

## **4.9.1 Vehicle Maintenance: Auto Servicing/Repair**

### *Case Study #1*

**BUSINESS:** Zimbrick Buick; Madison, WI  
**WASTE ORIGIN:** Auto Body Repair/Service  
**WASTE TYPES:** Office and Shop Materials, Paper and Plastic Packaging Materials, Office Paper and Cans, and Shop Materials (Sheet Metal, Tires, Batteries, Oil, Antifreeze, Freon, Alternators, Radiators)

#### **COMPANY BACKGROUND**

Zimbrick operates one of the largest auto body repair shops in the Midwest. Along with its auto service, the dealership generated a large volume of solid and liquid wastes.

#### **MOTIVATION**

Zimbrick wanted to reduce its waste generation and waste disposal costs. Some shop wastes, like Freon, antifreeze, and used motor oil required special disposal considerations and costs.

#### **STRATEGIES**

Managers evaluated the wastestreams and associated disposal costs. Many areas, including office, body repair, and service shops could benefit from source reduction, reuse, and recycle methods.

#### **ORIGINAL PROCESS**

Many containers for liquid products, like windshield washer, antifreeze, and cleaning supplies were routinely thrown away. Hazardous liquid wastes like Freon, antifreeze, and used motor oils were routinely disposed of. Solid wastes like tires, batteries, sheet metal scraps, and corrugated cardboard were trashed. Mostly new automotive parts were stocked.

#### **NEW PROCESS**

Reusable, returnable 55-gallon drums replaced individual plastic containers and individual spray cans. Freon and antifreeze was collected, recharged, and reused. Sheet metal, tires, batteries, oil, corrugated cardboard, and HDPE plastics were recycled. Rebuilt auto parts were stocked whenever possible. Office paper and aluminum cans from all departments were recycled.

#### **RESULTS**

##### **Waste Reduction**

Volume of waste was reduced 2,080 cubic yards/year.

##### **Economics**

**Savings:** \$3,600 (Estimate based on reduced disposal costs.)

**Capital Costs:** \$23,300 (Recycling and Rejuvenating Equipment)

\$10,500 (Five freon recycling units @ \$2,100 each.)

\$12,000 (Three antifreeze rejuvenators @ \$4,000 each.)

\$800 (Plastic recycling bins for office paper and cans.)

**Operating/Maintenance Cost:**

\$3,600 (Annual rental costs for cardboard compactor @ \$300 per month.)

**Payback Period:** Information not available.

## **4.9.1 Vehicle Maintenance: Auto Servicing/Repair**

*Case Study #2*

**BUSINESS:** Broadway of Green Bay; Green Bay, Wisconsin

**WASTE ORIGIN:** Auto Repair

**WASTE TYPES:** Parts Cleaning Solvents and Acetone

### **COMPANY BACKGROUND**

Broadway is an automobile dealership and repair center with 180 employees.

### **MOTIVATION**

Broadway wanted to reduce its waste generation and waste disposal costs. The company also wanted to improve its work environment and become an environmentally-friendly business.

### **STRATEGIES**

Replace solvent cleaners with an aqueous part cleaner.

### **ORIGINAL PROCESS**

Ten parts washers each used a 120-pound drum of solvent. Each drum was changed every two months. Dirty, spent solvent required special handling and additional disposal costs. A hazardous waste management company was contracted to supply and maintain the solvent-based cleaning system.

### **NEW PROCESS**

Biodegradable soap and hot water is used by the new aqueous washer unit. Deposited sludge from cleaning is landfilled as solid waste. Water is reused and discharged to the local sewer system.

### **RESULTS**

#### **Waste Reduction**

Eliminated 60 drums of waste solvent/year.

#### **Economics**

**Savings:** Information not available.

**Capital Costs:** \$4,000 for an aqueous washer unit.

**Operating/Maintenance Cost:** The aqueous cleaning unit is less labor intensive and costs less to operate than the solvent-based system.

**Payback Period:** Less than one year.

### **TECHNOLOGY TRANSFER**

Aqueous washer units are commercially available and can be easily adapted for many uses.