0%***	***3.0%***
Phase 2 Materials Total		15,071	15,222	15,374	15,682	16,152	16,637
Growth			***1.0%***	***1.0%***	***2.0%***	***3.0%***	***3.0%***
Phase 1 and 2 Materials Total		25,871	26,130	26,391	26,919	27,727	28,559
Growth			***1.0%***	***1.0%***	***2.0%***	***3.0%***	***3.0%***

** Note that Phase 1 Materials Total includes all Phase 1 and 2 desktop printing, copying, and multi-function devices. Table 2.2 outlines the exact Phase to which obligated EEE belong, for clarity. As the Revised WEEE Program Plan introduces new material categories that combine some Phase 1 and Phase 2 materials, caution should be used when comparing data contained in the Revised Program Plan to previous versions.*

[7] InterGroup Consultants. "Analysis of Environmental Handling Fee Schedules for Selected, Regulated, Industry-led, End of Life Electronics Recycling Programs in Canada - Calculation of Environmental Handling Fees for Phase 1 Products". March 26, 2009.

[8] InterGroup Consultants. "Analysis of Environmental Handling Fee Schedules for Selected, Regulated, Industry-led, End of Life Electronics Recycling Programs in Canada – Calculation of Environmental Handling Fees for Phase 2 Products". October 23, 2008.

To calculate the projected weight of Phase 1 and Phase 2 EEE supplied for use in Ontario (Table 3.3), the number of units of EEE Supplied for Use in Ontario (Table 3.1) was multiplied by the average current unit weights of these products (Table 3.2). These product weights were obtained from retailer and manufacturers websites.

OES will continue to review and refine these average weight estimates in future years to more accurately reflect the impact of changes in the industry including design innovation, successive technologies and convergence of technology.

Table 3.2: Average Unit Weights for Current Revised EEE Products Supplied for Use in Ontario

Material Category		Weight (kg/unit)
Display Devices	Computer Monitors	7.7
	Display Devices <18"	6.0
	Display Devices 18-29"	21.0
	≤29" Screen Total	**11.2**
	Display Devices >29-45"	35.0
	Display Devices >45"	45.0
	>29" Screen Total	**37.3**
Desktop Computers		7.4
Portable Computers		2.9
Computer Peripherals		**1.1**
Copiers and Multi-Function Devices	Desktop	9.6
	Floor-Standing	100.0
Printing Devices	Desktop	9.4
	Floor-Standing	50.0
Telephones and Telephone Answering Machines		1.2
Cellular Devices and Pagers		0.2
Image, Audio and Video Player and Recorders	Personal/Portable	0.8
	Home/Non-Portable	4.9
	Home Theatre in a Box	22.9
	Aftermarket Vehicle	2.3

Table 3.3: Quantities of EEE Supplied for Use in Ontario (Tonnes)

Material Category		EEE Supplied in Ontario (tonnes)					
		Baseline	Year 1	Year 2	Year 3	Year 4	Year 5
Display Devices	Computer Monitors	*8,110*	*8,191*	*8,273*	*8,438*	*8,691*	*8,952*
	Display Devices <18"	*759*	*767*	*775*	*790*	*814*	*838*
	Display Devices 18-29"	*9,167*	*9,259*	*9,352*	*9,539*	*9,825*	*10,119*
	≤29" Screen Total	18,036	18,217	18,399	18,767	19,330	19,910
	Display Devices >29-45"	*23,955*	*24,194*	*24,436*	*24,925*	*25,673*	*26,443*
	Display Devices >45"	*8,996*	*9,086*	*9,177*	*9,361*	*9,641*	*9,931*
	>29" Screen Total	32,951	33,280	33,613	34,286	35,314	36,374
Desktop Computers		10,167	10,268	10,371	10,578	10,896	11,223
Portable Computers		4,454	4,499	4,544	4,635	4,774	4,917
Computer Peripherals		2,010	2,030	2,050	2,091	2,154	2,218
Printing, Copying and Multi-Function Devices	Desktop and Portable Printing, Copying and Multi-Function Devices	31,735	32,052	32,373	33,020	34,011	35,031
	Floor-Standing Printing Devices	404	408	412	420	433	446
	Floor-Standing Copying Devices	833	841	850	867	893	919
Telephones and Telephone Answering Machines		5,271	5,324	5,377	5,485	5,649	5,819
Cellular Devices and Pagers		949	959	968	988	1,017	1,048
Image, Audio and Video Devices	Personal/Portable	2,235	2,257	2,280	2,325	2,395	2,467
	Home/Non-Portable	13,941	14,080	14,221	14,505	14,940	15,389
	Home Theatre in a Box	7,305	7,378	7,452	7,601	7,829	8,064
	Aftermarket Vehicle	651	658	664	678	698	719
Phase 1 Materials Total*		99,353	100,346	101,350	103,377	106,478	109,672
Growth			***1.0%***	***1.0%***	***2.0%***	***3.0%***	***3.0%***
Phase 2 Materials Total		31,589	31,905	32,224	32,868	33,855	34,870
Growth			***1.0%***	***1.0%***	***2.0%***	***3.0%***	***3.0%***
Phase 1 and 2 Materials Total		130,942	132,251	133,574	136,245	140,333	144,543
Growth			***1.0%***	***1.0%***	***2.0%***	***3.0%***	***3.0%***

** Note that Phase 1 Materials Total includes all Phase 1 and 2 desktop printing, copying, and multi-function devices. Table 2.2 outlines the exact Phase to which obligated EEE belong, for clarity. As the Revised WEEE Program Plan introduces new material categories that combine some Phase 1 and Phase 2 materials, caution should be used when comparing data contained in the Revised Program Plan to previous versions.*

3.2 Quantity of Phase 1 and 2 WEEE Available for Collection in Ontario

This section describes the estimated quantity of each material category of WEEE that is available for collection in Ontario. Data were generated using the WEEE Discard Model, and were used to project collection and diversion targets for the Program.

3.2.1 Method – WEEE Discard Model

To estimate the quantity of WEEE that will become available for collection in a given year, OES used the WEEE Discard Model[9]. The Discard Model was used by OES in the development of

[9] The WEEE Discard Model was initially developed by Kelleher Environmental, and has been employed as a planning tool for a variety studies including: EPSC; WDO 2005 WEEE Study; Environment Canada; Electronics Recycling Alberta; ARMA; OES Phase 1 WEEE Program Plan; SWEEP, ACES, EASBC: Interprovincial Phase 2 WEEE Study.

the Phase 1 WEEE Program Plan, and has since been further updated to include the product categories subject to the Phase 2 WEEE Program Plan. Outputs from inter-provincial Phase 1 and Phase 2 studies were used to determine the appropriate average weights, lifespans, and reuse, storage and discard assumptions for inclusion in the WEEE Discard Model calculations.

Inputs to determine Ontario WEEE discard projections used the best available data and assumptions for:

- Data on the annual number of units Supplied for Use in Ontario for each product (this was updated from the approved Phase 1 Plan to be more consistent with the inter-provincial data);
- Data on the average weight of the units that are supplied each year;
- Assumptions on the period of transition for successive technologies for some products, such as computer monitors and televisions (e.g. for computer monitors, the model has to attempt to predict that shift, over time, of the CRT technology through the transition of sales over a period of years to flat panel technologies);
- Estimates of the first lifespan for each product (time period its first user keeps the item in productive use);
- Assumptions about the typical fate of the product at the end of its first life (percentage of the product that is reused, put in storage or discarded);
- Years the product remains in reuse or storage prior to final discard; and,
- Product unit weights, which were based on best available data as established by inter-provincial WEEE studies and inter-provincial program experience.

The following sections of the report describe the sources of data and assumptions used in the WEEE Discard Model. Discards of electronics into the Ontario waste stream were estimated using the following approach:

- Products were assumed to last a specific “first life” in years.
- At the end of the “first life”, products are stored, reused, or discarded.
- Where products are stored or reused, a “second life” of an additional number of years is assumed which may be different for storage versus reuse.
- It is assumed that all products are discarded at the end of their “second life.” Products discarded in any given year are therefore made up of those units which were discarded at the end of their first life plus those units which were stored and reused for a number of years and are now being discarded at the end of their second life.

While the Ontario Revised Program WEEE Discard Model relies on a number of assumptions of average lifespan, material weight and sales projections, it remains the only practical methodology for estimating the quantity of Phase 1 and 2 WEEE available for collection on any given year. The results of the model were used to generate the quantity of Phase 1 and 2 WEEE available for collection in Ontario (as described in the following section). For greater detail on some of the assumptions used in the Discard Model please refer to Appendix 11: WEEE Discard Model Assumptions.

It is important to note that, although the WEEE Discard Model has been used in a number of provinces, Ontario is the only province to use the model to calculate and predict collection rates and percentages. This is primarily due to the limitations inherent in the large number of assumptions that are required by the WEEE Discard Model.

OES considers the WEEE Available for Collection data output from the WEEE Discard Model to be extremely limited. However it remains the only practical option at this time for estimating and planning. OES will update the assumptions outlined in Appendix 11 with actual data obtained from research and development (R&D) activities that will include sampling of collected WEEE, as well as waste audits in Ontario that may be undertaken by OES or by other parties.

Note that OES will update the projected quantities of WEEE Available for Collection to reflect revised Discard Model assumption factors that may change as a result of new data from R&D activities such as pallet sampling and waste audits. Please refer to Section 6.0 for more information on R&D activities under the Revised WEEE Program Plan.

However, it must be emphasized that the level of accuracy that the WEEE Discard Model will always be limited due to the many variables and assumptions. While updated assumptions and data inputs will be updated, the Discard Model will only be used by OES to review and assess trends and effectiveness of the program. Please refer to Section 6.0 for more information on R&D activities under the Revised WEEE Program Plan.

3.2.2 Results – WEEE Available for Collection in Ontario

Table 3.4 presents calculated tonnes of Phase 1 and Phase 2 WEEE available for collection (i.e. discarded) each year for the first five years of the Revised WEEE Program.

Projected WEEE Available for Collection is an important factor in the calculation of collection rate and percentage targets for the Revised Program Plan.

Table 3.4: Quantity of Phase 1 and 2 WEEE Available for Collection (tonnes)

Material Category		WEEE Available for Collection in Ontario (tonnes)					
		Baseline	Year 1	Year 2	Year 3	Year 4	Year 5
Display Devices	Computer Monitors	*5,854*	*7,047*	*7,537*	*7,537*	*7,423*	*8,680*
	Display Devices <18"	*1,777*	*1,821*	*1,644*	1,876	*1,816*	*1,814*
	Display Devices 18"-29"	*19,433*	*19,840*	*19,626*	*19,284*	*20,467*	*23,419*
	≤29" Screen Total	27,064	28,708	28,808	29,100	29,705	33,913
	Display Devices 29"-45"	*9,111*	*10,073*	*11,103*	*11,809*	*11,630*	*13,001*
	Display Devices >45"	*2,266*	*2,970*	*3,482*	*4,392*	*5,190*	*6,080*
	> 29" Screen Total	11,376	13,043	14,585	16,202	16,819	19,081
Desktop Computers		8,313	9,026	8,916	7,911	8,471	9,695
Portable Computers		2,107	2,732	3,400	3,847	4,322	5,153
Computer Peripherals		1,219	1,307	1,272	1,481	1,753	1,927
Printing, Copying & Multi-Function Devices	Desktop and Portable Printing, Copying and Multi-Function Devices	13,889	15,356	16,936	21,299	26,399	29,555
	Floor-Standing Printing Devices	180	212	236	318	412	502
	Floor-Standing Copying Devices	360	425	473	635	826	1,006
Telephones and Telephone Answering Machines		2,631	3,249	4,149	4,646	4,824	5,343
Cellular Devices and Pagers		558	623	699	806	926	1,085
Image, Audio & Video Devices	Personal/Portable	2,138	2,226	2,182	2,333	2,361	2,445
	Home/Non-Portable	6,906	10,569	14,535	14,653	16,463	16,638
	Home Theatre in a Box (HTB)	8,011	8,767	8,412	9,737	10,806	9,784
	Aftermarket Vehicle	594	597	780	988	1,060	1,013
Phase 1 Materials Total *		63,969	70,172	73,917	79,840	87,470	99,322
Growth			***9.7%***	***5.3%***	***8.0%***	***9.6%***	***13.6%***
Phase 2 Materials Total		21,377	26,669	31,467	34,116	37,678	37,817
Growth			***24.8%***	***17.9%***	***8.4%***	***10.4%***	***0.4%***
Phase 1 and 2 Materials Total		85,346	96,841	105,383	113,956	125,147	137,140
Growth			***13.5%***	***8.8%***	***8.1%***	***9.8%***	***9.6%***

** Note that Phase 1 Materials Total includes all Phase 1 and 2 desktop printing, copying, and multi-function devices. Table 2.2 outlines the exact Phase to which obligated EEE belong, for clarity. As the Revised WEEE Program Plan introduces new material categories that combine some Phase 1 and Phase 2 materials, caution should be used when comparing data contained in the Revised Program Plan to previous versions.*

Table 3.5 contains the consolidated category data for WEEE Available for Collection that is used to calculate the collection targets outlined in Section 5.0. These consolidated categories reflect the four WEEE management groups that OES will manage and track under the Revised Program. These WEEE management groups are outlined in greater detail in Section 4.5.

Table 3.5: Quantity of WEEE Available for Collection – For Performance Targets

WEEE Management Group	WEEE Available for Collection in Ontario (tonnes)					
	Baseline	Year 1	Year 2	Year 3	Year 4	Year 5
Group 1: Desktop and Portable Computers	10,421	11,758	12,309	13,333	14,107	16,922
Group 2: Display Devices (Incl. monitors and TV's)	38,441	41,751	43,367	44,577	47,616	48,390
Group 3: Other Phase 1 and 2 WEEE	35,945	42,695	48,936	55,107	62,283	70,489
Group 4: Floor Standing Copiers and Printers	540	637	772	939	1,142	1,338
Total Materials	85,346	96,841	105,383	113,956	125,147	137,140
Growth		***13.5%***	***8.8%***	***8.1%***	***9.8%***	***9.6%***

4.0 Description of Revised Program Plan

This section provides an overview of the Revised Program Plan, and outlines the process by which WEEE physically[10] flows through the system. Figure 4.1 illustrates the flow of material from collection through to EOL treatment, and is referenced frequently throughout the text. The principle stages of WEEE material flow can be summarized briefly as follows:

Supply of new or refurbished EEE into Ontario:

- Stewards – (1) in Figure 4.1

Creation of WEEE:

- EEE Consumers/WEEE Generators – (2a) in Figure 4.1

Management of WEEE:

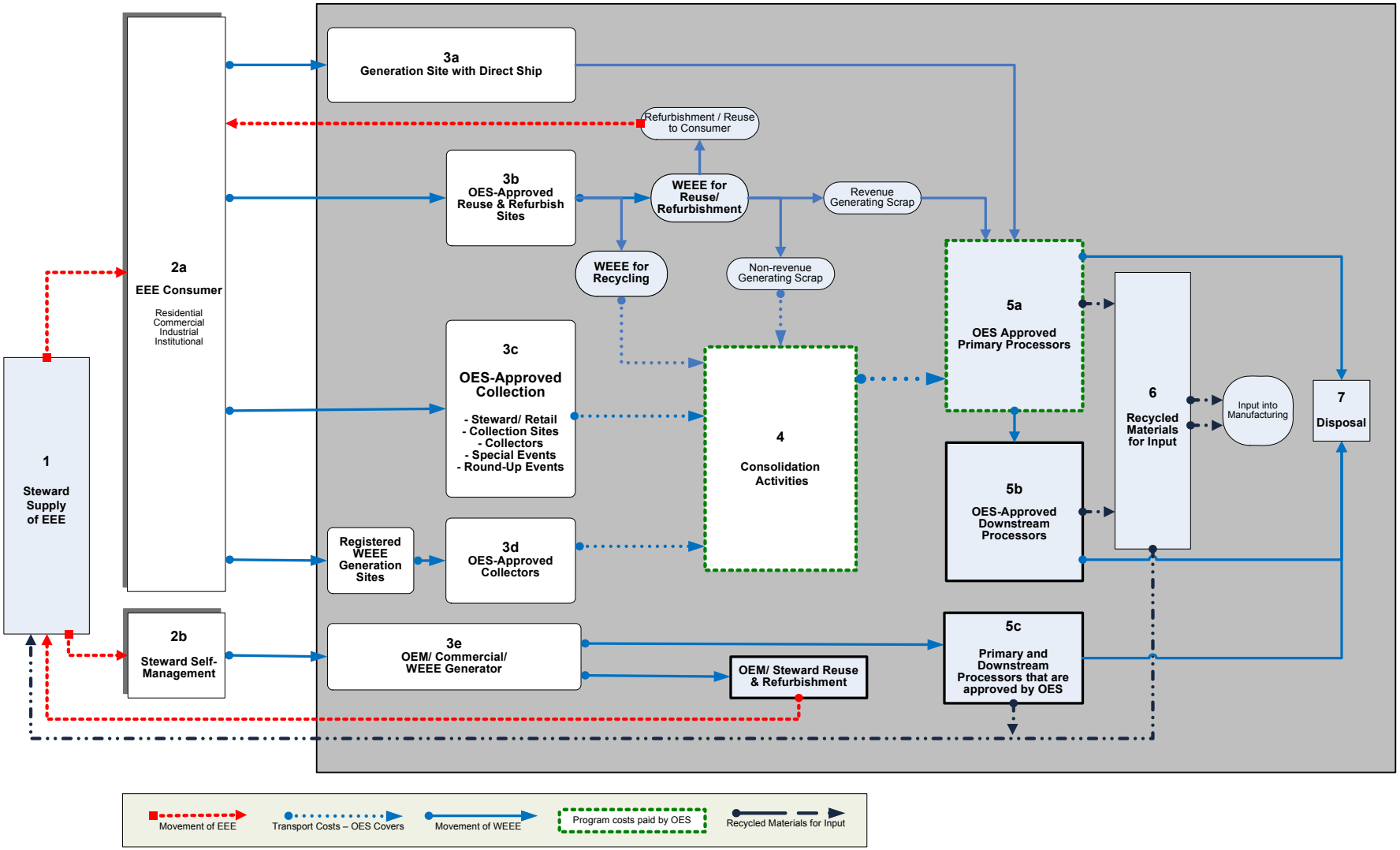
- Steward self-management – (2b) and (3e) in Figure 4.1
- Collection options, including reuse and refurbishment – (3a) to (3d) in Figure 4.1
- Consolidation points – (4) in Figure 4.1
- Processing options – (5a) to (5c) in Figure 4.1
- Recycling of materials – (6) in Figure 4.1

These stages reflect the main objectives of the Plan: to increase Program accessibility for WEEE generators, and to promote the reduction, reuse and recycling of WEEE (with disposal only for those materials for which 3Rs options are not available or technically feasible).

Note that as per the Minister's Program Request Letter (June 11, 2007), Stewards are the only stakeholders obligated to participate in this Program, once approved. Participation of other stakeholders is voluntary but encouraged.

[10] For details on the financial flows and implications of the Program, please see section 9.0.

Figure 4.1: Flow of Materials and OES Funding



4.1 Supply of EEE into Ontario – Steward Overview and Obligations

The brand owners, first importers and/or assemblers of non-branded products for sale and use in Ontario that result in WEEE are designated as Stewards under the Plan. OES has been established as the IFO to develop, implement and fund the Program.

"**Stewards**" are designated as the brand owners, first importers and/or assemblers of non-branded products for sale and use in Ontario that result in WEEE.

In addition to their obligation to develop, implement and fund the Program, Stewards also have an important role to play at the design stage of EEE, to reduce both the quantity of WEEE generated and to address barriers to the cost effective EOL management of these products. 'Designing for the Environment' (DfE) is the term for initiatives undertaken by the electronics industry to improve the environmental performance of their products and activities. OES recognizes the commitments made by Stewards to make improvements in the areas of product design and manufacturing. The EPSC Designing for Environment Report can be found in Appendix 9.

4.1.1 Steward Registration and Reporting Requirements

OES, as the IFO for WEEE, is required to develop Rules for the Program. These Rules govern the designated material definitions, payment of Steward Fees, and reporting requirements. Obligated Stewards are required to:

- Register online with OES;
- Sign agreements with OES where applicable;
- Report online to OES as outlined in the Rules reporting schedule; and,
- Pay applicable Steward Fees as outlined in the Rules payment schedule.

Stewards are required to submit monthly Steward's Reports for the total quantity of obligated EEE products supplied for use in Ontario in the corresponding data period. The EEE fees are to be remitted by the Steward for the EEE products supplied for use in Ontario in a given data period, by the end of the following month. Steward reporting procedures will be reviewed annually by OES.

OES is required to send a notification letter to all potential Stewards informing them of the Program and where they can access a copy of the Rules for the Program. The Program Rules can be found in Schedule A of Section 11.0. Failure to comply with the Rules is an offense under the WDA and could result in penalties and late-payment interest charges.

4.1.2 Steward Compliance and Enforcement Procedures

OES will work with Stewards and industry associations to effectively communicate Steward obligations under the Program, and the consequences for companies that fail to comply. Section 41 (1) of the WDA specifies that a person who contravenes the *Act* is guilty of an offence and is subject to penalties as follows:

> Directors, officers, etc.
>
> (2) If a corporation contravenes the *Act*, the regulations or the rules, every director, officer, employee or agent of the corporation who directed, authorized, participated in, assented to or acquiesced in the contravention is guilty of an offence. 2002, c. 6, s. 41 (2).
>
> Penalty
>
> (3) On conviction, a person who is guilty of an offence under this *Act* is liable,
>
> (a) if the person is an individual, to a fine of not more than $20,000 for each day or part of a day on which the offence occurs or continues; or
>
> (b) If the person is a corporation, to a fine of not more than $100,000 for each day or part of a day on which the offence occurs or continues. 2002, c.6, s.41 (3).

Failure to register, report and pay applicable fees as outlined in the Rules is subject to enforcement activities by the MOE Investigations and Enforcement Branch (IEB). OES will contract with IEB to investigate companies identified as potentially obligated WEEE Stewards that that have not registered with OES.

4.2 Creation of WEEE – EEE Consumers/WEEE Generators

The point at which EEE becomes WEEE (adding the 'W' for 'Waste') begins with the user who has purchased, leased or received a designated EEE product that they no longer require or wish to possess. WEEE generators include individual consumers who have WEEE at their home, as well as users who have WEEE at an industrial, commercial or institutional (IC&I) establishment. In Figure 4.1, WEEE generators are referenced as item "2a."

A "**WEEE Generator**" is the final user of designated WEEE who makes the product available for reuse, recycling or disposal. This includes individual consumers who have WEEE at their home, as well as users who have WEEE at an industrial, commercial or institutional (IC&I) establishment.

Under the Revised Program, residential and IC&I generators of WEEE will have an expanded range of options by which they can safely and properly manage their WEEE, as described in the following sections.

Residential and IC&I generators will be able to drop off their unwanted Phase 1 and 2 WEEE at OES-sponsored events free of charge.

4.2.1 Protecting Sensitive and Private Generator Information

Of primary concern to many WEEE generators, both individual and IC&I consumers, are issues of data security and privacy protection. The WEEE management infrastructure in Ontario is extensive, and therefore there are many potential 'hands' involved in the collection, sorting, packaging, and transporting of WEEE. To ensure a standard of privacy and data protection,

OES has considered privacy and security to be paramount issues during the development of the Revised Program Plan.

The reuse, refurbishment and EOL management of some designated WEEE materials presents a unique challenge for the Program. Some designated materials, including CD-ROM drives, printers, copiers, and computer disk drives, may still contain personal or confidential information when they enter the Program as WEEE. When the final user makes a decision about how to manage their WEEE, they may not be aware that this personal information could be accessed by others.

OES has prescribed measures to ensure the secure protection of private data throughout the entire Program. The Revised Program Plan incorporates several policy measures that are designed to ensure secure data destruction, as described below:

- The final user of the material before it is managed as WEEE (and therefore the owner of the information contained in the material) is responsible for determining whether the material is sent for reuse, refurbishment or recycling.
- All previous users of material retain all responsibility for destroying any user data contained on or within the equipment before it is sent for reuse, refurbishment or recycling.
- OES-Approved Collection Sites and Collectors will adhere to security requirements established by OES for participation under the Program.
- OES-Approved Collection Sites and Collectors will have signage to remind final users of the need to safely destroy information on the equipment before it is delivered to the Program.
- Contracts with collection, transportation, and consolidation service providers, with the exception of OES-Approved Reuse and Refurbishment organizations, will prohibit the removal of parts or items or testing equipment.
- Potential vendors of services to reuse or refurbish WEEE under the Program must meet the Reuse and Refurbishment Standard as outlined in Appendix 8a, which includes, at a minimum, a requirement that the organization shall develop and maintain a process to communicate to generators and customers a WEEE information security policy, including adequate security measures to:
    - Protect any WEEE and parts from loss or unintended use.
    - Destroy any user data contained on and within equipment, including the removal of hard drive data using industry standard practices and software (i.e. Royal Canadian Mounted Police or U.S. Department of Defence), and removal of other identification such as asset tags.
    - Destroy all WEEE where data destruction cannot be confirmed, by directing this material to OES-Approved EOL processors.
- Potential vendors of EOL WEEE processing services under the Program must ensure secure destruction of materials and will be prohibited from the removal of parts for reuse or refurbishment to ensure that information cannot be accessed.

OES will communicate the need for appropriate methods of information destruction in public education campaigns sponsored by the Program.

4.3 Program Operations – Overview of WEEE Management by OES

As in the Phase 1 Plan, the Revised Program Plan includes a variety of activities and service providers that ensure effective and efficient diversion of WEEE from landfill. To achieve diversion, OES is working with the following types of service providers:

Stewards – (2b) and (3e) in Figure 4.1
- Self-management channel

Collectors – (3a) to (3e) in Figure 4.1
- Generation sites with existing direct-shipment arrangements that are approved by OES
- Reuse and refurbishment sites undertaking collection of WEEE
- Steward and retailer collection activities
- Collection sites
- Collectors (e.g. companies providing collection services to generation sites)
- Special events and/or OES Round-up events
- Steward self-management collection activities

Reuse, Refurbishment, and Processing Agencies – (3b), (5a), (5b) and (5c) in Figure 4.1
- Reuse and refurbishment sites
- Primary processors of WEEE
- Downstream processors of WEEE

Transporters and Consolidators – (4) in Figure 4.1
- Transporters
- Consolidation sites

To encourage the participation of service providers in the Revised Program, OES has established a variety of financial and non-financial incentives. These incentives are outlined according to activity in Table 4.1: Summary of Revised WEEE Program Plan Incentives.

All service providers under the Revised Program must be approved by OES, comply with OES performance and operating standards, and be in good standing throughout the duration of the agreement. Specific requirements for each type of service provider are detailed in Sections 4.4 to 4.8.

4.3.1 OES Recycling, Reuse and Refurbishment Standards

A central tenet of the OES WEEE Program Plan is the incorporation of two strategic recycling, reuse and refurbishment standards[11], which are supplemented by two guidance documents. These Standards were developed to:

- Ensure that all processors and recyclers meet or exceed applicable requirements of the OES Electronics Recycling Standard (Appendix 7a) and that all reuse and refurbishment service providers approved under the Program meet or exceed the applicable requirements of the OES Reuse and Refurbishment Standard[12] (refer to Appendix 8a), and obtain the highest environmental benefit in an economically efficient manner.

[11] These strategic objectives have been adopted by three other provincial WEEE programs, with the addition of a new Reuse and Refurbishment Standard developed specifically for Ontario.
[12] This standard was developed in consultation with Ontario industry representatives for the purposes of this Plan.

- Maintain diversity in service providers to ensure sufficient capacity is readily available.
- Continually improve the provision of services to achieve environmental and economic performance improvements.
- Ensure that Ontario-generated WEEE is handled at a consistently high standard of worker health and safety and environmental protection.
- Ensure compliance with applicable local, provincial, and national regulations and international obligations, including the *Basel Convention on the Control of Trans-boundary Movements of Hazardous Wastes and Their Disposal*. An outline of some of these requirements can be found in Appendix 10: Ontario-Specific Compliance Requirements.

The OES standards and guidance documents will be referenced throughout the Plan. They are summarized below, with more information provided in the corresponding appendices:

a) OES Electronics Recycling Standard (Appendix 7a) *– Updated June 2009*

The OES Electronics Recycling Standard[13] defines the minimum requirements for managing EOL WEEE. This Standard is intended to assist in determining if WEEE materials are managed in an environmentally sound manner that safeguards worker health and safety and the environment from the point of primary processing through recycling and, if required, to final disposal.

b) OES Recycling Standard Guidance Document (Appendix 7b) *– Updated June 2009*

The OES Recycling Standard Guidance Document[14] was developed to serve as an educational document outlining the environmental, health, and safety hazards associated with the handling and processing of EOL WEEE, to assist recyclers in the development of environmentally sound recycling processes, and to provide environmental auditors with a knowledge base for conducting assessments of electronics recyclers.

c) OES Recycling Qualification Process (Appendix 7c)

The OES Recycling Qualification Process[15] document outlines the process OES accredited auditors use to determine the downstream tracking and auditing of sub-vendors (EOL downstream processors); including how to determine whether an on-site audit is required.

d) OES Reuse and Refurbishment Standard (Appendix 8a) – *Updated June 2009*

The OES WEEE Reuse and Refurbishment Standard defines the minimum requirements for managing WEEE through reuse and refurbishment operations. This Standard is intended to assist in determining if reuse and refurbishing organizations provide sufficient WEEE management and data security measures, and conduct all activities in a safe and environmentally-sound manner, including refurbishing and recycling of WEEE that is not suitable for redistribution.

[13]The ERS is based upon the Recycling Vendor Qualification Standard (RVQS) by EPSC. This Standard was updated to reflect national standards.
[14] Based upon the *EPSC Recycling Vendor Guidance Document.*
[15] Based upon the *EPSC Recycling Vendor Qualification Process*.

4.3.2 Revised WEEE Program Incentives

In order to enable and encourage the participation of Stewards, retailers, collectors, reusers and refurbishers, and EOL processors, and to ensure compliance with OES requirements, the following Program incentives are offered:

- **Collection Incentive:** Payable to OES-Approved collectors and collection sites that perform all services required by OES (please refer to Section 4.5 for further information on collection requirements).

- **Transportation Incentive:** OES will cover the cost of transportation from the collection site to consolidation and EOL processing (please refer to Section 4.7 for further information on transportation and consolidation activities).

- **EOL Processing Incentive:** OES will cover the cost of EOL processing for WEEE that flows through a consolidation centre (please refer to Section 4.8 for further information on processing activities).

- **Transportation and EOL Processing Cost Reimbursement for Direct Ship:** For those generation sites that are approved to ship WEEE directly to an OES-Approved Primary Processor, OES will reimburse the transportation and processing cost incurred by the generation site (please refer to Section 4.5.1 for further information on direct-shipment activities).

These incentives are summarized in Table 4.1 below, and are specifically addressed within each Program element section (Section 4.4 through to Section 4.8).

4.4 Steward WEEE Self-Management Channel

This section references the Steward self-management channel (2b and 3e) in Figure 4.1.

Many EEE Stewards have created and currently operate their own self-managed programs for their specific EEE products. These programs are maintained and operated by Stewards, with all costs paid for by the Steward. These systems often include service arrangements for the take-back of an old device for EOL management, with the purchase and instalment of a new device.

"**Self-Managed Programs**" (or Steward WEEE Self-Management) means a program approved by OES under which a Steward operates its own collection and recycling program with respect to a particular class or classes of WEEE.

Table 4.1: Summary of Revised WEEE Program Plan Incentives

Participant and Potential Activities Under the WEEE Program		Incentives Available for Participation in the WEEE Program Plan					
		OES Covers All Costs	Collector Receives $165/tonne collection incentive payment	OES covers cost of transport from Collection Site	OES covers cost of transport from Consolidation Centre	OES covers cost of EOL processing of collected WEEE	OES reimburses transportation and EOL processing costs incurred by Generation Site
Brand-Owners, First Importers, and/or Manufacturers	**Take-Back Programs** – Subset of Phase 1 and 2 WEEE; all brands; accessible to the public	N/A	Yes	Yes	Yes	Yes	No
	Customer Returns – Subset of Phase 1 and 2 WEEE	N/A	No	Yes	Yes	Yes'	No
	End-of-Lease Material - Subset of Phase 1 and 2 WEEE	N/A	No	Yes	Yes	Yes	No
Retailers	**Host an OES "Round-Up" Event** for all Phase 1 and 2 WEEE – *At the discretion of the OES*	Yes	No	Yes	Yes	Yes	No
	Take-Back Programs – Subset or all of Phase 1 and 2 WEEE; all brands; accessible to the public	N/A	Yes	Yes	Yes	Yes	No
	Retailer-run Special Collection Events - Subset or all of Phase 1 and 2 WEEE; all brands; accessible to the public	N/A	Yes	Yes	Yes	Yes	No
	Customer Returns - Subset or all of Phase 1 and 2 WEEE; all brands; accessible to the public	N/A	Yes	Yes	Yes	Yes	No
Second-Hand Organizations	**Host an OES "Round-Up" Event** for all Phase 1 and 2 WEEE – At the discretion of the OES	Yes	No	Yes	Yes	Yes	No
	Depot - Subset or all of Phase 1 and 2 WEEE; all brands; accessible to the public	N/A	Yes	Yes	Yes	Yes	No
	Household Pick-up - Subset or all of Phase 1 and 2 WEEE; all brands; accessible to the public	N/A	Yes	Yes	Yes	Yes	No
	Special Collection Event - Subset or all of Phase 1 and 2 WEEE; all brands; accessible to the public	N/A	Yes	Yes	Yes	Yes	No
Waste Management and Recycling Companies	**Host an OES "Round-Up" Event** for all Phase 1 and 2 WEEE **–** At the discretion of the OES	Yes	No	Yes	Yes	Yes	No
	Depot - Subset or all of Phase 1 and 2 WEEE; all brands; accessible to the public	N/A	Yes	Yes	Yes	Yes	No
	Business Pick-up – subset or all of Phase 1 and 2 WEEE; all brands; accessible to tenants, employees and public	N/A	Yes	Yes	Yes	Yes	No
	Special Collection Event - Subset or all of Phase 1 and 2 WEEE; all brands; accessible to the public	N/A	Yes	Yes	Yes	Yes	No
Other IC&I Collection Site	**Host an OES "Round-Up" Event for all Phase 1 and 2 WEEE –** At the discretion of the OES	Yes	No	Yes	Yes	Yes	No
	Depot – subset or all Phase 1 and 2 WEEE; all brands; accessible to tenants, employees and public	N/A	Yes	Yes	Yes	Yes	No
	Direct Ship to Consolidation - Shipment from collection site to Consolidation	N/A	Yes	Yes	N/A	Yes	No
	Special Collection Event - Subset or all of Phase 1 and 2 WEEE; all brands; accessible to the public	N/A	Yes	Yes	Yes	Yes	No
OES-Approved Reuse/ Refurbishment/ Processing Organizations acting as Collectors	**Host an OES "Round-Up" Event** for all Phase 1 and 2 WEEE – At the discretion of the OES	Yes	No	Yes	Yes	Yes	No
	Depot - Subset or all of Phase 1 and 2 WEEE; all brands; accessible to the public	N/A	Yes	Yes	Yes	Yes	No
	Household Pick-up - Subset or all of Phase 1 and 2 WEEE; all brands; accessible to the public	N/A	Yes	Yes	Yes	Yes	No
	Special Collection Event - Subset or all of Phase 1 and 2 WEEE; all brands; accessible to the public	N/A	Yes	Yes	Yes	Yes	No
Direct-Shipment IC&I Generators	**Direct Ship to Processor** - Shipment from IC&I generators to EOL Processor	N/A	No	No	No	No	Yes
Primary Processors of WEEE	**Receiving Phase 1 and 2 WEEE from Consolidation Centers**	N/A	N/A	N/A	Yes	Yes (As per Section 5.4.2)	No

Under the Revised Program Plan, Stewards that operate a self-managed program for some or all of their WEEE may be eligible to operate under the new Steward self-management channel. Under this new process, Stewards must first apply and be approved by OES. To be approved, Stewards with self-managed WEEE systems must meet requirements that include, but are not limited to, the following:

- Provide information to OES on the how the self-management system operates, including possible confidential information if required. This information is necessary for OES to review and fully understand all elements of the program or system to provide an evaluation of this channel for approval.
- All WEEE collected via an OES-Approved Self-Managed Program shall only be directed to primary and downstream processors that have been approved by OES. Please refer to Section 4.8.4 for more information regarding processor approval. Note that the processor utilized by the OES-Approved Self-Managed Program, if not already approved by OES, will need to be approved under the OES ERS (Please refer to Appendix 7a). OES will coordinate with the Steward and the OES auditor to complete the audit, which will be paid for by the Steward. Upon approval OES will reimburse the Steward for the full cost of the audit.
- Stewards have the option to determine if they want all of their products or a subset of their products covered under this new self-management channel. Therefore, OES will need to approve the listing of the types of WEEE that are to be included in the Self-Managed Program.
- Stewards operating an OES-Approved Self-Managed Program will still be required to report their unit sales, according to OES specifications.
- Stewards operating OES-Approved self-management channels shall report the weight (kg) of WEEE by type sent for processing, and shall report the primary and downstream processing destinations, according to OES specifications.
- Stewards operating an OES-Approved Self-Managed Program shall enter into agreement with OES specifying commitments and performance measures, according to OES specifications. This agreement shall include cost coverage considerations to account for any targeted WEEE subset that is misdirected into an OES collection channel.

Despite the intentions of Stewards' Self-Managed Programs, OES does not anticipate that these programs will capture 100% of targeted WEEE under their Self-Managed Program. The Steward is responsible for demonstrating that an OES-Approved Self-Managed Program operates to achieve the highest capture rate of WEEE possible. OES will utilize waste audits to track against OES-Approved Self-Managed Programs for cost coverage purposes.

Stewards who are approved by OES to operate Self-Managed Programs for all or some of their WEEE will be required to pay Steward Fees. However upon OES approval, these fees will be modified to reflect the reduced volume of WEEE that is managed by OES and the reduced share of Revised Program common costs that will be incurred as a result. For more detail on the reduced fee for Stewards with OES-Approved Self-Managed Program, please refer to Section 8.4, Step 7.

The Program Compliance Fee will vary by Steward depending on the number of Stewards in the Revised Program and the quantity of WEEE flowing through OES-Approved Self-Managed Programs. OES anticipates that the Program Compliance Fee will range between $4,000 per Steward and $7,000 per Steward, for those Stewards who are approved for the Self-Managed

Program option. The following are two examples of how the compliance fee would be calculated.

Example 1: Acme Copier Inc. is a Steward and supplies into Ontario floor-standing copiers. Acme manages the EOL of these copiers in an OES-Approved self-management Program.

- Acme would NOT pay the per-unit fee ($28.13).
- Acme would pay a compliance fee that represents the average cost for OES to discharge compliance obligations. This fee is estimated to be between $4,000 and $7,000, depending on the number of Stewards.

Example 2: Acme Copier Inc. is a Steward and supplies into Ontario desktop copiers sold at retail. Some of Acme's desktop copiers are managed within the OES system, and some are managed in an OES-Approved self-management Program.

- Acme would pay the per-unit fee ($2.39) on the quantities managed in the OES system. This fee already incorporates a compliance cost.
- If the compliance portion on desktop copier fees to be paid is less than the average per steward compliance, they would pay the additional compliance fee to make up the difference.
- If the compliance portion on the desktop copier fees to be paid is more than the average, they would not incur any additional per steward compliance cost (e.g. at a minimum, they will pay the per Steward average compliance fee).

Note that Stewards who operate Self-Managed Programs under the Revised WEEE Program are not eligible to receive WEEE Program collection incentive payments described in section 4.3.2.

4.5 Collection System Overview

Collectors and collection sites receive, sort and prepare WEEE for transport according to OES specifications. OES-Approved Collectors can be either for-profit or non-profit organizations or municipalities who have entered into an agreement with OES for the collection of designated WEEE.

"**Collectors**" are approved by OES to collect, sort and prepare WEEE for transport according to OES requirements.

Collectors can choose to collect all Phase 1 and 2 WEEE, or only a subset of Phase 1 and 2 WEEE. If collectors collect a subset of WEEE, they cannot exclude any brands from collection, and collection operations must be accessible to the public. For example, a retailer may choose to collect only computers and cellular phones. In order to become an OES-Approved collection site (and receive collection incentives), the retailer must collect *all* brands of computers and cellular phones (not just the brands they carry in their stores).

There are a variety of ways WEEE can be collected in the OES system, as described in the following sections.

4.5.1 Generation sites with existing direct-shipment arrangements

This section references the direct-shipment channel (3a) in Figure 4.1.

For large volume IC&I generators who want to directly manage their own WEEE through reuse or recycling, the Revised Program Plan accommodates direct shipment of WEEE from the generator to either a reuse centre for redistribution, or directly to an OES-Approved processor for recycling. This channel allows for WEEE generation sites to maintain existing business relationships where there are security issues or the requirement for value added services that cannot be guaranteed when WEEE flows through the consolidated program. The generator will be provided a reimbursement of transportation and EOL processing costs (up to a maximum) as an incentive to participate in the Revised Program.

In order to qualify for the direct-shipment channel option, WEEE generation sites must go through the following process:

1) Register with OES and receive a unique generation site number. This initial registration number can be used again for future arrangements.
2) Contact OES and apply for direct shipment approval. The online application will require site operators to provide information that includes, but is not limited to, the following:
    - Description of material
    - Reasons for wanting to ship directly to processors rather than to consolidation locations
        - Reasons could include confirming data security, requiring a certificate of destruction, requiring asset tag management, etc.
    - Source of generation (e.g. product returns, EOL equipment from operations) including quantity of material originating from outside Ontario
    - Estimated quantities (e.g. units, weight, bins, pallets, etc.) by WEEE type
    - Destination (the specific OES-Approved processor)
    - Declare if material is sorted according to OES separation requirements or shipped commingled
    - Proposed date or timelines for shipping
3) Receive approval from OES for both the generation site and the OES-Approved processor (destination).
4) Initiate a bill of lading (BOL) as per OES requirements (each shipping unit – pallet, Gaylord, bulk bag – is to be tracked). This will ensure that material shipped from IC&I generators directly to processors is tracked the same way as all other WEEE under the Program.
5) The IC&I generator will report the quantity shipped and the total tonnes processed to OES and apply for reimbursement of processing costs for Ontario supplied Phase 1 WEEE only. The reimbursement amount cannot exceed the rate that OES pays the approved processor as identified through the competitive RFP and evaluation process.
6) The transportation incentive will be through reimbursement to a maximum amount based on average rates quoted from OES contracted transporters. OES will explore the option for providing transportation services for the generator on a trial basis during the remainder of Year 1.

If an approved IC&I generator chooses to have its WEEE sent to a reuse and refurbishment location, OES will provide a list of all OES-Approved Reuse and Refurbishment organizations.

OES' data and material-tracking system will allow OES to measure and analyze performance from individual generators and from the IC&I group as a whole. This will assist OES in assessing the need for changes to program enhancements on an annual basis.

OES will review these procedures and make modifications as necessary to increase efficiencies, to ensure collection of required data and to achieve the overall objectives of the program. OES will track:

- The number and types of applications received and approved;
- The quantity of Phase 1 and 2 WEEE, and non-Phase 1 and 2 WEEE that is reported;
- Administration and logistics time and costs of direct shipment to processors;
- Issues or barriers that this approach has for generators, processors and OES

In order to ensure confidentiality and privacy protection within the direct shipment arrangements, OES will enforce segregation of internal duties relating to management of the direct shipment operations. OES also recommends the use of confidentiality agreements between generators and processors engaged in direct shipment arrangements.

Please note that tonnage of WEEE materials that flow through the Direct Ship channel is included in the total quantity of WEEE allocated to each OES-Approved primary processor for the Phase 1 program period. However, within this timeframe, OES will monitor the implications of continuing to include the direct ship material within the primary processor allocation as compared to allocating only the materials that pass through collection and consolidation facilities. OES will consult with stakeholders and determine how they will proceed with prior to the second WEEE processing RFP and allocation process that is outlined in Section 4.8.5.

4.5.2 Reuse and refurbishment sites undertaking collection of WEEE

This section references the OES-Approved Reuse and Refurbishment channel (3b) in Figure 4.1.

Reuse and refurbishment organizations are encouraged to join the OES-Approved collection network and can participate in two capacities:

- As an OES-Approved collection site that is authorized and permitted under the Program to carry-out reuse and refurbishment activities; and/or,
- As an EOL primary processor.

The primary objectives for reuse and refurbishment organizations participating in the Revised Program are to ensure that all collected WEEE materials are tracked and managed, and that reuse activities meet the OES requirements regarding the handling, storage, and transport of WEEE. Reuse and refurbishment sites that undertake collection of WEEE must be approved by OES, and are required to meet the same compliance standards as other collection sites.

Section 4.6 contains greater detail on the role of reuse and refurbishment sites that undertake reuse, refurbishment, and processing activities under the Revised Program.

4.5.3 Steward and voluntary retailer take-backs and returns

This section references the OES-Approved Collection channel (3c) in Figure 4.1.

Many Stewards and retailers currently collect WEEE from a number of different streams, such as customer returns, end-of-lease material, warranty repairs, and voluntary take-back initiatives. Stewards may also offer a collection service by running special events in conjunction with retailers and local community groups, or through direct mail back from customers.

The OES Program encourages and provides incentives to Stewards to continue and expand existing programs, and to initiate new collection programs for WEEE. The Program will also allow retailers who sell EEE and may not be Stewards (i.e. sell EEE and are not first importers under the Rules) to act as a collection site.

4.5.4 Permanent collection sites

This section references the OES-Approved Collection channel (3c) in Figure 4.1.

Permanent collection sites collect all or a subset of Phase 1 and 2 WEEE at their facilities, and operate on a permanent or semi-permanent basis. They may provide collection services to the IC&I sector, the residential sector, or both.

4.5.5 Special Collection Sites and Events

This section references the OES-Approved Collection channel (3c) in Figure 4.1.

Organizations may choose to offer special one-time or short-term collection events, and/or operate collection sites only at special times of the week, month, or year. There are two basic kinds of events, as described below.

a) OES 'Round-Up' Events

OES 'Round-Up' events are special one-time, full-service, 'turnkey' collection events that are fully sponsored and supported by OES. OES will provide all P&E, labour, and equipment required to conduct the event, as well as cover the cost to transport collected WEEE, and the cost of EOL processing. The primary purpose of the 'Round-Up' events is to provide OES with flexibility to respond to support short-term 'gaps' in collection service across Ontario.

b) Special Collection Events

OES will support and encourage organizations, such as a retailer or a municipality, who choose to initiate and undertake Special Collection Events for WEEE. Special Collection Events are typically one or two-day events, where WEEE generators would be allowed to return WEEE to a specified location for EOL management. For instance, a retailer could allow customers to return WEEE to the retail location on a certain day.

Should a retailer or municipality want to coordinate their own Special Collection Event, the retailer or municipality would be responsible for coordinating and staffing the event, but could coordinate with OES and receive handling equipment (e.g. pallet, bins, etc.), transportation, and processing services. The Program incentives for this Special Collection Event option are outlined in Table 4.1.

For retailers or municipalities wanting to simply 'host' a collection event, OES can provide 'Round-Up' event services, as discussed in the previous section.

4.5.6 WEEE Generation Sites that Utilize OES-Approved Collectors

This section references the OES-Approved Collectors channel (3d) in Figure 4.1.

To allow for flexible and efficient collection activities under the Revised Program Plan, OES is incorporating an additional return channel. Some WEEE generation sites may experience difficulty meeting the OES collection requirements, and as such may not qualify to be OES-Approved Collection Sites (refer to Section 4.5.7) or may simply choose not to participate in the manner required by OES. However, under the Revised Program Plan, these generation sites can be serviced by an external OES-Approved Collector, who will ensure that collected WEEE is sorted and packaged according to OES' requirements.

The Approved Collector registers the collection site and is provided a tracking number. The incentive is paid to the Approved Collector and the collection site can choose whether or not to be added to the Do What You Can website as a public site. WEEE managed from these generation sites by OES-Approved Collectors will be sorted and packaged in accordance with OES requirements, and will flow into the WEEE management system in the same manner as WEEE from other OES-Approved Collection Sites.

4.5.7 Procedures for Selecting OES-Approved Collectors

Collectors under the Program are considered the unofficial representatives of OES to all WEEE generators. As such, OES expects collectors to:

- Provide high-quality and reliable services to WEEE generators;
- Ensure that the safety and health of all staff handling WEEE materials is maintained, and is of highest priority;
- Ensure compliance with all environmental performance requirements;
- Ensure the highest possible level of security to prevent and prohibit the removal of collected WEEE from the premises or the accessing of data while in the care of the collector; and,
- Ensure full and current organizational compliance with all applicable municipal, provincial, and federal regulations and requirements.

To become eligible as a collector or collection site, an organization must register with OES, meet the OES performance and compliance requirements, and be approved by OES to become a collector/collection site. All collectors are required to monitor and report WEEE collection under the Program for OES data collection, material tracking and reporting purposes.
The following sections provide more details on performance requirements and the approval process.

a) Sorting and Packaging Requirements

OES sorting and packaging requirements specify how Phase 1 and 2 WEEE should be sorted and handled from approved collection points, through to final processing. Phase 1 and 2 WEEE must be segregated and managed by sorting and packaging into four WEEE management groups:

Group 1: Desktop and portable computers
Group 2: Display devices (including monitors and televisions)
Group 3: Other Phase 1 and 2 WEEE
Group 4: Floor standing copiers and printers

OES-Approved containers must be used by all collectors sending WEEE to OES consolidation centres[16]. For the first few years of the Program, a province-wide pallet, bulk-bag and Gaylord box transportation system will provide the highest level of Program flexibility, safety precautions, reduced WEEE breakage, and maximized efficiencies from the point of collection through downstream processing. Pallet and container specifications for the product groups are as follows:

Group 1: Desktop and portable computers to be palletized to a height of no more than 1.7 metres
Group 2: Display devices to be palletized to a height of no more than 1.7 metres
Group 3: Other Phase 1 and 2 WEEE is to be placed into bulk bags or Gaylord boxes, not to be packed higher than the side walls of the container.
Group 4: Floor standing copiers and printers will either be placed on a pallet and shrink-wrapped to the pallet or handled as independent units if they have wheels

b) Special Sorting and Packaging Requirements for Municipal Collection Only

Due to the specific concerns raised by some municipalities during OES consultation, OES has agreed to allow for the following deviations from the OES Sorting and Packaging Requirements for municipalities *only*.

Group 1: Computers can be palletized to a height of no more than 1.7 metres or can be placed into bulk bags or Gaylord boxes, not to be packed higher than the side walls of the container.
Group 2: Display devices can be palletized to a height of no more than 1.7 metres or can be placed into bulk bags or Gaylord boxes, not to be packed higher than the side walls of the container.
Group 3: Other Phase 1 and 2 WEEE is to be placed into bulk bags or Gaylord boxes, not to be packed higher than the side walls of the container.
Group 4: It is not anticipated that municipalities will receive floor standing copiers or printers, however if that should occur, where possible, they should be wrapped and secured separately onto a pallet.

[16] Note that as depicted in Figure 4.1, generation sites, including municipalities that use collectors (3d), or engage in OES-Approved direct shipment activities (3a), may not be bound by these packing requirements.

c) Additional procedures required of OES-Approved Collectors

Additional requirements of OES-Approved Collectors include the following:

- Collection sites must accept Phase 1 and Phase 2 WEEE, and Phase 1 and 2 WEEE component parts at no charge[17]
- Collect a minimum of six pallets prior to scheduling an OES pick-up.
- Implement a data tracking system whereby the collector will record and report to OES the number of full pallets with unit counts and the number of bulk bags or Gaylord boxes of printing devices and peripherals produced by the collector.
- Ensure that packaged WEEE material transported to consolidation centres is at or below the allowable level of contamination. The contamination threshold has been set at not more than 5% by weight.
- Maintain general security measures to prohibit the removal of whole WEEE items and WEEE parts from the collection site.
- Ensure compliance with OES' privacy protection requirements that are specified in Section 4.2.1.

OES has developed training materials for collection site staff and will conduct training events as required. OES will also provide additional support including guidance documents and equipment (e.g. pallets, bulk bags) to assist approved collectors in the transition to a pallet and bulk bag/Gaylord box system. New or existing collection sites are not expected to make physical changes to existing facilities. In most cases, short term storage space is all that is required. OES assumes that collection sites will be able to accommodate a minimum of six pallets, which is the threshold at which an OES pick-up can be scheduled.

4.5.8 Incentives to participate as an OES-Approved Collector

The Revised Program Plan promotes strong partnerships with participating collectors through the following Program elements and indirect incentives:

- A $165 per tonne collection incentive.
- OES covers the costs of transportation of the WEEE materials to OES-Approved consolidation centres, as well as the costs of EOL processing (Box 4a in Figure 4.1).
- OES-provided equipment (e.g. pallets, bulk bags) to assist Approved Collectors in the transition to a pallet and bulk bag Gaylord box system.
- Specialized training materials and guidance documents, supplemented by training events for collection staff as necessary.

The basis for calculating the collection incentive at $165 per tonne is outlined below:

- Allocation of space for pallets based on market lease rate of $5.82 for a square-foot;
- Labour costs of 1.5 hours for assembling a pallet at an hourly rate of $20;
- Overhead costs such as utilities, maintenance and insurance at 50% of the lease rate;
- Amortized capital costs;
- Miscellaneous material costs;

[17] Recognizing that municipalities may: a) charge a 'gate fee' to residents for entering a municipal waste management site that is not related to the materials being delivered; and b) charge on a weight basis for mixed loads of materials.

- Contingency of 10%; and,
- Average pallet and bulk bag weight of 300 kg.

OES has captured these various collection scenarios in Table 4.1: Summary of Revised WEEE Program Plan Incentives.

4.6 Reuse and Refurbishment Overview

The preferred first option for management of WEEE is to reuse or refurbish it for secondary use. If products are in suitable condition, WEEE generators can take their products to any OES-Approved Reuse and Refurbishment organization.

Existing reuse and refurbishment organizations in Ontario include a mix of not-for-profit and for-profit organizations[18], which may provide a range of services to accomplish different objectives (such as job-training programs). While some organizations will have a drop-off service, some may offer scheduled pick-up of items.

"**Reuse**" is defined as the provision of functioning WEEE to another user for its original intended purpose, without hardware repair or modification, and where the reuse activities are limited to non-intrusive operations only.

"**Refurbishing**" is defined as any disassembly of WEEE for the purpose of internal testing, troubleshooting or replacement or repair of non-functioning or obsolete parts.

Organizations may or may not charge a fee to cover some of the costs of handling WEEE materials, and often will either resell or donate equipment. The Program allows reuse organizations to operate as they do currently, while providing additional benefits including free promotion, advertising and awareness, anticipated higher collection volumes, and relief from transportation and end-of-life processing costs. These benefits and incentives are outlined in Table 4.1: Summary of Revised WEEE Program Plan Incentives.

4.6.1 Program Support for Reuse Initiatives

The WDA encourages a 3Rs approach (Reduction, Reuse and Recycling) to manage designated wastes, and this is reflected in the Revised Program Plan. OES has developed a number of activities to facilitate WEEE reuse.

a) Online Searchable Database of WEEE Collection Sites

As part of Phase 1 Program implementation, OES developed an online tool that allows WEEE generators to search, by postal code, the WEEE collection sites in their area. As an enhancement to this online search tool under the Revised Program Plan, generators would also be able to search for local collection sites by their preferred end-use option: refurbishment vs. reuse vs. recycling.

b) Electronic Materials Exchange Network

As part of the Revised Program Plan, OES will establish a materials exchange network, which is an online exchange network that allows users to post materials they wish to sell, as well as search for materials to purchase. This network enables generators of WEEE to engage in the

[18] All reuse and refurbishing operations are treated equally within the Revised Program whether they are for-profit or not-for-profit.

donation or resale of their unwanted electronics to other Ontarians. Not only does this create new opportunities for the reuse of unwanted electronics, but also enables OES to monitor and track reuse activities taking place within Ontario.

c) WEEE Component Reuse

The introduction of Phase 2 WEEE creates new opportunities for the inclusion of component reuse initiatives under the Program Plan. WEEE components with reuse potential are such items as rechargeable batteries contained within portable computers, cellular phones, and PDAs. These batteries are of particular interest because many of these reuse/refurbishment companies currently report reuse rates of 10% - 20% of batteries collected.

4.6.2 Procedures for Selecting OES-Approved Reusers and Refurbishers

To become eligible as an OES-Approved Reuse and/or Refurbishment organization, an organization must register with OES and meet the OES performance and compliance requirements, specifically the requirement to meet OES Recycling or Reuse and Refurbishment Standard (Appendices 7a and 8a). Reuse and refurbishment sites that are registered with OES will be required to track and report to OES on a regular basis the number of units redistributed, either sold or donated into the market.

Under the Revised Program Plan, Reuse and Refurbishment organizations are permitted to salvage parts and components with reuse and/or scrap value. This provision is being allowed for Reuse and Refurbishment organizations *only*, to encourage these groups to participate in the Program, and to maximize their income through the reclamation of WEEE material that is unsuitable for reuse.

OES encourages Reuse and Refurbishment organizations to further salvage other valuable materials from WEEE by permitting sale of this material: Electronic and hazardous material may be sold to an OES-Approved Processor. Outlets for non-hazardous materials, such as ferrous or non-ferrous metals, must be approved by OES. In some cases this will create a new source of income for the organization, while in other cases it will permit organizations to carry on existing business practices without OES intervention. For WEEE that is not suitable for reuse and that remains in its original form (i.e. not dismantled for parts), reuse and refurbishment organizations will receive the $165 per tonne collection incentive, provided that WEEE is prepared for transport according to the OES requirements outlined in Section 4.5.7.

In addition, OES will cover the costs and logistics of EOL processing for all OES-Approved Reuse and Refurbishment organizations under the Program for all non-reusable WEEE materials. Processing costs have been identified by these organizations to be significant and, in some cases, have proven to be a barrier to environmentally-sound recycling. OES will cover these costs, and provide WEEE logistics support to pick-up all WEEE residual from their operations. This will provide relief from the administrative costs related to securing appropriate WEEE processing services.

a) Requirement to Meet OES WEEE Reuse and Refurbishment Standard

To become an OES-Approved Reuser or Refurbisher, organizations must meet the OES WEEE Reuse and Refurbishment Standard[19]. This Standard describes the minimum requirements for managing WEEE through reuse and refurbishment operations. The Standard ensures that reuse and refurbishment organizations provide sufficient data security measures, and conduct all activities in a safe and environmentally-sound manner, including refurbishing and disposal of WEEE that is not suitable for redistribution. For the full text of the Standard, please see Appendix 8a.

4.6.3 Incentives to participate as an OES-Approved Reuser and/or Refurbisher

OES will promote a strong partnership with participating reuse and refurbishment organizations through the following Program elements and indirect incentives:

- Directing residents and businesses to website and contact information of reuse organizations.
- Increasing awareness of local reuse operations in each community.
- Allowing reuse organizations to continue, if they so choose, to remove revenue-generating scrap from their operations and retain this revenue. Electronic and hazardous scrap must be directed to OES-Approved Processors. Outlets for non-hazardous scrap, such as ferrous and non-ferrous metal, must be approved by OES.
- Covering costs for transportation and processing of non-revenue generating Phase 1 and 2 WEEE scrap.
- Allowing reuse organizations to participate as OES-Approved Collectors, and receive the $165 per tonne collection incentive for all non-reusable Phase 1 and 2 WEEE that is collected, sorted, and prepared for transport according to OES Sorting and Packaging Requirements. In many instances this will represent a new source of revenue for the organization.
- Establishing minimum operating standards for approved reuse and refurbishment organizations in terms of environmental compliance, worker health and safety, handling practices, and secure data destruction procedures.

For a summary of these incentives, please see Table 4.1.

4.7 Transportation and Consolidation Overview

Before material is processed, it must be collected and consolidated. This includes sorting the material into the four collection streams, and preparing the material for transport to an OES-Approved consolidation centre. This section describes the transportation and consolidation system in further detail.

"**Transporters**" ship sorted WEEE to be further processed.

"**Consolidators**" receive bulk WEEE from collection agents for subsequent transport to OES-Approved Processors.

[19] The Reuse Task Group, a cooperative effort comprised of OES as well as reuse and refurbishment organizations in Ontario, provided input to OES during the development of the WEEE Reuse and Refurbishment Standard. This Standard was updated in April 2009.

4.7.1 Transportation

In the OES Program, material is transported from collection points to regional consolidation centres, and from consolidation centres to EOL processors. For the purposes of the Program, all transportation costs will be assumed by OES once the WEEE has been collected (i.e. transport between collectors and consolidation centres and transport between consolidation centres and primary processors). The transportation costs to be covered by OES are depicted as the connecting lines in Figure 4.1 from:

- Boxes 3b, 3c, and 3d → Box 4
- Box 4 → Box 5a

OES will also cover costs of non-revenue generating scrap transported from reuse and refurbishment organizations that go for consolidation (Box 4).

a) Procedures for Selecting OES-Approved Transporters

OES has established transportation zones that correlate with the locations of consolidation centres and primary processors (these transportation and consolidation zones are detailed in Appendix 6). Transportation services are solicited through RFPs, and transport companies will be chosen based on the following criteria:

- Security: presence of security measures that prevent the removal of whole or parts of WEEE, or the accessing of data while in the care of the transporter.
- Ability to provide support services to special event collection.
- Service ability: equipment, age of fleet, hours of operation.
- Experience: understanding of Program requirements, years of operation, operator turnover rate.
- Transportation records: driver abstracts, company and driver infractions.
- Environmental performance: 3Rs plan, alternative fuels, anti-idling programs.
- Cost.

A company chosen to transport WEEE to a consolidation point or primary processor is the first check point for pallet and packaging integrity. At no time will a shipping unit be picked up if it is not safe and properly packaged and marked in accordance with OES Sorting and Packaging Requirements (Section 4.5.7). Further, the transport of WEEE within the OES system must be done in accordance with all transportation laws and must ultimately avoid and prevent the accidental generation of hazardous waste.

4.7.2 Consolidation

Under the Program, consolidated shipments of WEEE are directed from consolidation centres (See Box 4 in Figure 4.1) to OES-Approved Processors (See Box 5a in Figure 4.1). OES has divided the province into four consolidation regions: East, West, Central and North. Please refer to Appendix 6 for more detail regarding OES' Ontario consolidation regions.

a) Procedures for Selecting OES-Approved Consolidation Centres

OES will select consolidation centres through an open and competitive process, and will contract in accordance with the following criteria:

- Security: presence of security measures that prevent the removal of whole or parts of WEEE, or the accessing of data while in the care of the transporter.
- Service ability: equipment, condition of facility, hours of operation.
- Experience: understanding of Program requirements, years of operation, operator turnover rate.
- Environmental performance: 3Rs plan, alternative fuels, anti-idling programs.
- Location: relative location to collectors and primary processors; proximity to rail terminal.
- Cost.

Consolidation centres will be required to:

- Assess each pallet's packaging integrity, and verify unit count (if applicable), contents (including non-Program materials) and weight.
- Confirm receipt and enter required information into OES tracking system.
- Direct source separate WEEE to approved primary processors (5a) as directed by OES.
- Ensure general security measures to prohibit the removal of whole WEEE, and WEEE parts from the consolidation site or the accessing of data.

Under the Program, consolidated shipments of WEEE will be directed from consolidation centres to OES-Approved primary WEEE processors (See Box 5a in Figure 4.1). The material will be directed by a dedicated logistics coordinator who will ensure material flows efficiently from consolidation through to the OES-Approved EOL Processors.

4.8 Processing and Recycling Overview

Once WEEE has been collected and/or consolidated, it is ready to be disassembled for recycling or proper disposal. One of the major objectives of this Plan is to maximize the recycling rate for WEEE, while diverting significant quantities of toxic materials (such as lead and mercury) from landfills. To this end, the Revised Program Plan has an approvals process that incorporates strict processing and recycling standards for all OES-Approved Processors and recyclers. In addition, OES has established the following goals for the processing and recycling of WEEE under the Program:

"**Processing**" is defined as the separation of a product's component materials in preparation for recycling or disposal.

"**Recycling**" is defined as the processing of WEEE by manual or mechanical means for the purpose of resource recovery.

- OES will meet the Program Plan recycling targets in a manner which seeks to maximize environmental outcomes while remaining cost effective (refer to Section 5.1.5 for the Revised Program Plan recycling targets).
- OES-Approved Processors must meet or exceed the applicable requirements of the Electronics Recycling Standard.
- OES will contract with processors in a fair and transparent system that supports diversity in service providers and ensures sufficient overall processing capacity.

- OES will foster continuous improvement in the environmental and economic performance of OES-Approved Processors.
- OES will conduct annual assessments of OES-Approved processors to ensure that recycling activities under the Program are in compliance with the Minister's Program Request Letter.

This section describes the processing and recycling system in further detail.

4.8.1 Primary Processing

Primary WEEE processing is the first point in the WEEE EOL management chain that performs any of the following upon receipt of WEEE: receiving for OES, sorting, dismantling, disassembly, shredding or any other material processing activity, preparing material for further downstream processing and disposal. Processing can include manual and/or mechanical activities.

OES contracts with primary processors for a percentage allocation of collected WEEE under the Program. The primary processor interacts with multiple downstream processors as per their normal business arrangements, and OES has no direct contractual relationship with the primary processor's downstream vendors.

4.8.2 Downstream Processing and Recycling

Downstream WEEE processing is the further manual or mechanical separation of materials by another vendor or vendors after the recovery of recyclable and non-recyclable components. Downstream processing may involve many vendors, and may include the following types of activities: shredding, grinding, smelting, incineration, energy recovery, and landfill disposal of non-recoverable materials. Materials managed through incineration, energy recovery and landfill do not constitute diversion under an Ontario diversion program.

The purpose of downstream processing is to recover specific material resources (such as metals or plastics) from different WEEE components, and to ensure proper handling, recovery and/or disposal of non-recyclable components received from a primary WEEE processor. Some downstream processors receive manually separated materials from primary processors such as batteries, CRT tubes or mercury lamps. Others receive mixed shredded material as feedstock for smelting and metal refining operations.

4.8.3 Requirement to meet the OES Processing and Recycling Standards

OES processing and recycling activities operating within the Revised Program Plan are based upon three guiding standards and documents[20]:

- The OES Electronics Recycling Standard (Appendix 7a).
- The OES Recycling Standard Guidance Document (Appendix 7b).
- The OES Recycling Qualification Process (Appendix 7c).

[20] Since the approval of the Phase 1 Plan, OES has made revisions to these Standards in accordance with similar changes being made to the EPSC Standards. The Revised ERS will be applied no later that October 2010, upon completion of the next contracting cycle. Please refer to Appendix 7a for the OES Revised ERS.

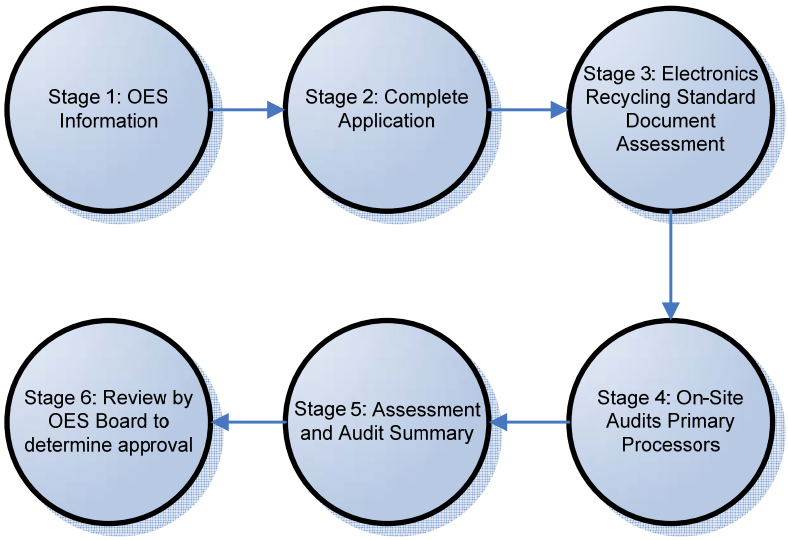
Downstream processing currently takes place in many locations within Ontario, North America and globally. When downstream processing occurs outside of North America, processing may not always comply with the Canada-Wide Principles for Electronics Product Stewardship as issued by the Canadian Council of Ministers of the Environment (CCME). Further, there is no guarantee that processing is undertaken in a safe and environmentally sound manner that satisfies local, provincial and national regulations and international obligations, including the *Basel Convention on the Control of Trans-boundary Movements of Hazardous Wastes and Their Disposal.* To address some of the uncertainties associated with downstream processing, the OES Electronics Recycling Standard includes the following key requirements:

- The OES Electronics Recycling Standard does not allow export of WEEE to countries that are not members of the Organisation for Economic Co-operation and Development (OECD) or the European Union, unless the primary processor can demonstrate that any/all downstream processors meet or exceed environmental, health and safety standards equal to Ontario requirements.
- The primary processor is responsible for documenting and ensuring that all downstream processors meet the Electronics Recycling Standard.

In addition to using this industry-developed national standard, OES recognizes that service suppliers must go beyond this standard, and where applicable must also be in compliance with the WDA, other Ontario regulations (e.g. Regulation 347) and Ontario waste management policies (e.g. in Ontario energy recovery is regarded as disposal and not diversion). Therefore, OES will incorporate such Ontario specific requirements in its contracts with transportation, consolidation and primary processing service providers to ensure compliance with Ontario regulations and policy. An outline of the potentially applicable Ontario-specific compliance requirements can be found in Appendix 10.

4.8.4 Qualification and Selection Process for OES-Approved Primary Processors

OES has implemented a six-stage application and evaluation process that provides existing primary processors and potential new entrants with an ongoing opportunity to be placed on the OES Approved Processors List[21].



[21] Note that OES manages and contracts transportation and consolidation services independently of these processing arrangements.

Stage 1: Obtain OES Information

To ensure that interested vendors are informed of all aspects of the Program Plan requirements, OES will conduct information sessions to further explain the Electronics Recycling Standard requirements and OES approvals process. In addition, OES has implemented an online application process to allow both existing and new processors the opportunity to qualify under the Program.

Stage 2: Complete Application

The application procedure requests that prospective processors provide initial information regarding their operations and their downstream processors. OES will evaluate the applications (specifically the level of detail and support documentation) and determine whether the application is sufficient for OES to progress to the next stage. Information provided in the application will be used to assess the ability of the primary processor (and its downstream processors, if applicable) to comply with the OES Electronics Recycling Standard.

The OES Electronics Recycling Standard requires prospective primary processors to meet, at a minimum, the following Program requirements and responsibilities:

- Shipping and receiving: WEEE loading and off-loading of transport trucks;
- Tracking and monitoring: comply with OES material tracking requirements;
- Continuous receiving and storage: as full truck loads are delivered, the processor is required to continuously process WEEE or place it in temporary storage as needed;
- Pallet and packaging recycling: implement programs to recycle or reuse pallets, shrink wrap, corrugated cardboard, and other shipping components as needed;
- Processing: hazards removal pre-processing, and processing to maximize recycling, with an ability to track and report recycling;
- Security: general security measures to prohibit the unauthorized removal of whole or parts of WEEE from the processing site or accessing data while in the care of the processor;
- Downstream markets: ensure that downstream processors and/or end markets are in compliance with Program Plan requirements and the OES Electronics Recycling Standard;
- Reporting: regular reporting of processing activities, audit compliance, health and safety records, environmental performance, any legal contraventions, and mass balancing;
- Invoicing: back up documentation requirements to be determined;
- Insurance, permits; and,
- Continuous environmental and economic improvements over time.

Processors that meet these OES requirements will progress to the next stage of the process.

Stage 3: Electronics Recycling Standard Document Assessment

In this stage, an independent third-party auditor will perform a document assessment of prospective processor. This stage of the audit process requires the auditor to perform the following:

- Confirm and verify information provided in the processor's application;
- Identify all WEEE materials processed, processing methods, and all downstream vendors used;
- Identify non-conformances; and,

- Report findings to OES Board and the potential applicant, with recommendations for corrective action, if required.

Prospective processors should, at a minimum, have the following information available for a document audit:

- Material flow: identifying all downstream processors used, and estimated material quantities sent to each;
- Site information: contacts, site description, organizational structure, etc.;
- Processing method(s): accurate and thorough description of processing methods used, including controls to safeguard the environment and worker health and safety;
- Copies of regulatory permits, insurance coverage, and worker compensation coverage;
- ISO 9001/14001 (or similar) certification, if available;
- Details on the downstream flow of materials and vendors used, including volumes of applicable materials processed and sent through to sub-vendors;
- Confirmation that the facility and operations comply with all applicable local, provincial and national regulations for handling, transporting, storing and processing WEEE; and,
- Identification of any existing or potential environmental liabilities from contamination of land, water or air.

Through this review, the auditor will assess whether the prospective processor appears, based on the information provided, to be in conformance to the requirements of the OES Electronics Recycling Standard. The auditor will also identify any potential non-compliance issues, and confirm the material flow and volumes that each vendor was reported to handle. If potential issues are identified, the auditor will work with the processor to understand the deficiencies, and the steps necessary to address them. The services of the independent third party auditors will be secured and provided by OES, at OES' cost.

Stage 4: On-Site Audits

Stage 4 of the approval process requires that potential applicants undergo an on-site audit. On-site audits are mandatory for primary processors only, but may be requested of downstream processors. The on-site audit requires the auditor to do the following:

- Assess any outstanding issues with the application or document audit;
- Audit in accordance with the requirements of the OES Electronics Recycling Standard, including any applicable regulatory requirements, such as environmental and health and safety; and,
- Identify non-conformances based on major and minor deficiencies.

An on-site audit typically lasts one day and will include the following activities:

- An opening meeting to review the purpose and scope of the audit;
- A tour of the site and operations;
- Review of internal documents/procedures/training records to confirm conformance to the OES Electronics Recycling Standard; and,
- A closing meeting to review the audit results and any outstanding deficiencies.

Prospective processors require the following for an on-site audit:

- Requested documents, including work procedures and training records;
- Details of operational processes; and,
- Staff resources to work with the auditor to provide the required audit material.

The key issues that are addressed during an on-site audit include the following:

- Environment, health and safety regulatory requirements compliance;
- Emergency situation identification and response procedures;
- Hazardous material management and training; and,
- Risk assessment protocols and operation audits.

***On-site Audits for Downstream Processors*:** downstream processor on-site audits will be based on the results of the downstream processors' document audit. The auditor assesses all aspects of the downstream operations according to the Electronics Recycling Standard Audit Process, and determines whether an on-site audit is required. This differs from primary processors, for which an on-site audit is mandatory. If a downstream processor is determined to require an on-site audit, the auditor will follow a similar on-site audit process used for primary processors. OES retains the right to conduct an on-site audit of the downstream vendors of OES-Approved primary processors to ensure ongoing compliance with the ERS.

First-time services of independent third-party auditors will be secured by OES, at OES' cost. Changes to processing operations and/or downstream processors or vendors as a result of non-approval will require new document audits and on-site audits, which may not be eligible for funding from OES.

Stage 5: Assessment and Audit Summary

At this stage, the auditor will compile and evaluate all processor data and information, and will prepare a final assessment report for submission to OES. The final assessment report will include the following:

- A map of the downstream flow of materials, including a mass-balance of the materials.
- The results of document and on-site audits, including any identified deficiencies and the actions taken to address them.
- A determination of the compliance status to the OES Electronics Recycling Standard of the primary processor and downstream sub-vendors at the time of the assessment.

The report will also identify non-conformances based on major and minor deficiencies, and will be submitted to OES by the auditor only when the auditor is provided the necessary information and evidence from the primary or downstream processor.

Stage 6: Final Approval by OES

At this final stage, OES will review the final report and make a decision on whether the prospective processor meets the requirements for processing WEEE collected under the Program. OES may request that the auditor follow up on any additional issues not resolved at the time of final report submission, in order to make a final decision.

Once approved by OES, a processor will be added to the OES Approved Processor List. The approval of primary and downstream processors is valid for a period of three years. After three years, all approved processors will require a re-assessment. OES will determine whether a full assessment is required or whether a more 'targeted' approach will be employed. This determination is at the sole discretion of OES and will take into consideration any process changes, changing market conditions, relationship and history with the primary and downstream processors, or any other condition that OES deems to be relevant to re-issuing an approval rating.

OES will work in cooperation with other provincial WEEE stewardship organizations to harmonize procedures for auditing and approving processors.

4.8.5 Description of Revised OES Allocation Methodology

Processors that successfully complete the audit process will be placed onto the OES Approved Processors List. To determine how available WEEE will be distributed amongst processors on the List, OES has developed a specific allocation methodology. The allocation process has been modified from the Phase 1 Program Plan, and the revised WEEE allocation methodology includes the following key objectives:

- OES will meet the Program Plan recycling targets in a manner which seeks to maximize environmental outcomes and in a cost effective manner.
- OES-approved primary WEEE processors shall meet or exceed the applicable requirements of the OES Electronics Recycling Standard.
- OES will contract with primary processors in a fair and transparent system that supports diversity and ensures sufficient overall processing capacity and performance.
- OES will foster continuous improvement in contracted processors' environmental and economic performance.

Based on experience from the allocation process conducted during Phase 1 implementation, OES has made the following changes to help streamline the process, and provide greater flexibility to OES, while still maintaining the objectives outlined above. OES will review options for the allocation of collected WEEE beyond the 36 month service contract period during the first year of the Revised Program.

Note that the tonnage of WEEE materials included in the allocation methodology includes WEEE managed by OES, as well as tonnages of WEEE managed via OES-Approved Direct-Ship channels. WEEE managed by Stewards under OES-Approved Steward self-management programs is not included in the tonnage of WEEE materials for allocation.

a) Revised Allocation Methodology

The revised WEEE allocation process includes the following components, as summarized in Table 4.2:

- Allocation will be based on a competitive RFP with revised scoring criteria that have been streamlined based on the experience from the Phase 1 allocation process.
- Revised scoring criteria that streamlines proposal and review process and eliminates criteria that did not contribute to objectives in the Phase 1 allocation process
- The number of scoring criteria have been revised from five to three, as detailed below:

1) Recycling rate (50%) – based on reported results from Phase 1 or through site audit by OES and calculation based on information collected from the primary and downstream processors. The weighting will remain at 50% however all points will be performance-based.
2) Price (30%) – the weighting has been increased from 20% to 30% to reflect the expansion of the category to allow processors to provide pricing for a range of options based on volume or mixes of material.
3) Innovation and capacity (20%) – this will be qualitatively assessed and scored by OES. This will allow the processor to describe new innovations, enhancements and value added services they can provide. A critical element is also the need to fully understand processor capacity for OES material.

- Individual allocations based on four regions and two material streams has been removed, and replaced by a more flexible, non-regionalized approach. This more flexible approach allows a primary processor to provide pricing on broader range of WEEE and can provide discounted pricing, if they choose, based on volume or mix of WEEE.
- The RFP process with service contract length extended from 18 months to 36 months.
- OES retains the right to direct up to 20% of collected WEEE to processors for the purposes of R&D, start-up testing of processing equipment and to achieve objectives of reducing transportation.
- Total tonnes of WEEE received by each primary processor under OES-approved Direct Ship arrangements are included in the total amount of WEEE allocated to that primary processor by OES.

OES contracts with processors will include an emergency clause that will allow OES to redirect WEEE to an alternative processor if the contracted processor is unable to honour the terms of their agreement with OES (e.g. fire and plant shutdown at primary or downstream processor; receivership; unable to process materials as contracted; etc.). OES will not guarantee bid quantities for two reasons: 1) Bid quantities are based on projected collection rates over a 36 month period and actual collected quantities may be higher or lower than the collection targets in Table 5.4 and Table 5.5; and 2) OES retains the right to reallocate material in the event that a processor is unable to meet the terms of their agreement with OES. Each year, OES will work with approved processors to forecast for future years.

Processor evaluation and subsequent allocation will be made by a sub-committee of the OES Board and in the presence of a staff representative of WDO, who will monitor the evaluation process. Any disputes in regard to the allocation of WEEE to selected processors arising between OES and bidders will be resolved using the dispute resolution process outlined in Section 4.9.

Table 4.2: Changes to WEEE Material Allocation Methodology

Change	Phase 1 Plan	Revised (Phase 1 and 2) Plan	Rationale for Change
Duration of service contract	18 month contract	36 month contract	• Provides longer business planning timeframe for processors and OES
Change selection criteria for ranking processors for standing offer	Recycling rate – 40% Recycling innovation –10% Capacity calculation – 10% Plans to increase capacity – 10% Distance to consolidation – 10% Cost – 20%	Recycling rate – 50% Cost – 30% Innovation and capacity – 20%	• Recycling rate remains highest ranking criteria • Capacity calculation did not accurately reflect OES requirements and processor capacity available to OES. This can be done by reviewing processors' Certificate of Approval • Increased emphasis on cost competitiveness
Allocation by region	Separate allocation for each region	No regional allocations	• Additional range of Phase 2 materials makes multiple allocations more challenging • Provides flexibility to OES to direct subsets of designated WEEE to processors that maximize recycling • Allows for cost efficiencies through "bundling" materials and volume reductions in pricing
Allocation by stream	Separate allocation for display devices and combined computers, printers, peripherals	No allocation by stream	• Additional range of Phase 2 materials makes multiple allocations more challenging • Provides flexibility to OES to direct subsets of designated WEEE to processors that maximize recycling • Allows for cost efficiencies through "bundling" materials and volume reductions in pricing
Percentage allocated	100% of material handled directed by OES through consolidation or direct delivery	Allocated a minimum of 80% of tonnage managed through consolidation via RFP process. The balance (up to 20%) is available to OES to direct as required.	• Allows OES the flexibility to direct WEEE to processors for the purposes of R&D, start-up testing of processing equipment and to achieve objectives of reducing transportation.

Table 4.3 includes a description of the revised scoring criteria that OES will apply to OES-Approved Processors. OES will rank the processors according to the following scoring criteria and this ranking will form the basis of the percentage of material to be allocated to processors. The revised scoring criteria are intended to do the following:

- Provide an incentive for processors to maximize the recycling rate of WEEE managed under contract with OES;
- Ensure adequate and redundant capacity to guarantee the continuous flow and processing of WEEE, and as per the contract requirements of WEEE processors under the WEEE Program;

- Minimize environmental impacts from transportation; and
- Achieve optimal pricing for OES and Stewards.

Table 4.3: Revised Evaluation Scoring Criteria

Description of Scoring Criteria	Weighting
Recycling Performance • 50 points of the weighting are based on the percentage of incoming WEEE that is recycled versus disposed presented as a recycling X% • The 50 point weighting is determined based on the following calculation: Recycling rate (%) multiplied by 50 points (e.g. 80% recycling x 50 point criteria weighting = 40)	50%
Innovation and Capacity • Qualitative scoring that allows processor to describe innovation, enhancements and value-added services they are able to provide to OES • Qualitative evaluation of the processor's current and proposed future capacity. • A requirement of the bid process will include that processors not exceed the storage conditions included in their C of A	20%
Cost • Cost proposals on a $/tonne to process WEEE for the specified period of time • 30 points are awarded to lowest overall bid price • All others bids are calculated on the cost differential as compared to the lowest bid • Cost quote based on OES delivering WEEE to primary processor	30%

Note that this WEEE allocation process does not limit processors' potential to source and process non-Phase 1 or 2 WEEE materials, or to continue or expand the services that they currently provide for processing WEEE received from jurisdictions beyond Ontario.

4.8.6 Opportunities for New Entrants

To encourage new entrants to apply to process WEEE managed under the Program, OES will provide the following assistance and incentives:

- Detailed information about the processor application process, including the schedule and specific application procedures.
- In-house assistance to processors in completing the application process.
- Funds for an independent auditing firm to undertake an initial document audit of applications submitted by interested processors, and communication back to the processor on any deficiencies identified in their application.
- Once all deficiencies identified during the document audit process are rectified by the applicant, an OES-contracted auditor will undertake an on-site audit of the primary processor's operations[22], at OES' cost.
- OES will inform applicants of any deficiencies identified during the on-site audit, and provide the opportunity to rectify these deficiencies prior to participating in any OES processing RFPs.
- Once all deficiencies have been rectified, the processor may then be listed by OES as an Approved Processor, and would be eligible to participate in the Program, as outlined in Section 4.8.5 above.

[22] Performance of an on-site audit for downstream processors is dependent on the recommendations of the third-party document auditor.

Through this process, OES seeks to ensure an open and competitive market for processing services provided under the Program; to foster innovation and maximize environmental outcomes while impacting the market in a fair manner.

4.9 Dispute Resolution – Bidders and/or Service Providers

Should any dispute arise between OES and a bidder or service provider contracted for service under the Program as to their respective rights and obligations, the following dispute resolution procedures will be used to resolve the dispute:

1) Designated representatives from each of OES and the company shall attempt to resolve the dispute within thirty (30) days upon which written notice of the dispute was first given, or as otherwise agreed upon.

2) If the parties are unable to resolve the dispute within the above period, the company and OES shall, within thirty (30) days thereafter, jointly select an arbitrator to arbitrate the dispute. In the event that the company and OES cannot agree on the selection of arbitrator, an arbitrator shall be selected by WDO.

3) The arbitrator shall render a decision on the dispute and the award arising there from, in accordance with the *Arbitration Act, 1991*.

5.0 Performance Targets, Tracking and Reporting

This section describes performance targets for accessibility, reduction, reuse, collection and recycling in the Revised Program Plan. These targets and performance measures prioritize and encourage WEEE reduction, reuse and recycling over disposal. This section also describes Program assessment and reporting procedures.

Program targets were developed from the analysis of the quantity of EEE Supplied for Use in Ontario, and the quantity of WEEE Available for Collection in the Program, as detailed in Sections 3.1 and 3.2 respectively. Targets also incorporate experience from other provincial WEEE programs and from implementation of Phase 1 of the OES program to-date.

As presented in Section 3.0, target dates outlined in this text are in reference to this Revised (Phase 1 and 2) WEEE Program Plan. For example, targets referring to 'Year 1' mean the first year of implementation of the Revised WEEE Program Plan (and not the first year of the original Phase 1 Program, which was implemented April 1, 2009).

5.1 Targets and Activities under the Revised Program Plan

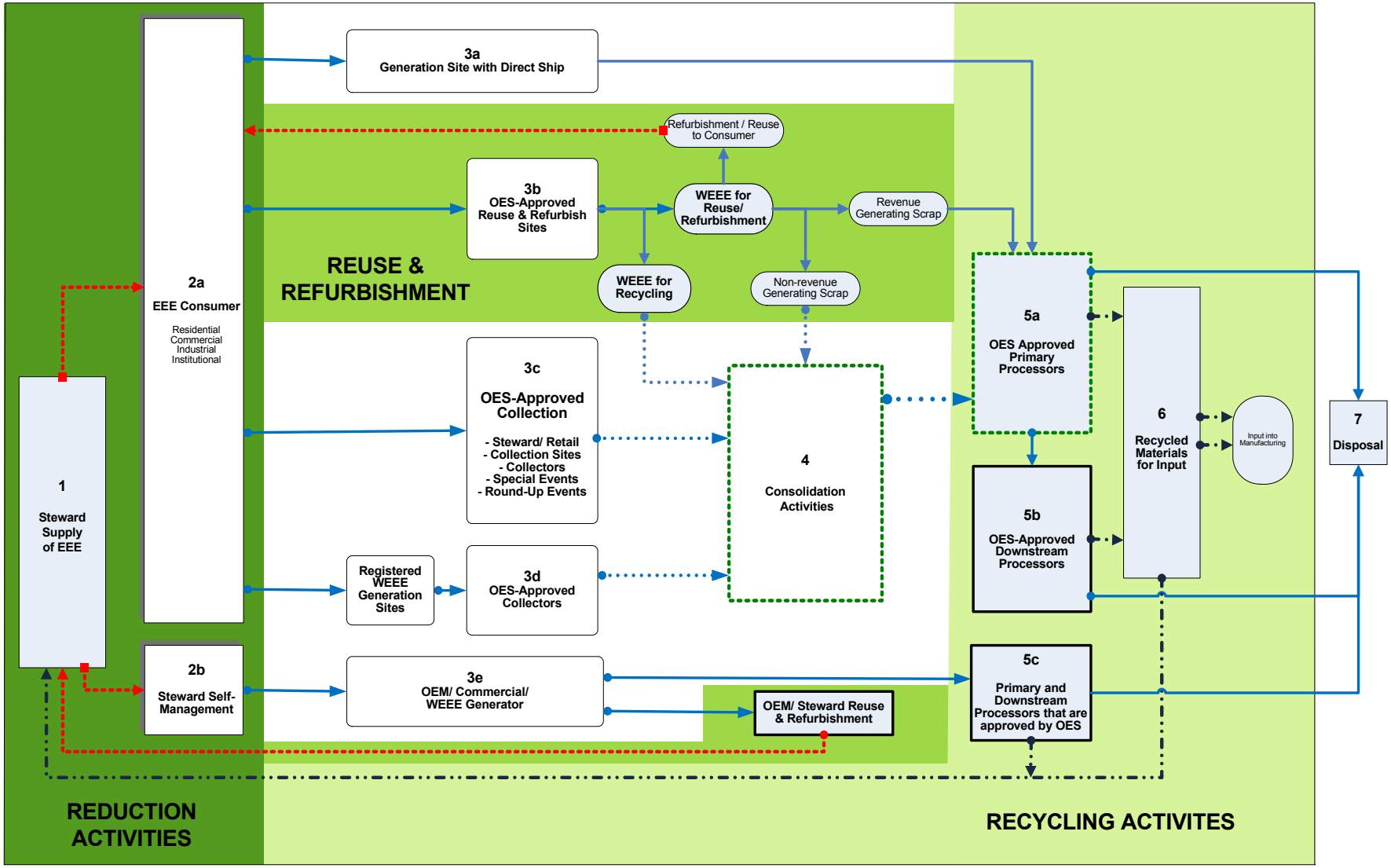
In the development of the Revised Program Plan, OES has prioritized key targets in accordance with the Minister's Program Request Letter. These targets relate to:

- Program accessibility to ensure that the Program is convenient and accessible to all Ontarians;
- Reduction assumptions for each EEE;
- Reuse for each WEEE category of product for the first five years of the Program;
- Recycling for each WEEE category of products for the first five years of the Program.

OES' progress toward meeting program targets will be assessed annually. Various mechanisms will be used to achieve material-specific targets, including targeted promotion and education, modifications to collection and processing fees as required, and research and development activities to increase Program efficiency and effectiveness and to overcome identified barriers.

The flow chart in Figure 5.1 describes how the Revised WEEE Program Plan addresses each of the various 3Rs activities that can occur during the lifespan of EEE. Activities and targets designed to promote these reduction, reuse and recycling activities are described in the following sections.

Figure 5.1: Reduction, Reuse and Recycling Activities Within the Revised Phase 1 and 2 WEEE Program Plan



5.1.1 Accessibility Targets

Accessibility targets refer to the level of access to collection services for WEEE generators, as provided under the Revised Program Plan. A key objective of this Program is to ensure that collection is convenient and accessible to people living in all parts of Ontario, including, but not limited to: high-density urban areas, rural communities and northern Ontario. This section describes current accessibility that has been established through implementation of the Phase 1 WEEE Program to date, as well as accessibility targets for the first five years of the Revised WEEE Program. This section also describes accessibility targets and activities that will be undertaken by OES to expand and improve the existing collection and diversion infrastructure, in order to meet the WEEE accessibility targets and to maximize collection for reuse and recycling.

The response to the start-up of the WEEE program in Ontario has been very encouraging. As of April 20, 2009, OES has received over 240 applications to be an approved OES collection site. OES has been actively working with applicants to assess their capabilities for meeting the program collection standards and addressing issues of concern. Activities to encourage collection sites under the program have focused to-date on the following stakeholders:

- Municipalities that were previously collecting WEEE at permanent depots and/or special event based collections activities;
- Municipalities that were not previously collecting WEEE, but are interested in providing some level of service to residents now that costs are being offset by OES;
- Municipalities that have expanded their services to residents by providing curbside collection to single family homes. Other municipalities that are considering segregating WEEE that they collect as part of seasonal or bulky waste collections;
- Provincial and community based social and not-for-profit organizations;
- National retail chains and independent retailers either on an event based arrangement or as permanent collection sites;
- Private companies in the waste management sector that are looking to provide additional services to their business and municipal customers;
- Private electronics reuse, refurbishment and value-added service providers;
- Commercial property management companies that provide collection sites for WEEE generated on their properties and are also allowing people that work in the buildings to bring in WEEE on designated collection days throughout the year;
- Manufacturing and commercial facilities looking to provide direct collection of WEEE from their own operations but also to allow employees to bring material in from home;
- Universities and colleges looking to provide collection for the WEEE that they generate directly, and that may also be able to provide permanent depot or event-based collection activities for students and staff;
- The direct ship option to increase program accessibility for generators of WEEE that were unable to join the program due to concerns over security of material shipped through program consolidation centres to multiple processors.

In addition to permanent collection sites, OES will continue to utilize special collection events to ensure increasing accessibility for Ontarians. Some of the collection event activities that were coordinated by OES with partners for the launch of the Program in April 2009 include:

- The first public collection event on the weekend of April 4 & 5, 2009, at MTC in Whitby;
- Collection events at 14 Sears Canada locations in 7 communities in Eastern Ontario for Earth Week 2009;
- Best Buy Canada coordinate in-store promotions for the week for Earth Week 2009 at 31 locations across Ontario; Collection events for employees at the head offices of Sony Canada and Staples;
- Joint collection event with Computers for Schools at University of Western Ontario (IC&I);
- Future collection pilot event in partnership with Computers for Schools with schools boards;
- Cooperative events with community organizations in Barrie; and
- Northern Ontario round-up collection events.

In addition, municipalities across Ontario have used collection events to increase awareness and to provide access to residents for the collection of WEEE. In many instances, these events are combined with other collection events for MHSW, tires or other recyclable materials. Municipalities that have or are in the process of being approved as collectors by OES will provide event based collections throughout the year. Currently, over 80 municipal events are planned for 2009 where WEEE will be collected as part of the OES program.

Table 5.1 describes the existing baseline accessibility level and the accessibility targets for the first five years of the Revised WEEE Program Plan.

The Baseline accessibility outlined in the first column of Table 5.1 considers those sites currently listed on the Do What You Can website (www.dowhatyoucan.ca) as of April 1, 2009 that are open to the public, as well as those that are only open to defined groups (not open to the public). Through work undertaken as part of Phase 1 implementation, a number of new sites will come online in Year 1 of the Phase 1 Program, the majority of which will be IC&I facilities. It is anticipated that an initial increase in the number of sites during Year 1 will be required to meet consumer and industry demand, after which OES will work to add new sites across all regions to align with changes in demographic indicators, such as population growth.

OES has developed a multi-year strategy to further enhance the existing collection system. This strategy includes the following:

- Launching a province-wide P&E plan for Phase 1 and 2 materials to increase awareness of the program, including promotion of the 'Do What You Can' website as a tool for finding the nearest collection site;
- Partnering with Stewardship Ontario, municipal and non-municipal collectors to simultaneously collect WEEE and MHSW at events and/or permanent collection sites;
- Partnering with retail establishments and OEMs to increase take-back programs through in-store or on-site collections, and partnering with other brand owner-operated services and/or private operators to include Steward initiated and self-managed WEEE diversion activities as part of the overall provincial diversion calculations;
- Partnering with industry and reuse organizations to expand household collection services to collect Phase 1 and 2 WEEE; and

- Continuing to hold OES-sponsored special event collections to improve accessibility in under-serviced areas in rural and Northern parts of Ontario.

As these activities are implemented, an ongoing auditing and tracking mechanism will monitor and assess the effectiveness of each type of collection activity. Further, ongoing communications research on public attitudes towards WEEE accessibility will help to focus future efforts to provide collection service to all Ontario residents.

OES will review WEEE Program accessibility targets on an annual basis to ensure that all residents of Ontario are provided with an acceptable level of collection service.

5.1.2 Activities to Promote Reduction

The Revised Program Plan encourages the reduction and redesign of products in order to accomplish the following:

- Reduce waste throughout the life-cycle of EEE products.
- Improve product reusability and/or ease of recycling.
- Reduce the toxicity of materials used in the product.
- Minimize environmental and human health impacts throughout the product life-cycle, from product design to EOL management.

EEE products are designed and produced for a global market. As such, manufacturers have had to respond to regulatory requirements in various international markets to reduce both the quantity of WEEE generated, and address barriers to cost-effective EOL management. Most noteworthy in this regard has been the pioneering efforts of the European Union related to EEE production and WEEE management. Regulations in this single market of 450 million people have influenced the industry on a world-wide basis.

Product design and manufacture of obligated products are constantly changing and being renewed by competitive pressures, as well as through federal, provincial and international regulations and standards. As a part of regular product development, manufacturers of EEE are reviewing the use of substances of concern, and redesigning products to conform to tightening international standards and regulations, as well as to keep pace in a highly competitive market.

‘Designing for the Environment’ (DfE) is the term for initiatives undertaken by the electronics industry to improve the environmental performance of their products and activities. In the spirit of DfE, Stewards have committed to improvement efforts in the areas of product design, materials and construction of products.

Table 5.1: Five-Year Anticipated Accessibility Targets for Phase 1 and 2 WEEE Collection

		Baseline Population	Baseline		Year 1		Year 2		Year 3		Year 4		Year 5	
			Perm. Sites	Events	Perm. Sites	Events	Perm. Sites	Events	Perm. Sites	Events	Perm. Sites	Events	Perm. Sites	Events
North	Public	899,655	1	14	31	18	34	22	36	22	38	22	39	22
	Non-Public		--		5		7		9		10		10	
	Household Collection		OES will monitor and report on household collection activities undertaken in the North Region during Year 1 of the Revised Program Plan											
East	Public	1,927,833	46	31	76	39	84	47	88	47	92	47	97	47
	Non-Public		10		15		20		25		30		30	
	Household Collection		OES will monitor and report on household collection activities undertaken in the East Region during Year 1 of the Revised Program Plan											
West	Public	2,570,444	27	40	57	50	63	60	66	60	69	60	73	60
	Non-Public		10		1		20		25		30		30	
	Household Collection		OES will monitor and report on household collection activities undertaken in the West Region during Year 1 of the Revised Program Plan											
Central	Public	7,454,288	158	117	188	146	207	175	217	175	228	175	239	175
	Non-Public		30		40		50		60		60		60	
	Household Collection		500,000[1]		500,000[1]		500,000[1]		500,000[1]		500,000[1]		500,000[1]	
Total	**Public**	**12,852,221**	**232**	**202**	**352**	**253**	**388**	**304**	**407**	**304**	**427**	**304**	**448**	**304**
	Non-Public		**50**		**61**		**97**		**119**		**130**		**130**	
	Household Collection		**500,000**		**500,000**		**500,000**		**500,000**		**500,000**		**500,000**	

1) Refers to the number of households that the City of Toronto will service via a municipally-operated curb-side pick-up program that began in Summer 2009.

The products covered in this Program are diverse and the rate of pace of innovation in the EEE industry is very fast. Some examples of reduction via product design that have occurred in the last 5 years include, but are not limited to, the following:

- The weight of televisions and computer monitors of comparable screen sizes have been reduced by 87%[23] through the shift in technologies from CRT to LCD and plasma technologies.
- Convergent technologies such as the multi-function devices now combine printing, copying, facsimile and scanning in one unit rather than four separate units. However this has resulted in an increase in the weight of the multi-function printing/copying device.
- Advancements in portable computer performance has allowed many consumers to purchase a portable computer instead of a desktop computer and monitor, while achieving the same performance requirements.
- Wireless mice and keyboards reduce the amount of WEEE through the elimination of cables.

Further examples and details of DfE initiatives can be found in the 2009 EPSC Designing for Environment Report, in Appendix 9.

While OES does not have authority to require individual Stewards to undertake company or product-specific DfE activity, the fee-setting methodology has the flexibility to modify fee rates in the future to account for the following: variation in the achieved collection and diversion performance of each material; relative cost to manage related WEEE; or other 3Rs policy objectives established by the OES Board. In its annual reporting to WDO, the OES Program will include examples and analysis of reduction activities, and the anticipated future impact in Ontario of these initiatives.

5.1.3 Reuse Targets

Developing reuse targets for the Phase 1 and 2 materials included in the WEEE Program is challenging. Under the Revised Program, reuse and refurbishment activities can take place in a variety of complex ways, including:

- Brand owners' customer returns (that are directly refurbished and redistributed).
- Retail customer returns of products.
- Brand owner and retailer take-back programs.
- Brand owners' lease returns (often leased a national basis).
- Third-party lease returns (hundreds of leasing companies operate in Ontario).
- Reuse and refurbishment by non-profit and charitable organizations.

In some instances, the second life of the refurbished or off-lease equipment takes place outside of Ontario, presenting additional tracking and monitoring challenges. Despite these limitations, reuse targets have been established for Year 1 and Year 2 of the Revised WEEE Program.

23 Example provided by OES member company based on proprietary data.

a) Methods for Establishing Reuse Targets

Reuse targets are based on four sources: 1) the quantity of WEEE available for collection in Ontario (as presented in Section 3.2); 2) WEEE generation assumptions by sector (IC&I versus residential use); 3) the potential for WEEE reuse as per OES' conversations with reuse and refurbishment organizations; and 4) the results of a proprietary industry study on the reuse potential of various WEEE[24].

As part of ongoing market development and research and development activities, OES will implement an electronics materials exchange network[25] to further enable and encourage peer-to-peer reuse opportunities. OES remains committed to investing funds for a study in Year 1 to sample and analyze palletized loads managed under the program to identify WEEE material age and reusability potential. In addition, OES will continue to work with other provincial WEEE organizations to develop a national reuse reporting strategy, as the tracking and monitoring challenges are common to all programs.

It is anticipated that the data and results obtained from the aforementioned study, as well as data from participation rates in the electronics materials exchange network, will assist OES in determining the potential for establishing more specific reuse targets in future years of the WEEE Program. However, given the circumstances outlined above, it is not possible at this time to meet the MOE request for material specific reuse targets beyond Year 2 of the program.

Note that the reuse targets outlined in Table 5.2 are limited and speculative. Reuse targets have not been established under other programs, and there is little reliable data to support the assumptions used to calculate these targets. Reuse and refurbishment organizations under the Program will report their activities in Year 1, which will allow OES to revisit these assumptions in future years.

b) Baseline and 2-Year Reuse Targets

Table 5.2 outlines the estimated reuse targets for Ontario expressed in total tonnes, and kilograms per capita. Overall, reuse targets are expected to increase just over 1,000 tonnes by Year 2 as compared to the baseline year.

It is important to note that the reuse targets are based on the WEEE available for collection figures presented in Table 3.4. With the overall quantities available for collection decreasing, OES adjusted the projected per capita figures and overall tonnages estimates down to ensure the overall percentage were reasonable.

[24] Dempsey, Mark, and Lutz-Guenther Scheidt. "*Analysis of the Reuse Potential of Used ICT Equipment". 2007.*
[25] The materials exchange network will be similar to the one currently offered in British Columbia (www.bce.mex.ca).

Table 5.2: Baseline and 2-Year Reuse Targets (Tonnes)

Material Category		Estimated Reuse Targets for Revised Phase 1 and 2 EEE Materials						
		Baseline		Year 1		Year 2		Year 3 Year 4 Year 5
		(tonnes)	(kg/capita)	(tonnes)	(kg/capita)	(tonnes)	(kg/capita)	
Display Devices	Computer Monitors	*234*	*0.018*	*282*	*0.022*	*301*	*0.023*	Insufficient data for projections at this time.
	Display Devices <18"	*49*	*0.004*	*50*	*0.004*	*45*	*0.003*	
	Display Devices 18-29"	*534*	*0.041*	*546*	*0.042*	*539*	*0.042*	
	≤29" Screen Total	817	0.063	878	0.068	886	0.068	
	Display Devices 29"-45"	*251*	*0.019*	*277*	*0.021*	*305*	*0.023*	
	Display Devices >45"	*62*	*0.005*	*82*	*0.006*	*96*	*0.007*	
	> 29" Screen Total	313	0.024	359	0.028	401	0.031	
Desktop Computers		3,117	0.240	3,385	0.261	3,342	0.257	
Portable Computers		790	0.061	1,024	0.079	1,274	0.098	
Computer Peripherals		37	0.003	39	0.003	38	0.003	
Printing, Copying and Multi-Function Devices	Desktop Printing, Copying and Multi-Function Devices	861	0.066	952	0.073	1,049	0.081	
	Floor-Standing Printing Devices	93	0.007	110	0.008	122	0.009	
	Floor-Standing Copying Devices	65	0.005	115	0.009	247	0.019	
Telephones and Telephone Answering Machines		1,381	0.106	1,706	0.131	2,177	0.168	
Cellular Devices and Pagers		209	0.016	233	0.018	262	0.020	
Image, Audio and Video Devices	Personal/Portable	64	0.005	67	0.005	65	0.005	
	Home/Non-Portable	35	0.003	53	0.004	73	0.006	
	Home Theatre in a Box	220	0.017	241	0.019	231	0.018	
	Aftermarket Vehicle	16	0.001	16	0.001	21	0.002	
Phase 1 Materials Total*		5,936	0.457	6,637	0.511	6,990	0.538	
Phase 2 Materials Total		2,084	0.160	2,541	0.196	3,198	0.246	
Phase 1 and Phase 2 Materials Total		8,019	0.617	9,178	0.707	10,188	0.785	

** Note that Phase 1 Materials Total includes all Phase 1 and 2 desktop printing, copying, and multi-function devices. Table 2.2 outlines the exact Phase to which obligated EEE belong, for clarity. As the Revised WEEE Program Plan introduces new material categories that combine some Phase 1 and Phase 2 materials, caution should be used when comparing data contained in the Revised Program Plan to previous versions.*

As outlined in Section 3.2.2 the only method that OES can use to calculate percentage-based reuse targets is by using consolidated data on WEEE Available for Collection. In order to effectively track and monitor Program performance based on percentage reuse targets, these targets have been calculated to correlate with the four WEEE management groups on which reuse and refurbishment organizations are required to report, as presented in Table 3.5. These WEEE management groups are outlined in Section 4.5.6. Table 5.3 outlines the projected 2-year percentage-reuse targets for the Revised Program Plan.

Table 5.3: Baseline and 2-Year Projected Reuse Targets (%)

WEEE Management Category	Reuse Targets (%)					
	Baseline	Year 1	Year 2	Year 3	Year 4	Year 5
Group 1: Desktop and portable computers	37.5%	37.5%	37.5%	Insufficient data for projections at this time		
Group 2: Display Devices (incl. monitors and TV's)	2.9%	3.0%	3.0%			
Group 3: Other Phase 1 and 2 WEEE	7.9%	7.7%	8.0%			
Group 4: Floor Standing copiers and printers	29.3%	35.3%	52.1%			
Total Materials	**9.4%**	**9.5%**	**9.7%**			

5.1.4 Collection Targets

Collection targets refer to the projected quantities of WEEE to be returned or collected through all channels (IC&I, municipal and non-municipal) and take into account anticipated changes in both sales and the quantities available for collection.

a) Methods to Establish Collection Targets

When establishing collection targets for the first five years of the Revised WEEE Program, OES has established targets that are challenging but consistent with results achieved in other provincial WEEE programs. To achieve this, OES approached the establishment of collection targets as follows:

- OES utilized the collection-rate growth assumptions for sub-categories of WEEE as specified in the inter-provincial studies for Phase 1 and Phase 2 WEEE completed in the three industry-led programs in Canada. These collection growth rates are based on actual results being achieved by the ESABC, SWEEP, and ACES programs.
- As the Phase 1 Program has only one month of operational results at the time of Revised Program Plan development, OES believes using collection growth rates based on data from these three provincial programs is a reasonable approach.
- For Phase 2 WEEE, there are no collection results available. Nova Scotia began collecting a similar range of Phase 2 products starting February 2009.
- Collection targets were then calculated by applying the collection-rate growth to the Baseline data for WEEE Available for Collection as specified in Section 3.2.
- OES estimates that 10% of the information technology WEEE (i.e. desktops and portable computers, computer monitors, desktop printers and copiers, and peripherals) will flow through the direct shipment option based on feedback from industry representatives.
- OES estimates that 50% of floor-standing printers, and 75% of floor-standing copiers, will flow through Stewards' self-managed programs based on feedback from that industry. These collection rates are included in the overall collection targets.
- It is assumed all other WEEE will flow through the Consolidation sites registered with the Program. The rationale for this approach is that OES cannot reasonably predict the success or utilization of these options. It is also not possible to predict how either of the new collection options included under the Revised Plan will impact different materials. However, at this stage of the Plan development process, OES cannot project the participation rates of either the direct ship or self-management options.
- OES will track the results from the first full year of operation and an on an ongoing basis, and will revise collection estimates when the necessary information becomes available.

b) Baseline and 5-Year Collection Targets

Table 5.4 presents the projected total quantity from each Phase 1 and 2 WEEE material category projected to be collected under the Revised Program in each year, expressed in kilograms per capita. Overall, this Program is targeting an average compound annual growth rate of 16.5% of Phase 1 and 2 materials collected.

Table 5.4: Five Year Projected Collection Targets (kg/capita)

Material Category		Collection Targets (kg/capita)					
		Baseline	Year 1	Year 2	Year 3	Year 4	Year 5
Display Devices	Computer Monitors	*0.402*	*0.533*	*0.613*	*0.757*	*0.909*	*0.967*
	Display Devices <18"	*0.063*	*0.059*	*0.060*	*0.059*	*0.058*	*0.057*
	Display Devices 18"-29"	*0.787*	*0.794*	*0.762*	*0.749*	*0.737*	*0.725*
	≤29" Screen Total	1.252	1.386	1.435	1.565	1.703	1.748
	Display Devices 29"-45"	*0.313*	*0.347*	*0.367*	*0.398*	*0.431*	*0.467*
	Display Devices >45"	*0.142*	*0.176*	*0.215*	*0.263*	*0.323*	*0.397*
	> 29" Screen Total	0.455	0.523	0.582	0.661	0.755	0.864
Desktop Computers		0.366	0.452	0.520	0.620	0.738	0.880
Portable Computers		0.066	0.088	0.101	0.126	0.156	0.194
Computer Peripherals		0.044	0.051	0.059	0.068	0.079	0.092
Printing, Copying & Multi-Function Devices	Desktop and Portable Printing, Copying and Multi-Function Devices	0.373	0.460	0.542	0.665	0.832	1.066
	Floor-Standing Printing Devices	0.009	0.011	0.014	0.017	0.021	0.026
	Floor-Standing Copying Devices	0.018	0.022	0.028	0.034	0.042	0.052
Telephones and Telephone Answering Machines		0.081	0.087	0.095	0.106	0.121	0.139
Cellular Devices and Pagers		0.013	0.016	0.019	0.023	0.028	0.035
Image, Audio & Video Devices	Personal/Portable	0.033	0.034	0.036	0.037	0.038	0.040
	Home/Non-Portable	0.213	0.274	0.352	0.452	0.582	0.748
	Home Theatre in a Box (HTB)	0.105	0.124	0.148	0.175	0.208	0.247
	Aftermarket Vehicle	0.018	0.022	0.027	0.033	0.041	0.050
Phase 1 Materials Total *		2.556	2.960	3.239	3.705	4.264	4.844
Growth			***15.8%***	***9.4%***	***14.4%***	***15.1%***	***13.6%***
Phase 2 Materials Total		0.490	0.591	0.718	0.879	1.081	1.337
Growth			***20.6%***	***21.5%***	***22.3%***	***23.1%***	***23.7%***
Phase 1 and 2 Materials Total		3.045	3.551	3.957	4.584	5.345	6.181
Growth			***16.6%***	***11.4%***	***15.9%***	***16.6%***	***15.6%***

** Note that Phase 1 Materials Total includes all Phase 1 and 2 desktop printing, copying, and multi-function devices. Table 2.2 outlines the exact Phase to which obligated EEE belong, for clarity. As the Revised WEEE Program Plan introduces new material categories that combine some Phase 1 and Phase 2 materials, caution should be used when comparing data contained in the Revised Program Plan to previous versions.*

The per capita collection target results were compared against the actual and projected per capita collection results from other operating provincial programs, and were found to be similar. It should be noted, that while other provincial WEEE programs were established by adding to an existing network of recycling depots, the Ontario WEEE collection system was started from scratch, and continues to be built from the ground, up.

To calculate the projected tonnage of WEEE collected under the Revised Program, the per capita collection targets outlined in Table 5.4 were then multiplied by the projected population growth for Ontario for 2009 – 2014, as per Statistics Canada. The total projected tonnes of WEEE collected under the Revised Program over the first five years of operation are depicted in Table 5.5.

Note that the growth rates included in Table 5.4 will not match the rates included in Table 5.5. Table 5.4 accounts for the growth in projected collection tonnage as well as the projected growth in population to express these values as per capita targets. As a result, the growth rates in Table 5.4 may differ from those in Table 5.5.

Table 5.5: Five Year Projected Collection Targets (Tonnes)

Material Category		Collection Targets (Tonnes)					
		Baseline	Year 1	Year 2	Year 3	Year 4	Year 5
Display Devices	Computer Monitors	*5,219*	*6,996*	*8,133*	*10,154*	*12,322*	*13,250*
	Display Devices <18"	*818*	*778*	*801*	*792*	*783*	*775*
	Display Devices 18"-29"	*10,224*	*10,423*	*10,108*	*10,050*	*9,993*	*9,936*
	≤29" Screen Total	16,261	18,198	19,042	20,996	23,098	23,961
	Display Devices 29"-45"	*4,060*	*4,551*	*4,872*	*5,337*	*5,846*	*6,404*
	Display Devices >45"	*1,849*	*2,312*	*2,848*	*3,535*	*4,387*	*5,445*
	> 29" Screen Total	5,909	6,862	7,720	8,871	10,233	11,848
Desktop Computers		4,753	5,935	6,899	8,312	10,013	12,063
Portable Computers		854	1,157	1,345	1,688	2,118	2,659
Computer Peripherals		572	675	785	919	1,076	1,260
Printing, Copying & Multi-Function Devices	Desktop and Portable Printing, Copying and Multi-Function Devices	4,842	6,035	7,187	8,921	11,279	14,613
	Floor-Standing Printing Devices	117	146	183	228	286	357
	Floor-Standing Copying Devices	234	292	365	457	571	714
Telephones and Telephone Answering Machines		1,052	1,145	1,267	1,426	1,634	1,907
Cellular Devices and Pagers		167	205	252	311	386	479
Image, Audio & Video Devices	Personal/Portable	428	449	471	495	520	546
	Home/Non-Portable	2,762	3,591	4,668	6,069	7,890	10,256
	Home Theatre in a Box (HTB)	1,362	1,634	1,961	2,353	2,824	3,389
	Aftermarket Vehicle	238	293	362	447	551	680
Phase 1 Materials Total *		33,191	38,861	42,977	49,706	57,817	66,404
Growth			***17.1%***	***10.6%***	***15.7%***	***16.3%***	***14.9%***
Phase 2 Materials Total		6,360	7,756	9,530	11,786	14,661	18,328
Growth			***22.0%***	***22.9%***	***23.7%***	***24.4%***	***25.0%***
Phase 1 and 2 Materials Total		39,551	46,617	52,507	61,492	72,478	84,732
Growth			***17.9%***	***12.6%***	***17.1%***	***17.9%***	***16.9%***

** Note that Phase 1 Materials Total includes all Phase 1 and 2 desktop printing, copying, and multi-function devices. Table 2.2 outlines the exact Phase to which obligated EEE belong, for clarity. As the Revised WEEE Program Plan introduces new material categories that combine some Phase 1 and Phase 2 materials, caution should be used when comparing data contained in the Revised Program Plan to previous versions.*

As outlined in Section 3.2.2, the only method that OES can use to calculate percentage-based collection targets is by using consolidated data on WEEE Available for Collection. In order to effectively track and monitor Program performance based on percentage collection targets, these targets have been calculated to correlate with the four WEEE management groups on which service providers are required to report, as presented in Table 3.5. These WEEE management groups are outlined in greater detail in Section 4.5.6. Table 5.6 outlines the projected five-year collection targets for the Revised Program Plan.

Performance against collection targets will be tracked by management channel, reported in tonnes, kilograms per capita, and percentage of material available for collection, and will be published in the annual report (see details in Section 5.3).

Table 5.6: Five Year Projected Collection Targets (%)

WEEE Management Group	Collection Targets (%)					
	Baseline	Year 1	Year 2	Year 3	Year 4	Year 5
Group 1: Desktop and Portable Computers	54%	60%	67%	75%	86%	87%
Group 2: Display Devices (Incl. monitors and TV's)	58%	60%	62%	67%	70%	74%
Group 3: Other Phase 1 and 2 WEEE	32%	33%	35%	38%	42%	47%
Group 4: Floor Standing Copiers and Printers	65%	69%	71%	73%	75%	80%
Total Materials	46%	48%	50%	54%	57%	62%

Note that OES' model for determining collection targets actually projected unreasonably high percentage-targets for Group 1 in Year 4 and Year 5 of the Program. In order to reflect more realistic percentage collection targets OES has capped the Year 4 target at 89% and the Year 5 target at 93%.

5.1.5 Recycling Targets

Recycling targets describe the amount of collected WEEE that will be diverted to resource recovery activities[26]. Primary and downstream processors of WEEE disassemble WEEE materials into their constituent parts through a combination of manual and mechanical processes. Due to the complex nature of EEE products, often utilizing more than a thousand component parts, WEEE is equally complex to disassemble and recycle. The percentage of component materials that can be recovered from a particular item of WEEE will vary depending on the type and age of the WEEE handled, as well as the processes used by the primary and downstream processor.

OES' objective is to increase the percentage of component material recycled annually for each subsequent year of the Program. Research and development funds have been included in the Program budget to assist with this effort.

a) Methods for Establishing Recycling Targets

Recycling targets were determined using confidential industry information, and incorporate data on materials that are recovered via manual and mechanical separation, as well as metal recovery from smelting operations. It does not include data on material consumed as a source of energy during processing (e.g. plastics in a smelter) or material that is disposed into landfill. Recycling targets were derived by using the quantity of WEEE targeted for collection under the Revised Program (presented in Table 5.5), and applying a recycling target of 77.5% to each material. OES then applied a 2.5% recycling rate growth increase per year to account for improvements in recycling and processing activities resulting from R&D investments and independent processor initiatives.

The impact that the inclusion of Phase 2 WEEE will have on recycling performance is difficult to predict. Typically, products that have a higher percentage of metal and circuit boards (as compared to plastics) will have higher potential for recycling. As the composition of the combined Phase 2 products is not known at this time, OES used the same recycling rate assumptions that are used for the Phase 1 products. Actual recycling performance for the full Phase 1 and 2 OES Program will be measured and reported annually.

[26] Under Ontario government policy, recycling does not include waste material directed to energy-from-waste applications.

b) Baseline and 5-Year Recycling Targets

Table 5.7 presents the projected total quantities of each Phase 1 and 2 WEEE category to be recycled under the Revised Program in each year, expressed in kilograms per capita.

Table 5.7: Five Year Projected Recycling Targets (kg/capita)

Material Category		Recycling Targets (kg/capita)					
		Baseline	Year 1	Year 2	Year 3	Year 4	Year 5
Display Devices	Computer Monitors	*0.311*	*0.426*	*0.506*	*0.643*	*0.795*	*0.870*
	Display Devices <18"	*0.049*	*0.047*	*0.050*	*0.050*	*0.051*	*0.051*
	Display Devices 18"-29"	*0.610*	*0.635*	*0.628*	*0.637*	*0.645*	*0.652*
	≤29" Screen Total	0.970	1.109	1.184	1.330	1.490	1.573
	Display Devices 29"-45"	*0.242*	*0.277*	*0.303*	*0.338*	*0.377*	*0.420*
	Display Devices >45"	*0.110*	*0.141*	*0.177*	*0.224*	*0.283*	*0.357*
	> 29" Screen Total	0.353	0.418	0.480	0.562	0.660	0.778
Desktop Computers		0.284	0.362	0.429	0.527	0.646	0.792
Portable Computers		0.051	0.071	0.084	0.107	0.137	0.175
Computer Peripherals		0.034	0.041	0.049	0.058	0.069	0.083
Printing, Copying & Multi-Function Devices	Desktop and Portable Printing, Copying and Multi-Function Devices	0.289	0.368	0.447	0.565	0.728	0.959
	Floor-Standing Printing Devices	0.007	0.009	0.011	0.014	0.018	0.023
	Floor-Standing Copying Devices	0.014	0.018	0.023	0.029	0.037	0.047
Telephones and Telephone Answering Machines		0.063	0.070	0.079	0.090	0.105	0.125
Cellular Devices and Pagers		0.010	0.012	0.016	0.020	0.025	0.031
Image, Audio & Video Devices	Personal/Portable	0.026	0.027	0.029	0.031	0.034	0.036
	Home/Non-Portable	0.165	0.219	0.290	0.385	0.509	0.673
	Home Theatre in a Box (HTB)	0.081	0.100	0.122	0.149	0.182	0.222
	Aftermarket Vehicle	0.014	0.018	0.023	0.028	0.036	0.045
Phase 1 Materials Total *		1.981	2.368	2.672	3.149	3.731	4.360
Growth			***19.6%***	***12.8%***	***17.9%***	***18.5%***	***16.9%***
Phase 2 Materials Total		0.380	0.473	0.592	0.747	0.946	1.203
Growth			***24.5%***	***25.3%***	***26.1%***	***26.7%***	***27.2%***
Phase 1 and 2 Materials Total		2.360	2.841	3.264	3.896	4.677	5.563
Growth			***20.4%***	***14.9%***	***19.4%***	***20.0%***	***19.0%***

** Note that Phase 1 Materials Total includes all Phase 1 and 2 desktop printing, copying, and multi-function devices. Table 2.2 outlines the exact Phase to which obligated EEE belong, for clarity. As the Revised WEEE Program Plan introduces new material categories that combine some Phase 1 and Phase 2 materials, caution should be used when comparing data contained in the Revised Program Plan to previous versions.*

To determine the projected tonnage of material recycled under the Revised Program, the per capita recycling targets outlined in Table 5.7 were multiplied by the projected population growth for Ontario for 2009 – 2014, using population data from Statistics Canada. The total projected tonnes of material recycled under the Revised Program over the first five years of operation are depicted in Table 5.8. Overall, this Program is targeting an average compound annual recycling growth rate of 20.0% for Phase 1 and 2 materials recycled under the Program.

Note that the growth rates included in Table 5.7 will not match the rates included in Table 5.8. Table 5.7 accounts for the growth in projected recycling tonnage as well as the projected growth in population to express these values as per capita targets. As a result, the growth rates in Table 5.7 may differ from those in Table 5.8.

Table 5.8: Five Year Projected Recycling Targets (Tonnes)

Material Category		Recycling Targets (Tonnes)					
		Baseline	Year 1	Year 2	Year 3	Year 4	Year 5
Display Devices	Computer Monitors	*4,044*	*5,597*	*6,710*	*8,631*	*10,782*	*11,925*
	Display Devices <18"	*634*	*623*	*661*	*673*	*685*	*697*
	Display Devices 18"-29"	*7,924*	*8,339*	*8,339*	*8,543*	*8,744*	*8,942*
	≤29" Screen Total	12,602	14,558	15,709	17,846	20,211	21,565
	Display Devices 29"-45"	*3,147*	*3,641*	*4,019*	*4,536*	*5,115*	*5,763*
	Display Devices >45"	*1,433*	*1,849*	*2,349*	*3,004*	*3,838*	*4,900*
	> 29" Screen Total	4,579	5,490	6,369	7,541	8,954	10,664
Desktop Computers		3,684	4,748	5,692	7,065	8,762	10,857
Portable Computers		662	926	1,110	1,435	1,854	2,393
Computer Peripherals		444	540	647	781	941	1,134
Printing, Copying & Multi-Function Devices	Desktop and Portable Printing, Copying and Multi-Function Devices	3,753	4,828	5,930	7,583	9,869	13,152
	Floor-Standing Printing Devices	91	117	151	194	250	321
	Floor-Standing Copying Devices	181	234	302	388	500	642
Telephones and Telephone Answering Machines		816	916	1,045	1,212	1,430	1,716
Cellular Devices and Pagers		130	164	208	264	337	431
Image, Audio & Video Devices	Personal/Portable	331	359	389	421	455	491
	Home/Non-Portable	2,141	2,873	3,851	5,159	6,903	9,231
	Home Theatre in a Box (HTB)	1,055	1,307	1,618	2,000	2,471	3,050
	Aftermarket Vehicle	184	235	299	380	482	612
	Phase 1 Materials Total *	25,723	31,089	35,456	42,250	50,590	59,763
	Growth		***20.9%***	***14.0%***	***19.2%***	***19.7%***	***18.1%***
	Phase 2 Materials Total	4,929	6,205	7,862	10,019	12,828	16,495
	Growth		***25.9%***	***26.7%***	***27.4%***	***28.0%***	***28.6%***
	Phase 1 and 2 Materials Total	30,652	37,294	43,319	52,268	63,418	76,258
	Growth		***21.7%***	***16.2%***	***20.7%***	***21.3%***	***20.2%***

** Note that Phase 1 Materials Total includes all Phase 1 and 2 desktop printing, copying, and multi-function devices. Table 2.2 outlines the exact Phase to which obligated EEE belong, for clarity. As the Revised WEEE Program Plan introduces new material categories that combine some Phase 1 and Phase 2 materials, caution should be used when comparing data contained in the Revised Program Plan to previous versions.*

These projected recycling quantities are lower and differ from the original Phase 1 Program Plan due to the changes in key data assumptions, as outlined in Section 3.2. Recycling targets expressed as a percentage of the quantity of WEEE Available for Collection are outlined in Table 5.9 below. The estimates of WEEE Available for Collection are presented in Section 3.2 and are based on the WEEE Discard Model described in Section 3.2.1.

Table 5.9: Five Year Projected Recycling Targets (Expressed as % of WEEE Available for Collection)

Material Category	Recycling Targets (%)					
	Baseline	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**
Group 1: Desktop and Portable Computers	42%	48%	55%	64%	75%	78%
Group 2: Display Devices (Incl. monitors and TV's)	45%	48%	51%	57%	61%	67%
Group 3: Other Phase 1 and 2 WEEE	25%	26%	29%	32%	37%	42%
Group 4: Floor Standing Copiers and Printers	50%	55%	59%	62%	66%	72%
Total Materials	**36%**	**39%**	**41%**	**46%**	**51%**	**56%**

Note that OES' model for determining collection targets actually projected unreasonably high percentage-targets for Group 1 in Year 4 and Year 5 of the Program. In order to reflect more realistic percentage recycling targets OES has capped the Year 4 target at 75% and the Year 5 target at 78%.

5.2 Program and Material Tracking Mechanisms

A comprehensive material tracking system (MTS) will be operational during the first year of Phase 1 Program operations. The MTS allows for on-going monitoring and evaluation of Program performance, and includes the following features:

- Each contracted collection site and collection event will be registered with a unique site number, and OES will enter into an agreement with the approved collector to ensure adherence to specified Program requirements.
- Pallets or bins that are ready for pickup from a collection site will each have a 'bill of lading' (BoL). The BoL will include the collection site number, the number for each pallet/bin, description of material collected (e.g. display devices) and date of shipment.
- Transportation service providers will collect the pallets and maintain a record of the collection location and number of pallets transported.
- Each incoming pallet will be weighed by the consolidation centre or processor and the information for that particular pallet or bin recorded and reported to OES. This provides a check on the weight of material that is managed by WEEE processors.
- The loads will be checked at the consolidation centre to ensure proper preparation for shipping and to identify loads containing non-Phase 1 and 2 WEEE.
- The shipping unit will then be loaded for transportation to the approved EOL primary processor, who will verify weight, type of material and source of material upon receipt. This information will be scanned and reported to OES.
- Once the material is received by the EOL primary processor, the ability to track individual pallet loads or shipments ends. Tracking the flow of processed WEEE from primary to downstream processors will be based on weight and will be a condition of the agreements between OES and approved primary processors.
- The Reuse and Refurbishment Standard for OES-approved reuse and refurbishment collection sites requires that the number of items redistributed and flow of material that is sent for recycling will be tracked and reported to OES using the MTS.

5.3 Program Assessment and Reporting

The overall Program design will ensure that there is accurate information on the flow of Phase 1 and 2 materials from collection through to final destination. This allows OES to measure performance; to ensure that program costs can be fairly allocated across obligated materials; and to ensure that there is progress toward diverting materials from disposal to reuse and recycling, in accordance with the Minister's Program Request Letter.

OES will prepare an annual report for WDO, reporting on Program benchmarks and progress towards WEEE diversion activities. At a minimum, OES will measure and report the following information to WDO on an annual basis:

- Total WEEE collected by material category (reported in tonnes and projected units) through the Program including quantities from various types of collection locations (e.g.

municipal, Steward, retailer, reuse and refurbishment, etc) and by type of collection (e.g. event based, permanent collection site, etc.), and compared to collection targets.
- Total WEEE collected and processed (reported in tonnes, units, kilograms per capita, percentage of material collected and percentage of material available for collection)
- Total WEEE collected and processed via the approved direct shipment option (reported in tonnes, units, kilograms per capita, percentage of material collected and percentage of material available for collection).
- Total WEEE managed and processed under the Steward self-management option (reported in tonnes, units, kilograms per capita, percentage of material collected and percentage of material available for collection)
- Total collection, transportation, consolidation and processing costs per tonne by material category, and compared to budget.
- The mass-balance of materials collected and directed to processors will be employed to map the final allocation routes for all obligated materials.
- The number of OES-Approved collection sites and events, plus information on approved reuse and refurbishment sites, and compared to accessibility targets.
- Total volume (tonnes and percentage of total collected) of material managed through reuse and refurbishment.
- The number of whole units that OES-approved reuse and refurbishment organizations reported as being redistributed, and compared to reuse targets.
- Total volume recycled (tonnes, percentage of total collected and percentage of available for collection), and compared to recycling targets.
- Total volume disposed (tonnes, percentage of total collected and percentage of available for collection).
- Designing for Environment initiatives, as outlined in Section 5.1.2 and as per the 2009 EPSC Designing for Environment Report located in Appendix 9.
- If available, new information on product weights, life spans, and portion reused, to populate the Discard Model.
- An evaluation of the communication and public awareness tools, and effectiveness at communicating to the public (as outlined in Section 7.0).

The Program will be continuously monitored for opportunities to make operational and strategic improvements. Issues to be reviewed on an ongoing basis include:

- The definition of obligated materials. This ensures that definitions are updated to account for changing technology in the marketplace.
- Electronics waste management technology and policy developments in other jurisdictions.
- New technologies for processing and/or recycling WEEE.
- Developments or new initiatives that acknowledge environmental efforts of companies who may be advocating and promoting green procurement through the use of programs such as the Electronic Product Environmental Assessment Tool (EPEAT).

6.0 Research and Development (R&D)

As described in the Minister's Program Request Letter, OES is responsible for research and development (R&D) activities that develop, support, and increase the effectiveness and efficiency of WEEE collection and diversion. Thus, associated financial costs to pay for R&D are incorporated into Stewards' fees, which are assessed on a yearly basis.

This chapter describes the R&D activities to be undertaken by OES. Specifically, R&D funds will be used to support direct investments or service agreements that:

- Promote improved effectiveness and efficiency of collection, reuse and recycling processes and infrastructure;
- Identify and strengthen existing markets and develop new markets for recoverable materials;
- Assess additional opportunities for reduction and reuse; and
- Develop and implement a tracking and auditing mechanism for WEEE from the point of collection through to its final destination.

6.1 R&D Funding Principles

OES funding for R&D activities will be based on the following principles:

- **Link to Specific Materials and Related Targets:** Where possible, priority will be given to investments that meet the particular needs of each specific WEEE material category, and that support activities (reuse/refurbishing, recycling) that ensure program targets are achieved.
    - Possible exceptions to this may include enhancements to common P&E or material tracking systems.

- **No Cross-subsidization:** Funding for any R&D activity that leads to increased efficiency and effectiveness of Program processes and infrastructure will be assigned to the designated material categories that benefit from the funding investment.
    - In some instances, investments will be specific to one WEEE item (material-specific R&D) while multiple or even all WEEE items may benefit from other activities (common R&D).

- **Partnership:** Wherever possible, OES will undertake R&D activities in partnership with other organizations, such as private sector service providers, provincial and federal agencies, municipalities, or other IFOs.

6.2 R&D Priorities

R&D expenditures will include the following types of activities:

- Research and analysis to assess system improvement needs and identify innovative, efficient and effective collection, storage, transportation, consolidation, processing, marketing, tracking and monitoring activities and technologies for material specific categories that have not reached program targets.
- Pilot and demonstration projects, including research and development studies for new or improved technologies, reusable transportation container systems and reusable pallets that can be used for all materials.
- Capital funding (direct or indirectly through fee for service arrangements with service providers) if required, to assist with the development of appropriate infrastructure to achieve accessibility or material-specific targets.

6.2.1 Material-Specific R&D priorities

OES will conduct the following material-specific R&D activities:

- Pilot programs to assess options for collecting display devices, such as rear-projection or old television consoles. OES is currently working with two retailers under Phase 1 R&D. It is anticipated that under the Revised Program, the pilot programs will be expanded to municipal and social non-profit organizations. These projects will assess various incentives to increase the collection of televisions from residents.
- Continue R&D activities to assess cathode ray tube (CRT) glass recycling options for leaded and non-leaded glass. OES will be undertaking a feasibility study under Phase 1 and the Revised Program Plan R&D budget will continue those activities.
- Conduct a study on wood recycling options for older WEEE collected under the Program. This waste is expected to be predominately from televisions and image, audio and video devices.
- Conduct sample pallet audits for display devices to assess detailed composition information (product, screen size, weight, brand, manufacture date) on display devices collected under the Program.

6.2.2 Common R&D priorities

OES will conduct the following common R&D activities:

- Update of collection site activity-based costing studies conducted in Phase 1 to include the expanded range of materials.
- Research into adopting a reusable container and pallet system to improve the efficiency and effectiveness of collection, transportation, and consolidation. The timing of the Revised Program Plan has led to a decision to carry this item forward as part of the R&D program under the Revised Program Plan.
- Work with processors to identify opportunities to recycle a higher percentage of plastics from Phase 1 and Phase 2 WEEE.
- Conduct a sampling protocol to annually assess the weight of EEE supplied into Ontario to track changes in unit weights over time. This will determine the potential to establish

more accurate reduction targets for future years of the program, and improve inputs to the WEEE Discard Model to more accurately calculate the quantity available for collection.

- Conduct audits and analysis of collected WEEE to determine lifespan and reuse potential.
- Conduct a “designing for environment” study to assess opportunities to encourage reduction.
- Conduct an investigation into reuse and recycling options for components of WEEE.

R&D investment needs for subsequent years will be reviewed and refined based on analysis of the material-specific needs during each subsequent year of the Program. Appropriate R&D costs will be incorporated into the Stewards’ fees each year.

7.0 Promotion and Education (P&E)

Qualitative and quantitative research conducted in Phase 1 revealed that most Ontarians want environmentally-sound options for managing their WEEE. This research also highlighted the need for recycling options: one survey reported that 78% of Ontarians have at least one piece of electronic equipment in their homes that is not working or is not being used.

The Minister's Program Request Letter specified that OES is responsible for promotion and education (P&E) of the Program. Some of the options that will be considered on a case-by-case basis and within the context of the annual P&E program budget are the following:

- Province-wide paid and earned media that builds general awareness about the Program
- Jurisdictional paid and earned media that inform residents about local collection opportunities and events.
- Jurisdictional paid and earned media that inform residents about permanent local collection sites
- Collection site communication that promotes local collection sites and the types of WEEE materials collected.

This section outlines strategies and tactics that will be used to promote the objectives of the Revised Program Plan. With the principles of good communication planning, implementation and evaluation in mind, this outline describes the elements that will be included in an integrated communication strategy.

7.1 Support Functions and Target Audiences

Drawing extensively from the experience of implementing the Phase 1 WEEE Plan, this revised P&E strategy establishes two distinct communication functions to support diversion activities in the Revised Program Plan.

The first of the two communication functions is *operational* communication support: the strategic and tactical actions required to communicate with stakeholders who participate in an operational capacity. This audience includes, but is not limited to:

- Stewards of obligated WEEE materials including brand owners, first importers and/or assemblers
- Retailers selling and/or voluntarily taking back some or all of Phase 1 and 2 WEEE
- Collectors including not-for-project and for-profit organizations, municipalities, private waste and recycling companies
- Reusers/ Refurbishers
- Primary and downstream processors approved to process WEEE, as well as those interested in becoming an OES-Approved processor

The OES website (www.ontarioelectronicstewardship.ca) provides information, assistance and support to each of these targeted groups.

The second of two communication functions is *general promotion and education*: the strategic and tactical actions required to communicate with residential and IC&I consumers who generate

WEEE. These messages will be designed to specifically encourage consumers to properly dispose of their waste electronics. This audience includes the following:

- WEEE Generators, from both residential and IC&I sectors
- Other stakeholders such as industry associations and environmental non-government organizations (ENGOs)
- Ontario citizens

The 'Do What You Can' website (www.dowhatyoucan.ca) was developed in cooperation with Stewardship Ontario's MHSW program, and allows generators of WEEE to search for and locate OES-Approved collection sites, collection events and reuse and refurbishment organizations. The website also provides additional information about the Program, as well as answers to frequently asked questions.

7.1.1 Social Marketing Techniques

The OES P&E approach uses social marketing techniques to reach and involve a target audience. Social marketing is the practice of applying communications techniques to achieve specific behavioral goals for a social good. Typically, a mix of communication tools is used to motivate audiences to voluntarily adopt the desired behaviour. Social marketing is framed by research and evaluation, in order to ensure that P&E investments are informed, as well as monitored for effectiveness. Key features of strategic social marketing techniques include these steps:

- Establishing a personal interest in the subject matter within the target audience
- Educating the target audience concerning the action that would be required
- Motivating action (providing a "call-to-action")
- Reinforcing/rewarding the newly adopted behaviour (by providing information about results)
- Reminding the target audience of the benefits of the behaviour in order to help establish it as normative

7.2 Supporting the 3Rs

Key messages will help to encourage concepts of the 3Rs hierarchy, such as giving usable but unwanted electronics to family, friends, neighbours and charitable organizations before recycling. These messages are best conveyed through items such as consumer brochures and stories for use in newspapers and online mediums.

7.2.1 Green Economy

The P&E campaign will work to promote activities that encourage a green economy, by explaining how recycling or donating working WEEE can result in the development of enterprises to collect, refurbish and reuse electrical and electronic equipment. For example, a key message will be that donating usable WEEE for refurbishment and reuse and delivering recyclable WEEE to collection sites will lead to green job creation. Over time this will be quantified under the Revised Program.

7.3 Regional Focus and Strategy

P&E activities will be regionalized based on the type and availability of consumer WEEE collection options. This is particularly relevant in the northern regions of Ontario, where the usual collection opportunities are more limited. The range and scope of these operational activities will define the P&E that is needed to support the Revised Program.

8.0 Fee-Setting Methodology

This section describes the authority with which OES assesses Steward Fees, and describes the detailed fee-setting methodology that will be employed by OES under the Revised WEEE Program Plan. Specific Year 1 Revised WEEE Steward Fees are detailed in Section 9.0.

8.1 Authority

Under the WDA, the Industry Funding Organization for an approved Program Plan may assess fees against companies designated as Stewards under the plan. Section 30 of the Act sets out the powers for fee-setting as follows:

> 30. (1) If an industry funding organization is designated by the regulations as the industry funding organization for a waste diversion program, the organization may make rules,
>
> (a) designating persons or classes of persons as Stewards in respect of the designated waste to which the waste diversion program applies;
>
> (b) setting the amount of the fees to be paid by Stewards under subsection 31 (1) or prescribing methods for determining the amount of the fees;
>
> (c) prescribing the times when fees are payable under subsection 31 (1)
>
> [2002, c. 6, s. 30 (1)]

8.2 Fee-Setting Principles

Section 30 of the WDA defines the fee-setting principles as follows:

> 30. (3) In making rules under clause (1) (b), the industry funding organization shall have regard to the following principles:
>
> 1. The total amount of fees paid by Stewards under subsection 31
>
> (1) should not exceed the sum of the following amounts:
>
> i. The costs of developing, implementing and operating the program.
>
> ii. A reasonable share of costs not referred to in subparagraph i) that are incurred by Waste Diversion Ontario in carrying out its responsibilities under this Act.
>
> iii. A reasonable share of costs incurred by the Ministry in administering this Act.
>
> 2. The fee paid by a Steward should fairly reflect the proportion of the sum referred to in paragraph 1 that is attributable to the Steward.
>
> [2002, c. 6, s. 30 (3)]

During development of the Phase 1 Program Plan, OES established a task group of affected Stewards to develop an appropriate fee-setting methodology for each of the designated Phase 1 EEE. As an initial step the task group identified five guiding principles for this fee-setting process. During the development of the Revised WEEE Program Plan, an additional sixth guiding principle was identified.

OES' guiding principles for the fee-setting process are as follows:

1) There should be no cross-subsidization of management costs across WEEE categories.
2) Stewards Fees will be based on EEE units supplied into the Ontario market in the Program year but will cover the projected cost to manage the WEEE under the Revised Program in that year.
3) Fee-setting is to begin with the cost to manage WEEE within each WEEE category under the Program as determined by a transparent cost allocation methodology.
4) Material-specific fees may then be modified to achieve (a) the overarching Program policy goal to divert waste from disposal and (b) material specific policy goals including achieving targets established for collection, reduction, reuse, and recycling.
5) Common and shared OES costs will be assessed across all Stewards in a fair and transparent manner.
6) In accordance with the concept of Successive Technology, the costs associated with the management of obsolete WEEE will be allocated to the Steward fees for the obligated EEE device that followed and/or replaced, totally or in part, the function or intended purpose of the obsolete WEEE device.

8.3 Key Fee-Setting Methodology Issues under the Revised Program Plan

The WEEE fee-setting methodology has been revised to support the Revised Program Plan for Phase 1 and 2 materials, while addressing all the requirements included in the Minister's June 2007 Program Request Letter.

8.3.1 Availability of Data

The Revised Program Plan is being developed before the Phase 1 WEEE Plan has been fully implemented, and so there are limited sources of new data with which to refine generation and diversion estimates, and management cost projections for fee-setting purposes. However, consideration has been given to:

- Any arrangements between OES and service providers (including municipalities) for the collection, transfer, consolidation, reuse and processing of WEEE;
- Revised estimates of quantities of obligated WEEE materials introduced into the Ontario market given economic conditions existing at the time of Plan development; and
- Further analysis of specific R&D or capital investments or service agreements required to expand collection and diversion infrastructure for these WEEE and to meet targets for accessibility, collection, reduction, reuse and recycling of WEEE.

Furthermore, while OES has used the best available data for the purposes of setting fees for Year 1 of the Revised WEEE Program Plan, the quality of the data that will be available for fee-setting in subsequent Program years will be improved significantly by the requirement for Stewards and service providers to provide more detailed reports upon Program approval and implementation. Therefore, OES will continue to use a seven-step approach to setting WEEE Stewards' fees over the five year term of the Revised WEEE Program Plan.

8.3.2 Revised WEEE Program Material Categories

Steward fees will be assigned to each of the following eight major EEE material categories and 14 material reporting sub-categories, as described in Table 8.1:

Table 8.1: Material reporting categories for the purpose of assigning Steward fees

1. Desktop Computers	2. Portable Computers
3. Computer Peripherals	4. Printing, Copying and Multi-Function Devices - Desktop Printing, Copying and Multi-Function Devices - Floor-Standing Printing Devices - Floor-Standing Copying Devices
5. Display Devices - ≤29" Screen - >29" Screen	6. Telephones and Telephone Accessories
7. Cellular Devices and Pagers	8. Image, Audio & Video Players & Recorders - Personal/ Portable - Home/ Non-Portable - Home Theatre in a Box (HTB) - Aftermarket Vehicle

8.3.3 Other Key Fee-Setting Methodology Issues

Four additional issues have been identified and addressed in the Revised Program Plan fee-setting methodology:

1. As an alternative to the standard Steward fees for the WEEE Program, OES will set a compliance fee to allow Steward-managed WEEE systems to be integrated into the Revised Program Plan. The compliance fee will be established based on the level of OES services provided to monitor and report Steward compliance, Steward program performance, overall program performance and other related services. Affected Stewards will be required to report the quantities of EEE supplied into the Ontario market as well as the WEEE material managed within their self-managed programs.

2. The Phase 1 Program Plan development costs will be allocated in two steps: first to Phase 1 and Phase 2 materials according to the level of each activity attributable to those materials within the plan development process; and second, according to the 85% direct cost and 15% equal share formula approved for allocating common costs

3. The Revised Program Plan development costs will similarly be allocated in two steps: first, to Phase 1 and Phase 2 materials according to the level of each activity attributable to those materials within the plan development process; and second, according to the 85% direct cost and 15% equal share formula approved for allocating common costs.

4. Any surplus or shortfall over and above the amount allocated to material-specific investments prescribed in the Revised Program Plan will be resolved annually. However, depending on the size of the surplus or shortfall, OES may extend the resolution period up to three years in order to smooth short-term fee trends. See Section 8.5.3 for more details.

8.4 Methodology for Setting Steward Fees for Year 1 of the Revised Program Plan

OES has calculated the fees for Year 1 of the Revised Program Plan using the methodology described in this section. This methodology incorporates the best available data and agreed approaches for allocating costs. OES has calculated and applied specific fee rates to each WEEE material category in the following seven steps.

Step 1*: Determine operating cost to manage each WEEE category*

a. The operating costs to manage each WEEE category in the system will be assessed and allocated based on weight[27]. OES will track costs by WEEE management group, and will utilize waste audit data to allocate costs by material category. Note that the cost to manage different types of WEEE within each category can vary by WEEE management group. While these considerations were incorporated into the current fee-setting methodology based on cost assumptions, OES will revise these variable management costs to incorporate actual costs in will be incorporated in future fee-setting. Table 9.1 outlines the variable management costs by WEEE management category.

Step 2: *Add additional investment costs for each material category to reach accessibility targets*

a. Determine and add Year 1 capital investments or service agreements necessary to reach accessibility targets detailed in Section 5.1.1.

b. Investments that are specific to one WEEE category will be allocated to that category. Investments that are shared will be allocated based on weight as per other system costs in Step 1.

Note: The OES Board will review and determine the need for additional capital investment fees or service agreements on an annual basis.

Step 3: *Add research and development (R&D) costs for each WEEE category to reach collection, reuse and recycling targets, and to develop tracking and auditing mechanisms*

Determine and add funds required in Year 1 to support investments in R&D activities. .R&D investments may be incurred for all or specific sub-categories of WEEE. For investments that are shared, the fees will be allocated based on weight as per other system costs as noted in Step 1. Fees may be used to create investment funds and/or to enter into contracts with OES service providers. For investments that are incurred for a specific category of WEEE, costs will be allocated to that category.

Note: The OES Board will review and determine the need for additional R&D investments on a product-by-product basis annually.

[27] Weight-based measurement is the predominant method of assigning costs within the industry. If data become available for a more accurate approach to allocating costs throughout the system, those data would be used in future fee-setting cycles (with consideration of other factors).

Step 4: ***Add Year 1 WEEE promotion and education (P&E) costs***

a. Determine and add promotion and education costs used to promote and improve collection, reuse and recycling for specific WEEE, if required.

b. Common P&E costs will be allocated on the same basis as the sharing of common Program delivery costs as described in Step 5.

Note: The OES Board will review and determine the need for additional common and specific P&E investments annually.

Step 5: ***Add a share of the direct OES WEEE Program delivery and administration costs, and WDO Program delivery and administration costs attributable to OES (together referred to as "common costs") to each WEEE material based on the following calculation.***

a. Allocate 15% of the common costs in an equal portion to each of the 14 material reporting categories.

b. Allocate 85% of the common costs to each WEEE material category in proportion to the direct costs associated with management of each WEEE category as described in Steps 1 through 4.

A commonly accepted approach to allocating common costs is to use a combination of direct costs, plus some equal sharing among materials or program participants to reflect a certain level of effort and cost required for a Steward regardless of the volume of material for which that Steward is responsible. In the absence of reliable data on the number of Stewards, the OES Technical Committee decided to use the material categories as the basis of the equally shared portion. In the absence of a direct material-specific driver for the common costs, the choice of 85% and 15% was considered to be the optimum balance to ensure that Stewards in those categories with very few Stewards were not assigned a disproportionate share of the common cost. OES common costs include:

- OES Board operating costs
- Accounting
- Legal fees
- General administration costs relating to maintaining office and equipment, staffing, banking and insurance
- Registering obligated EEE suppliers
- Receiving, verifying and auditing Steward's Reports
- Reporting to WDO, MOE, OES Board and Stewards
- Information technology activities to develop and maintain reporting and accounting systems
- OES share of WDO costs that can be directly attributed to WEEE and the OES share of WDO's costs that are not directly attributable to other programs
- Development of a methodology for the ongoing measurement of the quantities of WEEE available for collection
- WEEE data tracking and verification processes to support vendor standards

- OES administration of the tendering and contracting process for Program services related to WEEE
- Developing plans for meeting accessibility, collection, reduction, reuse and recycling targets, and for the purposes of future fee-setting
- Designing and implementing research and development programs to improve overall WEEE Program efficiency and cost effectiveness
- Annual review and modification, as required, of the Program cost calculations, cost allocation methodologies, fee-setting methodology and fee-setting through the approved fee-setting methodology
- OES cost allocation field work as required
- Design and implementation of the provincial WEEE promotion and education program, and
- OES and MOE WEEE-related compliance activities

Note: The OES Board will review and determine the use of these allocation factors annually.

c. Allocate Phase 1 Program Plan Development Costs

Phase 1 Program Plan development costs are costs that were incurred in the development of the Phase 1 Plan following the Minister's direction in June 2007, and include the following:

- Development and operation of WDO, EPSC, RCC and OES committees that helped to develop the Plan
- Discussions among MOE, municipalities, other stakeholders, WDO and OES in the development of the Phase 1 Plan
- Consultation with municipalities, industry and the general public in the development and review of the draft Phase 1 Plan
- The analytical and technical work completed by OES in the drafting of the Phase 1 Plan
- Legal costs related to development of the Phase 1 Plan and rules and drafting of the program agreement between WDO and OES in preparation for delivery of the Phase 1 Plan

Phase 1 Program Plan development costs will be allocated to Phase 1 and Phase 2 materials according to the level of each activity attributable to those materials:

- Activities attributable to Phase 1 materials alone will be allocated entirely to Phase 1 materials according to the formula: 85% based on relative direct costs and 15% apportioned equally to each material category.
- Activities attributable to all materials will be allocated to both Phase 1 and Phase 2 materials according to the formula: 85% based on relative direct costs and 15% apportioned equally to each material category.

The full cost of Phase 1 Plan development was incorporated into the Year 1 Program fees for Phase 1 materials. Those costs, as outlined for attribution in the Phase 1 Plan, will be reconciled with the cost attributed to Phase 1 materials under the Revised Program Plan. If applicable, the appropriate credit will be assigned to the Phase 1 materials in the first year of Revised WEEE Program fees.

d. Allocate Phase 1 Program Start-up Costs

Phase 1 Program start-up costs are costs that have been incurred to put the resources, facilities and systems in place to successfully implement the Phase 1 WEEE Program Plan in a timely manner, and they include the following:

- Providing clarifications and responding to requests from WDO and the MOE for additional information following submission of the final Phase 1 Program Plan
- Discussions and pre-implementation planning with key stakeholders
- Development of WEEE Program administrative procedures
- Information technology (IT), data management and tracking systems development
- Legal and accounting services
- Promotion and education
- Consultation with stakeholders
- Identification and notification of potential Stewards
- Establishment and operation of OES registration “call centre”
- Identifying, notifying and registering obligated Phase 1 Stewards
- Registration of collectors and reuse and refurbishment organizations
- Contracting with transporters, consolidators and processors

Phase 1 Program Plan start-up costs will be allocated to Phase 1 and Phase 2 materials according to the level of each activity attributable to those materials:

- Activities attributable to Phase 1 materials alone will be allocated entirely to Phase 1 materials according to the formula: 85% based on relative direct costs and 15% apportioned equally to each material group
- Activities attributable to all materials will be allocated to both Phase 1 and Phase 2 materials according to the formula: 85% based on relative direct costs and 15% apportioned equally to each material category

The full cost of Phase 1 Plan start-up was incorporated into the Year 1 Program fees for Phase 1 materials. Those costs, as outlined for attribution in the Phase 1 Plan, will be reconciled with the cost attributed to Phase 1 materials under the Revised Program Plan. If applicable, the appropriate credit will be assigned to the Phase 1 materials in the first year of Revised WEEE Program fees.

e. Allocate Revised Program Plan Development Costs

Revised Program Plan development costs are those that were incurred in the development of the Revised Program Plan following approval of the Phase 1 Plan in July, 2008, and include the following:

- Operation of WDO and OES committees that helped to develop the Revised Program Plan
- Discussions among MOE, municipalities, other stakeholders, WDO and OES in the development of the Revised Program Plan
- Consultation with municipalities, industry and the general public in the development and review of the draft Revised Program Plan

- The analytical and technical work completed by OES in the drafting of the Revised Plan itself
- Legal costs related to development of the Revised Program Plan and Rules and drafting of the program agreement between WDO and OES in preparation for delivery of the Revised Program Plan

Revised Program Plan development costs will be allocated to Phase 1 and Phase 2 materials according to the level of each activity attributable to those materials:

- Activities attributable to Phase 2 materials alone will be allocated entirely to Phase 2 materials according to the formula: 85% based on relative direct costs and 15% apportioned equally to each material category
- Activities attributable to all materials will be allocated to both Phase 1 and Phase 2 materials according to the formula: 85% based on relative direct costs and 15% apportioned equally to each material category

f. Allocate Revised Program Plan Start-Up Costs

The Revised Program Plan start-up costs are those that will be incurred to put the additional resources, facilities and systems in place to successfully implement the Revised Program Plan in a timely manner, and include the following:

- Providing clarifications and responding to requests from WDO and the MOE for additional information following submission of the final Revised Program Plan
- Discussions and pre-implementation planning with key stakeholders
- Development of Revised Program administrative procedures
- Additional IT, data management and tracking systems development
- Legal and accounting services
- Promotion and education
- Consultation with stakeholders
- Identifying, notifying and registering obligated Phase 2 Stewards
- Upgrading the operation of the OES registration “call centre”
- Identifying, notifying and registering obligated Phase 2 Stewards
- Upgrading the operation of OES registration “call centre”
- Registering additional collectors and reuse and refurbishment organizations
- Modifying contracts with transporters, consolidators and processors

Revised Program Plan start-up costs will be allocated to Phase 1 and Phase 2 materials according to the level of each activity attributable to those materials, as described below:

- Activities attributable to Phase 2 materials alone will be allocated entirely to Phase 2 materials according to the formula: 85% based on relative direct costs and 15% apportioned equally to each material category
- Activities attributable to all materials will be allocated to both Phase 1 and Phase 2 materials according to the formula: 85% based on relative direct costs and 15% apportioned equally to each material category

Step 6*: Calculate the total costs*

Calculate the total costs applicable to each individual material category by adding the allocated share of costs for managing each related WEEE category as determined in Steps 1 through 5.

Step 7*: Calculate the fee rates*

a. Fee Calculation Methodology for Items Collected and Managed by OES

   For each material category the total costs (Step 6) are divided by the estimates of the total quantity of the obligated materials introduced into the Ontario market and expressed in the appropriate units for each material as set out in the Program Rules[28].

b. Fee Calculation for OES-Approved Steward Self-managed Programs

   The Revised Program Plan allows for the integration of Steward self-managed WEEE diversion programs[29]. Stewards must be approved by OES to utilize this option, and WEEE material must be sent to an OES-Approved processor. Note that the processor utilized by the OES-Approved self-management system, if not already approved by OES, will need to be approved under the OES ERS (Please refer to Appendix 7a). OES will coordinate with the Steward and the OES auditor to complete the audit, which will be paid for by the Steward. Upon approval OES will reimburse the Steward for the full cost of the audit.

   Stewards approved by OES to operate a self-managed WEEE program will be required to report data and pay a compliance fee. The compliance fee will be established based on the level of OES services provided to monitor and report Steward compliance, Steward program performance, overall program performance and other related services. Affected Stewards will report the quantities of EEE supplied into the Ontario market as well as the WEEE material managed within their self-managed programs.

   The costs for stewards approved for self-management to manage directly their WEEE will not be included in the direct cost of the OES Program charged to other WEEE Stewards.

   It is possible for some Stewards to have WEEE that they want to self-manage and have other WEEE that they want managed through the collective program. Therefore, this approach is flexible enough to accommodate a variety of program management options. Please refer to Section 4.4 for greater detail on the Steward Self-management option, and for an example of how the compliance fee will be calculated.

The following Table 8.2 identifies the activities and services which will be included in the calculation of the compliance fee for Stewards approved to self-manage their WEEE, compared to those activities and services included in the calculation of the standard fee for Stewards whose materials are managed within the OES Program. OES has assumed that Stewards approved to operate a self-management program will not benefit from material-specific P&E and R&D expenditures for the Revised Program Plan, and these costs are therefore not included in the calculation of the compliance fee.

[28] Note that the Rules for the Revised Program Plan have not been finalized.
[29] Examples could include closed-loop end-of-life management systems for large office copiers and multi-function devices and cell phones

Table 8.2: Activities and Services Included in the Calculation of Steward Fees

Cost Area	Compliance fee for Stewards approved to self-manage WEEE Note (1)	Fee for Stewards whose material is managed by OES Note (2)	
		Common	Direct
Plan development costs	√	√	
Plan start-up costs	√	√	
Corporate website development	√	√	
P&E strategic plan and launch	√	√	
Audit and registration of vendors	√ (3)	√	
Negotiation of contracts		√	
Develop MTS		√	
IFO Admin and Program Management			
Corporate website	√	√	
Do What You Can website	√ (4)	√	
Legal, accounting and collections relating to Stewards	√	√	
Legal, accounting and collections relating to material service providers		√	
Steward identification, registration, communications, report review	√	√	
Cost allocation and fee-setting	√	√	
Reporting accessibility and diversion against targets to WDO, MOE	√	√	
IFO Board costs	√	√	
Steward Reporting			
Steward identification, registration, communications	√	√	
Steward's Report review and field audits	√	√	
IFO compliance activities	√	√	
External Charges			
WDO Administration and delivery	√	√	
WDO Datacall	√ (5)	√	
MOE enforcement	√	√	
Program Delivery and Operations (6)			
Common P&E		√	
Material-specific P&E			√
Materials tracking		√	
Vendor standards, registration and audits	√ (7)	√	
Collection services			√
Transport services			√
Consolidation services			√
Primary processing			√
Research & Development			√

Table 8.2 notes:

1. The program compliance fee is payable by Stewards that are approved by OES to manage their WEEE material through a separate self-managed program.
2. The standard fee would be paid by all Stewards whose WEEE material is managed by the OES Program, and this fee would cover both common costs (allocated as described in step 5) and variable costs (allocated as described in step 1).

3. Since Stewards that are approved by OES to operate self-managed programs use OES-Approved processors, a share of the processor auditing costs would be charged to those Stewards. These Stewards may choose to have their chosen processors meet the OES standard through an application and audit process, paid for directly by the Steward.
4. Similarly, Stewards operating self-managed programs might benefit from Program-wide common P&E and R&D, so some of these costs would be allocated to those Stewards.
5. Some materials covered by Stewards' self-managed programs might also be managed through OES services operated by municipalities.
6. These costs will exclude all costs for the self-management of WEEE by stewards
7. Note that the processor utilized by the OES-Approved self-management system, if not already approved by OES, will need to be approved under the OES ERS (Please refer to Appendix 7a). OES will coordinate with the Steward and the OES auditor to complete the audit, which will be paid for by the Steward. Upon approval OES will reimburse the Steward for the full cost of the audit.

8.5 Methodology for Setting WEEE Steward Fees for Year 2 of the Approved Revised Program Plan

OES will calculate the Year 2 Revised Program Fees for WEEE Stewards using the same methodology as for Year 1, with specific modifications and improved data.

8.5.1 Year 2 Data Sources

Fee calculations for Year 2 of the approved Revised Program Plan will use improved sources of data from the following:

- Quantities of obligated EEE materials introduced into the Ontario market on the basis of Stewards' reports received during Year 1;
- Contracts between OES and service providers (including municipalities) for the collection, reuse and processing of WEEE;
- Analysis of cost allocation methodology approved by the OES Board of Directors for WEEE[30];
- Analysis of specific R&D or capital investments or service agreements required to expand collection and diversion infrastructure for these WEEE and to meet targets for accessibility, collection, reduction, reuse and recycling of WEEE;
- Findings from review of the performance of any recovery channels such as special events and new depot locations implemented in Year 1 (according to accessibility plan) and an assessment of the relative cost-effectiveness of events and permanent capital infrastructure; and,
- Results of research and monitoring of P&E activities undertaken in Year 1.

8.5.2 Consideration of Possible Differences within Material Categories

In consultation on Year 2 fee-setting, the OES Board of Directors may consider developing a workplan that will consider potential factors that may be applied to modify the fees calculated in

[30] It is anticipated that data will become available through the tendering process. This will be a more accurate allocation of costs throughout the system (versus a weight-based allocation) and these would be used in the following fee-setting cycles.

steps 1 to 4 of the Year 1 methodology within a material category. The workplan will consider factors that may be applied in order to account for possible differences in the collection and diversion performance achieved, and the relative cost to manage related WEEE or to meet other WEEE Program Plan policy objectives established by the OES Board.

8.5.3 In the event of a fee shortfall or surplus

After completing Step 5 of the Year 1 Program Fee-Setting methodology, the appropriate share of any shortfall or surplus in the total Revised Program fees collected in Year 1 of the Revised Program will be recovered or credited in Program Year 2 fees[31]. This calculation will be based on the combination of:

- Any amount of fees either underpaid or overpaid by Stewards of each material category for costs incurred during Year 1; and
- Any deficit or surplus in the amount of common expenses incurred during Year 1, allocated on the same basis used to determine allocation of common costs (described in Step 5 of the Year 1 WEEE Program fee-setting methodology).

There are numerous factors that make it difficult to collect the full amount of fees owed to OES each year, including but not limited to such things as: non-payment and late-payment by Stewards, mergers and acquisitions, changes in sales between data at the time the fees were established and at which the Stewards make payments, higher or lower actual recovery rates on which payments must be made than had been projected for setting fees.

Any shortfall of the actual Program costs will be recovered from appropriate Stewards annually. However, in order to smooth short-term fee-trends, and depending on the size of any surplus, OES may extend the resolution period for budget surpluses up to three years at the discretion of the OES Board.

The amount of any surplus that the OES Board of Directors agrees to maintain from material category-specific contributions will be directed only to activities prescribed in the WEEE Program Plan and fee-setting methodology in respect of the specific material categories for which the contributions have been made. This will be dependent upon the material-specific situation, and will be assessed every fee-setting cycle.

Note that a shortfall or surplus for Program compliance fees assessed to Stewards approved to operate self-management programs will be addressed within the broader fee-setting process as required.

The OES Board of Directors recognizes the need for a sustaining fund to enable the organization to carry out its non-profit activities and satisfy all of its obligations. After a period of sustained operation and before the end of the 2009 calendar year, the OES Board will decide on an appropriate level of internally restricted net assets for the purpose of a sustaining fund.

8.5.4 Modify Step 7 of the Year 1 WEEE Program Fee-setting Methodology

OES will modify the source of data used to calculate the fee rates (Step 7). The quantities of EEE Supplied into Ontario will be based on OES reports from Stewards within each obligated material category.

[31] It is anticipated that this step would carry forward into the fee-setting methodology in subsequent years.

8.6 Methodology for Setting WEEE Stewards' Fees for Subsequent Years of the Approved Revised WEEE Program Plan

Any revisions to the fee-setting methodology made after the approval of the Revised WEEE Program Plan would be developed following public consultation by OES, and would be submitted for consideration and approval to WDO Board and the Minister.

9.0 Program Budget

The Revised Program budget includes all known and projected costs expected to be incurred by the Revised WEEE Program in Year 1. These include, but are not limited to, the following:

- Costs to develop and enhance collection and diversion infrastructure;
- Costs for collecting, consolidating, transporting and processing WEEE through service agreements;
- Developing and implementing vendor standards and a tracking and auditing system for materials;
- Research and development costs to support and increase the effectiveness and efficiency of collection and diversion systems;
- Promotional and educational activities to support the Program;
- Administration costs, including cost allocation analyses and Steward fee-setting;
- WDO costs for development and start-up of the WEEE Program;
- WDO costs directly related to delivery and administration of the WEEE Program and a reasonable share of WDO's general costs; and,
- MOE enforcement costs.

Estimates of these costs are outlined in the following sections.

9.1 WEEE Management Costs – Collection, Transportation, Consolidation and Processing Cost Estimates

A detailed cost model was developed by OES and provides an analysis of the Revised Program operations: collection, transportation and consolidation components for Year 1 of the Revised WEEE Program. As outlined in Section 4.5.6, WEEE will be managed in four WEEE management groups under the OES Program: 1) Computers; 2) Display Devices; 3) Other WEEE; and 4) Floor-standing Printing and Copying Devices. The cost elements of the collection, transportation, consolidation, and processing system include:

- The cost of collection (receiving, storing, preparing WEEE for shipment to consolidation centres as represented by the collection incentive);
- The cost of transport to consolidation centres, and from consolidation centres to processing facilities;
- The cost of consolidating loads of WEEE for shipment to processing facilities; and
- The cost of processing, shipping for recycling and disposal, and the cost of disposal of residuals.

As illustrated in Figure 4.1, three channels of material handling are anticipated:

1) Direct ship (3a in Figure 4.1)
2) Steward self-management (2b in Figure 4.1)
3) Consolidation through OES-Approved collection sites (4 in Figure 4.1)

Note that under the direct ship option, OES will not incur collection, or consolidation costs, but will reimburse transportation and processing costs to the generation site, up to a maximum that

OES establishes based on the quoted costs from OES contracted transporters for equivalent transport distances and on the contracted price OES has with the processor, respectively.

For the purposes of estimating Year 1 costs and setting fees, OES has assumed that all of the total collection volume will flow through OES-Approved collection sites, with exception of the following:

- 10% of information technology WEEE (i.e. desktops and portable computers, computer monitors, desktop printers and copiers, and peripherals) will flow through OES-Approved direct shipment from generators to primary processors.
- 75% of floor-standing copying and multi-function devices will be managed via the Steward self-management channel, and the remaining 25% will be managed under the Program;
- 50% of floor-standing printing devices will be managed via the Steward self-management channel, and the remaining 50% will be managed under the Program.

These assumptions are reflected in Table 9.2. As the Program is implemented and matures, it will be possible to make more accurate projections of the percentage of WEEE that will flow through each of the three channels.

Management costs are outlined for each WEEE category expected to be sourced from each of the four consolidation regions in the province. A description of the calculation for each of these elements is presented in the following sections, and cost assumptions are outlined in Table 9.1. A table presenting detailed calculations for each WEEE category is presented in Table 9.3.

Table 9.1: Cost Assumptions for Collection, Transportation, Consolidation and Processing

Description of Assumption	Estimated Year 1 Cost
Collection	
Collection ($/tonne)	$165
Special events ($/tonne)	$680
Cost of equipment and materials ($/tonne)	$20
Consolidation	
Consolidation ($/pallet)	$12
Transportation	
Weight per pallet (tonne)	0.300
Pallet threshold: central, north, east, west	6
Pallets per truckload	24
North ($/pallet)	$50
East ($/pallet)	$40
Central ($/pallet)	$25
West ($/pallet)	$35
Display devices: breakage contingency	5%
Processing	
Display Devices ($/tonne)	$1,000
Computers ($/tonne)	$750
Other WEEE[32] ($/tonne)	$850
Floor-Standing Printing and Copying Devices ($/tonne)	$1,000

[32] OES acknowledges that there is a broad mix of WEEE in this category that may attract varying processing costs. OES will update cost assumptions for WEEE management Group 3 with actual costs when available.

9.1.1 Aligning Costs Related to Display Devices

In the approved Phase 1 Program Plan televisions were differentiated from monitors on the basis that they contained an embedded television tuner. However, the presence or absence of a television tuner does not drive the cost of managing end-of-life display devices within the OES management system; it is the size of the display devices that determines the cost to manage it at end-of-life.

In general, all computer monitors sold in the past, and those that are currently supplied for use in Ontario, fall into the ≤29" screen size category. In the case of televisions, older models are generally being collected are also found in the ≤29" screen size category.

Market trend data suggest that consumers are replacing their old displays with larger devices that have screen sizes >29". For this reason, all operating costs and unit sales associated with televisions in the 18”-29" screen size range have been grouped with other applicable display device units with screen sizes >29". This has been done to reflect the succession of technology, changing consumer behaviour trading one technology for another, and to prevent the cross-subsidization between televisions and monitors.

In order to align the cost to manage display devices with the screen size cost-driver, the costs to manage display devices with screen sizes between 18” and 29” are allocated into the cost calculations for display devices with screens >29”. To ensure transparency, these cost categories have been clearly depicted throughout the program cost and budget tables contained within this Section.

OES has committed R&D funds to measure the return of display devices by screen size category, and require Stewards to report based on screen size category in order to ensure that there is no cross-subsidization of the program costs to manage computer monitors and televisions.

9.1.2 Methods for Determining WEEE Management Costs

The costs of the Program will be driven largely by the quantity of each WEEE material that is managed. Therefore, cost estimates are based on estimates of the quantities of WEEE that are projected to be collected and managed in each year. As outlined in Section 3.0, the baseline estimates of WEEE currently being handled, and hence the basis for projections of material to be managed under the Program, are based on data from the inter-provincial study results that were extrapolated for Ontario conditions.

The estimates of the quantities of each WEEE category to be collected and sent for processing in Year 1 were segmented into four regions (Central, East, West, and Northern Ontario), based on population data from the 2006 Canadian Census from Statistics Canada. Data were insufficient to be able to precisely determine the geographic source of recovered items in Year 1. The quantity of WEEE collected in the four regions will be closely monitored, allowing OES to make more robust cost projections in subsequent years. Details regarding these material and regional cost estimates can be found in Table 9.2.

9.1.3 Collection and Consolidation Costs

For the purposes of Year 1 Program Planning, OES has assumed that the majority of total collection volume will pass through registered collection sites for which OES will pay a collection incentive of $165 for each tonne of WEEE collected, sorted, and prepared for transport.

OES will be conducting an activity-based costing study of collection and handling at OES-Approved collection sites. While this was an R&D commitment under the approved Phase 1 Program Plan, the result of that research will not be known until after this Revised Plan is submitted to WDO. Therefore, to be conservative for financial budgeting purposes, OES has included a 30% contingency for the $165 per tonne collection incentive to allow for modifications to this payment rate, if justified through the activity-based costing study.

OES has also included a budget allocation for equipment and materials that will be provided to collection sites, including pallets, shrink wrap, bulk bags and gaylords. The budgeted amount for equipment and materials is $20 per tonne. This has been increased from $15 per tonne used in the Phase 1 Plan, to more accurately reflect costs OES is paying under the current Phase 1 implementation.

OES has estimated a $12/pallet (approximately $36/tonne) cost for consolidation services, which is consistent with the Phase 1 Plan. This cost estimate was based on experience from other provincial WEEE programs, as well as experience implementing Phase 1 collection and consolidation activities.

There is no current evidence to suggest that the costs to collect and consolidate WEEE under the Program would differ for different types of WEEE. Therefore, for the purpose of estimating the cost for Year 1, OES has assumed that the cost to manage each of the four WEEE management groups is the same. Note that a 5% contingency amount was added to display devices to account for the high risk of breakage. As new operating cost information becomes available after Year 1, OES will investigate the potential to identify costs specific to each of the four WEEE management groups, if possible. The estimated costs associated with collection and consolidation can be found in Table 9.3.

Please note that OES has assumed 10% of IT materials will flow through the Direct Ship channel, for which OES will reimburse transportation and processing costs incurred by the generation site. Tonnages of WEEE managed via the Direct Ship channel will be included in the total weight of WEEE allocated to OES-Approved primary processors, as outlined in Section 4.8.5.

Table 9.2: Projected Material Quantities: By Channel and By Region

Material Category			Material Collected (tonnes)	Material Channel	Portion of Material to Channel		Region			
							North 7.32%	East 14.92%	Central 58.30%	West 19.45%
					(%)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)
Display Devices	≤29" Screen	Computer Monitors	5,219	Direct Ship	10%	522	38	78	304	102
				Approved Collection	90%	4,697	344	701	2,738	914
				Steward Self-Management	0%	-	-	-	-	-
		Displays <18"	818	Direct Ship	0%	-	-	-	-	-
				Approved Collection	100%	818	60	122	477	159
				Steward Self-Management	0%	-	-	-	-	-
	>29" Screen	Displays 18"-29"	10,224	Direct Ship	0%	-	-	-	-	-
				Approved Collection	100%	10,224	749	1,525	5,961	1,989
				Steward Self-Management	0%	-	-	-	-	-
		Displays >29"-45"	4,060	Direct Ship	0%	-	-	-	-	-
				Approved Collection	100%	4,060	297	606	2,367	790
				Steward Self-Management	0%	-	-	-	-	-
		Displays >45"	1,849	Direct Ship	0%	-	-	-	-	-
				Approved Collection	100%	1,849	135	276	1,078	360
				Steward Self-Management	0%	-	-	-	-	-
Desktop Computers			4,753	Direct Ship	10%	475	35	71	277	92
				Approved Collection	90%	4,278	313	638	2,494	832
				Steward Self-Management	0%	-	-	-	-	-
Portable Computers			854	Direct Ship	10%	85	6	13	50	17
				Approved Collection	90%	769	56	115	448	150
				Steward Self-Management	0%	-	-	-	-	-
Computer Peripherals			572	Direct Ship	10%	57	4	9	33	11
				Approved Collection	90%	515	38	77	300	100
				Steward Self-Management	0%	-	-	-	-	-
Printing, Copying and Multi-Function Devices	Desktop Printing, Copying and Multi-Function Devices		4,842	Direct Ship	10%	484	35	72	282	94
				Approved Collection	90%	4,358	319	650	2,541	848
				Steward Self-Management	0%	-	-	-	-	-
	Floor-Standing Printing Devices		117	Direct Ship	0%	-	-	-	-	-
				Approved Collection	50%	58	4	9	34	11
				Steward Self-Management	50%	58	4	9	34	11
	Floor-Standing Copying and Multi-Function Devices		234	Direct Ship	0%	-	-	-	-	-
				Approved Collection	25%	58	4	9	34	11
				Steward Self-Management	75%	175	13	26	102	34
Telephones and Telephone Answering Machines			1,052	Direct Ship	0%	-	-	-	-	-
				Approved Collection	100%	1,052	77	157	614	205
				Steward Self-Management	0%	-	-	-	-	-
Cellular Devices and Pagers			167	Direct Ship	0%	-	-	-	-	-
				Approved Collection	100%	167	12	25	98	33
				Steward Self-Management	0%	-	-	-	-	-
Image, Audio and Video Devices	Personal/ Portable		428	Direct Ship	0%	-	-	-	-	-
				Approved Collection	100%	428	31	64	249	83
				Steward Self-Management	0%	-	-	-	-	-
	Home/Non-Portable		2,762	Direct Ship	0%	-	-	-	-	-
				Approved Collection	100%	2,762	202	412	1,611	537
				Steward Self-Management	0%	-	-	-	-	-
	Home Theatre in a Box (HTB)		1,362	Direct Ship	0%	-	-	-	-	-
				Approved Collection	100%	1,362	100	203	794	265
				Steward Self-Management	0%	-	-	-	-	-
	Aftermarket Vehicle		238	Direct Ship	0%	-	-	-	-	-
				Approved Collection	100%	238	17	35	139	46
				Steward Self-Management	0%	-	-	-	-	-
Total Projected Material Quantities						**39,551**	**2,897**	**5,901**	**23,060**	**7,694**

9.1.4 Transportation and Consolidation Costs

Material will be transported from collection points to regional consolidation centres, and from consolidation centres to EOL primary processors. OES currently has 16 approved regional consolidation centres: 3 in the West Region; 4 in the East Region; 5 in the Central Region; and 4 in the Northern Region.

OES has assumed that the four WEEE management groups will be shipped from collection locations in mixed, often relatively small loads (for example, 1 pallet with peripherals/printers/Phase 2 WEEE, 2 pallets containing display devices, 3 pallets of computers, and 1 pallet with a floor-standing printer), before being assembled into full truckloads at the consolidation centres. For the purposes of estimating the costs of the first year of the Program it is assumed that full truckloads of material will be transported from these consolidation centres to EOL primary processing facilities. In future years of the Program, fee-setting will reflect actual (and not estimated) transportation and consolidation costs.

Year 1 transportation costs for each WEEE material category is comprised of two parts[33]: first, the cost for the smaller, mixed load between the collection point and consolidation centre; and second, the cost for the full truckload between the consolidation centre and an EOL primary processing facility. This methodology provides a relatively conservative estimate of transportation costs.

Please note that OES has assumed 10% of IT WEEE materials will flow through the Direct Ship channel, for which OES will reimburse transportation and processing costs incurred by the generation site. Tonnages of WEEE managed via the Direct Ship channel will be included in the total weight of WEEE allocated to OES-Approved primary processors, as outlined in Section 4.8.5.

Transportation costs have been determined by estimating the number of truckloads from each collection point and consolidation centre, and assumptions on both the standard pallet weight and the number of pallets per truckload for each WEEE material category. Transportation rates within different geographic regions were determined based upon the range of rate proposals received from 22 interested transportation companies in response to OES' Transportation RFP, issued on March 27, 2009. The estimated transportation costs can be found in Table 9.1.

9.1.5 Processing Costs

For the purposes of Year 1 budget planning and fee-setting, OES estimated the cost to process the four WEEE management groups. Processing cost estimates were based on data obtained from 10 interested processors through the RFP process for Phase 1 WEEE processing. A cost per tonne has been assumed for processing distinct types of WEEE categories for the purpose of estimating the Year 1 Program cost and setting Year 1 fees, as follows:

- $750/ tonne to process computers;
- $1,000/ tonne to process display devices;

[33] The exception is for Group 2 (display devices), in which a 5% contingency has also been added to the transportation costs. This contingency provides for the increased handling and transportation costs of any broken displays. Should display devices break during collection, sorting, or preparation for transport, they may be considered dangerous goods and will require special management in accordance with the *Transportation of Dangerous Goods Act*.

- $850/ tonne to process other combined WEEE items such as printers, peripherals, and all of the Phase 2 designated products, with the exception of floor standing printers and copiers;
- $1,000/ tonne to process floor standing printing, copying and multi-function devices.

The total estimated processing costs can be found in Table 9.3. While the cost assumptions for collection, consolidation, transportation and processing are all conservative, and the number of tonnes handled reflects the best available data, a 10% contingency has been applied across the total material management portion of the Program cost. This contingency is to strengthen the financial underpinnings of the Program in Year 1 in the event that the quantity of WEEE collected exceeds Plan projections.

Please note that OES has assumed 10% of IT WEEE materials will flow through the Direct Ship channel, for which OES will reimburse transportation and processing costs incurred by the generation site. Tonnages of WEEE managed via the Direct Ship channel will be included in the total weight of WEEE allocated to OES-Approved primary processors, as outlined in Section 4.8.5.

These processing costs *are estimates only for the purposes of budget planning and fee-setting*. OES will receive processing quotations through the RFP and WEEE allocation process described in Section 4.8.5 and will be required to pay the actual processing costs resulting from this process.

9.2 Year 1 WEEE Program and Administration Costs

The estimated costs for OES to manage Phase 1 and 2 WEEE collected under the Program are combined with estimates for all other elements of the Program, to develop the total estimated Revised Program cost for Year 1, as detailed in Table 9.3.

The Program budget for Year 1 is based upon the best available data and estimates derived from the consultation process. Costs will be refined during each year of the Program to ensure that the sum of Stewards' annual fees matches the total Program financial requirements in each year. These budget projections will be reviewed by OES on an annual basis, prior to setting Steward Fees.

Table 9.3: WEEE EOL Management – Year 1 Cost Estimates

Material Category			Material Channel	Collection ($)	Consolidation ($)	Processing ($)	Transportation ($)	Contingency ($)	Total Management Cost ($)
Display Devices	≤29" Screen	Computer Monitors	Direct Ship	-	-	$521,860	$113,296	$63,516	$698,671
			Approved Collection	$1,538,651	$187,869	$4,696,736	$1,019,663	$744,292	$8,187,211
			Steward Self-Management	-	-	-	-	-	-
		Displays <18"	Direct Ship	-	-	-	-	-	-
			Approved Collection	$268,076	$32,732	$818,302	$177,654	$129,676	$1,426,440
			Steward Self-Management	-	-	-	-	-	-
	>29" Screen	Displays 18"-29"	Direct Ship	-	-	-	-	-	-
			Approved Collection	$3,349,400	$408,962	$10,224,055	$2,219,646	$1,620,206	$17,822,269
			Steward Self-Management	-	-	-	-	-	-
		Displays >29"-45"	Direct Ship	-	-	-	-	-	-
			Approved Collection	$1,330,090	$162,404	$4,060,103	$881,450	$643,405	$7,077,451
			Steward Self-Management	-	-	-	-	-	-
		Displays >45"	Direct Ship	-	-	-	-	-	-
			Approved Collection	$605,656	$73,951	$1,848,766	$401,368	$292,974	$3,222,714
			Steward Self-Management	-	-	-	-	-	-
Desktop Computers			Direct Ship	-	-	$356,501	$98,281	$45,478	$500,261
			Approved Collection	$1,401,478	$171,121	$3,208,513	$884,532	$566,564	$6,232,208
			Steward Self-Management	-	-	-	-	-	-
Portable Computers			Direct Ship	-	-	$64,045	$17,656	$8,170	$89,872
			Approved Collection	$251,776	$30,742	$576,409	$158,906	$101,783	$1,119,617
			Steward Self-Management	-	-	-	-	-	-
Computer Peripherals			Direct Ship	-	-	$48,644	$11,833	$6,048	$66,525
			Approved Collection	$168,733	$20,602	$437,800	$106,495	$73,363	$806,993
			Steward Self-Management	-	-	-	-	-	-
Printing, Copying and Multi-Function Devices	Desktop Printing, Copying and Multi-Function Devices		Direct Ship	-	-	$411,570	$100,114	$51,168	$562,852
			Approved Collection	$1,427,614	$174,312	$3,704,126	$901,027	$620,708	$6,827,786
			Steward Self-Management	-	-	-	-	-	-
	Floor-Standing Printing Devices		Direct Ship	-	-	-	-	-	-
			Approved Collection	$19,158	$2,339	$58,479	$12,091	$9,207	$101,274
			Steward Self-Management	-	-	-	-	-	-
	Floor-Standing Copying and Multi-Function Devices		Direct Ship	-	-	-	-	-	-
			Approved Collection	$19,158	$2,339	$58,479	$12,091	$9,207	$101,274
			Steward Self-Management	-	-	-	-	-	-
Telephones and Telephone Answering Machines			Direct Ship	-	-	-	-	-	-
			Approved Collection	$344,745	$42,093	$894,484	$217,583	$149,891	$1,648,796
			Steward Self-Management	-	-	-	-	-	-
Cellular Devices and Pagers			Direct Ship	-	-	-	-	-	-
			Approved Collection	$54,827	$6,694	$142,256	$34,604	$23,838	$262,220
			Steward Self-Management	-	-	-	-	-	-
Image, Audio and Video Devices	Personal/ Portable		Direct Ship	-	-	-	-	-	-
			Approved Collection	$140,075	$17,103	$363,443	$88,407	$60,903	$669,932
			Steward Self-Management	-	-	-	-	-	-
	Home/Non-Portable		Direct Ship	-	-	-	-	-	-
			Approved Collection	$904,942	$110,494	$2,347,988	$571,147	$393,457	$4,328,027
			Steward Self-Management	-	-	-	-	-	-
	Home Theatre in a Box (HTB)		Direct Ship	-	-	-	-	-	-
			Approved Collection	$446,143	$54,474	$1,157,575	$281,580	$193,977	$2,133,748
			Steward Self-Management	-	-	-	-	-	-
	Aftermarket Vehicle		Direct Ship	-	-	-	-	-	-
			Approved Collection	$77,854	$9,506	$202,002	$49,137	$33,850	$372,349
			Steward Self-Management	-	-	-	-	-	-
Total Preliminary Year 1 Cost Estimates				**$12,348,374**	**$1,507,738**	**$36,202,135**	**$8,358,562**	**$5,841,681**	**$64,258,490**

9.2.1 Year 1 Administration and Program Delivery Costs

Table 9.4 presents the summary of Year 1 administration and Program delivery costs, which amount to a total of $5,145,300. These costs include:

a) Plan development and start-up costs
b) Program administration costs
c) Program delivery costs

Note that these costs include credits to Stewards of Phase 1 materials for any costs incurred as a part of the Phase 1 planning process that have benefitted Stewards of Phase 2 materials, as outlined in Section 8.4.

a) Plan Development and Start-Up Costs

Plan development and start-up costs incurred by WDO will be billed to OES within ninety days of Program commencement. Other Plan development and start-up costs incurred by OES include technical consultants, legal services, consultation expenses and other plan development costs. OES will also be incurring additional start-up costs prior to commencement, including processor audits and development of the data tracking system. The Plan development and start-up costs are estimated to be $1,275,300, and will be repaid over the first year of the Program.

b) Administration Costs

Program administration costs have been developed based on a review of activities relating to the implementation and management of similar programs, in addition to consideration of activities and costs that are unique to the Ontario WEEE Program. As presented in Table 9.4, total administration costs are estimated to be $1,000,000.

c) Program Delivery Costs

Program delivery costs include OES program delivery, as well as on-going charges attributable to the WEEE Program from WDO and for the Ministry of Environment activities to ensure Steward compliance. These are $570,000 and $50,000 respectively. Program delivery costs not including common promotion and education and research and development activities are estimated to be $2,870,000 for Year 1.

Table 9.4: Estimated Year 1 Program Administration and Delivery Costs

Description	Estimated Year 1 Cost
Program Plan Development and Start-Up	
Phase 2 Plan Development	$225,300
WDO plan development and start-up	$100,000
OES legal and other plan development	$100,000
Processor audits	$200,000
Reuse and refurbisher audits	$100,000
Data tracking system	$150,000
Revised Program Plan Start-up	$400,000
Sub-Total	**$1,275,300**
Administration	
OES Corporate	$800,000
Strategic Management	$200,000
Sub-Total	**$1,000,000**
Program Delivery	
Program Management	$2,100,000
Audits and verification	$150,000
MOE Compliance	$50,000
WDO Program Delivery and Administration	$570,000
Sub-Total	**$2,870,000**
Total Program Administration and Delivery	**$5,145,300**

9.2.2 Year 1 Promotion & Education Costs

Table 9.5 presents the estimated expenditures on common corporate communications and P&E in Year 1.

Finalization of P&E costs will depend on the recommendations developed in the Year 1 Strategic Communication Plan. This communications plan will be developed in the Pre-Commencement Stage and will use qualitative and quantitative benchmark research, as well as the on-going results of increased accessibility and special events. Program management costs for P&E activities are captured under the overall OES corporate and program management budget. The P&E budget for subsequent years will be refined annually based on achievement of Program performance metrics.

Table 9.5: Estimated Year 1 Cost for Promotion & Education Activities

Cost Centre	Estimated Year 1 Cost
Corporate Communications	
Staff (mix of full time and shared)	$330,000
Stewards and Stakeholder Communication	$275,000
Sub-Total	**$605,000**
P&E Strategic Communication Support	
Consumer Research (qualitative and tracking quantitative)	$165,000
Creative Agency Fees	$220,000
Creative Production Costs	$187,000
New Photography for new materials	$33,000
Point of Purchase: brochure and collaterals	$220,000
Paid Promotion Campaign	$1,375,000
Earned Media/Public Relations	$110,000
Launch staging and collaterals	$38,500
Website: hosting, updating new materials	$55,000
Round-Up events - local P&E support	$880,000
Sub-Total	**$3,283,500**
Total P&E and Communications	**$3,888,500**

9.2.3 Year 1 Common and Material-Specific R&D Costs

a) Common R&D Costs

A Year 1 common R&D budget totalling $600,000 has been included for key prioritized projects that are common to all categories of obligated EEE products. These projects include:

- Further refinement of the activity-based costing methodologies at collection sites to include changes resulting from the new Phase 2 products.
- Further research into adopting a reusable container and pallet system to improve the efficiency and effectiveness of collection, transportation, and consolidation. The timing of the Revised Program Plan has led to a decision to carry this item forward as part of the R&D program under the Revised Program Plan.
- Assessment of options for improved plastics recycling.
- A regular sampling protocol to assess the weight of EEE supplied into Ontario, and WEEE collected under the Program, to determine changes to unit-weight over time. This data will be used to update the WEEE Discard Model (as described in Section 3.2)
- Audits of collected WEEE to determine lifespan for Phase 1 and 2 WEEE, and to assess reuse potential.
- Conduct a “designing for environment” study to assess opportunities to encourage reduction.
- Conduct an investigation into reuse and recycling options for components of WEEE.

Common R&D costs are included in Table 9.6.

b) Material-Specific R&D Costs

In addition to the common R&D activities, R&D expenditures will be undertaken in Year 1 to address specific WEEE categories, as summarized in Table 9.6. For Year 1, total material-specific R&D fees amount to $550,000. The three projects identified for Year 1 are as follows:

- A pilot project to assess options for collecting display devices such as large televisions such as rear-projection or old television consoles. OES will select communities in Ontario and will test various incentives to increase the collection of televisions from residents.
- Conduct study of international activities on CRT glass recycling options for leaded glass and applicability for Ontario.
- Conduct assessment of opportunities for the diversion of wood from old televisions and audio equipment.
- Conduct sample pallet audits for display devices to assess detailed composition information on display devices collected under the Program.

The R&D budget for subsequent years will be refined annually based on the achievement of accessibility, collection and diversion targets, as well as the achievement of cost-efficiencies within the Program.

Table 9.6: Estimated Year 1 Common and Material-Specific Costs for R&D

Common and Material-Specific R&D Costs			Estimated Year 1 Cost
Material-Specific R&D Costs - by Material Category			
Display Devices	≤29" Screen	Computer Monitors	$84,200
		Displays <18"	$13,700
	>29" Screen	Displays 18"-29"	$171,400
		Displays >29"-45"	$166,400
		Displays >45"	$75,800
Image, Audio and Video Devices	Home/Non-Portable		$25,800
	Home Theatre in a Box (HTB)		$12,700
		Sub-Total	**$550,000**
Common R&D Costs			
		Sub-Total	**$600,000**
Total Common and Material-Specific R&D Costs			**$1,150,000**

9.2.4 Year 1 WEEE Management Costs

The Year 1 cost estimates are based on the best information available during Program development. Costs will be incurred during the first year of the Program as actual data becomes available and Program performance results are known.

As noted earlier, while the cost assumptions for collection, consolidation, transportation and processing are considered to be conservative, a 10% contingency has been applied across the total material management portion of the Program cost. This contingency will be used in the event that actual supplied into Ontario are less than estimates, the quantity of WEEE collected exceed estimates, and/or there are significant spikes in key program operating costs (such as energy costs). OES will explore the option of assessing different contingency rates for different materials.

Table 9.7 summarizes the estimated Year 1 costs for management of Phase 1 and 2 WEEE from the point of collection, through to end-of-life management by primary and/or downstream processors.

Table 9.7: Estimated Year 1 Cost to Manage Phase 1 and 2 WEEE Materials

Material Category			Estimated Year 1 Cost
Display Devices	≤ 29" Screen	Computer Monitors	$8,885,900
		Displays <18"	$1,426,400
	> 29" Screen	Displays 18"-29"	$17,822,300
		Displays >29"-45"	$7,077,500
		Displays >45"	$3,222,700
Desktop Computers			$6,732,500
Portable Computers			$1,209,500
Computer Peripherals			$873,500
Printing, Copying and Multi-Function Devices	Desktop Printing, Copying and Multi-Function Devices		$7,390,600
	Floor-Standing Printing Devices		$101,300
	Floor-Standing Copying and Multi-Function Devices		$101,300
Telephones and Telephone Answering Machines			$1,648,800
Cellular Devices and Pagers			$262,200
Image, Audio and Video Devices	Personal/Portable		$669,900
	Home/Non-Portable		$4,328,000
	Home Theatre in a Box (HTB)		$2,133,700
	Aftermarket Vehicle		$372,300
Total Estimated WEEE Management Costs			**$64,258,400**

Projected Program start-up, administration and program delivery budget (Program common costs) and WEEE management costs for Year 1 of the Revised Program Plan are presented in Table 9.8.

Table 9.8: Estimated Year 1 Program Costs

Description	Year 1 Cost Revised Phase 1 and 2 Plan
Program Plan Development and Start-Up	
Phase 2 Plan Development	$225,300
WDO plan development and start-up	$100,000
OES legal and other plan development	$100,000
Processor audits	$200,000
Reuse and refurbisher audits	$100,000
Data tracking system	$150,000
Revised Program Plan Start-up	$400,000
Sub-Total	$1,275,300
Administration	
OES Corporate	$800,000
Strategic Management	$200,000
Sub-Total	$1,000,000
Program Delivery	
Program Management	$2,100,000
Audits and verification	$150,000
MOE Compliance	$50,000
WDO Program Delivery and Administration	$570,000
Sub-Total	$2,870,000
Promotion and Education (P&E)	$3,888,500
Research and Development (R&D)	$1,150,000
WEEE Management Costs	$64,258,400
Total Program Cost	**$74,442,200**

9.3 Year 1 EEE Fee Rates

For each category of EEE, fee rates were calculated based on the number of units of EEE Supplied for Use in Ontario (Please refer to Section 3.1). These fee rates are included in the Program Rules and will be the basis of Steward's Reports and payments in Year 1.

Table 9.9 outlines the basis for determining per unit Fees. These fees are based on the assumption that the majority of WEEE is managed through the OES-Approved collection and management system. Total costs were applied to each unit of Phase 1 and 2 EEE to determine per unit costs, as demonstrated in Table 9.10 below.

The Program Compliance Fee will vary by Steward depending on the number of Stewards in the program, and the quantity of WEEE that flows through Steward self-managed channels. OES anticipates that the Program Compliance Fee will range between $4,000 and $7,000 per Steward, for those Stewards who are approved for the Steward self-management option.

Table 9.9: Detailed Year 1 EEE Costs

Revised Phase 1 and 2 WEEE Material Categories			Material-Specific Direct Costs				Common Costs				Total Costs	
			Material Management ($000s)	Material-Specific R&D ($000s)	Total Material-Specific ($000s)	Relative Direct Cost (%)	Program Costs ($000s)	P & E ($000s)	R & D ($000s)	Total Common ($000s)	Total ($000s)	Relative Costs (%)
Display Devices	≤29" Screen	Computer Monitors	$8,886	$85	$8,971	13.8%	$161	$364	$47	$573	$9,544	12.8%
		Displays <18"	$1,426	$14	$1,440	2.2%	$158	$113	$18	$289	$1,729	2.3%
	>29" Screen	Displays 18"-29"	$17,822	$171	$17,993	27.8%	$1,625	$1,056	$170	$2,851	$20,844	28.0%
		Displays >29"-45"	$7,077	$166	$7,244	11.2%	$520	$404	$62	$986	$8,229	11.1%
		Displays >45"	$3,223	$76	$3,298	5.1%	$208	$189	$28	$425	$3,723	5.0%
Desktop Computers			$6,732	$0	$6,732	10.4%	$223	$305	$42	$570	$7,303	9.8%
Portable Computers			$1,209	$0	$1,209	1.9%	$86	$85	$12	$183	$1,393	1.9%
Computer Peripherals			$874	$0	$874	1.3%	$39	$62	$8	$109	$982	1.3%
Printing, Copying and Multi-Function Devices	Desktop Printing, Copying and Multi-Function Devices		$7,391	$0	$7,391	11.4%	$545	$411	$64	$1,021	$8,411	11.3%
	Floor-Standing Printing Devices		$101	$0	$101	0.2%	$79	$46	$8	$133	$234	0.3%
	Floor-Standing Copying and Multi-Function Devices		$101	$0	$101	0.2%	$79	$46	$8	$133	$234	0.3%
Telephones and Telephone Answering Machines			$1,649	$0	$1,649	2.5%	$245	$139	$23	$407	$2,055	2.8%
Cellular Devices and Pagers			$262	$0	$262	0.4%	$96	$56	$9	$161	$424	0.6%
Image, Audio and Video Devices	Personal/ Portable		$670	$0	$670	1.0%	$140	$80	$13	$234	$903	1.2%
	Home/Non-Portable		$4,328	$26	$4,354	6.7%	$534	$301	$50	$885	$5,239	7.0%
	Home Theatre in a Box (HTB)		$2,134	$13	$2,146	3.3%	$298	$169	$28	$495	$2,641	3.5%
	Aftermarket Vehicle		$372	$0	$372	0.6%	$108	$62	$10	$181	$553	0.7%
Total Year 1 Total Program Costs			**$64,258**	**$550**	**$64,808**	**100.0%**	**$5,145**	**$3,889**	**$600**	**$9,634**	**$74,442**	**100.0%**

Note: Columns may not add due to rounding. These fees are based on the assumption that the majority of WEEE will be collected through OES-Approved collection sites and managed under the OES management system. These fees are subject to change.

Table 9.10: Summary of Revised Per Unit Fees ($/unit)

Revised Phase 1 and 2 WEEE Material Categories		Fee Rate	
		Units Supplied (000s)	($/unit)
Display Devices	≤ 29" Screen	1,180	$9.55
	> 29" Screen	1,321	$24.83
Desktop Computers		1,374	$5.32
Portable Computers		1,536	$0.91
Computer Peripherals		1,872	$0.52
Printing, Copying and Multi-Function Devices	Desktop Printing, Copying and Multi-Function Devices	3,518	$2.39
	Floor-Standing Printing Devices	8	$29.00
	Floor-Standing Copying and Multi-Function Devices	8	$28.13
Telephones and Telephone Answering Machines		4,383	$0.47
Cellular Devices and Pagers		4,764	$0.09
Image, Audio and Video Devices	Personal/ Portable	2,410	$0.37
	Home/Non-Portable	2,893	$1.81
	Home Theatre in a Box (HTB)	319	$8.28
	Aftermarket Vehicle	286	$1.94
Total		**25,871**	

Note: These fees are subject to change.

9.4 Economic Implications of Revised WEEE Program

During the development of the Revised Program Plan, OES engaged in extensive consultation with stakeholders, in part to ensure that the Revised Program Plan affects the market fairly while meeting Program objectives[34]. The key market actors that may be affected by this Program include:

- Collection service providers including municipalities
- Reuse and refurbishment organizations
- Transport service providers
- Consolidation service providers
- Processing service providers
- Stewards
- Consumers
- Other service sectors (i.e. R&D)

The Revised Plan will achieve increasing accessibility, collection, reuse and recycling rates of WEEE and raise the environmental, health, and safety standards for the management of these materials while impacting the market actors in a fair manner. This section provides an assessment of these economic impacts.

[34] OES consultation activities and responses are documented in the *OES Report on Consultation to Support the Development of the Revised WEEE Program Plan* that accompanies this Plan.

9.4.1 General Program Approach and Broader Economic Implications

The WEEE Program Plan is designed to:

- Build on and improve the performance and environmental management practices of the existing WEEE management infrastructure in Ontario;
- Ensure that Ontarians will have convenient opportunities at accessible locations to return WEEE;
- Significantly increase the quantities of WEEE collected for reuse, refurbishment and recycling;
- Reduce environmental impacts of WEEE by diverting from disposal to diversion and by managing diversion to minimize environmental impacts;
- Make clear that participation in the WEEE Program Plan is voluntary and incentive driven and focused on the management of Phase 1 and Phase 2 WEEE generated in Ontario;
- Meet the requirements put on the Program by the Waste Diversion Act and the Minister's Program Request Letter.

Overall the Revised WEEE Program Plan is expected to:

- Create new opportunities for existing economic actors to expand their current operations with reduced economic risk;
- Promote new entrants into the market to promote healthy competition;
- Contract service provision through transparent and fair competitive bidding processes;
- Incent continuous improvement in the services provided under the Program;
- Shift the costs of managing WEEE to the designated Stewards of these materials;
- Provide incentives to Stewards to reduce the costs of WEEE management;
- Operate the Program in the most cost effective manner;
- Operate the Program in a transparent manner.

As summarized in Table 9.11, the Year 1 Revised Program Plan represents a potential total expenditure of almost $75 million. In addition, there are positive economic impacts that can be anticipated (but not yet quantified) from direct investments by service providers. Investments and expenditures of this magnitude will benefit community based organizations, economic enterprises and municipalities.

Table 9.11: Expenditures by WEEE Program Plan Element

Program Plan Element	Estimated Year 1 Expenditure
Collection	$12,348,400
Transportation	$8,358,600
Consolidation	$1,507,700
Processing	$36,202,100
Contingency	$5,841,700
Promotion and Education	$3,888,500
Research and Development	$1,150,000
Planning, Administration and Program Delivery	$5,145,300
Total	**$74,442,300**

Please note that OES has used the best available information on which to estimate Year 1 costs for budget planning and fee-setting. Once the Program is approved and implemented, OES will have the responsibility to operate the Program and pay the costs for services that are determined through competitive RFPs for transportation, consolidation and EOL WEEE processing services.

9.4.2 Economic Implications for Collection Service Providers

Collectors under the WEEE Program Plan may include municipalities, Stewards, retailers, reuse and refurbishing companies, EOL processors, not-for-profit organizations, recycling and waste service companies, and other entities. Participation in a collection capacity is voluntary, however participating collectors must register with OES, and meet the OES requirements that have been outlined in Section 4.0.

Under the Program, all collectors that operate in accordance with the OES collection requirements will receive:

- $165 per tonne collection incentive for each tonne of Phase 1 and 2 WEEE that is collected, sorted, and prepared for transport according to OES requirements;
- Free promotion of its WEEE collection services through an online interactive web-site;
- Free transportation of collected WEEE;
- Free equipment support (pallets, reusable containers).

It is anticipated that the positive economic impacts of this approach will include, but are not limited to:

- Potential new revenue source for collectors, helping to cover costs and potentially create a profit;
- The creation of fundraising opportunities for community-based organizations;
- New employment opportunities as collection volumes grow;
- Potential for new investment in collection operations resulting from increased supply of WEEE.

The basis for $165 per tonne collection incentive is outlined in Section 4.3.2. However, to repeat, these rates include the following assumptions:

- Allocation of space for pallets based on market lease rate of $5.82 for a square-foot;
- Labour costs of 1.5 hours for assembling pallet at hourly rate of $20;
- Overhead costs such as utilities, maintenance and insurance at 50% of the lease rate;
- Amortized capital costs;
- Miscellaneous material costs;
- Contingency of 10%; and
- Average pallet and bulk bag weight of 300 kg.

It is calculated that the Revised WEEE Program Plan will result in economic activity of almost $12 million to collection service providers in Year 1 alone.

OES will undertake activity-based-costing studies during Year 1 in order to determine more reliable collection cost information, and to refine the collection incentive calculation methodology for future years of the Program.

9.4.3 Economic Implications for Reuse and Refurbishment Organizations

OES will also provide free promotion and marketing support for reuse and refurbishment organizations, in addition to providing an online database of OES-approved reuse organizations for generators to consult when considering EOL options.

OES intends to further encourage reuse activities by permitting and encouraging reuse and refurbishment organizations to salvage parts and components with reuse and/or scrap value to generate revenue. OES expects that providing this incentive will encourage reuse and refurbishment organizations to participate in the WEEE Program, and to maximize their income return through the reclamation of material from WEEE that is unsuitable for reuse.

OES will also encourage organizations to further salvage any other valuable materials from the WEEE by permitting sale of these items to an OES-Approved Processor, in some cases creating a new source of income, and in other cases permitting organizations to carry on existing business practices without OES intervention. Similar to the sale of salvaged parts and components, OES anticipates that this incentive will encourage reuse and refurbishment organizations to reclaim more of the valuable materials from the WEEE as an additional source of income.

For WEEE that is not suitable for reuse, reuse and refurbishment organizations will receive the $165 per tonne collection incentive, provided that WEEE is prepared for transport according to the OES requirements outlined in Section 4.5.6.

In addition, OES will cover the costs and logistics of EOL processing for all non-reusable WEEE materials from registered reuse and refurbishment organizations under the Program. EOL processing costs have been identified by these organizations to be significant and, in some cases, have proven to be a barrier to environmentally-sound recycling. OES will cover these costs, and provide WEEE logistics support to pick-up all WEEE residual from their operations. This represents a cost saving to current operations, in addition to providing relief from the administrative costs related to securing appropriate WEEE processing services.

All reuse and refurbishing operations are treated equally whether they are for-profit or not-for-profit operations. For those operations that have been charging for reuse activities, these incentives should allow them to reduce (or in many cases eliminate) the requirement to charge a fee to WEEE generators.

Table 9.12 summarizes and compares the economic implications of the OES program for reuse and refurbishment organizations that choose to participate in the OES WEEE Program.

During the consultation process, some reuse and refurbishment organizations stated that the incentives being offered would not be sufficient to offset the revenues received from charging generators for the reuse services they now provide. OES will review the financial incentives on an annual basis to ensure that these incentives are adequate to meet Program objectives and for the purposes of setting Steward fees.

Table 9.12: Summary of Economic Implications for Reuse and Refurbishment Organizations

Key Considerations	Prior to WEEE Program Plan	Under Revised (Phase 1 and 2) WEEE Program Plan
Promotion/ Advertising	• Directly finance activities themselves	• Will be part of provincially branded program including searchable website that will direct new business and volumes to OES-Approved reuse and refurbishment organizations
Incoming feedstock	• Feedstock of WEEE varies depending on business model • Quality and reuse value is dependent on source of material (e.g. IC&I versus residential) • Minimum specifications wanted by processors. Some charge fees to receive older equipment for dismantling • Current minimum less than 5 year old working monitors and computers with Pentium III, 650 MHZ, 128 RAM and 6 GB hard drive[35]	• Estimated 10% to 30% increase in potential volumes as a result of OES promotion on searchable OES website and press releases • Types and quantities of WEEE materials that can be targeted is broader than the Phase 1 Plan (Phase 1 and Phase 2 WEEE)
Resale/ donation of whole units or parts	• Currently happening to maximize revenue • Some organizations charge fees for services they provide, which limits sources of materials and increases competition	• Current practices and resale/donation activities encouraged under the program • Organization is free to determine appropriate charge for services provided as it does now • Volumes of all materials handled likely to increase resulting in more units for sale or donation • R&D component of the program to audit collected materials to identify and quantify potentially reusable items
Revenue generation from disassembling WEEE	• Current business practice to maximize revenue from sale of metals (e.g. steel, aluminum, copper), circuit boards and drives removed from non-reusable equipment	• Current practice is encouraged • R&D component of the program to identify additional opportunities for recycling, especially for plastics • Only requirement is to use OES-Approved Processors so that OES can track activity as per program requirements
Disposal costs from disassembled WEEE	• Current business practice is to be selective in sourcing WEEE to minimize handling and disposal of non-revenue generating WEEE such as CRT panels, broken equipment, plastics etc. in order to avoid processing or disposal costs	• Non-revenue generating WEEE can be placed into bulk bag/Gaylords provided by OES and will be transported and processed at OES cost • Savings are anywhere from $150 (assuming landfill disposal) to $1,000 per tonne (EOL processing cost)
Collection incentive option	• Not applicable	• Organization has choice to either dissemble to maximize revenue and/or to collect and package to OES standards for collectors and receive $165 • OES assistance provided with storage and transportation (pallets, wrap, handling) and free transport to processor
Logistics and administration	• Need to coordinate and/or contract to transport outbound material to processors and downstream markets • Incur administration cost of locating, negotiating and due diligence on processors, downstream markets and contractors	• Relieves organization of responsibility and costs associated with transportation to processors and EOL processing • Relieves organization of responsibility for coordinating with processors and related due-diligence administration
Operating flexibility	• Organizations are free to make decisions that best suit their operations	• Full operational flexibility maintained plus new opportunities created for revenue, increased throughput of material and relief from current operating costs.

[35] http://www.rcto.ca/Donors/EquipDonations.aspx

9.4.4 Economic Implications for Transport Service Providers

OES will maximize the use of existing Ontario transportation infrastructure to provide transportation services under the Program. The provision of transportation services for the WEEE Program will be contracted via a competitive tendering process that is open to all qualified transport service providers.

In December 2007 OES surveyed 40 transport companies to determine approximate costs for a variety of shipping corridors and destinations. Table 9.13 outlines the average transportation costs, by region and load, which were calculated using the survey response data. These costs can also be referenced in Table 9.3.

Table 9.13: Average Transportation Expenditures

Region	Truckload (TL)[1]	Less-Than-Load (LTL)[1]
North	$1,200	$300
East	$960	$240
Central	$600	$150
West	$840	$210

1) Based upon survey data from 40 Ontario transportation companies.

As indicated in Table 9.3, it is calculated that the WEEE Program Plan will result in economic activity of approximately $8.4 million to transport service providers in Year 1 alone.

Please note that OES has used the best available information on which to estimate Year 1 costs for budget planning and fee-setting. Once the Program is approved and implemented, OES will have the responsibility to operate the Program and pay the costs for services that are determined through competitive RFPs for transportation services listed in Section 4.7.

9.4.5 Economic Implications for Consolidation Centres

The provision of consolidation services for the Revised WEEE Program will be contracted via a competitive tendering process that is open to consolidation service providers across Ontario. No additional infrastructure is expected to be required to manage Phase 1 and Phase 2 WEEE.

During development of the Phase 1 Program Plan OES surveyed Ontario consolidation service providers, and referenced the results against the experience of the Electronics Stewardship Association of British Columbia (ESABC) to determine the approximate costs associated with the consolidation of collected WEEE materials under the WEEE Program Plan.

As indicated in Table 9.3, OES is projected to secure regional consolidation centres capacity at expenditures of approximately $1.6 million in Year 1.

Please note that OES has used the best available information on which to estimate Year 1 costs for budget planning and fee-setting. Once the Program is approved and implemented, OES will have the responsibility to operate the Program and pay the costs for services that are determined through competitive RFPs for consolidation services listed in Section 4.7.

9.4.6 Economic Implications for Processing Service Providers

Benefits that the Program will provide to processors include:

- OES support to educate and assist processors in meeting OES Electronics Recycling Standards;
- Free independent audit of their operations;
- Continuous opportunities to bid on collected WEEE volumes;
- Free transportation of allocated WEEE to their operations;
- Payments based on WEEE tonnage received and processed.

Processors that do no comply with the Electronics Recycling Standard or that have not been selected by OES to receive tonnage due to their lower recycling rate may continue to receive and process Phase 1 and 2 WEEE not managed under the Program and non-Phase 1 and 2 WEEE from within Ontario and WEEE from outside of Ontario.

As indicated in Table 9.3, and based on data provided to OES as part of the first allocation of WEEE, OES is projected to make expenditures of approximately $36.2 million for WEEE processing in Year 1.

Please note that OES has used the best available information on which to estimate Year 1 costs for budget planning and fee-setting. Once the Program is approved and implemented, OES will have the responsibility to operate the Program and pay the costs for services that are determined through competitive RFPs for EOL WEEE processing services listed in Section 4.8.

9.4.7 Economic Implications for Stewards

The methodologies for projecting and allocating OES Program costs have been reviewed in detail and the basis for these calculations have been widely disseminated to Stewards through the consultation process.

The best available data has been used to establish Year 1 fees under the Program. Program costs and fees will be reviewed on an annual basis and will be adjusted as required to reflect the actual costs incurred under the Program.

It is the view of OES that the fee-setting methodology assesses Steward Fees fairly and equitably for all obligated Stewards. Stewards will report on a monthly basis, and will be assessed per unit fees for each unit that they supplied into Ontario for each reporting period.

9.4.8 Economic Implications for WEEE Generators

Under the Revised Program Plan, individual and IC&I generators of WEEE will be provided with significantly greater access to opportunities for the reuse, refurbishment or recycling of WEEE.

Today, the costs of managing WEEE are borne by the generator, either indirectly, through the property tax base, or directly, through waste management service charges. Under the WEEE Program, the costs associated with the management of WEEE will be allocated to the Stewards of these products.

The method by which these costs might then be incorporated into a Stewards operation will vary by Steward. The actual economic impact on the consumer at the time of EEE purchase is unknown at this time.

Table 9.14: Examples of Product Specific Cost Impacts

Category	Product Example	Fee Rate (Per Unit)	Example Consumer Product Price 2009*
Display Devices ≤ 29"	Televisions; monitors; etc.	$9.55/ unit	$180 - $500
Display Devices >29"	Televisions; monitors; etc.	$24.83/ unit	$450 - $3,000
Desktop Computers	Desktop computer; desktop computer acting as a server.	$5.32/ unit	$400 - $2,800
Portable Computers	Laptop; Notebook; Tablet PC	$0.91/ unit	$300 - $2,500
Computer Peripherals	Keyboard; Mouse; External Hard drive; etc.	$0.52/ unit	$20 - $180
Desktop and Portable Printing, Copying and Multi-Function Device	Laser jet personal desktop printer.	$2.39/ unit	$30 - $500
Floor-Standing Printing Device	Floor-standing office printer.	$29.00/ unit	$800 – $10,000
Floor-Standing Copying/ Multifunction Device	Floor-standing copier/printer/scanner in-one.	$28.13/ unit	$1,000 - $15,000
Telephone and Answering Machines	Landline telephone; portable phone with charging base/cradle; etc.	$0.47/ unit	$25 - $180
Cellular Devices and Pagers	Cellular telephone or other mobile cellular enabled devices.	$0.09/ unit	$30 - $500
Personal Portable Imaging, Audio or Video	Camera; mp3 player; etc.	$0.37/ unit	$20 - $600
Home/Non-portable Imaging, Audio or Video	DVD player; speakers; etc.	$1.81/ unit	$50 - $3,500
Home Theatre in a Box Systems	CD player, and four speakers sold as a bundle, etc.	$8.28/ unit	$150 - $2,800
Aftermarket Vehicle Audio or Video	In-dash CD player; trunk-installed sub-woofer; etc.	$1.94/ unit	$100 - $900

* Range of prices on a per unit basis taken from retailer websites and catalogues.

9.4.9 Economic Implications for Other Service Sectors

The Revised WEEE Program Plan estimates Year 1 expenditures of $1,150,000 in common and material specific R&D, and over $3.8 million in promotion and education activities. These expenditures will positively impact the sectors that support this activity, such as:

- Advertising (print, radio, other)
- Ad agencies
- P&E production companies

9.5 Program Cost Internalization by Stewards

The Minister's Program Request Letter included an Addendum with the specific requirement that:

> "The Program shall consider options with respect to internalizing program costs based on the results of the *Waste Electrical and Electronic Equipment Study* and determine which option is most appropriate for Ontario as part of the Program."

Under the WDA, an IFO may assess fees against a designated Steward. In the case of WEEE, OES may assess fees against brand owners, first importers, and/or assemblers of WEEE.

It is the responsibility of individual Stewards to determine how their fees will be managed internally and, ultimately, how the fees will be reflected in their product costs.

The following description of how Stewards may respond to these fees is drawn from the *Waste Electrical and Electronic Equipment Study* completed by CSR on behalf of WDO in July 2005:

> *"The presence of a fee or levy will tend to modify the behaviour of parties to a transaction. Consumers may choose to consume less of a more expensive product, and producers may choose ways of producing goods that generate lower environmental burdens and therefore, presumptively, lower fees. What happens in practice will depend on market conditions, as discussed below.*
>
> *When considering a fee – whether imposed at the retail or manufacturing stage of production – an important question is to understand its economic incidence. The legal incidence of a fee is easy to determine: it falls on the person who is liable to pay the fee; for example, a producer may be legally responsible to remit fees or alternatively, the fee is legally payable by the customer. In the Ontario context, an IFO will collect fees from Stewards, meaning brand owners, first importers and assemblers will be legally responsible to remit fees.*
>
> *Economic incidence, however, is a different matter. Although a Steward may be legally obligated to remit a fee, the cost of the fee may be shifted forward by raising the product price charged to the consumer, or shifted back by cutting wages and salaries payable to workers, or reducing the income accruing to the owners (shareholders) of the business.*
>
> *Typically, therefore, when a fee is imposed on a market, it will be shifted forward as higher consumer prices or shifted back to bear on producers. Even where a fee is identified on consumer invoices, competitive markets may shift back the incidence to producers that internalize the fees as a cost. Questions arise from this statement including the following:*
>
> - *Under what conditions are fees shifted forward or back in competitive markets?*
> - *How would economic incidence affect consumer and producer incentives?*
> - *Would it make a difference if the fee is visible or not with respect to its economic incidence?*

In this discussion, nothing should be interpreted as to how broad or narrow a market can be defined. In theory, fees on products can be finely demarcated according to type, location and time in each and every market and can therefore be priced for a product type at a particular location or point of time. In practice, however, the number of fees that will be set is determined by the information available – and the cost of information – to distinguish among product types.

The notion of extended producer responsibility hinges on the recognition that internalizing the costs of pollution to the parties to a transaction will produce an efficient and socially desirable distribution of costs and benefits.

One feature of market-based incentives is policy tools' presumed ability to drive incremental environmental mitigation on the part of producers through market forces once the program is in place. If the producer is responsible for handling more of the product lifecycle costs associated with the production, use and EOL handling of related waste, the presumption is that the producer will take upstream design steps – possibly including process, handling and supply-chain management adjustments – that will lower the EOL and other environmental costs that would otherwise bear on the producer. Hence the aim of policies directed at encouraging design-for-environment is that a financial signal should be sent to producers about the environmental costs flowing from their actions."

Other options which may be considered by Stewards in order to manage and/or mitigate their WEEE Program costs could include, but are not limited to:

- Increasing the take back of their products to promote refurbishment, recovery of useable parts, and recycling of component materials prior to EOL management;
- Redesign of the products to facilitate refurbishment and recycling at the EOL stage;
- Promoting inter-provincial WEEE Program cooperation on R&D efforts to improve collection and processing efficiencies, promote markets for recovered materials, auditing of service providers, materials tracking and P&E efforts; and
- Explore opportunities for cooperation in these areas or for shared services with existing programs.

10.0 Governance

10.1 OES Governance Objective

The OES governance objective is an effective and efficient board consisting of Stewards from across the supply chain representing the full range of obligated EEE.

10.2 Board Size

The Board will be composed of 10 voting directors and 2 observers (non-voting) as follows:

- 4 voting directors appointed by EPSC
- 3 voting directors appointed by RCC
- 3 voting directors jointly appointed by EPSC and RCC to address gaps, as described in Section 10.5
- 1 observer from EPSC
- 1 observer from RCC

10.3 Minimum Eligibility Requirements

To serve on the OES Board, the minimum eligibility requirements are the following:

- All directors must be at least 18 years of age
- All directors must be residents of Canada
- No director may have the status of "bankrupt" or have been found by a court to be mentally incapable of managing property
- Must be a director, officer or employee of (1) a corporation that supplies a product from which waste electrical and electronic equipment is derived, or (2) an organization or industry association representing corporations that supply a product from which waste electrical and electronic equipment is derived
- All directors must consent in writing to serve as a director and must be willing and able to devote necessary time to fulfill duties as a director

10.4 Desired Skill Set of Directors

Below is a list of the desired skill set of an OES Director.

a) Expertise

- Demonstrates an understanding of and experience in electronic waste management in Ontario and/or other jurisdictions
- Understands the legislative, regulatory, social and political environments within which OES operates

b) Personal Characteristics

- Acts in the best interest of OES and not in his/her self-interest
- Demonstrates a sincere interest and excitement in the opportunity to serve

- Willing and able to commit to board and committee service
- Demonstrates an openness to other's opinions and the willingness to listen
- Is articulate, candid, and willing to express constructive opinions
- Has the ability to rise above sectoral issues
- Supports consensus building and decision-making
- Willing to be an effective ambassador and representative of OES
- Demonstrates the highest ethical standards
- Understands the difference between governing and managing and does not encroach on management's area of responsibility

10.5 Nominations' Process for 3 Voting Directors Jointly Appointed by EPSC and RCC

OES Governance Committee and Chair to review current board composition against marketplace supply chain structure to ensure adequate steward representation for all affected obligated products. This review will evaluate the obligated products and the various parties in the supply chain, such as manufacturers, retailers, business to business sales, direct importers, and distributors, and nominate representatives from under-represented segments to serve on the board within the board seat structure outlined above.

OES Governance Committee may issue a call for expressions of interest to stewards and/or their representative associations or may consider those who have directly expressed an interest in board service. All nominees must meet the minimum eligibility requirements and desired skill set outlined above. EPSC and RCC, on receipt of nominations, will jointly appoint three members to the OES board.

10.6 Terms

Terms of service are as follows:

- Will be a rotating board with one-half of the directors terms coming up each year, taking into consideration officer and other board roles to ensure continuity and effective succession planning.
- Directors may seek re-election.

11.0 Program Agreement

AMENDED AND RESTATED PROGRAM AGREEMENT

Preamble

THIS AGREEMENT made in duplicate is effective as of this 10th day of July, 2009.
B E T W E E N:

WASTE DIVERSION ONTARIO,
a corporation without share capital
incorporated by the *Waste Diversion Act, 2002*

(hereinafter referred to as "Waste Diversion Ontario")

- and -

ONTARIO ELECTRONIC STEWARDSHIP,
a corporation without share capital continued under
the *Waste Diversion Act*, 2002

(hereinafter referred to as "Ontario Electronic Stewardship")

WHEREAS according to Subsection 25 (3) of the *Act*, a waste diversion program developed under this *Act* must include an agreement between Waste Diversion Ontario and the industry funding organization that the program is developed in cooperation with, governing the role of the industry funding organization in the implementation and operation of the program and governing the exercise of the industry funding organization's powers under the *Act*;

AND WHEREAS Waste Diversion Ontario has caused Ontario Electronic Stewardship as the industry funding organization to be established under Section 24 of the *Act* for the purposes of developing and implementing a waste diversion program for designated Waste Electrical and Electronic Equipment under the *Act*;

AND WHEREAS Ontario Electronic Stewardship has been designated by Ontario Regulation 393/04 as amended by Ontario Regulation 245/08 as the industry funding organization for Waste Electrical and Electronic Equipment;

AND WHEREAS the parties hereto entered into a Program Agreement dated as of the 19th day of March, 2008 with respect to Phase 1 WEEE (as herein defined) and wish to amend and restate such Program Agreement in order to provide for the implementation of the waste diversion program with respect to Phase 2 WEEE (as herein defined) and to amend certain other provisions of such Program Agreement;

NOW THEREFORE in consideration of the premises and mutual agreements contained herein and subject to the terms and conditions hereinafter set forth, the parties covenant and agree as follows:

1.0 Purpose of the Agreement

1.1 The purpose of this Agreement between Waste Diversion Ontario and Ontario Electronic Stewardship is to:

(a) Define the roles and responsibilities of the two parties;

(b) Set out the operating relationships between the two parties; and

(c) Ensure openness and transparency to serve the public interest.

2.0 Definitions and Interpretation

2.1 Terms beginning with capital letters and used herein without definition shall have the meanings given to them in the Act, unless otherwise specified.

2.2 When used in this Agreement, the following words and expressions have the following meanings:

(a) "**Act**" means the *Waste Diversion Act, 2002*, S.O. 2002, c. 6, as it may be amended from time to time;

(b) "**Agreement**" means this Program Agreement which is entered into pursuant to Section 25 (3) of the *Act* and includes all attached schedules and any amendments thereto;

(c) "**Business Day**" means any working day, Monday to Friday inclusive, excluding statutory and other holidays, namely: New Year's Day; Good Friday; Easter Monday; Victoria Day; Canada Day; Civic Holiday; Labour Day; Thanksgiving Day; Remembrance Day; Christmas Day, Boxing Day and any other day which the Government of Ontario has elected to be closed for business;

(d) "**Documentation**" means, for purposes of Section 9 of this Agreement, correspondence, documentation whether paper or electronic pertaining to public consultation during development of the Waste Electrical and Electronic Equipment Program Plan, minutes of meetings of the Board of Directors and subcommittees, internal reports, consultants' reports, agendas and other information and data obtained, created or maintained by Ontario Electronic Stewardship;

(e) "**Final Program Request Letter**" means the letter dated June 12, 2007 from the Minister issued to Waste Diversion Ontario following submission of the Waste Electrical and Electronic Equipment Study dated July 20, 2005;

(f) "**FIPPA**" means the *Freedom of Information and Protection of Privacy Act*, R.S.O. 1990, c. F.31, as amended;

(g) "**Funds**" means monies received by Ontario Electronic Stewardship as described in Subsection 32(3) of the *Act*;

(h) **"Minister"** means the Minister of the Environment, Province of Ontario;

(i) "**Operating Agreement"** means the Operating Agreement entered into between Waste Diversion Ontario and the Minister;

(j) "**Phase 1 WEEE**" means all of the items referred to in paragraph 14(a) of the Addendum to the Final Program Request Letter;

(k) "**Phase 2 WEEE**" means all of the items referred to paragraph 14(b) of the Addendum to the Final Program Request Letter;

(l) "**Stewards**" means the persons or classes of persons designated under the Waste Electrical and Electronic Equipment Program Plan rules as responsible for paying fees to Ontario Electronic Stewardship;

(m) **"Steward"** means any member of the class of "Stewards";

(n) "**Waste Diversion Program**" means a program referred to in Sections 23 and 25 of the *Act*.

(o) "**Waste Electrical and Electronic Equipment**" means waste materials defined by Ontario Regulation 393/04 as amended by Ontario Regulation 245/08;

(p) **"Waste Electrical and Electronic Equipment Program Plan**" means the Waste Diversion Program (as amended) encompassing both Phase 1 WEEE and Phase 2 WEEE submitted by Waste Diversion Ontario to the Minister for approval, of which this Agreement forms a part.

2.3 In this Agreement,

(a) Words denoting the singular include the plural and vice versa and words denoting any gender include all genders;

(b) The word "including" or "includes" shall mean "including [or includes] without limitation";

(c) Any reference to a statute shall mean the statute in force as at the date hereof, together with all regulations promulgated thereunder, as the same may be amended, re-enacted, consolidated and/or replaced, from time to time, and any successor statute thereto, unless otherwise expressly provided;

(d) When calculating the period of time within which or following which any act is to be done or step taken, the date which is the reference day in calculating such period shall be excluded; if the last day of such period is not a Business Day, the period shall end on the next Business Day;

(e) All dollar amounts are expressed in Canadian dollars;

(f) Any tender of notices or documents under this Agreement shall be made upon the relevant party at the address set out in Section 13;

(g) The division of this Agreement into separate sections and subsections, and the insertion of headings are for convenience of reference only and shall not affect the construction or interpretation of this Agreement; and

(h) Except as specifically defined or provided for in this Agreement, words and abbreviations which have well known or trade meanings are used in accordance with their recognized meanings.

2.4 The parties acknowledge that the recitals to this Agreement are true and correct.

3.0 Term of Agreement and Amendment

3.1 The term of this Agreement shall commence upon the date of approval of the Waste Electrical and Electronic Equipment Program Plan (as amended to include Phase 2 WEEE) by the Minister and shall remain in effect until five (5) years after that date and for successive periods of five (5) years each thereafter unless terminated earlier in accordance with Section 17 of this Agreement or amended in accordance with Subsection 3.5.

3.2 Any changes to the terms of this Agreement shall be by written amendment signed by both parties. No changes shall be effective or shall be carried out in the absence of such an amendment.

3.3 The parties agree to conduct a review of the performance and implementation of this Agreement not later than two (2) years following the date of commencement of the term of this Agreement and every two (2) years thereafter. As part of such review, each of the parties may suggest any appropriate amendments to the terms of this Agreement.

3.4 Notwithstanding Subsection 3.3, the parties agree that Waste Diversion Ontario and Ontario Electronic Stewardship shall be able to suggest appropriate amendments to the terms of this Agreement to the Minister at any time.

3.5 No material change may be made to the Waste Electrical and Electronic Equipment Program Plan or to the terms of this Agreement without the written approval of the Minister as set out in Section 27 of the *Act*. Material changes include but are not limited to the following:

(a) Definition of Waste Electrical and Electronic Equipment in the approved Waste Electrical and Electronic Equipment Program Plan.

(b) Definition of Stewards - Meaning the persons or classes of persons designated under the Waste Electrical and Electronic Equipment Program Plan Rules for Stewards (2009) as responsible for paying fees to Ontario Electronic Stewardship.

(c) Change in the methodology for calculating fees as outlined in the approved Waste Electrical and Electronic Equipment Program Plan.

4.0 Roles of the Parties

4.1 Waste Diversion Ontario represents and warrants that it has approved the Waste Electrical and Electronic Equipment Program Plan. Waste Diversion Ontario:

(a) Will ensure that the terms and conditions of this Agreement are carried out in a responsible, complete and thorough manner, and on a timely basis;

(b) Will provide estimates to Ontario Electronic Stewardship from time to time of the following: (i) the costs incurred or expected to be incurred by Waste Diversion Ontario in respect of developing, implementing and operating the Waste Diversion Program in respect of Waste Electrical and Electronic Equipment; (ii) a reasonable share of the other costs incurred or expected to be incurred by Waste Diversion Ontario in carrying out its responsibilities under the *Act*; (iii) and a reasonable share of the costs incurred or expected to be incurred by the Ministry in administering the *Act*, all of which are to be charged to Ontario Electronic Stewardship under Section 32 of the *Act*;

(c) Will invoice Ontario Electronic Stewardship for the costs referred to in paragraph 4.1(b) commencing at the end of the first quarter following the date upon which the Waste Electrical and Electronic Equipment Program Plan commences following designation of Ontario Electronic Stewardship by the regulations made under the *Act* as the industry funding organization for the Waste Electrical and Electronic Equipment Program Plan (such costs to include costs identified in paragraph 4.1(b) incurred prior to the date upon which Ontario Electronic Stewardship is so designated);

(d) Will implement the programs, policies and procedures identified as the responsibility of Waste Diversion Ontario in the Waste Electrical and Electronic Equipment Program Plan approved by the Minister;

(e) Will give written notice to Ontario Electronic Stewardship if, in the opinion of Waste Diversion Ontario, Ontario Electronic Stewardship has failed to comply with the terms of the Waste Electrical and Electronic Equipment Program Plan, the Final Program Request Letter or the *Act* and advise Ontario Electronic Stewardship of the action required to remedy such non-compliance; and

(f) Will implement relevant activities and functions as outlined in the Operating Agreement with the Minister.

4.2 Ontario Electronic Stewardship:

(a) Will, following approval by the Minister, implement the Waste Electrical and Electronic Equipment Program Plan;

(b) Will honour invoices from Waste Diversion Ontario for amounts set out in Section 4.1with payment within 30 days;

(c) Will consult with Waste Diversion Ontario from time to time during the implementation of the Waste Electrical and Electronic Equipment Program Plan as reasonably required by Waste Diversion Ontario;

(d) Will make commercially reasonable efforts to implement any policies established by the Minister pursuant to Section 7 of the *Act*;

(e) Will comply with the terms of the Waste Electrical and Electronic Equipment Program Plan, the Final Program Request Letter and the *Act* (including the preparation of an annual report pursuant to Section 33 of the *Act*);

(f) Will, subject to the resolution of any dispute pursuant to the provisions of Section 16 hereof, make commercially reasonable efforts to implement any actions required by Waste Diversion Ontario pursuant to paragraph 4.1(e) above to bring Ontario Electronic Stewardship into compliance with the terms of the Waste Electrical and Electronic Equipment Program Plan, the Final Program Request Letter and the *Act*; and

(g) Will adopt and maintain a Code of Conduct for its directors, officers and committee members that is satisfactory to Waste Diversion Ontario, acting reasonably, and amend its by-laws as required to enable Ontario Electronic Stewardship to carry out the terms of the Waste Electrical and Electronic and Equipment Program Plan, the Final Program Request Letter or the Act, provided that any amendments to the composition of the Board of Directors of Ontario Electronic Stewardship shall be subject to an appropriate regulation made by the Minister and to the approval of Ontario Electronic Stewardship.

5.0 Fees And Business Plans

5.1 Ontario Electronic Stewardship has adopted the Rules for Stewards with respect to Payment of Fees set out in Schedule A hereto, which have been approved by Waste Diversion Ontario. Any amendments to the Rules set out in Schedule A hereto and any new Rules shall be subject to the prior written approval of Waste Diversion Ontario.

5.2 At such time as Ontario Electronic Stewardship proposes to amend the Rules with respect to the payment of fees by Stewards:

(a) Ontario Electronic Stewardship shall prepare a draft business plan outlining its proposed activities and objectives for the period in respect of which such fees are to be established and shall present such business plan to Waste Diversion Ontario for review and comment; and

(b) Following any such review and comments, Ontario Electronic Stewardship shall consult with Stewards concerning any amendment to the Rules with respect to the payment of fees by Stewards. Prior to formal approval of any such Rules by Waste Diversion Ontario, Ontario Electronic Stewardship shall, if deemed necessary as a result of such consultation, prepare a revised business plan outlining its activities and objectives for the period in respect of which such fees are to be established and submit it to Waste Diversion Ontario.

6.0 Transparency

6.1 Ontario Electronic Stewardship will maintain an Internet website accessible by the public and will post every rule made pursuant to the *Act* on its website. Subject to confidentiality or proprietary considerations, and provided that information is available in electronic format, Ontario Electronic Stewardship's website is to include information on, or contain the appropriate electronic links to, the Waste Electrical and Electronic Equipment Program Plan and Ontario Electronic Stewardship's annual report pursuant to Section 33 of the *Act*.

Ontario Electronic Stewardship will provide a copy of a rule to every person who requests a copy and may charge the person a reasonable fee for such copy.

7.0 Information Sharing

7.1 Subject to confidentiality and proprietary considerations and requirements, Ontario Electronic Stewardship shall provide data and information obtained in the course of developing, implementing and operating the Waste Electrical and Electronic Equipment Program Plan to Waste Diversion Ontario upon request. The parties acknowledge and agree that data and information which might be confidential or proprietary in relation to one Steward may cease to be proprietary or confidential if aggregated with data and information relating to more than one Steward, provided that after such aggregation it will not be possible to identify individual Stewards within the aggregated information. Information to be shared shall include, without limitation, comments received from Stewards with respect to the Waste Electrical and Electronic Equipment Program Plan. The parties have agreed upon the information sharing protocol set out in Schedule B hereto to implement the provisions of this Subsection 7.1.

7.2 Ontario Electronic Stewardship acknowledges that information provided by Waste Diversion Ontario to the Minister is under the control of the Minister within the meaning of FIPPA. Waste Diversion Ontario shall retain full control over all other information obtained, created or maintained by Waste Diversion Ontario.

7.3 Any data or materials provided by Ontario Electronic Stewardship to Waste Diversion Ontario which are confidential and are to remain confidential shall be clearly marked as confidential. In the event that the Minister receives a request under the FIPPA relating to the disclosure of any such confidential information which has been provided by Waste Diversion Ontario to the Minister and provides notice thereof to Waste Diversion Ontario, Waste Diversion Ontario agrees to provide Ontario Electronic Stewardship with notice to that effect. Notwithstanding the foregoing, Ontario Electronic Stewardship acknowledges that the Minister is bound by FIPPA and may be required by order of a court or tribunal to disclose confidential information provided by Ontario Electronic Stewardship to Waste Diversion Ontario which has in turn been provided by Waste Diversion Ontario to the Minister.

7.4 Each of the parties agrees to hold data and information received from the other which are marked confidential in confidence, unless:

(a) Such party is required to disclose such data or information by applicable law or by the order of any court or tribunal of competent jurisdiction; provided that the party required to disclose shall provide as much advance notice as possible to the other party of such requirement;

(b) Such data or information have become generally available to the public without breach of this Agreement;

(c) Such data or information were developed independently by the recipient without the use of such confidential data or information or were lawfully received from another source having the right to furnish such data or information; or

(d) Such data or information were previously known to the recipient free of any restriction as evidenced by documentation in the recipient's possession.

8.0 Stakeholder and Public Consultation

8.1 Waste Diversion Ontario may require Ontario Electronic Stewardship to provide opportunities for consultation with stakeholders, including the public, who may be affected by any proposed material changes to the Waste Electrical and Electronic Equipment Program Plan. Such consultation is to be open, accessible and responsive to concerns expressed.

9.0 Ontario Electronic Stewardship Responsibility for Documentation and Audit

9.1 Ontario Electronic Stewardship shall be responsible for maintaining Documentation in carrying out its responsibilities under this agreement, in a responsible and complete manner. Documentation may be maintained in paper or electronic format, as permitted by applicable law.

9.2 Without limiting the generality of the foregoing, the Board of Directors of Ontario Electronic Stewardship shall maintain the following:

(a) All Documentation relating to its consultation activities, comments and responses received and a review of whether and how comments and responses were addressed; and

(b) All Documentation relating to the Funds.

9.3 The receipt and disbursement of the Funds will be reflected in the audited financial statements of Ontario Electronic Stewardship. The audited financial statements are to be prepared in accordance with generally accepted accounting principles and accompanied by the auditor's report thereon.

9.4 Ontario Electronic Stewardship agrees to implement and maintain measures to protect the security and integrity of the Documentation and to protect the Documentation against loss, alteration and destruction.

10.0 Complaints and Inquiries Handling

10.1 Waste Diversion Ontario shall be responsible for handling all complaints and inquiries it receives in the following manner:

(a) Waste Diversion Ontario will be responsible for determining if the complaint and/or inquiry is related to:

i) its responsibilities as set out under the *Act* or as set out in this Agreement;

ii) any other action of Waste Diversion Ontario; or

iii) Ontario Electronic Stewardship;

(b) If the complaint/inquiry is related to Waste Diversion Ontario's responsibilities as set out under the *Act* or as set out in this Agreement, or to any other action of

Waste Diversion Ontario, Waste Diversion Ontario will be responsible for addressing the complaint or responding to the inquiry;

(c) If the complaint/inquiry is related to Ontario Electronic Stewardship, Waste Diversion Ontario shall forward the complaint/inquiry to Ontario Electronic Stewardship asking it to address the complaint or respond to the inquiry (in accordance with any applicable dispute resolution mechanism) and report to Waste Diversion Ontario within one calendar month and every calendar month thereafter until the dispute is resolved;

(d) In the event that Waste Diversion Ontario receives complaints/inquiries pertaining to enforcement issues, Waste Diversion Ontario will forward such complaints/inquiries to the Ministry; and

(e) With respect to any other complaint or inquiry, Waste Diversion Ontario will be responsible for forwarding the complaint or inquiry to the appropriate person.

11.0 Insurance

11.1 Ontario Electronic Stewardship shall put into effect and maintain throughout the term of this Agreement all the necessary and appropriate insurance for a prudent not-for-profit corporation.

11.2 Without limitation to the generality of the foregoing, Ontario Electronic Stewardship shall obtain and maintain directors and officers liability insurance in amounts which are customary for a prudent not-for-profit corporation.

12.0 Assignment

12.1 Ontario Electronic Stewardship shall not assign any of its rights or obligations under this Agreement or any part thereof without the prior written consent of Waste Diversion Ontario and the Minister.

12.2 Ontario Electronic Stewardship shall not subcontract any of its rights or obligations under this Agreement or any part thereof without the prior written consent of Waste Diversion Ontario.

13.0 Notices

13.1 All notices to or upon the respective parties hereto shall be in writing and shall be delivered to the party to which such notice is required to be given under this Agreement at the respective address set out below by personal delivery, facsimile with confirmation of transmission, pre-paid registered post or electronically by email. All notices shall be deemed to have been duly given:

(a) one (1) Business Day after such notice is received by the other party when delivered by personal delivery, by facsimile or by email; or

(b) five (5) Business Days after posting by prepaid registered post. In the event of a postal disruption, notices must be given by acknowledged email, personal delivery

or by a signed back facsimile and all notices delivered within one (1) week prior to the postal disruption must be confirmed by a signed back facsimile to be effective.

Notices to Waste Diversion Ontario shall be delivered to:

Waste Diversion Ontario
45 Sheppard Avenue East, Suite 920
North York, Ontario M2N 5W9
Attention: Executive Director

Facsimile: 416-226-1368
Email: glendagies@wdo.ca

Notices to Ontario Electronic Stewardship shall be delivered to:

Ontario Electronic Stewardship
885 Don Mills Road, #301
North York, Ontario M3C 1V9
Attention: Executive Director

Facsimile: 416-510-8403
Email: chochu@ontarioelectronicstewardship.ca

13.2 Either party may, by written notice delivered to the other party, designate a new address or facsimile number for these notices.

14.0 Waiver

14.1 No term, condition or provision hereof shall be or be deemed to have been waived by Waste Diversion Ontario by reason of any act, forbearance, indulgence, omission, or event. Only an express written waiver by Waste Diversion Ontario shall be binding and each such waiver shall be conclusively deemed to be limited to the circumstances, right or remedy therein specified.

15.0 Severability

15.1 In the event that any provision of this Agreement or any part of such provision shall be determined to be invalid, unlawful or unenforceable to any extent, such provision or part thereof shall be severed from the remaining terms and conditions of this Agreement which shall continue to be valid and enforceable to the fullest extent permitted by law.

16.0 Dispute Resolution

16.1 Ontario Electronic Stewardship shall include a dispute resolution mechanism in all contracts to which Ontario Electronic Stewardship is a party with the exception of contracts for goods and services in the ordinary course of business.

16.2 If any dispute arises between Ontario Electronic Stewardship and Waste Diversion Ontario as to their respective rights and obligations under this Agreement or the interpretation of the Waste Electrical and Electronic Equipment Program Plan by Waste Diversion Ontario,

the parties shall use the following dispute resolution procedures (modified if necessary pursuant to Subsection 17.3 below) to resolve such disputes:

(a) The parties shall attempt to resolve disputes in the spirit of mutual cooperation through discussions and negotiations between the designated representatives of the parties within thirty (30) days of the date upon which written notice of the dispute was first given by one party to the other or as otherwise agreed upon;

(b) If the parties are unable to resolve the dispute in the manner aforesaid, either party shall have the right, on notice in writing to the other, to require that such dispute be submitted to the Executive Director of Waste Diversion Ontario and the CEO of Ontario Electronic Stewardship for discussion and resolution within thirty (30) days of the date of the notice requiring such dispute to be submitted to them or as otherwise agreed upon;

(c) In the event that the Executive Director of Waste Diversion Ontario and the CEO of Ontario Electronic Stewardship are unable to resolve such dispute, either party shall have the right, on notice in writing to the other, to require that such dispute be submitted to the Chair of the Board of Directors of Waste Diversion Ontario and the Chair of the Board of Directors of Ontario Electronic Stewardship for discussion and resolution within thirty (30) days of the date of the notice requiring such dispute to be submitted to them or as otherwise agreed upon;

(d) If the Chair of the Board of Directors of Waste Diversion Ontario and the Chair of the Board of Directors of Ontario Electronic Stewardship are unable to resolve the dispute, either party shall have the right to refer the matter to binding arbitration in accordance with the provisions of the *Arbitration Act, 1991*, S.O. 1991, c. 17, as amended. Each party shall bear the cost of its own counsel and witnesses but the costs of the arbitration including the fees of the arbitrator(s), the cost of court reporters and transcripts and the cost of the arbitration facility shall be borne equally by the parties. The arbitration shall take place in Toronto, Ontario, Canada, before a single arbitrator to be chosen jointly by the parties. If the parties cannot agree on the choice of an arbitrator within thirty (30) days of the notice requiring such dispute to be submitted to arbitration, then the parties will each select an arbitrator who in turn will select a third arbitrator as soon as reasonably practicable following such thirty (30) day period and, subject to the agreement of the parties, such third arbitrator may act as the sole arbitrator of the dispute and the first two so appointed shall be deemed to have resigned; and

(e) The parties may determine the procedure to be followed by the arbitrator(s) in conducting the proceedings, or may request the arbitrator(s) to do so. The arbitrator(s) shall issue a written award within thirty (30) days of completion of the hearing.

16.3 Notwithstanding the provisions of Subsection 16.2, if such dispute relates to the costs recoverable by Waste Diversion Ontario (on its own behalf or on behalf of the Ministry) from Ontario Electronic Stewardship, to any invoice issued by Waste Diversion Ontario to Ontario Electronic Stewardship in respect of such costs or to any other issue which, in the reasonable opinion of Waste Diversion Ontario, pertains to the calculation of or responsibility for costs in relation to the Waste Electrical and Electronic Equipment Program Plan, the following provisions shall apply:

(a) The parties shall attempt to resolve such dispute in the spirit of mutual co-operation through discussions and negotiations between the designated representatives of the parties within fifteen (15) days of the date upon which written notice of the dispute was first given by one party to the other or as otherwise agreed upon;

(b) If the parties are unable to resolve the dispute in the manner aforesaid, either party shall have the right, on notice in writing to the other, to require that such dispute be submitted to the respective auditors of the parties for discussion and resolution within fifteen (15) days of the date of the notice requiring such dispute to be submitted to them or as otherwise agreed upon;

(c) In the event that the respective auditors of the parties are unable to resolve such dispute within such further fifteen (15) day period, such auditors shall, upon the request in writing of either party, select a third independent auditor as soon as possible to act as an arbitrator and to resolve such dispute in accordance with the provisions of the *Arbitration Act*, 1991, S.O. 1991, c. 17, as amended. In the event that the respective auditors of the parties are unable to agree upon the selection of an independent auditor to serve as arbitrator within five (5) days of the date of the written request by either party, Waste Diversion Ontario shall propose three (3) independent auditors to Ontario Electronic Stewardship and Ontario Electronic Stewardship shall, within two (2) days of receipt of such list, select one of such auditors to serve as the arbitrator;

(d) The auditor chosen as arbitrator shall make a final decision within fifteen (15) days of its appointment or such longer period as the parties may agree upon; and

(e) If any such dispute with respect to an invoice has not been finally resolved prior to the due date of such invoice, Ontario Electronic Stewardship shall pay the undisputed amount immediately to Waste Diversion Ontario and shall pay the disputed amount into a solicitor's trust account to be held pending the conclusion of the dispute resolution procedure. The disputed amount shall be disbursed by the solicitor in accordance with the results of the dispute resolution procedure. Each party agrees to continue performing its obligations under the Agreement pending the resolution of any dispute with respect to an invoice.

16.4 Ontario Electronic Stewardship will develop a dispute resolution procedure providing for the resolution of any dispute between Ontario Electronic Stewardship and a person with respect to the person's obligations under Section 31 of the Act or the person's obligations under the rules made by Ontario Electronic Stewardship under Section 30 of the Act, such dispute resolution procedure to be satisfactory in all respects to Waste Diversion Ontario.

16.5 Ontario Electronic Stewardship agrees to submit any dispute with respect to payments or in-kind contributions to be made to service providers under the Waste Electrical and Electronic Equipment Program Plan for resolution in accordance with the dispute resolution procedure adopted by Waste Diversion Ontario for this purpose, as amended from time to time. Waste Diversion Ontario agrees to consult with Ontario Electronic Stewardship upon request, but without obligation, with respect to the terms of such dispute resolution procedure.

17.0 Termination

17.1 If, in the reasonable opinion of Waste Diversion Ontario, there has been a breach of this Agreement by Ontario Electronic Stewardship, Waste Diversion Ontario may terminate this Agreement if Ontario Electronic Stewardship fails to remedy such breach within ninety (90) Business Days following written notice from Waste Diversion Ontario outlining the breach in reasonable detail. In the event that the remedy of such breach by Ontario Electronic Stewardship reasonably requires more than ninety (90) Business Days, Ontario Electronic Stewardship shall so advise Waste Diversion Ontario without delay and provide a revised time line to remedy such breach. Waste Diversion Ontario shall notify Ontario Electronic Stewardship in writing as to whether the revised time line is acceptable and, if it is, the revised time line to remedy such breach will apply. Notwithstanding the foregoing, with respect to a breach of Section 12, Waste Diversion Ontario may terminate this Agreement immediately if Ontario Electronic Stewardship has not given written notice to Waste Diversion Ontario that it disputes such breach within ten (10) days of the notice of breach from Waste Diversion Ontario.

17.2 Notwithstanding Subsection 17.1, Waste Diversion Ontario may terminate this Agreement immediately upon written notice to Ontario Electronic Stewardship if:

(a) Ontario Electronic Stewardship makes a voluntary assignment or a proposal under the *Bankruptcy and Insolvency Act* or a petition or any other proceeding shall be filed, instituted or commenced with respect to Ontario Electronic Stewardship under any bankruptcy, insolvency, debt restructuring, reorganization, liquidation, winding-up or similar law now or hereafter in effect, unless such proceedings are commenced by a party other than Ontario Electronic Stewardship and are being diligently contested by Ontario Electronic Stewardship and are stayed within 30 days from the date of notice of such proceedings being received by Ontario Electronic Stewardship;

(b) A receiver or trustee is appointed for any part of the assets of Ontario Electronic Stewardship; or

(c) Ontario Electronic Stewardship ceases for any reason whatsoever to be the designated industry funding organization for the Waste Electrical and Electronic Equipment Program Plan or the Waste Electrical and Electronic Equipment Program Plan is terminated for any reason whatsoever.

17.3 The parties acknowledge and agree that any determination by Waste Diversion Ontario that Ontario Electronic Stewardship is in breach of this Agreement as set out in a written notice given pursuant to Subsection 17.1 above is subject to the dispute resolution provisions of this Agreement but termination of this Agreement pursuant to Subsection 17.2 above is not subject to the dispute resolution provisions of this Agreement. If Ontario Electronic Stewardship disputes the right of Waste Diversion Ontario to terminate this Agreement pursuant to Subsection 17.1, Ontario Electronic Stewardship shall be required to give written notice of the dispute to Waste Diversion Ontario within ten (10) days of receiving written notice of breach from Waste Diversion Ontario and, if the parties have not resolved the dispute pursuant to paragraphs 16.2(a) – (c) above within twenty (20) days thereafter, the parties shall, at the option of Ontario Electronic Stewardship, proceed to arbitration pursuant to paragraph 16.2(d) above and the arbitrator shall be directed to deliver a written decision within ninety (90) Business Days

of the written notice of breach. If Ontario Electronic Stewardship has required arbitration of the issue, a notice given pursuant to Subsection 17.1 shall be effective ninety (90) Business Days thereafter unless the arbitrator has issued a written decision nullifying such notice on or before that date (without prejudice to any rights of Waste Diversion Ontario to appeal such decision on any basis provided for in the *Arbitration Act*, 1991, S.O. 1991, c. 17, as amended).

18.0 Agreement Binding

18.1 This Agreement shall enure to the benefit of and be binding upon the parties hereto and their respective permitted successors and assigns.

19.0 Entire Agreement

19.1 This Agreement embodies the entire Agreement between the parties with regard to the operation of Ontario Electronic Stewardship and the implementation of the Waste Electrical and Electronic Equipment Program Plan and supersedes any prior understanding or agreement, collateral, oral or otherwise, with respect to such subject matters existing between the parties at the date of execution of this Agreement. The Program Agreement dated March 19, 2008 between the parties is terminated, without prejudice to any action taken by the parties thereunder.

20.0 Public Announcements

20.1 Neither Waste Diversion Ontario nor Ontario Electronic Stewardship shall make any press release or other formal public announcement which refers to the role of the other in the development and implementation of the Waste Electrical and Electronic Equipment Program Plan without first consulting the other concerning the contents of such proposed press release or public announcement. The parties agree that prior consultation shall not be required in respect of routine communications or other general information provided by either of the parties to the public with respect to the implementation of the Waste Electrical and Electronic Equipment Program Plan.

21.0 Governing Law

21.1 This Agreement shall be construed and interpreted in accordance with the laws of the Province of Ontario and the laws of Canada applicable therein and the parties hereby agree that any dispute arising out of or in relation to this Agreement shall be determined in Ontario.

21.2 Ontario Electronic Stewardship agrees that it shall, and shall use reasonable commercial efforts to require its officers, directors and staff to, comply with all laws, ordinances, rules and regulations which apply to the operation of Ontario Electronic Stewardship, any activities of Ontario Electronic Stewardship and the responsibilities of Ontario Electronic Stewardship under the *Act*.

22.0 Signatures

IN WITNESS WHEREOF the parties hereto have executed this Agreement as of the date stated in the Preamble to this Agreement.

WASTE DIVERSION ONTARIO

Per: 

Cliodhna McMullin
Chair

I have authority to bind Waste Diversion Ontario

ONTARIO ELECTRONIC STEWARDSHIP

Per: 

Nick Aubry
Chair

I have authority to bind Ontario Electronic Stewardship

SCHEDULE A

RULES FOR STEWARDS WITH RESPECT TO PAYMENT OF EEE FEES

1) Interpretation

In these Rules, the following terms shall have the following meanings. Capitalized terms which are not otherwise defined will have the meaning given to them in the *Waste Diversion Act, 2002*:

Affiliate means an affiliated body corporate, determined as follows:

(1) one body corporate shall be deemed to be affiliated with another body corporate if, but only if, one of them is the subsidiary of the other or both are subsidiaries of the same body corporate or each of them is controlled by the same person;

(2) a body corporate shall be deemed to be controlled by another person or by two or more bodies corporate if, but only if,

(a) voting securities of the first-mentioned body corporate carrying more than 50 per cent of the votes for the election of directors are held, other than by way of security only, by or for the benefit of such other person or by or for the benefit of such other bodies corporate; and

(b) the votes carried by such securities are sufficient, if exercised, to elect a majority of the board of directors of the first-mentioned body corporate; and

(3) a body corporate shall be deemed to be a subsidiary of another body corporate if, but only if,

(a) it is controlled by,
  (i) that other, or
  (ii) that other and one or more bodies corporate each of which is controlled by that other, or
  (iii) two or more bodies corporate each of which is controlled by that other; or

(b) it is a subsidiary of a body corporate that is that other's subsidiary;

Base Interest Rate means the prejudgment interest rate established from time to time under the Rules of Civil Procedure of the *Courts of Justice Act*, as amended from time to time, for prejudgment interest;

Brand Owner means, with respect to Branded EEE, during any time in the Data Period:

(a) a Person Resident in Ontario who is the registered owner of the Brand, or

(b) a Person Resident in Ontario who is a licensee of the Brand, or

(c) a Person Resident in Ontario, who owns the intellectual property rights to the Brand, or

(d) a Person Resident in Ontario, who is the licensee, in respect of the intellectual property rights of the Brand;

where “licensee” includes a Person who packages EEE which bear a Brand, other than a packager, producer, Manufacturer or filler of Private Label Goods, and includes any Person whose corporate name or business name registration contains the Brand;

Brand means a trademark, official mark, tradename or distinguishing guise, within the meaning of the *Trade-marks Act (Canada)*, whether or not registered pursuant thereto;

Branded means a Brand is attached to or otherwise associated with EEE;

Commencement Date means:

(a) April 1, 2009 for all EEE listed in Appendix “F”; and

(b) with respect to all EEE listed in Appendix “A”, which is not also listed in Appendix “F”, the first day of the first quarter beginning not less than 150 days after the Minister of the Environment has made a regulation governing the composition of the board of directors of OES to apply for all of such EEE.

Commercial Connection, for the purposes of these Rules, means that a Person derives a direct economic benefit when the particular EEE is Supplied in Ontario;

Data Period means the one month period ending the last day of each calendar month starting with the Commencement Date;

EEE means electrical and electronic equipment, being all goods and products set out in Appendix A which are Supplied in Ontario that result in the generation of WEEE;

e-Laws Website means the website of the Government of Ontario for statutes, regulations and related materials that is available on the Internet at www.e-laws.gov.on.ca or at another website address specified by a regulation made under subsection 1(3) of the *Legislation Act, 2006*;

Filed means electronically submitted or mailed to OES at an address identified to the Stewards by mail or electronically, with confirmation of transmission in the case of sending by electronic means;

First Importer means a Person Resident in Ontario who is not a Brand Owner for a specific EEE that imports such EEE into Ontario, and includes a Person Resident in Ontario who is the first to take title or delivery or possession to such EEE, upon or after arrival in Ontario from elsewhere during the Data Period; and for the purposes of this definition, a Franchisee is not a First Importer of EEE if a Franchisor for such EEE is Resident in Ontario. A Person who takes delivery/possession of EEE only for the purpose of storing it or transporting it to another Person is not the First Importer of the EEE;

Franchisor, Franchisee and **Franchise System** have the meaning ascribed thereto under the *Arthur Wishart Act (Franchise Disclosure), 2000*, as amended from time to time;

Manufacturer means a Person, other than a Refurbisher, who uses Branded or Unbranded components with or without value added additional processing to create EEE;

OES means Ontario Electronic Stewardship;

Person includes an individual, partnership, joint venture, sole proprietorship, company or corporation, government (whether national, federal, provincial, state, municipal, city, county or otherwise and including any instrumentality, division, body, department, board or agency of any of them), trust, trustee, executor, administrator or any other kind of legal personal representatives, unincorporated organization, association, institution, entity, however designated; and words importing "persons" have similar meanings;

Private Label Goods means goods manufactured by a third party on behalf of and bearing the brand or trademark of a Brand Owner which are Supplied by such Brand Owner;

Published Address means an address in Ontario appearing in a current telephone directory or a recognized current published business directory;

Refurbisher means a Person who carries out internal testing, troubleshooting disassembly or physical modification to WEEE, part removal and replacement or repair of non-functioning or obsolete parts (not including consumable items such as batteries, toners, fusers, etc.) for the purpose of product or part repair and/or redistribution and Supplies such product for distribution in Ontario;

Resident in Ontario means either of the following: (i) having a published address in Ontario; or (ii) having a permanent establishment in Ontario within the meaning of Section 4 of the *Corporations Tax Act (Ontario)***,** as set out in Appendix C**;**

Rules means these rules, and includes additional rules or amendments to these Rules from time to time, as published by OES on its website;

Self-Managed Program means a program approved by OES under which a Steward operates its own collection and recycling program with respect to a particular class or classes of WEEE;

Steward means a Person designated as such under Rule 2; and "Stewards" means more than one Steward;

Steward's Fees means the fee payable to OES pursuant to Rule 4;

Steward's Report means a report prepared by a Steward and filed with OES describing the aggregate amount of EEE Supplied to a Person resident in Ontario in the Data Period by the Steward or its Franchisees and/or Affiliates, containing the information required by Appendix B, or such other information as may be required by OES from time to time;

Supplied means:

(i) sold or otherwise transferred (whether by transfer of possession or title);
(ii) leased;
(iii) donated;
(iv) disposed of;
(v) used; or
(vi) otherwise made available or distributed

for use in the Province of Ontario, and includes an import of EEE for a purpose set out in Rule 2(2)(b); **Supply** and **Supplies** have similar meanings;

Unbranded means a Brand is not attached to or otherwise associated with EEE;

WEEE means waste electrical and electronic equipment, being any waste EEE that is defined in Ontario Regulation 393/04.

2) Designation of Stewards

For the purposes of determining which Person shall be designated as a Steward for a particular class or group of EEE, the following provisions shall apply, in the order in which they are set out. If two or more Persons are designated as a Steward pursuant to the following, the earlier provision shall prevail.

(1) A Brand Owner is designated as a Steward with respect to all EEE Supplied:

a) for which it is the Brand Owner in the Data Period; and
b) to which it has a Commercial Connection;

(2) A First Importer is designated as a Steward with respect to all EEE

a. Supplied in the Data Period of which it is the First Importer; or

b. of which it is the First Importer in the Data Period for use by it or its Affiliate in the Province of Ontario;

(3) A Franchisor is designated as a Steward with respect to all EEE Supplied within the relevant Franchise System in the Data Period.

(4) If there are two Brand Owners for the same EEE in the same Data Period, the Brand Owner more directly connected to the production of the EEE shall be designated as the Steward.

(5) If there is Unbranded EEE in the Data Period, and if the Manufacturer is Resident in Ontario, the Manufacturer of such EEE shall be designated as the Steward for such EEE; otherwise the First Importer shall be designated as the Steward for such EEE.

(6) A Person who receives a Supply of EEE for personal consumption and not for a business or commercial use is not a Steward.

3) Steward's Report

(1) Every Steward shall file its first Steward's Report with OES not later than the later of:

(a) 30 days after the applicable Commencement Date; and

(b) 90 days after such Steward is notified of the existence of these Rules and how to obtain a copy of them.

(2) Stewards may amend a Steward's Report with the consent of OES to correct information in the Steward's Report that is in error or to replace data previously reported.

(3) Once it has filed its first Steward's Report, an EEE Steward shall file a Steward's Report in accordance with the schedule as set out in Appendix D.

(4) Notwithstanding the above OES may require a Steward to file a Steward's Report by sending a written request to the Steward.

(5) A Steward who operates a Self-Managed Program under agreement with OES is exempt from the reporting requirements in this Rule 3 and shall report to OES in accordance with the terms and conditions of such agreement.

4) Fees Payable

(1) Stewards shall pay Steward's Fees to OES in accordance with Appendix D. The amount of Steward's Fees shall be calculated in accordance with Appendix E by multiplying the number of units of each type of EEE included in the Steward's Report by the Fee Rate set out opposite such type.

(2) Notwithstanding that a Steward has not received the notice in Rule 3(1), it is responsible for payment of Steward's Fees for all EEE for which it is a Steward from and after the Commencement Date to the date on which it receives such notice.

(3) OES may provide a credit for Steward's Fees which are overpaid, or which are for the same EEE for which another Person has paid Steward's Fees.

(4) A Person described in any provision of Rule 2 who acquires EEE from a person also described in Rule 2 (the "**provider**") must ensure that the provider has an OES identification number. The OES number will be posted on the OES website. If a valid OES identification number is not given, the Person to whom a provider Supplies EEE will then be a Steward, and will be subject to filing a Steward's Report and paying Steward's Fees to the extent that the provider does not.

(5) A Steward who operates a Self-Managed Program under agreement with OES is exempt from payment of the Steward's Fees in this Rule 4 and shall pay Steward's Fees to OES in accordance with the terms and conditions of such agreement.

5) Voluntary Stewards

Where there is no Steward for a particular EEE Supplied in Ontario, a Person who is not Resident in Ontario may enter into an agreement with OES to be a voluntary Steward and file a Steward's Report and pay Steward's Fees in respect of such EEE.

6) Penalties, Interest and Back Fees

(1) Stewards who fail to pay Steward's Fees by the dates specified in Appendix D will be subject to a penalty calculated at 10% of Steward's Fees due and payable.

(2) If the amounts reported in a Steward's Report are inaccurate, any deficiency in Steward's Fees paid resulting from such inaccuracies shall be immediately due and payable from the date of the filing of the correcting Steward's Report, and, if not paid within 30 days, will be subject to a penalty equal to 10% of such Steward Fee deficiency.

(3) Interest on the amounts payable under Rules 6(1) and 6(2) shall accrue from their respective due dates at the Base Interest Rate plus 3% per annum. In addition, a Steward in default shall pay all collection costs, including all proper and reasonable legal fees, incurred by OES, whether or not an action has been commenced. If an audit under Rule 7 reveals that a Steward has under-reported the amount of Steward's Fees due by more than 5% in a

Data Period, in addition to any other sums payable, the Steward shall pay the costs of such audit, as reasonably determined by OES.

(4) OES may waive all or part of any penalty, interest or charges otherwise payable under this Rule 6.

7) Record Provision and Retention

(1) Upon request from OES, Stewards shall promptly provide data used by Stewards in the preparation of the Steward's Report, including calculation methodology, product data, audit reports, list of Brands reported and list of Brands excluded from report, and allocation percentages.

(2) A Steward shall retain records or, on receipt of written request, provide records at an address in the Province of Ontario to substantiate and verify the amount set out in its Steward's Report for a period of not less than five years from the date of the Steward's Report to which they relate. A Steward shall grant access to OES upon its request to examine its books and records to enable OES to audit and inspect such records respecting a Steward's Report up to five years after the date of receipt of such Steward's Report by OES.

8) Dispute Resolution

If any dispute arises between a Steward and OES as to the amount of EEE that is required to be included in a Steward's Report:

(1) The parties shall attempt to resolve the dispute through designated representatives from each of OES and the Steward within 30 days after written notice of the dispute was first given, or as otherwise agreed upon.

(2) If the parties are unable to resolve the dispute within the above period, the Steward and OES shall, within 30 days thereafter, jointly select an arbitrator to arbitrate the dispute. If the Steward does not nominate an arbitrator within the 30 day period, OES shall nominate the arbitrator. The arbitration shall be conducted in accordance with the *Arbitration Act, 1991*, as amended from time to time.

(3) OES may from time to time establish a panel of approved arbitrators for the purposes of this Rule, whose names will be published on the OES website. The arbitrator shall be chosen from this panel, unless OES and the Steward mutually agree otherwise.

(4) The arbitrator shall render a written decision on the dispute within 14 days after the arbitration hearing or submission. The decision of the arbitrator shall be final and binding on the parties and shall not be subject to appeal on any grounds whatsoever, and shall be enforceable against OES and the Steward, as the case may be, immediately on the issue of such decision to the parties to the dispute.

(5) Non-payment of Stewards Fees or the requirement for a Steward to file a Steward's Report shall not be items subject to arbitration.

9) Interpretive Memoranda

OES may publish on its website non-binding interpretive memoranda on these Rules and how it proposes to administer them.

10) Publishing of Names

(1) OES will provide all Stewards with an identification number.

(2) The names and identification numbers of Stewards filing Steward's Reports will be posted on the OES website.

(3) OES may post a list on its website of all Brands reported in Steward's Reports from time to time.

(4) OES may publish on its website the name of any Person who may appear to be a Steward Resident in Ontario, but which it has determined upon investigation is not Resident in Ontario.

11) Notice

Any notice, request or other communication from OES to a Steward which is required or may be given under these Rules may be delivered or transmitted by means of electronic communication, personal service or by prepaid first class postage to the Steward at a Published Address in Ontario and shall be deemed to have been received on the third day after posting and on the first day after the date of electronic transmission, in each case which is not a Saturday, Sunday or public holiday in Ontario.

12) Amendments to Rules

These Rules may be amended by OES from time to time, subject to any required contractual or regulatory approvals. On receipt of such approvals and the publication of the amended Rules on OES' website, such amendments will come into effect and apply to all Stewards from and after the effective date. The version of these Rules in effect at the time of a particular Supply, including the Steward's Fees set out in Appendix E, shall continue to apply to all EEE which is the subject of such Supply, notwithstanding any subsequent amendments to these Rules.

Appendix A: EEE Material Definitions

EEE Material Category for Reporting Purposes		Phase 1 and 2 Materials Definition	Includes	Excludes
Category	**Sub-Category**			
Display Devices	**≤29" Screen**	A device that displays an image, using a variety of technologies including CRT, LCD, plasma and rear-projection.	• Computer monitors • Professional display monitors • Closed circuit monitor screens • Televisions • Dual television and computer monitors • All-in-One (AIO) computers: a display device with an embedded computer	• Displays that are embedded into non-Phase 1 and 2 products where the display is not the primary product
	>29 Screen			
Desktop Computers		Desktop models refer to those computers that are designed to be utilized on a work surface and require standard alternating current (AC) power plug for a primary source of power.	• Desktops • Computers • Computer terminals • Desktops acting as servers • Thin clients • Microcomputers • Minicomputers	• Computer terminals that are embedded into non-Phase 1 and 2 products • Portable computers • Products classified as Computer Peripherals under this Plan • All-in-One (AIO) computers: a display device with an embedded computer
Portable Computers		Portable models refer to a portable computer that contains a Central Processing Unit (CPU) and than can operate using a self-contained battery or using an external AC/DC adaptor.	• Laptops • Notebooks • Notepads • Tablet PCs	• Computer terminals that are embedded into non-Phase 1 and 2 products • Personal handheld computers (included in Image, Audio and Video category) • Personal digital assistance (PDAs) (cell-enabled included in Cellular Devices category; non-cell-enabled included in Personal/Portable Image, Audio and Video Devices category) • Products classified as Computer Peripherals under this Plan • Other handheld electronic devices
Computer Peripherals		Computer peripherals refers to external, as well as integrated modems, disk drives, optical drives, computer mouse and keyboards that are added, or attached, to a computer in order to expand its functionality. A modem refers to a devices that encodes digital computer signals into analog/analogue telephone signals and vice versa and allows computers to communicate over a phone line or cable connection.	• Replacement computer component and standalone products that are sold to the end user • CD-ROM, DVD, HD-DVD and BluRay drives • Floppy-disk drives • Computer mouse • Computer keyboards • Wired cable, DSL, and ADSL modems • Wireless modems	• Computer peripherals that are supplied as replacement parts under a warranty and non-warranty service repair arrangement • Internal components contained within the original desktop or portable computer at the time of supply • Components that are supplied as replacement parts under a warranty • Components for non-warranty service repair arrangements • Speakers, cameras, microphone and other non-Phase 1 and 2 products • Internal components contained within the original desktop or portable computer at the time of supply • Routers • Network hubs • Satellite networking devices • Telephony devices (i.e. VoIP devices)

Appendix A: EEE Material Definitions

EEE Material Category for Reporting Purposes		Phase 1 and 2 Materials Definition	Includes	Excludes
Category	Sub-Category			
Printing, Copying and Multi-Function Devices	**Desktop and Portable Printing, Copying and Multi-Function Devices**	Printing, copying and multi-function devices, utilizing all printing technologies, designed to be handheld or to reside on a work surface and that can print on media with dimensions up to 48" wide. Copiers and/or multi-function devices classified as Segment 1 or Segment 2; Copier and/or multi-function devices that are designed to reside on a work surface that are not classified as Segment 1 or Segment 2. Includes models that are able to utilize an optional floor-stand.	• Desktop or portable computer scanners • Desktop printers • Portable PC-free photo printers • Typewriters powered by AC power plug or by internal battery unit • Camera dock printers • Desktop label, barcode, card printers • Point of Sale (POS) receipt printers • Handheld printers such as calculators with printing capabilities or label makers • Desktop multi-function or "all-in-one" devices • Desktop copiers or copy & print devices • Models which are able to utilize and optional floor-stand	• Desktop printing devices capable of performing additional non-printing functions such as copying or faxing • Printing devices that are embedded into non-Phase 1 and 2 products, where the printing devices are not the primary product • Non-electronic typewriters • Printing devices capable of printing on media with dimensions greater than 48" wide
	Floor-Standing Printing Devices	Printing devices, utilizing all printing technologies that are floor-standing models and that can print on media with dimensions up to 48" wide.	• Floor-standing office printers • Floor-standing graphics printers • Floor-standing wide-format printers	• Floor-standing printing devices capable of performing additional non-printing functions such as copying or faxing • Printing devices that are embedded into non-Phase 1 and 2 products, where the printing device is not the primary product • Newspaper and industrial printing devices • Printing devices capable of printing on media with dimensions greater than 48" wide • Models which are able to utilize an optional floor-stand
	Floor-Standing Copying Devices	Copier and/or multi-function devices classified as Segment 3, Segment 4 or Segment 5 Copier and/or multi-function devices that are floor-standing models that are not classified as Segment 3, Segment 4 or Segment 5.	• Floor-standing multi-function or "all-in-one" devices that perform different tasks such as copy, scan, fax, print • Floor-standing photocopiers • Floor-standing copy and print devices • Floor-standing wide-format copiers and/or multi-function devices	• Floor-standing devices that only perform printing functions • Newspaper and industrial copying and/or multi-function devices • Copying and/or multi-function devices capable of printing on media with dimensions greater than 48" wide • Models which are able to utilize an optional floor-stand

Appendix A: EEE Material Definitions

EEE Material Category for Reporting Purposes		Phase 1 and 2 Materials Definition	Includes	Excludes
Category	Sub-Category			
Telephones and Telephone Answering Machines		A telecommunication device with a handset or headset that is used for the transmission of sound (most commonly speech) between two or more locations using a variety of technologies including wire-line telephones and Voice over Internet Protocol (VoIP). Also includes telephone answering machines that are installed alongside, or incorporated within a wire-line telephone.	• Wire line telephones including rotary and touch-tone technologies • Cordless telephones requiring an electrical base station/handset cradle for battery charging and wire-line network connection. • VoIP phones • Answering machines that utilize cassette-based or digital recording technologies	• Telecommunication equipment developed for embedded use in motor vehicles of any type • Commercial-grade “pay phones” • Voicemail/answering machine devices that utilize a centralized networked system • Telephone accessories including headsets and hands-free accessories
Cellular Devices and Pagers		A handheld communication device that utilizes cellular networks to transmit voice or data signals. Includes cell-enabled Personal Digital Assistants (PDAs).	• Cellular phones • Cellular phones offering camera, video recording and/or audio functions • Smart phones (cell-enabled) • Palmtop computers (cell-enabled) • Cell-enabled PDAs utilizing touch-screen technology • Cell-enabled handheld devices • Pagers	• Satellite phones • Wireless devices that do not utilize cellular networks to operate • Non-cell-enabled PDAs (Included in Personal/Portable Image, Audio, and Video Devices category)

Appendix A: EEE Material Definitions

EEE Material Category for Reporting Purposes		Phase 1 and 2 Materials Definition	Includes	Excludes
Category	**Sub-Category**			
Image, Audio and Video Devices	**Personal/Portable**	Personal and/or portable devices that can transmit, record and/or playback an image, audio or video using a variety of technologies including mechanical, optical and digital technologies. Personal and/or portable peripheral audio devices that enable audio playback.	• Audio cassette players and/or recorders • Combination cassette recorders and players • CD players and/or recorders • Digital Video Disk (DVD) players and recorders • MP3 Players • Other Digital Audio Players/ Recorders (DAP) • Video cassette players (VCRs) and/or video projectors • Analog and digital video cameras and recorders • Turntables (Record Players and gramophones) • AM/FM Radios • Digital and non-digital cameras, including webcams • Digital picture frames • Digital projectors • Home stereo amplifiers • Speaker systems, including computer speakers • Home stereo systems • Handheld personal computers • Devices commonly called Ultra Mobile PCs (UMPC) that utilize a touch-sensitive screen between 4" and 7", and that can operate the same software as a standard computer (i.e. Windows) • PDAs that are not communication-enabled or cellular compatible	• CD-writing drives contained within, or replacements parts for Desktop and Portable Computers • DVD-writing drives contained within, or replacement parts for Desktop and Portable Computers • Non-audio optical disk-players • Optical disk drives included in the Computer Peripherals materials category • Webcams embedded in Desktop Computers and Portable Computers • Cameras embedded in devices for which the primary function is not to record an image/ video • Cell-enabled PDAs • Devices for which the primary design and function are for video-gaming purposes (As designated in Section 5 of O. Reg. 393/04) • Global Positioning Systems (GPS) for both portable and aftermarket vehicle installation • Home/ Non-Portable video-gaming devices • Satellite, Cable, and Digital transmitters and receivers • Headphones and ear-buds
	Home/Non-Portable	Home and/or non-portable devices that can transmit, record and/or playback an image, audio or video using a variety of technologies including mechanical, optical and digital technologies. Home and/or non-portable peripheral audio devices that enable audio playback.		
	Home Theatre in a Box (HTB)	Bundled combinations or devices that can transmit, record and/or playback an image, audio or video using a variety of technologies.	• Home theatre image, audio and video equipment sold as a package/bundle with a single point-of-sale SKU. Includes peripheral audio devices.	• Home theatre image, audio and video equipment sold as a package/ bundle with more than a single point-of-sale SKU (report separately). • Home theatre bundles that include televisions
	Aftermarket Vehicle	Audio and video devices for installation in motor vehicles aftermarket.	• Vehicle speakers • Vehicle radios • Vehicle CD players • Vehicle DVD/BluRay players	• Audio and video equipment embedded in original equipment manufacturer (OEM) supplied motor vehicles of any type

Appendix B
Form of Steward's Report

Name of Steward
Mailing address
Billing address
Primary Contact Person for Steward's Report
Email address

Number of units of Electrical and Electronic Equipment Supplied into Ontario for the brands owned or first imported into Ontario in the data period.

Revised Phase 1 and 2 WEEE Material Categories			# Units
Display Devices	≤29" Screen	Computer Monitors	
		Display Devices <18"	
		Display Devices 18" – 29"	
		All-in-One (AIO) Computers	
	>29" Screen	Displays >29" – 45"	
		Displays >45"	
Desktop Computers			
Portable Computers			
Computer Peripherals	Mice		
	Keyboards		
	Single Hard Drives		
	Optical Drives		
	Modems		
Printing, Copying and Multi-Function Devices	Desktop Printing, Copying and Multi-Function Devices		
	Floor-Standing Printing Devices		
	Floor-Standing Copying and Multi-Function Devices		
Telephones and Telephone Answering Machines			
Cellular Devices and Pagers			
Image, Audio and Video Devices	Personal/Portable		
	Home/Non-Portable		
	Home Theatre in a Box (HTB)		See HTB Bundles
	Aftermarket Vehicle		
Computer Bundles	Desktop Computer + Mouse + Keyboard		
	Desktop Computer + Mouse + Keyboard + Monitor		
	Desktop Computer + Mouse + Keyboard + Monitor + Printer		
	Desktop Computer + Mouse + Keyboard + Printer		
	Desktop Computer + Printer		
	Desktop Computer + Printer + Keyboard		
	Desktop Computer + Printer + Mouse		
	Portable Computer + Mouse + Keyboard + Printer		
	Portable Computer + Mouse + Printer		
	Portable Computer + Mouse		
	Portable Computer + Printer		
	Mouse + Keyboard		
Home Theatre in a Box (HTB) Bundles	Audio or Video Player + 3 Speakers		
	Audio or Video Player + 5 Speakers		
	Audio or Video Player + 6 Speakers		
	Audio or Video Player + 7 Speakers		
	Receiver or Amplifier + 3 Speakers		
	Receiver or Amplifier + 5 Speakers		
	Receiver or Amplifier + 6 Speakers		
	Receiver or Amplifier + 7 Speakers		

Required information to be included in the Steward's Report:

1. Description of methodology and data used to prepare this Steward's Report;
2. Description of Excluded units of EEE deducted from the Steward's Report,
3. List of brands or trade marks covered in this Steward's Report;
4. List of affiliates and /or franchisees included in this Steward's Report;
5. Declaration of accuracy of contents of this Steward's Report;
6. List of suppliers covered in the Steward's Report, and;
7. List of distributors covered in the Steward's Report.

Please note: Actual bundle categories for reporting purposes may vary once the reporting system has been designed and implemented. The bundles explicitly stated are strictly examples. Bundled items that do not meet the specifications of the bundles identified must, as a minimum, be reported as individual units in the most appropriate categories.

Appendix C

Extract from *Corporations Tax Act (Ontario)*

Permanent establishment

4. (1) In this Act,

"permanent establishment" includes branches, mines, oil wells, farms, timberlands, factories, workshops, warehouses, offices, agencies and other fixed places of business.

Idem

(2) Where a corporation carries on business through an employee or agent who has general authority to contract for the corporation or who has a stock of merchandise owned by the corporation from which the employee or agent regularly fills orders which the employee or agent receives, such employee or agent shall be deemed to operate a permanent establishment of the corporation.

Idem

(3) The fact that a corporation has business dealings through a commission agent, broker or other independent agent shall not of itself be deemed to mean that the corporation has a permanent establishment.

Idem

(4) The fact that a corporation has a subsidiary controlled corporation in a place or a subsidiary controlled corporation engaged in a trade or business in a place shall not of itself be deemed to mean that the first-mentioned corporation is operating a permanent establishment in that place.

Idem

(5) An insurance corporation is deemed to have a permanent establishment in each jurisdiction in which the corporation is registered or licensed to do business.

Idem

(6) The fact that a corporation maintains an office solely for the purchase of merchandise shall not of itself be deemed to mean that the corporation has a permanent establishment in that office.

Idem

(7) Where a corporation, otherwise having a permanent establishment in Canada, owns land in a province or territory of Canada, such land is a permanent establishment.

Idem

(8) The fact that a non-resident corporation in a taxation year produced, grew, mined, created, manufactured, fabricated, improved, packed, preserved or constructed in whole or in part anything in Canada, whether or not the corporation exported that thing without selling it prior to exportation, shall of itself, for the purposes of this Act, be deemed to mean that the corporation maintained a permanent establishment at any place where the corporation did any of those things in the taxation year.

Idem

(9) The use of substantial machinery or equipment in a particular place at any time in a taxation year of a corporation constitutes a permanent establishment of such corporation in that place for the taxation year.

Idem

(10) Where a corporation has no fixed place of business, it has a permanent establishment in the principal place in which the corporation's business is conducted.

Idem

(11) Where a corporation does not otherwise have a permanent establishment in Canada, it has a permanent establishment in the place designated in its charter or by-laws as being its head office or registered office.

Same, where tax liability affected by a tax treaty, etc.

(12) If the liability of a corporation for tax under the *Income Tax Act* (Canada) is determined with reference to a tax treaty, convention or agreement with another country, the corporation does not have a permanent establishment in Ontario for the purposes of this Act if it does not have such an establishment for the purposes of the tax treaty, convention or agreement.

Same

(13) Subsection (12) applies with respect to taxation years ending after June 17, 2002.

Appendix D

Payment and Reporting Schedule

Payment and reporting schedule will be monthly. The reporting schedule will depend on when a Steward is notified.

Monthly Data period	Data period end date	Payment deadline
First month	Last day of first month	30 days from last day of first month
Second month	Last day of second month	30 days from last day of second month
Etc.	Etc.	Etc.

All obligated Stewards are required to file individual EEE Steward's Reports from the commencement date of these Rules. Obligated Stewards are required to file an EEE Steward's Report for all outstanding EEE Steward's Reports by the date outlined in Section 4 of these Rules and then the regular schedule of filings and payments shall apply.

Stewards who fail to pay Steward Fees as set out in the instalment schedule above shall pay in addition:

- A penalty of 10% of the Steward's Fees due and payable.
- Interest at the posted prime interest rate plus 3% on any outstanding balance due.
- Legal and other collection costs and audit fees, as applicable.

Appendix E

Table of Fees: April 1, 2010

Revised Phase 1 and 2 WEEE Material Category		Fee Rate ($/unit)
Display Devices	≤ 29" Screen	$9.55
	> 29" Screen	$24.83
Desktop Computers		$5.32
Portable Computers		$0.91
Computer Peripherals		$0.52
Printing, Copying and Multi-Function Devices	Desktop Printing, Copying and Multi-Function Devices	$2.39
	Floor-Standing Printing Devices	$29.00
	Floor-Standing Copying and Multi-Function Devices	$28.13
Telephones and Telephone Answering Machines		$0.47
Cellular Devices and Pagers		$0.09
Image, Audio and Video Devices	Personal/Portable	$0.37
	Home/Non-Portable	$1.81
	Home Theatre in a Box (HTB)	$8.28
	Aftermarket Vehicle	$1.94

Appendix F

Phase 1 EEE Categories and Fee Rates: April 1, 2009 until March 31, 2010

EEE Material	EEE Material Sub-Category	Fee Rate ($/unit)
Desktop Computers		$13.44
Portable Computers		$2.14
Computer Peripherals	Mice	$0.32
	Keyboards	
	Single Hard drives	
	Optical Drives	
Monitors		$12.03
Televisions	18" screen and smaller	$10.07
	19" to 29" screen	
	30" to 45" screen	
	46" screen and larger	
Printing Devices		$5.05

SCHEDULE B

INFORMATION SHARING PROTOCOL

In accordance with subsection Section 7.1 of the Program Agreement, Waste Diversion Ontario (WDO) and the Industry Funding Organization (IFO) agree to keep each other informed and apprised of matters as they relate to the implementation of the WEEE Program Plan as set out below:

- The IFO agrees to provide WDO with information on a regular basis that is compiled or developed by the IFO during program implementation, which is pertinent to WDO's responsibilities under the Waste Diversion Act. WDO will provide reasonable advance notice to the IFO of the timing and content of its information requirements.

- The IFO and WDO agree to share communications from Stewards and stakeholders that include complaints or criticisms concerning the following aspects of the WEEE Program Plan implementation process immediately upon receipt and to co-operate in determining an appropriate response to such complaints or criticisms:
    - Complaints or criticisms that raise issues of compliance with the terms of the Program Plan, the *Waste Diversion Act*, *2002* (Ontario) or the Program Request Letter;
    - Complaints or criticisms from Stewards, service providers and other stakeholders that suggest that the Program Plan does not affect the marketplace in a fair manner;
    - Complaints or criticisms from residents or businesses regarding access to the collection system or fees charged;
    - Complaints or criticisms that reference the other, i.e. WDO or the IFO, as the case may be, the Ministry of the Environment or the Minister of the Environment.

- The IFO and WDO agree to share information about inbound calls from the media or other members of the public, identifying key questions and flagging potentially contentious issues. Media calls and requests for interviews should be accorded priority, with the IFO notifying WDO designated communications staff as soon as possible.

- The IFO agrees to share with WDO all final draft versions of hardcopy or electronic communications materials for review including but not limited to:
  a) Communications plans
  b) Advertising plans;
  c) News releases;
  d) Media advisories;
  e) Media backgrounders;
  f) Schedules of upcoming media events or releases; and
  g) Significant policy positions.

- The communications materials referred to above will be shared between designated communications staff at the IFO and WDO as soon as the material is ready to be submitted to WDO for review and comment or seven (7) business days prior to release, whichever is earlier. If timely response to events does not allow for seven (7) days lead time, the IFO agrees to provide the materials to WDO as soon as available.

- For the purposes of this Information Sharing Protocol, the Executive Director is the designated communications staff of WDO and the Executive Director is the designated communications staff of Ontario Electronic Stewardship.

- WDO agrees to share with the IFO all final draft versions of news releases, fact sheets and announcements related to the WEEE Program Plan for review. WDO will keep the IFO apprised of releases and events in as timely a manner as possible once approved for release.

- The IFO will handle inquiries related to its responsibilities under the Program Agreement.

- WDO will handle inquiries related to its responsibilities under the *Waste Diversion Act, 2002* (Ontario) and the Program Agreement.

- WDO and the IFO agree to give each other at least seven (7) days notice regarding any planned events and public appearances (media interviews, etc.) by its officers and representatives. If event planning does not allow for seven (7) days lead time, the parties agree to advise each other as soon as possible.

- If the IFO is seeking the participation of the WDO Chair or the Minister in any of its events or public appearances, the IFO agrees to give WDO Chair and the Minister reasonable notice.

附件五：尼加拉瓜資源回收宣導文宣

Fort Erie
Niagara Falls
Port Colborne
Welland

2009 Collection Calendar

help curbwaste
PUT IT IN ITS PROPER PLACE
Niagara Region

Green Bin
Food and Yard Material
(every week)

YES ✓

From the Kitchen:
- bones, meat, chicken, fish
- bread, toast, muffins, cake, cookies, pies, and dough
- coffee grounds and filters
- cooking oil, grease or fat
- dairy products (solid)
- eggs and egg shells
- fruits, vegetables and peelings
- nuts and nut shells
- paper towels and napkins*
- pasta and rice
- sauces and gravy
- table scraps and plate scrapings
- tea bags
- tissues*

From the Yard:
- grass clippings
- leaves
- plants and weeds
- small twigs and hedge trimmings
  max. 1.5 cm (0.5") diameter and 30.5 cm (12") length

In General:
- brown paper bags
- cooled fireplace ashes
- paper coffee cups - *remove and discard lids*
- paper egg cartons
- paper take-out trays and plates
- pet fur
- pet waste and kitty litter - *wrap in paper or place in a certified compostable plastic or paper bag*
- sawdust and wood shavings
- soiled newsprint and cardboard *

** not soiled with hazardous material*

NO ✗

From the Kitchen:
- plastic wrap and wax paper

From the Yard:
- branches - *collected separately (see reverse)*
- sod or soil
- treated wood products (lumber)

In General:
- cigarette ashes or butts
- dead animals
- diapers
- feminine hygiene products
- lubricants
- plastic bags - *see Grey Box*
- rubber products and textiles

Blue Box

Grey Box

alternating weekly collection -
Blue Box one week, Grey Box the next

Blue Box

YES ✓

Aluminium Cans and Foil Containers:
- *remove food residue*

Beverage Cartons:
- milk and juice cartons and drink boxes

Glass Jars and Bottles:
- *remove and discard caps and lids*

Plastic Bottles, Jars and Clamshells:
Plastic Tubs and Lids:
Look for these codes on container bottoms:

♻1 ♻2 ♻4 ♻5
- *remove and discard bottle caps and jar lids*

Polystyrene Plastic: ♻6
- foam food trays, clamshells and protective packaging

Spiral Wound Containers: **NEW**
- cardboard cans with metal bottoms (eg. frozen juice cans, potato chip containers, baby formula containers)

Steel Food and Beverage Cans:
- *place lid inside metal can and squeeze opening*

✓ **Empty and rinse all containers**

NO ✗

- aerosol cans
- appliances
- butter wrappings, cigarette wrappings and foil lined food lids
- coat hangers - *return to dry cleaner*
- ceramics, light bulbs or window glass
- lawn chairs
- needles or syringes - *see HHW*
- paint cans
- paper products - *see Grey Box*
- plastic bags - *see Grey Box*
- plastic blister packs
- plastic and foil food wrap
- plastic toys
- propane cylinders - *see HHW*
- scrap steel
- solar blankets
- ♻3 or ♻7 plastic or plastic without a code

Grey Box

YES ✓

Boxboard:
- cereal, pop, cookie, tissue, detergent, cracker, shoe and gift boxes - *remove liners*

Corrugated Cardboard:
- shipping and pizza boxes - *remove excess food*

Excess cardboard may be flattened and placed in a cardboard box or tied in bundles no larger than 91cm (3') x 91cm (3') x 91cm (3').

Paper:
- newspapers, flyers, glossy magazines, catalogues, envelopes, paperbacks, phone books, hardcover books (*remove cover and discard*)

✓ **Shredded paper should be placed inside a firmly tied clear plastic bag.**

✓ **Place all acceptable paper products loose inside the Grey Box. DO NOT place paper products in plastic grocery bags.**

Plastic Bags:
- retail, milk and bread bags, dry cleaning bags, clean bubble wrap, and the plastic outer covering from toilet tissue, paper towels and pop cases

IMPORTANT ***Remove receipts and stuff all plastic bags into one bag and tie handles.*** *Plastic bags stuffed into one bag are easily sorted when placed with paper for collection.*

✓ **If your Grey Box is full, you may use another rigid, reusable container (eg. Blue Box)**

NO ✗

- chip bags or plastic wrap
- coated paper bags (eg. pet food bags)
- metal, glass or plastic - *see Blue Box*
- milk and juice cartons - *see Blue Box*
- paper beverage cups
- paper egg cartons, paper take-out trays - *see Green Bin*
- waxed or coated boxboard such as frozen food packaging, ice cream cartons, etc.
- wrapping paper and greeting cards

Garbage
2 bag/can limit
(every week)

YES ✓

Non-compostable Materials

Non-recyclable Materials
- broken glass - *seal inside cardboard box and label it*

More than 2 bags/containers?
Bag tags are available, for $1 each, at outlets across Niagara region. Visit our website or call the Waste Info-Line for a list of outlets.

Large Household Items and Appliances

Call Modern at 905-262-6000 or 1-800-561-4409, at least two working days before your regular garbage day, to arrange collection for:
- Box springs, mattresses, couches, televisions, furniture, and appliances (refrigerators, stoves, microwaves, freezers, washers, dryers, air conditioners, etc.)

Refrigeration units (refrigerators, freezers, air conditioners, dehumidifiers, etc.) must have a **CFC removal sticker** affixed to the unit, prior to being collected. Refrigerator and freezer doors must be removed or secured to avoid any potential danger.

CFC removal stickers are available for $20 each at outlets across Niagara region. Visit our website or call the Waste Info-Line for a list of outlets.

NO ✗

- automotive parts (including tires, etc.)
- construction, demolition and renovation materials (such as doors, fencing, drywall, wood, siding and cupboards, etc.)
- dead animals
- household hazardous waste (HHW)*

HHW Days are open from 8am - 3pm on **designated dates ONLY** - see calendar

FE **Fort Erie:**
John L. Gibson Operations Centre, 1818 Pettit Road

NF **Niagara Falls:**
Niagara Region's Recycling Centre, 4935 Kent Avenue

PC **Port Colborne:**
to be determined

WLD **Welland:**
Seaway Mall Back parking lot, 800 Niagara Street (enter off Woodlawn Road)

Containers and bags must measure no more than 91cm (3') by 61cm (2') in diameter and must not exceed 22.7kg (50lbs.) when full.

HELPFUL HINTS

Remember.. no plastic in your Green Bin or for your leaf and yard material!

Your Green Bin does not have to be lined. Liner options include newsprint, shredded paper, cardboard, paper bags or certified compostable plastic bags with the BPI logo on the bag.

COMPOSTABLE

Bags that are labelled 'degradable' or 'oxo-degradable' but do not carry the BPI logo are NOT accepted.

Leaf and yard materials may be placed in rigid, reusable containers, paper bags or certified

Blue Box
- Place containers loosely inside the box. DO NOT place containers in plastic bags.
- Place lighter-weight containers, such as polystyrene, at the bottom of the box with heavier materials, such as glass, on top.
- Do not overfill your recycling boxes. If your Blue Box is full, you may use another rigid, reusable container (eg. Grey Box)

Grey Box
- Ensure cardboard is placed tightly in the Grey Box, rather than loosely on top, or tie it together.
- Place lighter weight materials (flyers and plastic grocery bags) at the bottom of the box with heavier materials (newspaper) on top.
- Place smaller boxboard items, such as toilet paper rolls, inside larger ones, such as cereal boxes.

www.niagararegion.ca

General
- To decrease windblown litter, place materials at the curbside in the morning by 7am rather than leaving them out overnight.
- **Do not place containers on top of, or behind, snow banks as materials will NOT be collected.** It may be necessary to shovel a small spot in the snow near the curb.

* HHW includes paint, aerosol cans, batteries, gasoline, motor oil, propane tanks, solvents, thinners, pharmaceuticals, pesticides, herbicides, fluorescent tubes, needles and syringes. For a complete list of materials, please

Fort Erie, Niagara Falls, Port Colborne and Welland

Materials must be at the curb by 7am SHARP on your collection day!

help curbwaste
PUT IT IN ITS PROPER PLACE
Niagara Region

February 2009

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16 REGULAR COLLECTION	17	18	19	20	21
22	23	24	25	26	27	28

March 2009

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24 SG	25	26 SG	27	28
29	30 SG	31				

April 2009

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
			1	2	3	4 NF
5	6	7	8	9	10 REGULAR COLLECTION	11
12	13 REGULAR COLLECTION	14 SG	15	16 SG	17	18 WLD
19	20	21	22	23 SG	24	25
26	27	28	29	30 SG		

May 2009

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
					1	2 NF
3	4	5	6	7	8	9
10	11	12	13	14	15	16 PC
17	18 REGULAR COLLECTION	19	20	21	22	23 FE
24	25	26	27	28	29	30

June 2009

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
31	1	2	3	4	5	6 NF
7	8	9	10	11	12	13
14	15	16	17	18	19	20 WLD
21	22	23	24	25	26	27
28	29	30				

July 2009

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
			1 REGULAR COLLECTION	2	3	4 NF
5	6	7	8	9	10	11
12	13	14	15	16	17	18 PC
19	20	21	22	23	24	25
26	27	28	29	30	31	

August 2009

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
						1 NF
2	3 REGULAR COLLECTION	4	5	6	7	8
9	10	11	12	13	14	15 WLD
16	17	18	19	20	21	22 FE
23	24	25	26	27	28	29

September 2009

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
30	31	1	2	3	4	5 NF
6	7 REGULAR COLLECTION	8	9	10	11	12
13	14	15	16	17	18	19 PC
20	21	22	23	24	25	26
27	28	29	30			

October 2009

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
				1	2	3 NF
4	5	6	7	8	9	10
11	12 REGULAR COLLECTION	13	14	15	16	17 EDAY WLD
18	19	20	21	22	23	24
25	26	27	28	29	30	31

November 2009

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
1	2	3	4	5	6	7 NF
8	9	10	11 REGULAR COLLECTION	12	13	14
15	16	17	18	19	20	21 PC
22	23	24	25	26	27	28
29	30					

December 2009

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21 REGULAR COLLECTION	22 REGULAR COLLECTION	23 REGULAR COLLECTION	24 REGULAR COLLECTION	25 COLLECTION DELAYED ONE DAY	26
27	28 REGULAR COLLECTION	29 REGULAR COLLECTION	30 REGULAR COLLECTION	31 REGULAR COLLECTION		

January 2010

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
					1 COLLECTION DELAYED ONE DAY	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30

February 2010

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
31	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15 REGULAR COLLECTION	16	17	18	19	20
21	22	23	24	25	26	27
28						

March 2010

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

April 2010

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
				1	2 REGULAR COLLECTION	3 NF
4	5 REGULAR COLLECTION	6	7	8	9	10
11	12	13	14	15	16	17 WLD
18	19	20	21	22	23	24
25	26	27	28	29	30	

Collection will take place on all statutory holidays, except Christmas and New Year's days.

LEGEND

- **Blue Box Collection Week** (collected same day as regular garbage)
- **Grey Box Collection Week** (collected same day as regular garbage)
- **Smart Gardening Workshops** visit www.smartgardening.ca for details
- **Environment Day** October 17, 2009 Welland – Seaway Mall back parking lot
- **Household Hazardous Waste Day** (see reverse side for locations)

Branch and Christmas tree collection

Acceptable size and weight limits:

- Branches must be tied in bundles
- **Maximum weight of bundle** = 22.7kg (50 lbs.)
- **Maximum size of bundle** = 1.5m (5 ft.) in length and 0.5m (1.6 ft.) in diameter
- Individual branches inside of bundle must not exceed 7cm (2.8 in.) in diameter

Branches will be collected on the following Saturdays ONLY:

April 18, May 23, June 20, July 11, October 17, November 14, 2009, and April 17, 2010

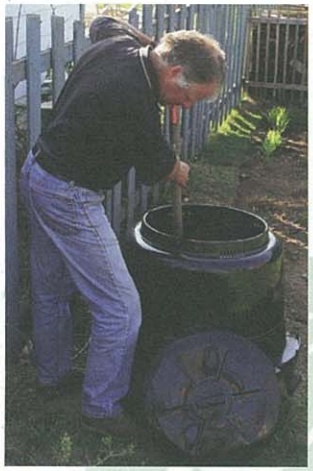
Christmas tree collection will be provided on:
Saturday, January 9, 2010 **ONLY.**

Branches and Christmas trees must be at the curb by 7am SHARP on the designated collection day.

Helpful Tips

General Tips

- Store your Kitchen Catcher in a convenient location. Try switching it with your kitchen garbage pail and see just how little garbage you really have.
- Line your bin with newspaper or egg cartons to absorb liquid and prevent waste from sticking to the bottom or sides. Rinse as required with warm water and mild soap.
- Empty your Kitchen Catcher often.
- Put your Green Bin out for collection every week even if it is not full.
- Continue to use your backyard composter. Backyard composting is a great way to produce ready-made compost for your garden. It also leaves more room in your Green Bin for materials that shouldn't go into your backyard composter such as dairy products, meats, fish, fats, pet waste and kitty litter.



Odours

Here are some tips to help reduce odours:

- Rinse your Kitchen Catcher and Green Bin regularly with hot water.
- Use lemon juice or baking soda to suppress odours.
- Avoid placing your Green Bin in direct sunlight. Store it in a well-shaded, well ventilated area.
- Wrap your organics in paper towels or napkins, or newspaper before placing them in your Green Bin.

Helpful Tips

Winter

- Wrap food scraps in newspaper to prevent food waste from freezing to the container, or
- Place crumpled newspaper at the bottom of the bin or between layers of food.

Pests and Insects

When closed properly, your Green Bins should be as secure as your regular garbage can. To make it even more pest-proof you can:

- Use a bungee cord or a weight to hold the lid down – please remove the cord or weight before you set the container out for collection!
- Try rubbing vinegar on your Green Bin – the smell deters some pests.
- Keep flies away by rinsing your Green Bin with borax and water or vinegar and water.
- Store your Green Bin in a garage or shed, and away from railings, walls or other objects that pests can use for leverage.
- Make sure wet and rotting foods aren't exposed. Try alternating layers of food waste with dry leaf and yard waste or paper products.

How to Get Another Green Bin or Kitchen Catcher

- Visit **www.niagararegion.ca** for a list of locations where you can buy an extra Green Bin or Kitchen Catcher.
- Any reusable container can be used as your "Kitchen Catcher". Any rigid container, such as a garbage can marked "Organics", can be your Green Bin. Call the Waste Info-Line to request your free "Organics" label.

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Your Guide to

Organics Collection

in Niagara Region

Pitch in. Use your Bin!

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Niagara Region

PUBLIC WORKS

Waste Info-Line

905-356-4141 or 1-800-594-5542

www.niagararegion.ca

Green Bin Program

What is the Green Bin Program?

It is a program that collects household organic waste, separate from recyclable materials and garbage, at the curb.

Benefits of the Green Bin Program

Organic material makes up about one-third of residential household waste. By participating in the Green Bin Program you will:

- Reduce the amount of garbage you set out at the curb for collection;
- Help keep organic material out of the landfill and help us reach our goal of diverting 65 per cent of our waste from landfills by 2012; and
- Give waste new life by creating valuable compost that can be used on lawns and gardens.

What Happens to Your Organic Material after it is Collected?

- The organics are taken to the composting facility for processing.
- Once the composting process is complete, the material is screened to remove any non-organic objects or oversized particles.

- The compost is tested to make sure it meets, or exceeds the Ministry of the Environment's guidelines for quality.
- Final compost can be used for a variety of landscaping and gardening applications.

Acceptable Materials

What Goes In?

From the Kitchen:

- bones
- bread, toast, muffins, cake, cookies, pies and dough
- coffee grounds and filters
- dairy products (solid)

- eggs and egg shells
- fruits, vegetables and peelings
- meat, chicken, fish
- nuts and nut shells
- paper towels and napkins*
- pasta and rice
- sauces and gravy
- table scraps and plate scrapings
- tea bags
- tissues*

*not soiled with hazardous material

From the Yard:

- grass clippings
- leaves
- plants and weeds
- small twigs and trimmings

max. 1.5 cm diameter, 30.5 cm long

In General:

- brown paper bags
- cooled fireplace ashes
- kitty litter
- paper coffee cups (remove and discard lids)
- paper egg cartons
- paper take-out containers
- pet fur
- pet waste
- sawdust, wood shavings
- soiled newsprint

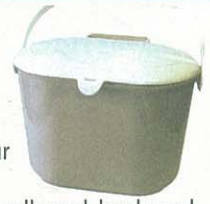
New! Kitty Litter and Pet Waste

For health and safety reasons, before placing kitty litter or pet waste in your Green Bin, either: wrap it in newspaper; place it in a paper or compostable plastic bag with the BPI logo.

COMPOSTABLE

Preparing Organics for Collection

Kitchen Waste



- Use your Kitchen Catcher to collect your indoor organic material.
- Food scraps can go directly into your Kitchen Catcher. If you want to line your Kitchen Catcher, you can use cardboard, boxboard, newsprint, shredded paper, paper bags or certified compostable plastic bags with the BPI logo.
- When your Kitchen Catcher is full, simply empty the contents into your Green Bin (or other rigid, reusable container marked 'Organics').

Tips for using compostable plastic bags:

- Compostable plastic bags, in your closed Kitchen Catcher, should be changed every three to four days to prevent moisture build-up and potential bag leakage.
- To avoid potential leakage when emptying your Kitchen Catcher into your Green Bin, take your Kitchen Catcher to your Green Bin – do not carry the contents by the compostable plastic bag.

Curbside

- Take your Green Bin to the curb by 7 a.m. on your scheduled collection day, even if it is not full.

Leaf and Yard Materials

- Leaf and yard materials may be placed in an open-top, rigid, reusable container, clearly marked 'Organics'. You may also use Kraft paper bags or your Green Bin for your leaf and yard materials.

Grasscycling

Leaving your grass clippings on the lawn is a great way to reduce the amount of yard waste bags you put to the curb by 20 to 25 per cent. Grasscycling can reduce fertilizer requirements by 30 per cent and the clippings retain moisture which means less watering is required.

GARBAGE TAGS AND CFC REMOVAL STICKER LOCATIONS

Garbage tags are available, for $1.00 each, and CFC removal stickers are available, for $20.00 each, at all Avondale, Avon Mart, and Dollar Mart stores throughout the Niagara Region.

These additional stores sell the garbage tags and/or CFC removal stickers. Those stores with an * beside their name sell garbage tags only.

Fort Erie:
* Ineson's Variety - 235 Gilmore Road
* Stevensville Grocery - 3732 Main Street W. Stevensville

Grimsby:
* Bartlett Convenience – 297 Lake Street
  Giant Tiger – 36 Main Street, West
  Happy One Stop - 310 Main Street West
  Lakeside Variety – 24 Olive Street

Niagara Falls:
* Big Bee - 8209 Lundy's Lane
* Busy Bee - 5056 Montrose Road
* Chippawa Variety - 3816 Main Street
* Don's Convenience – 7572 Lundy's Lane
* Drummond Mart – 5211 Drummond Road
* E-Mart – 8278 Thorold Stone Road
* Hasty Market - 4025 Dorchester Road
* Leo's Grocery – 7663 Woodbine Street
* Lee Mart - 6850 Thorold Stone Road
  Main Street Convenience - 6119 Main Street
* Montrose Variety – 6555 Montrose Road
* Mrs. Convenience – 5075 Bridge Street
  Niagara Region's Recycling Centre – 4935 Kent Avenue
* S&B Variety - 6015 Main Street
* Scott and Drummond Variety - 6188 Scott Street
* Stanley Convenience - 5551 Heritage Drive
* Stanley Variety & Video - 5724 Stanley Avenue
* Um's Kwik-E-Mart – 6265 Thorold Stone Road
* Young's Mini Mart – 6095 Dunn Street

Port Colborne:
* Easy Go Variety – 437 Sugarloaf Street
* Jasmine Variety – 87 Kent Street
* Paul's Variety – 675 King Street

Thorold:
* Clara Variety - 126 Clara Street
* Richmond Supermarket – 31 Richmond Street

St. Catharines:
* Anthony Variety - 215 Queenston Street
* A One Convenience - 227 Lake Street
* Big Bee Convenience - 134 Lake Street
* Big Bee Convenience - 569 Ontario Street
* Big Bee Convenience - 225 Queenston Street
* Haig St. Variety – 63 Haig Street
  J C Food Store – 132 Lakeshore Road
* Jim Variety - 400 Scott Street
* Lake-Mart Corporation – 117 Lakeshore Road
  Marindale Convenience - 6C-211 Martindale Road
  New Avenue Shoppe - 166 Russell Avenue
  N.R. Variety and Tobacco & Cigar Company -228-230 Ontario St.
* Oaks Grocery – 40 Bunting Road
* Pelham Convenience - 118 Pelham Road
* Shoppers Drug Mart – 143 Hartzel Road
* Short Stop Variety – 142 Lake Street
* Stop and Go - 240 Russell Avenue
* Sunny Side Market - 82 Chetwood Street
* Tony's Variety – 35 York Street
* Tropicana Ice Cream Parlour – 108 Arthur Street
* Victoria Variety – 224 Glenridge Avenue
* Welcome Variety – 359 Carlton Street
* West Garth Variety - 36 Pelham Road
* Young Variety Store – 139 Louth Street
* Zehrs – Pen Centre and Fairview Mall

Wainfleet:
* Winger General Store – 31W85 Highway 3

Welland:
* A One Convenience - 237 Hellems Avenue
  Arnold Variety – 36 Thorold Road
* Ben's Variety - 58 Southworth Street North
* Best Mart – 30 Rice Road
  Dain City Convenience – 7 Kingsway
* Dairy Maid Shop – 45 Broadway Street
* Denistoun Convenience - 112 Denistoun Street
* Golden Variety – 790 Court Avenue
  Kay's Korner Variety – 150 Thorold Road
* Pych Mini Variety - 67 Hellems (Formerly J&D Mini Variety)
  Seaway Mall Info. Booth – 800 Niagara Street
* Sunny Mart - 481 Thorold Road
* Sunny Stop Convenience - 106 Broadway Street
* Welland Convenience – 1000 Ontario Road
* Welland Food Mart - 236 East Main Street

West Lincoln (Smithville):
* Fulton Convenience – 9003 Highway 20
  Giant Tiger – 249 St. Catharine Street

Note: ***The above list of retail locations for Garbage Tags and CFC Removal Stickers is current, as of June 1, 2007.***

Your Guide to

Garbage Collection

in the Niagara Region

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Niagara Region

PUBLIC WORKS

Waste Management Services Info-line

905-356-4141 or 1-800-594-5542

www.regional.niagara.on.ca

WEEKLY CURBSIDE GARBAGE CONTAINER LIMITS

Type of Property	Container (Bag or Can) Limit
Single family homes, duplexes, and townhouses on private and public roads	2 containers per unit*
Apartments and trailer parks: • 3 to 5 units	2 containers per unit*
• 6 or more units	12 containers per property
Industrial, commercial and institutional, agricultural, and mixed-use buildings	7 containers per property

**** Only single family homes and apartments with five units or less may purchase garbage tags for the collection of additional containers.***

Garbage tags are available, for $1.00 each, at the stores listed on the back of this brochure.

In order to have additional containers collected, a garbage tag must be placed around the neck of each additional bag, or on top of materials placed inside each additional garbage can. Please do not place tags directly on garbage cans.

MATERIALS SHOULD NOT BE PLACED AT THE CURB BEFORE 8 PM, ON THE NIGHT BEFORE COLLECTION, AND NO LATER THAN 7 AM, ON THE DAY OF COLLECTION.

(Waste Management By-law No. 145-1999)

WHAT IS A GARBAGE CONTAINER?

A bag, can* or bundle, which does not exceed 90 cm (3 ft.) in height, by 60 cm (2 ft.) in diameter, weighing no more than 23 kg (50 lbs.), when full.

****All cans used for garbage must have handles on the outside of can.***

Metal and/or plastic barrels and drums, and cardboard boxes are **NOT** acceptable as garbage containers.

Sealed cardboard boxes may be used to store broken glass inside. Label boxes as "broken glass" and place next to garbage.

MATERIALS NOT COLLECTED WITH REGULAR GARBAGE

Recyclables, organics and household hazardous waste will **NOT** be collected, if mixed in with regular garbage.

Alternative services/programs are available for the proper disposal of these materials, including the curbside recycling and organics collection program and household hazardous waste depot program.

LARGE HOUSEHOLD ITEMS & APPLIANCE COLLECTION

Single family homes and apartments with 5 units or less receive year-round collection, on a call-in basis.

Call your garbage collection contractor, at least 2 working days prior to your collection day, to make arrangements for collection.

Municipality	Contractor	Phone Number
Fort Erie, Niagara Falls, Niagara-on-the-Lake, Port Colborne, St. Catharines, Thorold and Welland	Modern Corporations	905-262-6000 or 1-800-561-4409
Grimsby, Lincoln, Pelham, Wainfleet and West Lincoln	JW Sheldrick Sanitation *a Division of Modern Corporations*	1-800-561-4409

Carpet must be rolled and tied, in lengths no longer than 1.5 m (5 ft.).

Refrigeration units (freezers, air conditioners, etc.) are also collected, as part of this service. However, residents must purchase a CFC removal sticker, for $20.00 each, from the stores listed on the back of this brochure. When placing appliances out for collection, doors must be secured or removed.

Construction, demolition and renovation materials (drywall, lumber, fences, flooring, etc.) and automotive parts, including tires, are NOT collected as part of curbside collection service. With the exception of automotive parts, these materials may be taken to any Regional landfill site. Disposal fees will apply.

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WHITE GOODS

Includes: water softeners, metal bed-springs, stoves, fridges, freezers, air conditioners, dehumidifiers, water coolers, washers, dryers, BBQs, metal swing sets, bathtubs, T.V antennas, dishwashers, hot water tanks, pool filters, rangehoods, furnaces, humidifiers, lawnmowers, wheelbarrows, microwaves, bikes, exercise equipment, or any household metal items.

When placing appliances out for collection, please ensure that they are empty and doors are secured or removed.

CFC REMOVAL STICKER

Refrigeration units like fridges, freezers, air conditioners, dehumidifiers and water coolers all need C.F.C. removal stickers. These stickers are $20.00 each and can be purchased at local Avondale, Avon Mart & Dollar Mart Stores. Call the Region's Waste Info Line for additional retail locations.

What happens after the white goods are collected?

CFCs are removed from the refrigeration units and the white goods are sent to a scrap metal recycling facility.

BULKY GOODS

Includes: large household items such as furniture, fiberglass bathtubs, carpeting, mattresses, lamps, bookshelves, small appliances, sinks, toilets, televisions, etc.

Carpet must be rolled and tied, in lengths no longer than 1.5 m (4.5').

Construction, demolition and renovation materials (drywall, lumber, fences, flooring, etc.), automotive parts (tires, etc.) and are NOT collected as part of curbside collection service.

Please note that items that can fit within a regular garbage bag will NOT be collected as part of large household item and appliance collection.

Item still usable?

If items are still in good condition consider donating them to local organizations or businesses. The Region has developed the Enviro Guide which is a directory of local organizations that accept new or gently used items.

For a copy call the Region's Waste Info-Line, visit the website or visit your local municipal office.

Your Guide to

Large Household Item & Appliance Collection

in the Niagara Region

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Niagara Region
PUBLIC WORKS

Waste Management Services Info-line
905-356-4141 or 1-800-594-5542
www.regional.niagara.on.ca

Getting Rid of Large Items? Use Your Curbside Collection Service

(Only available to Single Family Homes or Apartments with 5 units or less)

To receive collection of large household items and appliances, you must call the garbage collection contractor, **Modern Corporations / JW Sheldrick Sanitation at 905-262-6000 or 1-800-561-4409**, at least 2 working days prior to your regular garbage collection day to make arrangements. For more information on large items that will be collected see reverse side.

After you book a date for collection, place large household items and appliances to the curb no earlier than 8:00 p.m. the night before your scheduled collection and no later than 7:00 a.m. on the day of your collection.

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HHW Program Facts

Oil delivered by residents to the depots annually is equivalent to over 24,000 automotive oil changes.

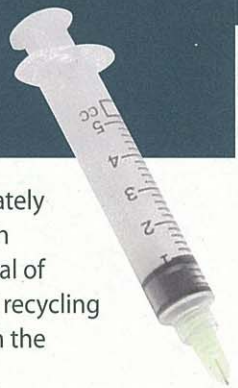
If all the car batteries collected in 2008 at the HHW days and depot were placed end to end in a straight line, the line would be almost 1 km long.

Thanks to Niagara residents, over 775,000 kg of HHW were collected at the 2008 HHW days and depot:

- **188,000 litres of paint (80% recycled);**
- **120,000 litres of motor oil (100% recycled);**
- **2,100 car batteries (recycled);**
- **2,700 propane tanks (100% reused or recycled);**
- **3,500 litres of antifreeze (100% recycled);**
- **29,000 kg of pharmaceuticals.**

Other materials that were collected included used oil filters, dry-cell batteries, aerosol spray cans, syringes, etc.

Being Sharp!



Each year, Canadians use approximately 7 million syringes at home for health care purposes. The improper disposal of syringes and sharps in garbage and recycling boxes poses a health hazard to both the community and sanitation workers.

The proper disposal of these items is essential, to ensure the safety of everyone.

Follow these simple guidelines for proper disposal:

1. Place all syringes and sharps in a sealed, puncture-proof container.
2. Contact your local pharmacy to see if they offer free sharps containers or disposal.
3. Bring syringes and sharps to any of the Region's HHW days or depot in a sealed puncture-proof container.

Waste Info-Line
905-356-4141 or 1-800-594-5542
www.niagararegion.ca

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Your Guide to

Household Hazardous Waste Disposal

in Niagara Region

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PUBLIC WORKS

Waste Info-Line
905-356-4141 or 1-800-594-5542
www.niagararegion.ca

Household Hazardous Waste (HHW)

What is Household Hazardous Waste?

HHW is material that is harmful to humans, animals and the environment, if not handled and disposed of properly. HHW can be corrosive, explosive, toxic, or flammable. These are products used in cleaning, home improvements, automobile maintenance, lawn and garden care, and a variety of other tasks.

Acceptable Materials:

Aerosol cans, antifreeze, batteries (all types), bleach, cleansers, fertilizers, gasoline, herbicides, insecticides, medications, motor oil, paint, pesticides, pool chemicals, propane tanks & cylinders, solvents and syringes, etc.

Unacceptable Materials:

Ammunition, explosives, electronics (TVs, DVDs, VCRs, computer monitors, etc), radioactive or pathological wastes, smoke detectors, microwaves, PCBs, and commercial or industrial waste.

2009 HHW Days and Depot Information

Niagara Falls

When: First Saturday of each month - April to November: (April 4, May 2, June 6, July 4, August 1, September 5, October 3, November 7)
Time: 8 am - 3 pm
Where: The Recycling Centre parking lot, 4935 Kent Avenue (access from Industrial Street)

Niagara-on-the-Lake

When: Saturday, June 27
Time: 8 am - 3 pm
Where: Niagara-on-the-Lake Municipal Offices 1593 Four Mile Creek Road, Virgil (enter off Four Mile Creek Road)

Fort Erie

When: Saturday: May 23 and August 22
Time: 8 am - 3 pm
Where: John L. Gibson Operations Centre, 1818 Pettit Road

Port Colborne

When: Saturday: May 16, July 18, September 19, November 21
Time: 8 am - 3 pm
Where: to be determined

St. Catharines/Thorold

When: Second Saturday of each month - April to November: (April 11, May 9, June 13, July 11, August 8, September 12, October 10, November 14)
Time: 8 am - 3 pm
Where: Niagara Region parking lot, 3501 Schmon Parkway

Wainfleet

When: Saturday, October 24
Time: 8 am - 3 pm
Where: Wainfleet Arena parking lot, Park Street

Welland

When: Saturday: April 18, June 20, August 15, October 17
Time: 8 am - 3 pm
Where: Seaway Mall back parking lot, 800 Niagara Street (enter off Woodlawn Road)

Grimsby, Lincoln, Pelham and West Lincoln Residents ONLY

Hours: Open year-round: Tuesday to Friday - 8 am - 5 pm and Saturdays - 8 am - 4 pm
Where: Niagara Road 12 landfill site, 7015 Concession Road 7, off Grimsby Road 12, West Lincoln

HHW - Proper Disposal

It is very important to make sure that your Household Hazardous Waste products are disposed of properly.

Improper disposal of HHW in drains, sewers, lawns and landfill sites is hazardous to our health. When disposed of carelessly, it pollutes our waterways and other natural resources. HHW products should never be included with your garbage or recycling and is illegal under the Region's Waste Management By-Law 95-2008.

When taking materials to the HHW depot, ensure all materials are in their original container, or in a well marked container. All containers should be securely sealed.

Oil must be delivered to the depot in sealed containers no larger than 20 litres each. Barrels and/or drums of oil will not be accepted.

Gasoline must be in a sealed container or existing fuel container. Gasoline will not be decanted at the HHW Depot; therefore, the container and the contents will be taken for safe disposal.

All HHW that is brought to the depots is recycled, reused or disposed of, in a safe and proper manner.

Reuse Table

A reuse table is set up at all the HHW depots. Items that are in good condition, and can be reused, are placed on display for residents to take, free of charge.

GreenScene
Spring 2009
Niagara Region Public Works Department www.niagararegion.ca

The ABCs of CSOs

Sewers have been a part of our society for thousands of years. Many ancient civilizations, including the Babylonians had them. There has even been some evidence of small sewer systems in Scotland dating back to 3,000 BC. Their function then and now is pretty basic... collect and carry away sewage and wastewater.

While the sewers in Niagara are not quite that old, some, called "combined sewers", were designed many years ago to collect and carry sewage, industrial wastewater and rain water, in one pipe, and move it all to a treatment plant.

While that system seemed to work fairly well at the time, it does have one fairly significant glitch that the Region and all 12 area municipalities are working to address today: during periods of heavy rain or snowmelt, the older pipes are sometimes too small to carry the load. When this happens, the water mixture needs to find someplace to go... and it's usually back up into your basement.

To address this glitch and protect your health and property, 'outlet pipes' were added to some of the combined sewers throughout the region to allow the excess water mixture during heavy rains/snow melts to flow directly into ditches and other waterways, instead of

backing up into basements. These outlet pipes are called Combined Sewer Overflows (CSOs) and there are 283 of them in Niagara.

While it is recognized that CSOs are not the optimum solution, without them, Niagara residents would be faced with ongoing basement flooding and the potential health and property impacts that go with that. The good news is that the situation is improving. The Region, and all 12 area municipalities, are working together on more than 95 CSO control projects across Niagara; many are already completed while others are either planned or in progress. These projects include:

A. The construction and implementation of the state-of-the-art high rate treatment facility like the one in Niagara Falls
B. Installing separate sewers for storm water and for sanitary sewage (from homes)
C. Reducing the amount of water entering the combined sewers (eg: promoting downspout disconnections)
D. Building underground CSO storage tanks to hold the sewage during heavy rainfall. The sewage is then released back into the sewer after the rainfall so that it can be treated at the treatment plant
E. Providing disinfection at CSO locations so that any sewage in the water mixture is partially treated before it enters the environment
F. The Region, in conjunction with area municipalities, is working together on developing Canada's first CSO reporting protocol

While Regional and municipal staff are working to address the problem through the various CSO control projects, you can help by doing some simple things at home:

A. Do not flush your toilet, or run your dishwasher or washing machine during heavy rain or snow melt events
B. Keep paint, oil and pesticides out of storm sewer drains
C. Take your car to a commercial car wash where the water is often recycled before being released into the sewers for treatment
D. Make sure that you use a biodegradable soap over grass or gravel when washing your car at home. The grass or gravel are important because this will catch some of the water that otherwise would have gone into the sewer, contributing to the excess flow of the water in the pipe
E. Disconnect your downspouts
F. Place a rain barrel in your yard to collect rainwater from your downspouts. This water can be used to water your plants and grass
G. Install low flush toilets. ■

For those who want to 'dig a little deeper' check out our CSO frequently asked questions on page 2

Times they are a'changing....

I understand completely if you missed them. I am referring to a number of good news stories that have come out of the Region's Public Works Department in the last six months. With all the negative press around the economy, I wouldn't be surprised if many of you just give the print and television media a cursory glance nowadays.

However, in a time of economic slowdown, Regional Council recognizes job creation and economic stimulus as major priorities for Niagara. By accelerating both existing and new infrastructure projects, the Region can make a significant impact on Niagara's economy and create immediate jobs.

Over the past few months, the Region's Public Works department has accelerated its capital works program and completed over $80 million in water, wastewater, transportation and waste management projects.

In preparation for the federal/provincial stimulus package, Regional staff has met with representatives of the construction and engineering community to identify effective ways of speeding up the infrastructure project implementation process, including the planning, design, tendering and construction phases. Recognizing that Niagara's share of the federal/provincial infrastructure funding package will be announced

Kenneth J. Brothers, P.Eng.

in the next few weeks, our efforts will allow us to get work done smarter, faster and more cost-effectively for the benefit of taxpayers and the economic health of the Niagara community. It's all about "getting the job done!".

In February, the Region was awarded a five-year contract to transport, process and market all the recyclable fibre material (newspaper, magazines, cardboard and boxboard) and plastic bags collected in the Region of Waterloo's recycling program. What makes this 'big news' is the fact that it's essentially unique in the industry to have a municipality compete against four private sector firms for such a contract – and win! I'm proud to say that it means the addition of upwards of 20 new jobs and

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CSO frequently asked questions

What is a combined sewer?

A combined sewer is a pipe that was designed to carry both rain water and wastewater from your home, in the same pipe. Under dry weather conditions, the pipe contains mainly sanitary sewage from your home which is transported to one of the Region's Wastewater Treatment Plants. During rainfall or snowmelt, the water flows into the same pipe and 'combines' with the sanitary sewage.

Why were combined sewers built?

Many years ago, when the sewer system was built, a single pipe (instead of separate pipes) was used for the collection of both rain water and sanitary sewage.

Is Niagara the only area with CSOs?

No. CSOs are part of sewer systems across North America. They were all installed to prevent basement flooding. Many jurisdictions, like Niagara, are currently working to address the impacts associated with CSOs.

Why should I be concerned about CSOs?

When CSOs occur, human health and the natural environment can be negatively impacted. Because CSOs are a source of pollution in the Niagara region (and throughout the rest of North America), human health can be put at risk through activities such as swimming in water bodies where CSOs drain to. The protection of human health is of top priority and Niagara Region and the area municipalities are working together to achieve this through the management of CSOs.

With respect to the natural environment, the release of potentially harmful pollutants into water bodies when CSOs occur can lead to contamination of the water, wildlife, and plant life, negatively impacting their health. The management of CSOs will greatly reduce the impacts to the natural environment.

How many CSOs are in Niagara?

There are a total of 283 CSOs located throughout the Niagara region. The exact locations of these CSOs can be viewed by visiting the Region's website at **www.niagararegion.ca**

What is being done in Niagara to manage CSOs?

There are 96 projects either completed, planned or in progress, that have been identified to address CSOs throughout the region. These projects include:

- **A** *The construction and implementation of state-of-the-art high rate treatment facilities like the one in Niagara Falls*
- **B** *Installing separate sewers for storm water and for sanitary sewage (from homes)*
- **C** *Reducing the amount of water entering the combined sewers (eg: promoting downspout disconnections)*
- **D** *Building underground combined sewer storage tanks to hold the sewage during heavy rainfall. The sewage is then released back into the sewer after the rainfall so that it can be treated at the treatment plant*
- **E** *Providing disinfection at CSO locations so that any sewage in the water mixture is partially treated before it enters the environment*
- **F** *The Region, in conjunction with area municipalities, is working together on developing Canada's first CSO reporting protocol*

Are combined sewers installed anymore?

No – combined sewers can no longer constructed, however, CSO storage tanks are still constructed in order to protect public health by minimizing basement flooding as a result of heavy rainfall events.

For more information on CSOs or any other water or wastewater related question, please call 905-984-3624. ■

Times they are a 'changing....

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additional revenue into the Waste Management Program to offset our cost of service to you. We are working to bring some much needed economic stimulus to our Region.

At the time the contract was awarded, I said that "to operate efficiently and competitively in today's market, we have to continually find new and innovative ways of doing business – the status quo is no longer an option".

I believe it so much that it has become a bit of a mantra of mine. I ask staff, everyday, to think outside the box and tell me how we can do what we do, better, faster, and more efficiently. Essentially, how can we continue to provide the same level of service (or better) to Niagara residents, for less?

Staff have risen to the challenge and I applaud their efforts. My hat is off to our staff who saw the business opportunity in Waterloo, went after it, and won it! By utilizing the surplus capacity of the Recycling Centre, the Region will generate additional net revenues which will help offset our waste management costs and thereby lower the overall cost per tonne of processing operations.

When I say the status quo is not an option, I mean it – literally. Just because we've done something a certain way for years, doesn't mean it can't be done better and more efficiently. Waste Management is bringing forward a report shortly that will outline service level options. They will be presenting a suite of options that will be delivered to all municipalities – in effect standardizing waste management services across the region – which hasn't been done in Niagara in recent memory. By offering options in this manner, we will attract more bidders leading to more competition, and ultimately a lower price for the services the community wants while still addressing our waste diversion targets of 65 per cent by 2012.

Speaking of bidding, staff sought to reduce the time and expense associated with the Region's annual fleet auction and found an on-line alternative that has already made a difference. What used to take days, involve multiple staff and result in limited success, can now be done by one person at the click of button – again, seeking new and different ways of getting it done (see related story on page 6).

As an organization, the Region, is continuing to strive to achieve Council's goal of Environmental Stewardship. Within Public Works, our aim is to reduce our carbon footprint. We are seeking new and innovative ways to do this and we've been able to make strides in energy conservation and environmental sustainability. You'll see, as you glance through this publication, that almost every article falls under either one of those two headings.

And, what's featured in these pages is just the 'tip of the iceberg' so to speak. There's truly a myriad of programs, projects and services that Public Works is leading or involved in where **energy conservation** and/or **environmental sustainability** are the guiding forces. We realize we have to do things differently in order to provide necessary services to residents while at the same time, protecting our environment – and we're well on our way to achieving that outcome.

As always, if you have any comments about this publication, or any other public works project or initiative, please don't hesitate to contact me.

Respectfully,
Kenneth J. Brothers, P.Eng
Commissioner of Public Works
ken.brothers@niagararegion.ca
905-685-4225 ext. 3340
800-263-7215 ext. 3340 ■

Happy fish and a side order of vinegar?

Niagara Region's Baker Road Wastewater Treatment plant has successfully completed an exciting full-scale study that could decrease damage to fish and aquatic life by reducing the amount of chlorine in the wastewater that is released into Lake Ontario.

The project was lead by Carleton University professor, Dr. Onita Basu, a consultant for Niagara Region's Water & Wastewater Services Division, and involved a number of Regional staff. The study aimed to determine whether peracetic acid could be used to disinfect treated wastewater as an alternative to chlorine. Peracetic acid is produced by combining hydrogen peroxide and acetic acid – the main ingredient in vinegar!

"This is the first study of its kind in Canada that is related to municipal wastewater," said Dr. Basu. "This collaborative research project could minimize the adverse effects on the environment, especially for aquatic life, that are associated with chlorine."

Peracetic acid has been recently approved by the U.S. Environmental Protection Agency for similar testing in the United States. Research already conducted in Europe shows that peracetic acid is environmentally less toxic than chlorine.

By pioneering the study, Niagara Region has once again shown leadership in the area of water and wastewater treatment. ■

Residents show they are waste diversion heroes!

Preliminary results show Green Bin relaunch a success

In the four months following the relaunch of the Green Bin program, Niagara residents have shown they truly are waste diversion heroes! Participation levels soared by 52 per cent and Green Bin and leaf and yard material collection was up by 25 per cent after the fun "Be a waste diversion hero" campaign launched last summer. The super-hero-themed campaign (photo below) featured Niagara residents showing how easy organics recycling is and encouraging each other to use the Green Bin.

"We knew residents were committed to the program and to protecting the environment – they just needed the tools," said Catherine Habermebl, Associate Director, Waste Collection and Diversion. "It's an easy way to keep useful materials out of the landfill – the resulting compost is great in gardens and on lawns."

Stay tuned, once all the data is reviewed, more highlights of the program's success will be in the next issue of the Green Scene.

What goes in your Green Bin

From the Kitchen:

- bones, meat, chicken, fish
- bread, toast, muffins, cake, cookies, pies and dough
- coffee grounds and filters
- cooking oil, grease or fat
- dairy products (solid)
- eggs and egg shells
- fruits, vegetables and peelings
- NEW • microwave popcorn bags
- nuts and nut shells
- NEW • paper flour and sugar bags
- paper towels and napkins*
- paper towel/toilet paper rolls
- pasta and rice
- sauces and gravy
- table scraps and plate scrapings
- tea bags

*not soiled with hazardous materials

From the Yard:

- grass clippings and leaves
- plants and weeds
- small twigs and hedge trimmings (max 1.5cm [0.5"] diameter and 30.5cm [12"] long)

In General:

- brown paper bags
- cooled fireplace ashes
- paper coffee cups – remove and discard lids
- paper egg cartons
- paper take-out trays and plates
- pet fur
- pet waste and kitty litter – wrap in paper or place in a certified compostable plastic or paper bag
- sawdust and wood shavings
- soiled newsprint and cardboard*
- tissues*

Pitch in. Use your Bin!

Remember:

- Pet waste and kitty litter are now accepted in the Green Bin program.
- Plastic bags have been eliminated from the collection program – this reduces processing costs and ensures a better quality end product.

It is important to remember that no liner is required in your Green Bin. If you choose to line your Bin, please use one of the following options:

- kraft paper bag; or
- certified compostable plastic bag with the BPI logo; or

COMPOSTABLE

- newsprint or cardboard – to absorb moisture.

Residents are cautioned that some bags are labelled 'degradable', 'biodegradable' or 'oxo-degradable', but do not carry the BPI logo. These bags are NOT accepted and will not be collected.

For health and safety reasons, please use one of the following options when placing pet waste or kitty litter in your Green Bin:

- wrap in newsprint; or
- place in a paper bag; or
- place in a certified compostable plastic bag with the BPI logo. ■

What does NOT go in your Green Bin

The following items should NOT be placed in your Green Bin:

- plastic wrap and wax paper
- branches – collected separately (see Branch Collection on page 7)
- sod or soil
- treated wood products (lumber)
- cigarette ashes or butts
- dead animals
- diapers
- feminine hygiene products
- lubricants
- plastic bags
- rubber products and textiles

You could be our next Waste Diversion Heroes!

Are you, or is someone you know, a Waste Diversion Hero? Let us know and you/they could star in our next campaign!

Submissions should address the following key components:

- How has the Green Bin program changed your/their lives – at home, work or away from home on a daily basis?
- Are you/they using the Green Bin for all acceptable organics, except, of course, what can be put in a backyard composter?
- How has it made a difference? (i.e. has it reduced the amount of garbage you/they place at the curb?)
- Have you/they promoted using the Green Bin and/or converted anyone else to use it?
- Share your/their tips on how to be a devoted/successful Green Bin user.

Submissions are due June 30, 2009 and should be mailed to:
Sherri Tait, Niagara Region,
Waste Management Services,
2201 St. David's Road,
Thorold ON L2V 4T7
or emailed to
sherri.tait@niagararegion.ca.

Please keep submissions to a maximum of 500 words. The following information is required for your submission to be considered:

- Candidate's name
- Candidate's full address
- Candidate's telephone number
- Number of people living in candidate's residence ■

Reducing our ecological footprint

It's important for us to know how small changes in our lifestyles can make a big difference to the environment. They can help us in reducing our ecological footprint.

Our ecological footprint is a measure of our resource use and waste production. It is the amount of the earth's surface that is needed to produce all the energy and resources that each of us use to live our particular lifestyles and to absorb all the wastes we produce, directly or indirectly.

Knowing our ecological footprint would help us realize how our decisions for things like food, goods and services, shelter and transportation will impact our ability to live in a sustainable way.

One of the main ways to reduce your ecological footprint is to change the way you use energy. Making your ecological footprint smaller can also be greatly assisted by the three R's: reduce, reuse, and recycle. The Region undertakes various initiatives to protect the environment through its environmental best practices.

Following Council's theme of Environmental Stewardship, the Region's Public Works department has implemented a number of initiatives aimed at reducing its energy consumption and re-using surplus energy including:

- introducing power generating equipment at the Welland water treatment plant
- retrofitting Regional water and wastewater facilities with energy efficient lighting fixtures to save 20-40 per cent of the annual lighting costs as well as significantly reduce the electricity consumption (see related article below).

- investigating the option of installing "super high efficiency" electric motors and pumps to replace older equipment.
- partnering with St. Catharines Hydro to fully utilize the bio-gas resources for co-generation purposes at Port Weller Wastewater Treatment Plant
- Modifications to the Engineering Design Standards Manual, which outlines equipment specifications and preferences, to include additional high efficiency options. Evaluation criteria are being tailored to favour high energy efficiency equipment, where the return on investment period is favourable.

These initiatives create a positive impact on our everyday life and help us realize the long-term benefit of creating a healthy environment. ■

To calculate your own ecological footprint and to see how many planets are needed to accommodate your lifestyle, visit one of the following websites:

www.footprintcalculator.org *OR* **www.earthhour.zerofootprint.net**

Lighting the way to Environmental Stewardship

In keeping with Regional Council's strategic theme of Environmental Stewardship, the Region has introduced an energy efficiency lighting program at several facilities.

Launched in 2008, the program involves a retrofit of high efficiency lighting systems to save energy, reduce operating costs, improve reliability, and minimize environmental impact. In some facilities, the existing fixtures have been replaced with high efficiency lamps and ballasts to improve energy efficiency.

"The new high performance fluorescent lamps use 42 per cent less energy, while maintaining or improving light intensity and quality compared to the old lamps with magnetic ballasts," said Peter Inman, Associate Director Energy Management. "A 50 per cent increase in lamp life improves reliability and lowers future maintenance and waste disposal costs." Mr. Inman also notes that the replaced lamps are sent to a registered recycling company that provides a recycling certificate to ensure that all lamps are recycled with the minimum going to landfill sites.

The Region will achieve additional savings by the use of automatic controls such as motion sensors which eliminate the use of excessive lighting. Daylight sensors are also being used to turn lights off where adequate natural lighting is available.

"The focus of the program so far has been on internal lighting within buildings and water/wastewater plants. However, throughout 2009 the program will expand to outdoor lighting where the same energy efficiency philosophy will be used to reduce energy consumption, increase reliability, lower maintenance costs and reduce environmental impact." ■

Region can help make your next event a "Green" one

Take advantage of the free Special Events Recycling program

The Region's Special Events Recycling program provides free collection of recyclables from large events throughout Niagara – diverting them from landfill.

Once we receive notification of the event, staff will drop off and collect the recycling containers from the event site at no charge. Recycling containers are booked on a first-come, first-served basis – so it's suggested that you contact us early.

Special Events Recycling services are available to any event hosted within Niagara region. Simply complete and submit the online application form at ***www.niagararegion.on.ca/business/fpr/Special-Events-Recycling-Services.aspx****. You can also call the Waste Info-Line at 905-356-4141 or 1-800-594-5542, open Monday through Friday from 8 am to 4:30 pm to request an application form. Please give at least two weeks notice to ensure that we can accommodate your request.* ■

Recycling Centre benefits from Green Retrofit Project

In February 2008, Niagara Region received $975,000 in funding from Ontario's Municipal Infrastructure Investment Initiative to identify and implement a number of green initiatives at Niagara Region's Recycling Centre in Niagara Falls.

The Recycling Centre is the facility that recycles materials collected at the curbside from Niagara residences, schools, institutions and businesses. The objectives of the Green Retrofit Project are to improve the work environment, achieve energy efficiency, realize utility cost savings and promote environmental stewardship.

"We have a number of initiatives we're considering including enclosing the manual sort areas; installing energy efficient lighting, a geothermal heating and cooling system and natural ventilation; adopting water-saving measures; and constructing a "green" parking lot that incorporates recycled glass, from our collection program, in the landscaping water filtration beds and asphalt paving," said Andrew Pollock, Director, Waste Management Services. "These initiatives will result in lower utility costs, a smaller environmental footprint for the facility, and improvement of work environment for staff." ■

Top 10 Recycling Tips

Mastering the "ins" and "outs" of household recycling

It was only a few short years ago that people lived by the old adage, "when in doubt, throw it out". Today, with so many recycling options available, there's less and less that ultimately gets 'thrown out'. However, it can be confusing to know exactly what is recyclable and what is not, and how to properly prepare your materials for recycling.

The Region has put together a "Top 10" list of recycling tips to help residents know what to put in their Blue and Grey Boxes. If you have any questions about what should go in your recycling boxes, please call the Region's Waste Info-Line at 905-356-4141 or 1-800-594-5542 or visit the website at **www.niagararegion.ca/living/waste/Recycling-Items.aspx**

1 Always put plastic bags inside one firmly tied plastic bag and place in your Grey Box.

Why? It is much easier to sort bundled plastic bags from the paper (Grey Box) stream than from the container (Blue Box) stream. Also, individual loose bags are difficult to pick off the sorting line and, if they are not removed, either end up contaminating other recyclable material or end up in the residue (garbage) stream.

2 Remove caps from beverage containers and empty any remaining liquid before placing in your Blue Box. Place caps in your garbage.

Why? Beverage bottles and cartons are separated from other containers at the recycling facility by optical sensors and air jets. Liquid left in a container makes it too heavy to be picked up by the air jets and the bottle has to be manually sorted off the line, which makes the process less efficient and more costly. Caps are not recyclable and end up contaminating the marketed material or end up in the residue (garbage) stream.

3 Place non-bottle glass, such as drinking glasses, window glass and mirrors, in your garbage. *(To protect collection workers, broken glass should be wrapped in paper or plastic and placed in a cardboard box marked 'glass'.)*

Why? Glass bottles and jars are pure glass and can be readily recycled into a variety of products. Other types of glass, such as drinking glasses and mirrors, contain additives, such as lead, that contaminate the recycled glass.

4 Place beverage cartons (juice and milk cartons and drink boxes) in your Blue Box.

Why? These recyclable container materials are processed as part of the Blue Box container stream. If they are placed in your Grey Box they contaminate the paper stream and must be manually removed and carried back to the container stream to be reprocessed, making the process less efficient and more costly.

5 Rinse all recyclable food containers before placing them in your Blue Box.

Why? The weight of the left-over food can prevent the container from being properly sorted at the recycling facility, resulting in the container not being recycled at all. The food residue also contaminates the recyclable material.

6 Do not place "composite" and "coated" packaging, such as gift wrap, chip bags, boxes with plastic windows and plastic coated pet food bags, in your Blue Box or Grey Box.

Why? These items are made from a combination of different materials, and, therefore, are not recyclable. If placed in your Blue Box or Grey Box, they contaminate the recyclable material.

Due to the intensity of the chemicals in the ink and the coating of the paper, greeting cards and wrapping paper cannot be properly processed at the paper mills and are not recyclable.

What to do instead:

- ☑ Separate the plastic window from the box – the plastic goes in your garbage and the rest of the box can be flattened and placed in your Grey Box.

7 Do not place paper take-out cups in your Blue Box or Grey Box.

Why? Take-out beverage cups are coated with wax or plastic, making them non-recyclable.

What to do instead:

- ☑ Place all take-out soft drink cups in the garbage.
- ☑ Household quantities of paper coffee cups can be placed in your Green Bin – (remove and discard the plastic lids)
- ☑ Whenever possible, use glasses, mugs or refillable containers for your beverages.

8 Remove plastic wrapping from cardboard boxes before placing them in your Grey Box.

Why? Plastic bags and cardboard are sorted at the recycling facility before being baled and shipped to end markets. Sorters in the facility cannot effectively separate the plastic wrapping from the cardboard so the entire package is directed to the residue (garbage) stream.

What to do instead:

- ☑ Remove plastic wrapping from cardboard packaging. Place the plastic wrapping in a tied plastic bag with other plastic bags and place the bundle in your Grey Box.
- ☑ Flatten the cardboard package and place in your Grey Box, or bundle it with other cardboard and place beside your Grey Box.

9 Place only plastic bottles and jugs, plastic food tubs and trays, gardening flower pots and trays, and "styrofoam" packaging in your Blue Box.

Why? Markets only exist for the following plastic packaging: plastic bottles and jugs, plastic food tubs, plastic bags and white "styrofoam" packaging with the following recycling codes:

Any plastic package with:

code (or no code at all) is **not recyclable**. Other plastic items (e.g. toys) are made up of different types of plastics and **cannot be recycled.**

What to do instead:

- ☑ Look for these recycling symbols on the bottom of plastic containers:

Remember:

- ☑ Place tied bags of plastic bags in your Grey Box.
- ☑ Place all other plastic items and packaging in your garbage.

10 Place only steel food and beverage cans, and no other steel items, in your Blue Box.

Why? Municipal recycling facilities use large magnets to capture steel food and beverage cans. Other types of scrap metal, such as frying pans, toasters, etc., are not captured by the magnets and end up as residue (garbage).

What to do instead:

- ☑ Donate gently used items that are in good working order to a charity or place unusable items in the garbage.

The environment will thank you and so does the staff at Niagara's Recycling Centre! ■

When the winds are high, stop the recyclables from flying by!

We have all seen wind blown Blue/Grey Box material around our homes and along roadways. With a little pre-planning, we can keep our neighbourhoods garbage free by following these easy set-out tips:

- *Squeeze or flatten large plastic bottles and beverage cartons to create more room in your Blue Box.*
- *Flatten boxboard and stuff inside one boxboard box before placing in your Grey Box.*
- *Stack your Blue/Grey Boxes on top of one another to prevent materials from blowing away.*
- *Secure your recyclables. In your Grey Box, place heavier items such as magazines, catalogues or telephone books on top of loose paper. In your Blue Box, place glass containers on top of other recyclables.*
- *On windy days, place your recycling boxes out for collection on the morning of your collection day by 7 am instead of the night before.*
- *Do not overfill your recycling boxes. If your Blue Box is full, you may use another rigid, reusable container (eg. Grey Box).*

NEW *Larger Blue Boxes will be available for purchase from the Region's distribution centres in the coming months. Check our website (**www.niagararegion.ca**) regularly for updates.* ■

Region utilizes on-line auction for surplus equipment

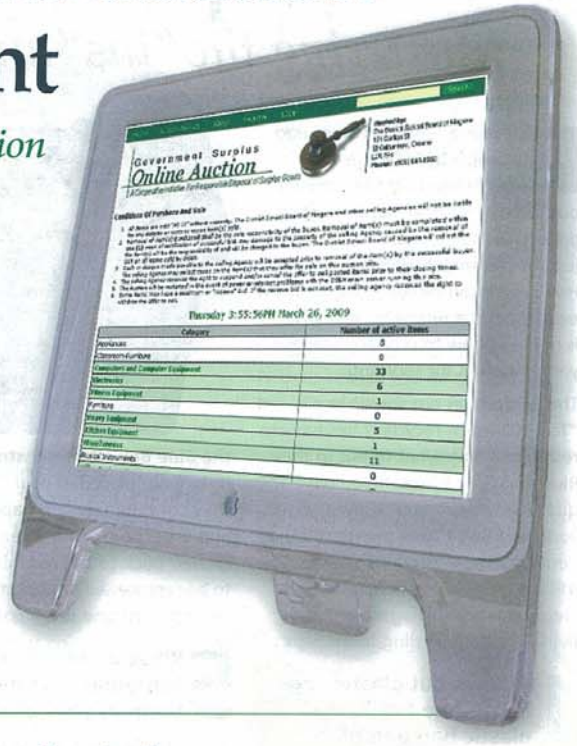
Eliminates need for Annual Municipal Fleet Auction

Niagara Region will no longer be hosting its annual Municipal Fleet Auction. It's gone 'high-tech' and is utilizing the on-line auction services provided by the District School Board of Niagara.

"It's like the E-Bay of Niagara's municipal world," said Kim Koz, Fleet Manager. "This option is far more cost effective and operationally efficient." Ms. Koz also noted that the Niagara Regional Police Service are using the site as well.

The site, which can be accessed from **www.niagararegion.ca**, allows municipal organizations like the Region to list any and all items they have for sale – there is almost nothing that is too large or too small as the site carries items from as small as a keyboard to as large as snowplows. All the pertinent details about each item is listed – as is a photo.

"We have seen tremendous results in the short time we've been using the service," said Ms. Koz. "The on-line auction has allowed us to extend our audience reach exponentially beyond what we ever could have through the former fleet auction. And, the staff time and associated costs to the Region have decreased significantly versus what was involved in hosting the auction. It's a 'win-win' situation for us." ■



How does a traffic light become a flower garden?

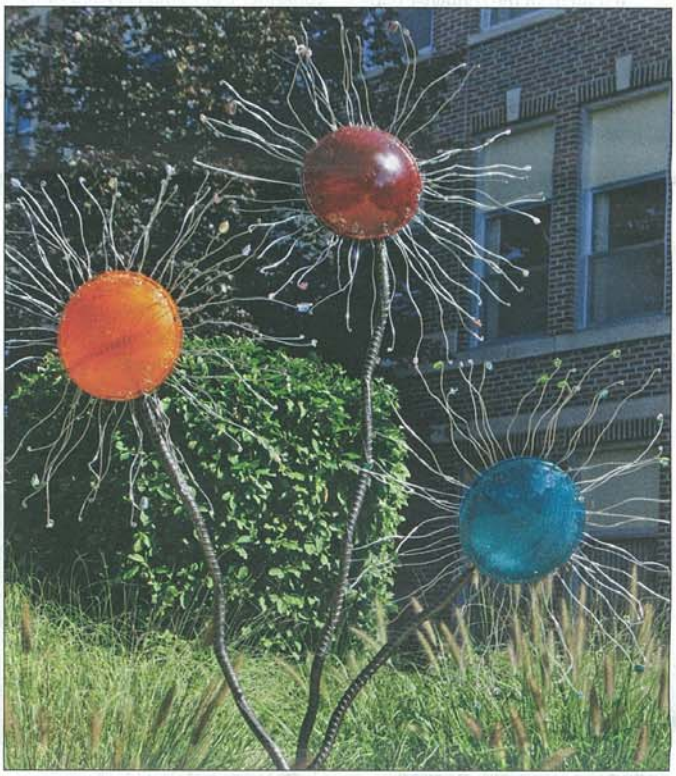
When it's in the hands of local sculpture artist Sabine LeDieu! Sabine is a Canadian sculptor and glass artist, who has an amazing ability to discover beauty in things others might see as 'trash'. She was the creative brain behind reusing the Region's traffic lights in her unique sculptures – the first of which was the "traffic flower".

Sabine used the traffic lights that were being discarded through the Region's light-emitting diode (LED) retrofit program, an initiative that involved replacing traffic signals across Niagara to LED technology which are 80 per cent more energy efficient. The refurbished traffic signals have a lower maintenance cost and provide improved visibility. The program has saved more than $80,000 to date.

When Sabine saw the discarded lights through her creative eye, she knew something beautiful could come from them. From there, the idea 'blossomed' and she created flower structures like sunflower faces from the yellow lenses and flower designs from the red, green and yellow lenses. She felt "it was a natural, creative exploration" and refers to her sculptures as art-fusion which prompts her to make interesting things.

The traffic flower sculptures created by Sabine were awarded the Ruth Mott Art in the Garden 2008 Award at Applewood Estate in Flint, Michigan. The sculptures have also been published and highlighted in the Ruth Mott Estate Tour Book.

Expressing her enthusiasm for her art-fusion, Sabine encourages everyone to think creatively about what they consider 'trash'. She said, "I would encourage people to try to look beyond the surface of what something is, and think about what it could be. All you need is imagination and the ability to take the challenge and transform things." ■



Sabine's quick tips for turning trash into treasure

- *Look for shapes! Think how that shape can embellish or augment a design feature.*
- *Take things apart! Sometimes the pieces inside can be more interesting.*
- *Be a proud re-user! Celebrate your creative re-thinking. Add up all the money you have saved by re-uses.*
- *Mosaic! Making mosaics is fun and easier than you think.*
- *Take the challenge! Don't be afraid to try. Think, make mistakes, and play with it. Just do it!* ■

Branch Collection Days

For all municipalities except Wainfleet

Residents who live in single family homes and multi-residential buildings with five units or less can take part in the Region's branch collection program. If you are eligible for this service, please ensure that branches are curbside by 7 am on your designated branch collection day.

Branch Guidelines

- Branches must be tied into bundles
- Maximum weight of bundle = 22.7 kg (50 lbs)
- Maximum size of bundle = 1.5 m (5 ft) in length and 0.5 m (1.6 ft) in diameter
- Individual branches in the bundle cannot be larger than 7 cm (2.8 in) in diameter
- Treated wood products and stumps are not accepted.

2009 Collection Dates

Niagara-on-the-Lake, St. Catharines, Thorold, Fort Erie, Niagara Falls, Port Colborne and Welland – Saturday: June 20, July 11, October 17 and November 14

Grimsby, Lincoln and Pelham – regular collection day during weeks of: June 15, July 13, October 12 and October 26. ■

Please note: Branches and bundled material are only collected on designated branch collection days. Small twigs and hedge trimmings – smaller than 1.5 cm (0.5 in) in diameter and 30.5 cm (12 in) long – may be placed in your Green Bin, or other rigid, reusable container marked "Organics", for weekly collection. ■

Smithville Residents Only

Smithville residents in single-family homes and apartments with two to five units are eligible to participate in the scheduled collection of leaf and yard material, including branches.

Collection will take place on the following Mondays ONLY: **June 15, July 13, October 12 & 26, November 9 & 23.**

All materials must be at the curb by 7 am on your designated collection day.

Yard materials such as leaves, weeds, trimmings, grass clippings will be collected as part of this service. The following materials are not collected as part of this service: sod, soil, gravel, loose leaves, stumps, treated wood products and branches.

Tips for setting out leaf and yard material

- Leaf and yard material must be either in paper bags, rigid, reusable containers, or certified compostable plastic bags with the BPI logo.

COMPOSTABLE

Plastic bags are not accepted.

- Branches must be tied into bundles.
- Maximum weight of bundle or bag = 22.7 kg (50 lbs).
- Maximum size of bundle = 1.5 m (5 ft) in length and 0.5 m (1.6 ft) in diameter.
- Individual branches in the bundle cannot be larger than 7 cm (2.8 in) in diameter. ■

Remember – think paper bags when you're doing your spring yard clean up

Spring has arrived, and that means it is time to dust off our rakes and shovels and get to work on those yards and gardens!

Did you know that garden waste is actually not waste at all – it can be turned into valuable compost simply by putting it in your Green Bin or placed out separately in rigid containers (i.e. garbage cans) or paper bags!

There is no limit to how much leaf and yard material you can place at the curb, but please remember to only use acceptable containers and liners.

Acceptable containers and bags for leaf and yard materials are:

- Rigid metal or plastic reusable open-top container (i.e. garbage can), clearly marked "Organics";
- Kraft paper bag designed for leaf and yard waste;
- Certified compostable plastic bag with the BPI logo; or

COMPOSTABLE

- Green Bin.

Please note that your leaf and yard materials may not be placed in cardboard boxes or plastic bags.

Please call the Waste Info-Line at (905) 356-4141 or 1-800-594-5542 if you need an "Organics" label for your container.

If your materials are not set out in an acceptable container, they will not be collected.

At Home Alternatives

Managing leaf and yard materials on your property is the most effective way to deal with this material.

Grasscycling

Grasscycling provides a natural fertilizer at no cost at all! Not only is it free to leave your grass clippings on your lawn, but it also saves you time and energy. No more raking and bagging clippings! Leaving your grass clippings on your lawn helps to promote a green, healthy lawn since the clippings decay quickly and release valuable nutrients into the soil. This can result in a 25 per cent reduction in your lawn's fertilizer needs!

Leaf mulching

Leaf mulching – for large, or heavily treed, properties, fallen leaves can be left on your lawn or used in your gardens as mulch.

Benefits of leaf mulching

- Makes nutrients more readily available in the soil and speeds up the soil-enrichment process;
- Retains water in the soil during the summer, for drought protection;
- Insulates the ground from penetrating cold during the winter, allowing the underground work of earthworms and soil microorganisms to continue the processes of creating humus;
- Helps reduce weeds;
- Supports many parts of the ecological system better than bare ground or course bark mulch (by providing appropriate cover, for example, for night-feeding caterpillars that need daytime protection from predators). ■

Why are plastic bags no longer accepted for leaf and yard materials?

When leaf and yard materials are collected in plastic bags, the materials must be debagged at the compost processing facility. The plastic bags are then discarded since they cannot be recycled due to contamination from the organic material. Some of the leaf and yard materials that you worked so hard to keep separate are caught in the plastic and end up in the landfills along with the plastic bags.

As you can see, removing plastic bags at our composting facility creates unnecessary waste and expense. It also results in a lower quality finished compost, since not all of the plastic can be completely removed.

Paper leaf and yard material bags, on the other hand, will completely decompose along with the organic material and become part of the finished product. They do not create contamination. ■

The Region's composting goes high-tech

In April 2008, Niagara Region entered into a 20 year agreement with Integrated Municipal Services Inc. to process and sell Niagara's Green Bin and leaf and yard material. The new compost facility, using GORE technology, has been receiving Niagara Region's material since April 1, 2009.

Material delivered to the site is weighed, inspected and stockpiled on the tip floor inside a building. The air from the tip floor is treated by a special filter to help prevent any odours.

The material is then loaded onto a conveyor where any metal is removed and the material is shredded. The material is 'prepared' by adjusting things like the moisture content, carbon-to-nitrogen ratio, and particle size etc.

The material is then trucked and placed on a concrete pad, in long rows called windrows . The GORE cover, a specially developed membrane laminated between two polyester layers, is pulled over the material and secured to the ground.

The GORE cover protects the windrow from weather conditions but allows the release of carbon dioxide.

Air is pumped into the windrows and leachate (a product that is formed when water comes in contact with the organic material) is removed and reused in the composting process. A computer system controls the aeration blowers based on oxygen levels measured in the windrow while sensors collect and record windrow temperatures to ensure compliance with Ministry of the Environment standards.

Much of moisture that turns into water vapour within the windrow is stopped by the cover which helps maintain moisture levels. The moisture also helps to control odours.

The material is placed under the GORE cover for six weeks. This is followed by an additional two weeks of curing on the aerated pad. After eight weeks of composting, the material is screened and stockpiled for further curing, and it is then ready for sale. ■

Household Hazardous Waste (HHW) Depots

Poisonous, flammable and corrosive materials are not only hazardous to our health, but also to the health of our environment.

When you are spring cleaning this year, remember to properly dispose of any unwanted household hazardous waste (HHW), by simply visiting any one of the Region's HHW depots.

2009 HHW Depot Dates

Fort Erie
When: Saturday, August 22
Time: 8 am–3 pm
Where: John L. Gibson Operations Centre, 1818 Pettit Road

Niagara Falls
When: Saturday, June 6, July 4, August 1, September 5, October 3, November 7
Time: 8 am–3 pm
Where: Recycling Centre parking lot, 4935 Kent Avenue (access from Industrial Street)

Niagara-on-the-Lake
When: Saturday, June 27
Time: 8 am–3 pm
Where: Niagara-on-the Lake Municipal Offices, 1593 Four Mile Creek Road, Virgil (enter off Four Mile Creek Road)

Port Colborne
When: Saturday, July 18, September 19, November 21
Time: 8 am–3 pm
Where: Thomas Lannan Sports Complex, 550 Elizabeth Street

St. Catharines/Thorold
When: Saturday, June 13, July 11, August 8, September 12, October 10, November 14
Time: 8 am–3 pm
Where: Niagara Region parking lot, 3501 Schmon Parkway

Wainfleet
When: Saturday, October 24
Time: 8 am–3 pm
Where: Wainfleet Arena parking lot, Park Street

Welland
When: Saturday, June 20, August 15, October 17
Time: 8 am–3 pm
Where: Seaway Mall back parking lot, 800 Niagara Street (enter off Woodlawn Road)

Grimsby, Lincoln, Pelham and West Lincoln residents only

A permanent depot is open year-round.

When: year-round, Tuesday to Friday, 8 am–5 pm and Saturdays, 8 am–4 pm
Where: Niagara Road 12 landfill site, 7015 Concession Road 7, off Grimsby Road 12, West Lincoln

Now that's impressive!

Last year's HHW depots collected 775,000 kg of HHW from Niagara residents! This included over 120,000 litres of motor oil – which was 100 per cent recycled. Other hazardous materials collected throughout 2008 were over 2,100 car batteries, 2,700 propane tanks, and 3,500 litres of antifreeze. These hazardous materials were all 100 per cent recycled!

For more information and a list of acceptable materials, visit **www.niagararegion.ca/living/waste/hhw-depots.aspx.**

Residents can also visit **www.dowhatyoucan.ca** for a list of local retailers that accept hazardous waste. ■

Waste Electrical and Electronic Equipment (WEEE) Drop-Off Locations

Niagara residents may take their waste electrical and electronic equipment (WEEE) for recycling, free of charge, to any of the Region's drop-off depots (located at the Region's landfill sites), the Recycling Centre in Niagara Falls or the Walker's residential drop-off depot. Please note that this service is for residents only.

Photo courtesy of Ontario Electronic Stewardship

The following items may be dropped off for recycling:

- *Computers and their components*
- *Monitors*
- *Televisions*
- *Electronic games and video consoles*
- *Digital cameras*
- *Radio and stereo equipment*
- *Telephones and cell phones*
- *Electronic pagers and calculators (excluding manual calculators)*
- *VCRs, CD players*
- *MP3 players*
- *Software (floppy disks, CDs, DVDs, MDs)*
- *Fax machines and photocopiers*
- *Printers, scanners and plotters*
- *Typewriters and projectors*
- *Electric hand or power equipment*

*Residents can also visit **www.dowhatyoucan.ca** for a list of local retailers that accept WEEE for recycling.* ■

Thank you for recycling! Please place in your Grey Box when you are finished with this publication.