

APPENDIX X: DESCRIPTIONS OF WASTE STREAMS IN ONTARIO COUNTY

The following information was collected from the 1992 Ontario County SWMP and various websites related to Solid Waste Management

PAPER

Paper has a long lifespan and can be recycled several times before finally breaking down into pulp too small to use. Paper products currently make up about 40 percent of solid waste in the U.S. Still, recycled paper is attractive to all parts of the market. Companies use less energy and fewer resources when using paper made from recycled materials, and consumers, in turn, benefit from those savings. In 2007, 56 percent of the paper used in the U.S. was recovered for recycling. That equates to an average of 360 pounds of paper recovered per person in the United States. Because of this high recovery rate, the paper industry set a new goal of a 60 percent recovery rate by 2012.¹

- **Corrugated Cardboard:** It is comprised of corrugated fiber paper, sandwiched by sturdy sheets of cardboard. Once this cardboard has been deposited into the trash or recycling bin, it is referred to as old corrugated cardboard, or OCC. Corrugated cardboard is used to make boxes and other containers for shipping materials. When not wet or contaminated with food or oil, cardboard is recyclable. It is also naturally biodegradable. If the cardboard has a waxy coating, then it may need to be thrown out.
- **Paperboard:** Paperboard, also called boxboard or chipboard, is flat, stiff, and often coated to give a glossy appearance. Examples include drink boxes, cereal containers, detergent packaging, shoe boxes and tissue containers. Recycled paperboard represents one of the largest markets for recycled paper in the United States. Paperboard is recycled using a single-grade process, meaning no other type of paper is mixed in during manufacturing.
- **Brown Bags:** Brown bags are dispersed at grocery, fast food, and other stores for containing purchases. Brown bags may be recycled.
- **High Grade Paper:** This category includes computer paper, ledger paper, envelopes, copy paper, and notebook paper. Computer paper, which is made primarily from hardwood trees like oak and maple, is one of the most prevalent and easy-to-recycle types of paper made today.¹ It can be recycled between five and seven times before it is no longer usable and is commonly converted to printing paper, writing paper, and tissues products (paper towels, napkins, and toilet paper). It is easily recyclable and is accepted by most vendors and paper mills.

¹ Source: <http://earth911.com>

- **Newspaper:** This paper category consists of used or unsold newspapers and may include coated advertisement inserts. Newspapers are recycled into a number of products. One of the most common is new newsprint. According to the Newspaper Association of America (NAA), the average newspaper contains 30 percent recycled fiber content. Newspapers are also recycled into other products, since it is often more cost-effective to recycle them locally, rather than ship them to distant mills for recycling into new newsprint. According to the NAA, newspaper is often recycled into:

- Cereal Boxes
- Egg Cartons
- Pencil Barrels
- Grocery Bags
- Tissue Paper
- Cellulose Insulation Materials

- **Other Paper:** This category includes a variety of paper products from a multitude of sources including homes and offices. Paper products include uncontaminated food packaging, cereal boxes, magazines, and junk mail. Mixed papers can be recycled as roofing felt and construction board. The demand for other, or mixed, paper is lower than for other grades of paper. A large percentage of this category is exported to other countries.
- **Magazines:** This category includes all types of magazines, including coated paper and stapled bindings. Because magazines and catalogs tend to contain more ink, they often undergo a different recycling process than office and other types of paper. Typically, the recycled content of newspaper stock will be 70 percent old newspapers and 30 percent old magazines. An alternative to recycling magazines is donating them to be reused.

METALS

Steel is the most recycled material in North America, and it can be infinitely recycled and turned into new steel products. Aluminum cans are the most valuable beverage containers to recycle and are the most recycled consumer product in the United States today.

- **Ferrous Metals:** Ferrous metals are metals derived from, or containing, iron. Steel is the most common of these metals, including alloys such as stainless steel. The most common objects containing ferrous metals are food cans (made of steel and/or tin), automobile parts, household appliances (aka “white goods”), and construction beams. Ferrous metals can also be found in broken tools, small household appliances, toys, and residue from magnetic cleansers in a composting facility.

- **Aluminum Cans:** The aluminum can is the most valuable beverage container to recycle. Aluminum is a durable and sustainable metal: two-thirds of the aluminum ever produced is still in use today.
- **Aluminum Foil:** Aluminum is durable and can be reused over and over again. Aluminum foil is technically just as recyclable as aluminum cans, but the challenge is that aluminum foil is often dirtier, thus making it harder to recycle.
- **Furniture:** This includes discarded aluminum and other non-ferrous furnishings from homes, office, and institutions. Aluminum furniture is recyclable through scrap metal dealers, may be donated, or sold second-hand.
- **Structural:** Structural non-ferrous items include aluminum auto parts, housing and mobile home components not discarded as C & D and other substantially heavy non-ferrous items. These may be recycled at local scrap dealers.
- **Housewares:** Non-ferrous housewares include discarded aluminum tools (snow shovels, rakes, wrenches), wiring not discarded as C&D, aluminum appliances, and toys. These may be recycled at local scrap dealers. Housewares may be recyclable through scrap metal dealers, may be donated, or sold second-hand.

GLASS

Glass is made of four basic ingredients: sand, soda ash, limestone, and, depending on the type, colorants. Once a glass container has been colored it cannot be made into a different color. Glass is one of the most popular materials recycled today, both because of the purity of the ingredients and the quick turnaround of recycling. Similar to paper, glass comes in a variety of colors, which comes into play in the recycling process. Glass can be recycled indefinitely and not lose its quality. About nine in ten glass containers are recycled to produce more glass containers. What isn't used typically ends up as decorative kitchen tile, insulation or even as road building material. High-quality purified crushed glass (aka cullet) will be used to make glass containers, abrasives, fiberglass or beads. Lower quality cullet may be used as insulation, road aggregate or decorative tile.

- **Amber/Brown Glass:** Nickel, sulfur and carbon are added to molten glass during manufacturing to give it a brown color. The most common use for brown glass is the production of beer bottles. The amber tint reflect ultraviolet light and protects the product inside from direct sunlight, thus preserving freshness and flavor.
- **Green Glass:** Green glass is colored by adding metals such as iron, chromium or copper to the molten glass during production. Green glass has more variety of shades than any other color, making it a popular color choice for bottles. It also helps keeps sunlight and temperature from affecting the contents inside.
- **Clear Glass:** Clear (aka colorless) glass is most often made of a combination of silica (sand) and other substances. It is most often used to store solid materials, but is also used for beverages.

- **Flat Glass:** Flat glass includes all types of household window glass and mirrors. It can be considered a contaminant to container glass recycling.
- **Other Glass:** This category includes all other glass which has not been included in the above categories. Items in this category include glass cookware, electrical insulators, ceramic household and automotive items, automotive glass, etc. This type of glass can be used as an aggregate and filler in asphalt.

PLASTICS

Plastics are denoted by number; each number represents the *type of resin* made to produce the plastic. These numbers are plastic #1, #2, #3, #4, #5, #6 and #7. Because each resin is different, these numbers affect how and where you can recycle plastics. The American Chemistry Council distinguishes between the following plastics.

- **Polyethylene Terephthalate (PET) #1:** PET is clear, tough, and has good gas and moisture barrier properties. This resin is commonly used in beverage bottles and many injection-molded consumer product containers. Cleaned, recycled PET flakes and pellets are in great demand for spinning fiber for carpet yards, producing fiberfill and geotextiles.
- **High Density Polyethylene (HDPE) #2:** HDPE is used to make many types of bottles, including those for milk, water, juice, cosmetics, shampoo, dish and laundry detergents, and household cleaners. It is also used to make plastic shopping bags, cereal box liners, and reusable shipping containers. Recycled HDPE can be used to make the aforementioned types of bottles, plastic lumber, piping, floor tiles, buckets, crates, flower pots, film, and recycling bins.
- **Polyvinyl Chloride (PVC, Vinyl) #3:** Plastic #3 has a resistance to grease, oil, and chemicals and has high impact strength. When recycled, it can be used in for a variety of construction purposes (e.g. piping, decking, fencing, paneling, gutters, carpet backing, floor tiles and mats, resilient flooring, electrical boxes, cables), mud flaps, traffic cones, garden houses, and mobile home skirting.
- **Low Density Polyethylene (LDPE) #4:** LDPE is used predominantly in film applications due to its toughness, flexibility and relative transparency. It can be found in such products as bags for dry cleaning, newspapers, bread, frozen foods, fresh produce, and household garbage; shrink wrap, container lids, squeezable bottles, and coatings for paper milk cartons and hot and cold beverage cups. When recycled, the byproduct can be used to manufacture shipping envelopes, garbage can liners, floor tile, paneling, furniture, film and sheet, compost bins, trash cans, landscape timber, and outdoor lumber.
- **Polypropylene (PP) #5:** PP has good chemical resistance, is strong and has a high melting point, making it good for hot-fill liquids. This resin is found in flexible and rigid packaging, fibers, and large molded parts for automotive and consumer products. When recycled, PP's byproduct can be used to manufacture automobile applications (e.g. battery cases, signal lights, battery cables, brooms

and brushes, ice scrapers, oil funnels, and bicycle racks), garden rakes, storage bins, shipping pallets, sheeting, and trays.

- **Polystyrene (PS) #6:** Typical applications include protective packaging, foodservice packaging, bottles, and food containers. When recycled, PS's byproduct can be used to manufacture thermal insulation, thermometers, light switch plates, vents, desk trays, rulers, license plate frames, cameras or video cassette casings, foamed foodservice applications, plastic mouldings, and expandable polystyrene foam protective packaging.
- **Other #7:** Use of this code indicates that a package is made with a resin other than the six listed above or is made of more than one resin and used in a multi-layer combination. This is commonly found in three- and five-gallon reusable water bottles, some citrus juice and catsup bottles, oven-baking bags, and custom package. The recycled contents may be used in bottles and plastic lumber applications.

ELECTRONICS

Electronics have the potential to cause the most environmental damage because of their hazardous ingredients. Electronic Waste (aka E-waste) is growing at three times the rate of other municipal waste. Although e-waste accounts for only 1 to 4 percent of municipal waste, it may be responsible for as much as 70 percent of the heavy metals in landfills, including 40 percent of all lead. E-waste contains materials such as glass, copper, aluminum, plastic and other components can often be extracted and reused.

The United States Postal Service and Clover Technologies partnered to provide consumers with free postage for the recycling of certain small electronic devices. Customers can pick up envelopes in 1,500 Post Offices. Clover will pay the postage on these items in the hopes they can be refurbished. If not, the components will be recycled. Items that can be recycled include: Inkjet cartridges; PDAs; Blackberries; digital cameras; iPods, and MP3 players.

- **Cell Phones:** The usage of cell phones has increased astronomically since they were first made available to the public in 1984. According to a study by Strategy Analytics, 1.1 billion cell phones were sold in 2007. If disposed of improperly, cell phones can pollute the surrounding soil and water because they contain toxic materials such as arsenic and zinc. When recycled, some cell phones are broken down into their raw materials. Other are refurbished and sent to other countries for purchase in consumer markets. There are several nation cell phone recycling programs: [Motorola](#), [Nokia](#), [Call2Recycle](#), [National Coalition Against Domestic Violence](#), [Call to Protect](#), [Verizon Wireless](#), [AT&T Wireless](#), [T-Mobile Wireless](#), [Sprint Wireless](#).
- **Televisions:** The U.S. EPA estimates that 82 percent of televisions, or 20.6 million units, were disposed of, primarily in landfills, between 2006 and 2007. That means only 18 percent, or 6.3 million units, were recycled. Televisions contain hazardous materials (most notably lead) that can leach out of landfills over time.

Many areas have banned televisions from landfills because of the hazards of lead leachate.

- **MP3 Players:** The batteries and other parts of most MP3 devices can be recycled or returned to most manufacturers, free of charge.
- **CDs and DVDs:** There are three main components to consider when recycling CDs and DVDs as each is made of different materials. Cover and Liner Notes are generally made from paper and relatively easy to recycle. Discs contain plastics, metals, and ink. Discs are made mostly from polycarbonate, although a small amount of lacquer is also used as a protective coating. Aluminum is the primary metal in discs, but traces of gold, silver and nickel are also present. The dyes used in printing on the disc itself contain some petroleum products, but when it comes to recycling, only metal and plastic are processed. *Jewel Cases* are generally made of plastic #6, a cheap, but hard-to-recycle materials. Of the three components, jewel cases are generally the most difficult to recycle.
- **Video Games:** Many of the most common video game consoles contain hazardous chemicals and materials such as polyvinyl chloride (PVC); phthalates, beryllium, and bromine. The consoles also contain circuit boards like hard drives, which contain lead that can leach out of landfills and into the water supply.
- **Inkjet Cartridges:** The average toner cartridge is composed of 40 percent plastic, 40 percent metal, and smaller amounts of rubber, paper, foam, and toner. Many companies now pay for used cartridges which they remanufacture and resell. Local office supply stores often offer incentives to recycle cartridges, such as returning a cartridge in exchange for a ream of paper. Collection of inkjet cartridges can also be used as a fundraiser. E-waste drop-offs also often accept used printer cartridges.
- **Computers:** Computers are a primary contributor to electronic waste (e-waste), posing a major disposal issue because they are made up of various components that are toxic to the environment. The Institute for Local Self-Reliance estimates that 75 percent of obsolete electronics are currently stored, but with continued innovations in technology, there is an increasing opportunity to recycle computers, limiting the number that end up in landfills.
- **Computer Monitors:** Computer monitors are made of plastic, glass and metal. Some also can contain lead, from the color cathode ray tube (CRT), which creates the images on the screen.

CONSTRUCTION AND DEMOLITION DEBRIS

Construction and Demolition Debris (C & D) is comprised of uncontaminated waste generated from construction and remodeling projects and the repair and demolition of structures and roads. It also includes vegetation and brush from land clearing, utility line maintenance, and seasonal and storm related clean-up. C & D waste includes rubble such as bricks, concrete, and other masonry materials, soil and rock; wood based materials such as pallets, stumps and tree parts from land clearing, framing and siding lumber from

construction projects and treated wood; and mixed C & D materials such as wall coverings, plaster, sheetrock, gypsum, and drywall, plumbing fixtures, non-asbestos insulation, roofing shingles, ferrous and non-ferrous metals, plastics, glass, and corrugated cardboard.

- **Wood:** Wood is the only 100 percent renewable, recyclable, reusable and biodegradable resource. Beyond typical household reuse, recycled wood can become a number of products, such as lumber, engineered wood products, mulch or compost feedstock, biomass fuel and other miscellaneous items such as animal bedding or wood flour.
- **Brick:** Unused brick can be recycled. New brick that fails to meet the manufacturers' standards can be recycled through a crushing process, creating "**brick chips.**" Those brick chips can be used as a landscape material, or can be reground through the manufacturing process to create new, quality brick.
- **Carpet:** There are many different kinds of carpet, and nearly all are recyclable. Depending on the face fiber, carpet can be broken down and used to make a new product. It may be used to make composite lumber, tile backer board, roofing shingles, railroad ties, automotive parts or carpet cushion. That said, according to the Carpet America Recovery Effort (CARE), carpet is difficult to recycle because of the many substances that constitute it. For example, in a typical carpet, the two main components are the face fiber and the backing system. The face fiber is what you see and walk on, is the most valuable portion of the carpet for recycling and is typically made of:
 - Nylon 6,6
 - Nylon
 - Polypropylene (also called "olefin")
 - Polyester

The second portion of the carpet structure is the backing system. The most common types of backing are:

- Polyvinylchloride (PVC) – Primarily used in the commercial sector
- Latex – Typically used in residences

Backing also contains:

- Additional layers – Such as polypropylene
- Fillers – Such as calcium carbonate

Because of this complex system and the numerous substances within it, recycling carpeting is difficult and often comes at a charge to cover the steps involved, such as separation, shredding and handling.

- **Carpet Padding:** Carpet padding is installed beneath carpet to protect and increase the life of the carpet. It serves as both an insulator and sound dampener and comes in several different styles. Although there are various thicknesses and densities in each, the three broad categories of carpet padding are fiber, rubber and foam. 1) *Fiber.* In this padding, natural fibers, such as wool or jute, or synthetic fibers such as nylon and polyester, are woven together into a pad that

resembles a sheet of felt. These types of pads are made from new and recycled materials. Though jute is not recyclable, it does biodegrade and is plentiful. 2) *Rubber*. Rubber padding provides more cushion than fiber padding, and it is more resistant to moisture and odors. Rubber padding is also made from new and recycled materials. 3) *Foam*. Today, foam comprises nearly 90 percent of all carpet padding produced and sold in the United States. The main reason for this is the ease in which foam padding can be recycled. When carpet pads are recycled, they are collected, cleaned, chopped up and combined with post-industrial foam scrap to create what is known as bonded foam (or rebond). Rebond contains scrap foam from furniture, bedding, and automobile manufacturers.

- **Gypsum Drywall:** Gypsum drywall is the primary material used for interior walls in the construction of houses in the U.S. It is made up of gypsum covered on both sides by paper. Gypsum itself is a naturally occurring rock. Some other commonly known names for drywall are gypsum board, wallboard, plasterboard, gyboard and sheetrock. Gypsum is recyclable. It has also been shown to be a useful soil amendment because it improves water penetration, softens soil with a high level of clay content, neutralizes soil acidity, and adds nutrients such as calcium and sulfur. It is being used in general agriculture; mushroom growing; forestry and mine reclamation; nurseries; parks and recreation area, residential laws, golf courses, and in compost as an additive.
- **Linoleum:** Linoleum is a type of floor covering most often made from solidified linseed oil that is combined with wood flour or cork dust. This mixture is then used to cover burlap or canvas, in turn creating linoleum. Linoleum manufacturers feed all scrap materials back into the production line, virtually eliminating all waste. It is incorrectly referred to as vinyl flooring, but it is actually comprised of all natural materials. Natural linoleum can be composted or landfilled because it is biodegradable. When properly prepared into smaller pieces, and in the presence of suitable conditions with proper minerals, linoleum decomposes. This releases carbon, which can then be used by various forms of microbes and fungi, creating healthy and organic compost for your garden or lawn. Alternately, linoleum can be used as fuel, since it produces energy equivalent to coal and releases the same amount of carbon which its natural constituents absorb.
- **Pallets:** Pallets are made from several materials.
 - *Softwoods*, the most common type of pallet, are the cheapest to create and are often considered to be “expendable” – meaning they end up in the trash once they reach their destination.
 - *Hardwood* pallets and those made of plastic or metal are slightly more expensive and end up being resold or returned to the sender once the load has been delivered.
 - Made of *polyvinyl chloride* (PVC) and high density polyethylene (HDPE), plastic pallets account for approximately two percent of those made. They cost more but are more durable than wooden pallets.

- *Metal* pallets, typically made from steel or aluminum, make up less than one percent of the pallet market but are best used for transporting hazardous waste.
- New to the industry in the past 15 years are *paper* pallets, which are made from corrugated cardboard and molded wood pulp, making them much lighter than other types of pallets.

Due to the cost, pallets made from plastic, metal and some hardwoods, are typically resold or returned to the sender when the product is unloaded. Once returned, they can be reused or recycled through various recycling companies. For cheaper softwood pallets, recycling is the best option. According to the Virginia Tech Center for Forest Products Marketing, nearly 170 million wood pallets are repaired and recycled each year. When wooden pallets are no longer useful, they can be recycled into mulch for landscapes; fuel pellets; pressed logs; composting agent to increase air flow and decomposition; pet bedding; and medium density fiberboard.

AUTOMOTIVE

- **Tires:** Rubber is difficult to recycle due to the procedure known as “vulcanization,” which it undergoes to attain its springy, flexible nature. Vulcanization is a curing process that involves adding sulfur to rubber, which creates stronger bonds between the rubber polymers. Due to the vulcanization method, tires are difficult to melt for reuse and are therefore typically broken down by a mechanical process. According to the Rubber Manufacturer’s Association, there are three main uses for scrap tires. 1) *Tire-derived Fuel (TDF)* utilizes granulated, tires in the place of traditional fuels in cement kilns, pulp and paper factories, electric utilities and various boilers. TDF is not considered to be genuine recycling, but accounts for an estimated 52 percent of all scrap tires. 2) *Civil Engineering.* Recycled scrap tires play a meaningful role in civil engineering processes, consuming 16 percent of the scrap tire available in 2005. Tire shreds are cost-effective substitutes for traditional materials when they are used to stabilize weak soil, such as constructing road embankments or as a subgrade (below the ground level of a project) fill. Additionally, tire shreds provide effective subgrade insulation for roads, walls and bridge abutments. 3) *Ground Rubber* or “crumb” rubber, is being used to a greater extent in many states in rubberized asphalt applications and is the largest single use of recycled rubber. Its benefits include noise reduction, shorter braking distances, reduced road maintenance and more cost-effective, durable road surfaces. Ground rubber also serves a number of sports and recreational purposes. Used in shock-absorbing running tracks and ground cover under playgrounds, the springy and responsive nature of rubber decreases the impact of running or falling. Also added to soil under playing fields, crumb rubber improves drainage and root structure of grass. Ground rubber applications accounted for 12 percent of scrap tire use in 2005.

- **Car Fluids:** Car fluids include oil, transmission fluid, coolant, power steering fluid, and brake fluid. Most of these fluids can be recycled, and depending on specifics, this process can cost significantly less than manufacturing new products. There are three basic methods for recycling motor oil. 1) *Re-refining*. Motor oil is treated to remove impurities and distilled to “base oil,” which, with additives, can be re-refined to produce lubricants, including motor oil, transmission fluid and grease. 2) *Reconditioning*. Impurities are removed through a filtration process and in some cases this less pure oil can be used again. 3) *Reuse or reprocessing*. Many used motor oils or used industrial lubricants can also be used as a heating and energy source for industrial boilers, power plants or combustion facilities. If they cannot be used “as-is,” they can often be reprocessed to remove certain impurities and then used as a fuel. Antifreeze often can be recycled at an auto repair shop equipped with the proper filtration or distillation technology. Contaminants such as oils and heavy metals are removed from the antifreeze through a variety of methods such as include filtration, distillation, reverse osmosis and ion exchange. The antifreeze is restored to “new” antifreeze by adding chemicals that stabilize the fluid and make it more resistant to breakdown. Transmission fluid, power steering fluid and gear oil can also be recycled, reconditioned or reused through similar processes.
- **Auto Bodies:** According to the Motor and Equipment Manufactures Association, over 76 percent of each scrap automobile is recycled. Almost all the iron and steel of a car is recovered when recycled or reused, as well as lead, aluminum and copper. Recycling of most automobiles begin at auto salvage dealers, who remove reusable or resalable parts, drain fluids, and flatten the remaining components. After being delivered to a scrap yard, the crushed vehicle is separated into three streams: iron and steel, nonferrous metal, and non-metallic scrap. The non-metallic scrap is typically sent to land fills and the remainder is shredded into smaller pieces of various materials before being shipped to respective end markets.
- **Car Batteries:** Automotive batteries (lead-acid batteries) are generally made up of a hard rubber or plastic case, lead and an electrolyte solution. Car batteries are the single most recycled product in the United States; According to the U.S. EPA, 99 percent of automobile batteries were recycled in 2006. Most individuals return their old car batteries to the dealership or the store where they are purchasing their replacement. Additionally, each year the American Automobile Association sponsors the AAA Great Battery Round Up, during which they set up collection sites for dead car batteries and perform free automobile battery checks; this is usually held in correspondence with Earth Day. If the case of the battery is polypropylene, it is typically returned to a battery manufacturer to become new covers and cases. If the case is rubber is can be recycled with the lead smelting process as a carbon source. The recycled lead is used for new plates in batteries. Lead oxide can also be reused in the manufacturing process to create new battery units. The sodium sulfate solution can be reused in a variety of manufacturing

processes, including glass, textiles, and laundry detergents. It can also be treated and reused in new battery manufacturing.

- **Auto Parts:** This category includes products such as the windshield, brake pads, oil filter, seat covers, and floor mats. Windshields/Auto glass may be recycled into asphalt filler, fiberglass, glass beads, reflective additive, architectural aggregate, ground for abrasives, backing to carpet, and a line of products (e.g. wine glass, counter tops, glass lamps). Oil Filters (steel) may be recycled into cans, household appliances, construction materials, flat-rolled steel sheets, concrete reinforcement, structural beams, new car parts, and new oil filters. Polyurethane products such as floor mats and truck bed liners can be used to produce new foam, padding products, or tire covers. Wheels and wheel covers can be resold as used parts or reformed into other metal parts. Car seats can be dismantled and fed into the standard metal, plastic, and foam recycling processes.

HOUSEHOLD

- **Food:** One of the largest contributors to home-based composting piles is kitchen waste. Scraps from meal preparations as well as cooking supplies can be added to a compost bin and contribute nutrients to soil and mulch. Composting guides generally sort matter into two categories, according to what they contribute to the process: green (nitrogen) and brown (carbon).
- **Cooking Oil:** Cooking oil is defined as “purified fat of plant or animal origin.” It is mainly used when frying and sautéing, as well as in baked goods and salad dressings. Biodiesel is a biodegradable and nontoxic fuel that can be made from various forms of cooking oil.
- **Light Bulbs:** There are many types of bulbs.
 - *Tube-style Fluorescent Lamps.* Commonly used as overhead lighting in office buildings, these lamps also come in compact shapes for a variety of other uses for both the home and office.
 - *Compact Fluorescent Lamps (CFLs).* CFLs are smaller versions of the standard tube-style fluorescent lamps and can be used in place of standard incandescent lamps. CFLs are more energy efficient and last longer than incandescent lamps. These lamps contain levels of mercury that require proper disposal and special cleanup if broken.
 - *Mercury Vapor Lamps.* These are the original high-intensity discharge (HID) lamps with blue/white light. They were originally designed for farmyard lighting.
 - *Metal Halide Lamps.* These are newer, more efficient HID lights found in homes, businesses and institutions. They are also used for headlights and can be spotted by their bright, blue-tinted light.
 - *High-Pressure Sodium-Vapor Lamps.* These lamps generate white-yellow light used for street lamps and outdoor security lighting.
 - *Ultraviolet Lamps.* Typically used in water and air purifiers for germicidal purposes, these lamps are also used in some tanning salons.

With lamps such as compact fluorescent lamps (CFLs), mercury content needs to be taken into consideration before disposal. The United States Postal Service has a partnership with OSRAM SYLVANIA to allow consumers to shipped use compact fluorescent lightbulbs to be recycled.

<http://earth911.com/news/2007/12/06/sylvania-continues-lamp-recycling-program-with-us-postal-service/>

Fluorescent lamps are well suited for recycling due to the substances from which they are made. Each part (mercury and calcium phosphate) can be reused to make new lamps or other products. The aluminum used to manufacture the end-caps for lamps are used to make new end-caps and other aluminum products.

- **Clothing and Textile:** Textiles can be recycled into sandbags, geotextiles, wiping rags, and new fabrics.
- **Mattresses:** Mattresses can be a challenge to recycle because of their size, but if they are broken down and separated, the materials can be reused. Metal springs can be melted down and sold to steel companies. The cotton and foam are bought by companies who use it for carpet bagging or insulation. The wood is commonly sold to wood chippers or burnt for fuel.

HOUSEHOLD HAZARDOUS WASTE

Household hazardous waste (HHW) is waste that would normally be considered hazardous under DEC Part 371 regulations. Because it is generated in small quantities in homes, it is exempt from the hazardous waste regulations. HHW includes such products as oils, batteries (auto and consumer), solvents, cleansers, paints, fertilizers, and pesticides. It is not known how much HHW is generated in Ontario County each year, but waste generation studies generally attribute less than 1 percent of a county's waste stream to these materials.

HHW is disposed of in municipal trash. To date, the county has not sponsored a HHW collection program, recommending that residents use up the products for the purpose for which they are purchased. Gas station owners are required to accept up to 5 gallons of waste oil a day from residential customers for proper disposal. The NYS Legislature passes Chapter 304 of the Laws of 1991 that restricts the amount and types of heavy metals in batteries in New York. The bill also establishes a schedule for setting up a collection system for recycling and disposing of household batteries.

- **Household Cleaners:** When hazardous cleaning products are disposed of in landfills, the chemicals they contain can seep into groundwater. Cleaning chemicals that are disposed of down drains also end up in the water system and others drift from the air where they are initially used into the air outside. Due to the various types of cleaning products, there are several methods for properly disposing of them. Household cleaning products that are hazardous should be properly disposed of by household hazardous waste (HHW) facilities. The process

that follows exemplifies the course of HHW, specifically cleaning products, through the disposal process:

1. Trained staff members sort and categorize the materials by chemical class for proper storage. The HHW is typically classified as ignitable, corrosive, reactive or toxic. Cleaning products are categorized as corrosive or acidic alkaline.
2. A contracted hazardous waste hauler collects the waste into drums, manifests the material, and transports it to different treatment facilities based on the type of the waste. Disposal locations are chosen based on the use of environmentally protective methods.

YARD WASTE

- **Leaves:** Leaf recycling is accomplished through composting, which produces an end product suitable for use as fertilizer or mulch.
- **Grass Clippings:** Grass clippings can be recycled back into the lawn so that the lawn will get the full benefit from the nutrients in the clippings. Bagged clippings can be recycled by composting with MSW, sewage sludge, or other yard wastes.
- **Brush and Branches:** Brush and branches are recycled by chipping them into smaller particles for use as landscaping mulch or a bulking agent for MSW, sewage sludge, or yard waste composting.
- **Dirt:** Dirt is soil or earth waste resulting from excavation or demolition. Dirt waste is also produced by air filters in industrial plants and by household vacuum cleaners. Uncontaminated soil can be recycled as general or structural fill at a construction site or as daily or intermediate landfill cover. Contaminated soil can either be recycled for use as fill after decontamination via incinerator or as landfill cover, eliminating the need for excavation of new soil for use as cover.

ASBESTOS

Asbestos is defined by Part 360 as “friable solid waste that contains more than 1 percent asbestos by weight and can be crumbled, pulverized, or reduced to powder, when dry, by hand pressures”. The material collected in a pollution control device designed to remove asbestos is also included.

Asbestos materials exist in residential, commercial, institutional, and industrial buildings. They can be found in surface materials, pipe insulation, wallboard, floor and ceiling tiles, and side shingles. Asbestos is considered a non-hazardous industrial waste whose disposal requires a Part 364 waste haulers permit for quantities above 500 pounds.

The disposal of asbestos is regulated by both the federal and state governments. The relevant federal regulations include the Occupational Safety and Health Administration – Title 29, Parts 1910 and 1926 and USEPA – 40 CFR Parts 762 and 61. New York State requirements include Parts 360 and 364 of Title 6, NYCRR and Rule 56 of the State

Labor Code. The materials must be properly bagged according to 40 CFR Part 61, Subpart a and M, and 29 CFR Part 1910 and measures must be taken to prevent the asbestos fibers from becoming airborne.

Part 360 regulates the disposal of asbestos in landfills and acceptance at transfer stations. Contractors who remove asbestos from buildings are required to use a hauler with a Part 364 permit. Abatement projects must comply with NYS Rule 56 except for work done in an owner-occupied single family dwelling performed by the owner. These owners can place asbestos out with the trash provided it is double-bagged in plastic. DEC recommends that homeowners notify their waste hauler that asbestos will be in the trash.

SEWAGE SLUDGE

Municipal Wastewater Treatment Plant Sludge is a semi-solid or liquid waste generated from a water or wastewater treatment plant. Ontario County has ten municipal sewage treatment plants (STPs). Four of the plants treat sludge prior to final disposal in the Ontario County Landfill; one plant (Gorham) treats sludge prior to final disposal in landfills through the Penn Yan STP. Two of the plants (Farmington and Honeoye Lake) are relatively small and send their liquid sludge to the Canandaigua STP for processing prior to disposal. The remaining three plants compost their sludge on-site (these facilities are known as Biosolids Beneficial Use Facilities).

NON-HAZARDOUS INDUSTRIAL WASTE

Non-Hazardous Industrial Waste (NHIW) includes process waste and industrial sludge generated by local industries. In Ontario County, this waste stream comes largely from the food and wine industry in the form of sludge from treatment plants treating food processing wastewater and vegetable/filter process waste. Metal and paper plant sludge also comprise a portion of this stream. Food and wine process waste occurs primarily in the late summer and fall months, with lower levels generated during the winter season.