



**OPERATION AND MAINTENANCE AND SAFETY PLAN  
CSWS SOLID WASTE SYSTEM RECYCLING FACILITY  
211 MURPHY ROAD  
HARTFORD, CONNECTICUT**

**Revised February 2014**

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Attachment 1 - Site Drawings

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Site Plan - Drawing C2

Attachment 2 - Facility Plans

Railroad car Holding Area and Bale Storage Plan - Drawing ST1

Building Floor Plan A-1 (as built 05/2007)

East Elevation Drawing A3 (as built 05/2007)

Enlarged North Elevation at New High Bay A4 (as built 05/2007)

CP Fiber & Container Sort System 2/27/2006 As Built Drawings (5 drawings)

CP Fiber & Container Sort System 3/31/2006 Equipment Listing (3 pages)

Fire Extinguisher, Pull Station, Exit Sign, & Emergency Lighting

Locations Proposed Plan - Drawing F-1

CP Fiber & Container Sort System 4/7/2008 As Built Drawings (5 drawings)

CP Fiber & Container Sort System 4/7/2008 Equipment Listing (4 pages)

CP Punch list for 9/23/2008 added Rigid Plastic Sort Line

Attachment 3 - Traffic Study, DMJM Harris

Attachment 4 - Emergency Contact List

Attachment 5 - Connecticut Resources Recovery Authority Organizational Chart

Attachment 6 - Contractor - Organizational Chart

## LIST OF ACRONYMS

ANSI	American National Standards Institute
CPF	Container Processing Facility
CRRA	Connecticut Resources Recovery Authority
CSWS	Connecticut Solid Waste System
CTDEEP	Connecticut Department of Environmental & Environmental Protection
IPC	Intermediate Processing Center
MSDSs	Material Safety Data Sheets
Mid-CT	CSWS
NFPA	National Fire Protection Association
ONP	Old newspaper
OCC	Old corrugated cardboard
OSHA	Occupational Safety and Health Administration
PPE	Personal Protective Equipment
PPF	Paper Processing Facility
RF	RF Facility (211 Murphy Road)
RCSA	Regulations of Connecticut State Agencies
USEPA	United States Environmental Protection Agency
SS	Single Stream

# 1. INTRODUCTION

## 1.1 The Connecticut Resources Recovery Authority

In 1973 the State of Connecticut enacted a law creating the Connecticut Resources Recovery Authority (CRRA) to provide solid waste management services to municipalities and businesses in the state. CRRA is a public instrumentality and political subdivision of the State of Connecticut.

An eleven member Board of Directors governs CRRA.

CRRA provides waste management and recycling services to more than half of Connecticut's cities and towns. CRRA's statewide system is comprised of recycling, waste-to-energy, landfill and transfer station facilities in the CSWS, the Southwest Project, the Southeast Project and the Property Division. CRRA contracts with public and private sector vendors for facility operations.

## 1.2 The CSWS RF

### 1.2.1 History

In 1990, CRRA took steps to develop a Regional Recycling Center to serve the member towns of its former Mid-Connecticut (Mid-CT) Project. CRRA submitted to CTDEEP applications for permits to develop a PPF at 123 Murphy Road in Hartford and a CPF at 211 Murphy Road. CTDEEP issued permits to construct the facilities in 1991 and to operate in 1992. Together the PPF and the CPF constituted the Mid-CT Regional Recycling Center.

The CPF had handled commingled containers (glass, plastics and metal cans) and the PPF had handled paper (newspaper, corrugated cardboard and magazines) and commercial paper.

In calendar year 2005, CRRA executed a long term design/build/operate contract with a facility operator and modified the permit to construct and to operate at the 211 Murphy Road location. With this modification, the paper recycling activities that were formerly conducted at 123 Murphy Road were moved to 211 Murphy Road and consolidated within the same building as the commingled container operations. In calendar year 2008 CRRA further modified the facility to accommodate single stream recycling. Currently, the great majority of deliveries to the facility are in the single stream mode.

On November 16, 2012 all assets of CRRA's former Mid-CT Project, including the RF and Transfer Stations, were transferred to the CSWS.

### 1.2.2 Current Operations

The RF consists of the following:

- A scale house with two electronic truck weight scales;

- A 64,000 square foot enclosed processing building containing single stream processing operations;
- The administrative offices of FCR, LLC (the “Contractor”); and
- The break room and toilet and locker facilities for RF employees.

The site where the RF is located also contains a 16,000 square foot building housing the following:

- The CRRA CSWS Project offices; and
- The CRRA Trash Museum.

The general layout of the site is depicted in Drawings C1 and C2, titled “Area Plan” and “Site Plan,” respectively, in **Attachment 1** and the layout and equipment of the RF is depicted in Drawings B-1 thru B3, M1, M2 and ST-1 in **Attachment 2**.

While CSWS RF processing operations are housed in one building, the recyclables delivered to the RF (commingled containers and paper) are capable of being processed in either dual stream or single stream mode. CRRA has contracted with the Contractor to operate the RF pursuant to that certain Agreement for Operation & Maintenance Services and Commodity Marketing Services for the Connecticut Solid Waste System Recycling Facility (the “Operating Agreement”).

#### 1.2.2.1 Commingled Containers

The RF accepts commingled containers (glass, plastics, metal cans and aseptics) for separating and processing. The containers are transported to market throughout the United States, Canada and overseas.

#### 1.2.2.2 Paper

The RF accepts paper (e.g., newspaper, corrugated cardboard, magazines, mixed paper and boxboard) for processing. Paper is transloaded and transported to markets throughout the United States, Canada and overseas.

### 1.2.2.3 Single Stream (SS)

The RF accepts commingled containers (glass, plastics and metal cans) along with paper (e.g., newspaper, corrugated cardboard, magazines), combined together (SS), for separating and processing. The containers and paper are transported to market throughout the United States, Canada and overseas.

## 2. TRAFFIC

### 2.1 Access to the Site

The majority of the traffic going to the RF approaches the area of the facility on either I-91 or US 5/CT 15 (Wilbur Cross Highway).

#### **From I-91 Northbound**

Trucks exit I-91 at Exit 27, “Brainard Road/Airport Road.” They continue on the off-ramp to the intersection of Brainard and Murphy Roads where they go straight onto Murphy Road. They follow Murphy Road east and north to the RF.

#### **From I-91 Southbound**

Trucks exit I-91 at Exit 27, “Airport Road/Brainard Road.” At the end of the off-ramp they turn left (east) onto Airport Road. They follow Airport Road to Brainard Road and turn right (south) onto Brainard Road. They follow Brainard Road to Murphy Road and turn left (east) onto Murphy Road. The trucks follow Murphy Road east and north to the RF.

Alternatively, trucks may turn left (north) from Airport Road onto Brainard Road and follow Brainard Road north where it turns into Maxim Road. They follow Maxim Road northeast and east to Murphy Road where they turn right (south) onto Murphy Road and follow it south to the RF.

#### **From US 5/CT 15 Northbound**

Trucks exit US 5/CT 15 at Exit 87, “Brainard Road/Airport Road.” They continue on the off-ramp to the intersection of Brainard and Murphy Roads where they go straight onto Murphy Road. They follow Murphy Road east and north to the RF.

#### **From US 5/CT 15 Southbound**

Trucks exit US 5/CT 15 at Exit 87, “Brainard Road/Airport Road.” They continue on the off-ramp to the intersection of Brainard and Murphy Roads where they go straight onto Murphy Road. They follow Murphy Road east and north to the RF.



The only truck traffic that traverses the city of Hartford streets (other than those local streets mentioned above) are the trucks owned or contracted by the city for curbside collection of their recyclables.

## 2.2 Access on the Site

**Attachment 3** is a traffic study prepared by DMJM Harris for CRRA that evaluates both on-site and off-site traffic impacts. This study is a compilation of traffic analyses performed from August 2002 thru October 2005.

At the time of the original analyses in August 2002, CRRA had not decided on whether to build a new facility for residential paper recycling or to consolidate residential paper recycling in the commingled container recycling building. Traffic analyses performed at that time included an alternative which CRRA decided to implement at the RF.

Subsequent to completion of the original analyses, CRRA entered into the Access and Scale Use Agreement dated March 31, 2003 (the "Scale Use Agreement") with the owner of the property at 123 Murphy Road. Under the Scale Use Agreement, CRRA and the owner of 123 Murphy Road share access to their respective driveways (Driveways A and B, respectively, on Figure 1). Vehicles delivering recyclables to the RF may use Driveway B to access the RF and vehicles delivering bulk material and commercial paper to 123 Murphy Road may use Driveway A to access 123 Murphy Road. The Scale Use Agreement had an impact on traffic patterns and, therefore, DMJM Harris, at CRRA's request, performed an update to the original traffic analyses. Following the decision to solicit bids for a new vendor to operate and maintain the facility in 2005, DMJM Harris, at CRRA's request, performed another update to the traffic analyses to reflect the proposal of the selected vendor, FCR, as well as to incorporate current traffic count information.

All vehicles carrying recyclables destined for the RF will enter through Driveway B from Murphy Road. After delivering their recyclables to the RF, these vehicles will exit through Driveway A. The layout of the site and the configuration of the facility allow all vehicles to dump both their commingled containers and paper, or single stream without going back onto Murphy Road. Split-load recycling collection vehicles will have paper in the rear compartment and commingled containers in the front compartment and will move thru the site via the following steps:

- Enter Driveway B or C off of Murphy Road;
- Proceed to the scale area and get weighed;
- Proceed to the queuing area for the Paper Processing area
- Back into the RF building through Paper Processing Door ;
- Back up to the tipping floor;
- Tip their paper in the designated area;
- Pull out of the building utilizing Paper Processing Door ;
- Proceed to the maneuvering area for the Container Processing Area (in front of Container Processing Doors);
- Back up into the building through Commingled Processing Door;

- Tip their commingled containers in the designated area;
- Pull out of the building through the same door through which they backed into the building; and
- Exit the site by Driveway A onto Murphy Road.

Single stream recycling collection vehicles will move thru the site via the following steps:

- Enter Driveway B off of Murphy Road;
- Proceed to the scale area and get weighed;
- Proceed to the queuing area for the SS Processing area
- Back into the RF building through Paper Processing Door ;
- Back up to the tipping floor;
- Tip their single stream in the designated area;
- Pull out of the building utilizing Single stream Processing Door ;
- Pull out of the building through the same door through which they backed into the building; and,
- Exit the site by Driveway A onto Murphy Road.

Transfer vehicles carrying only commingled containers or paper follow the pattern from the scale for the type of material they are carrying.

No significant queuing is anticipated within the internal circulation areas of the RF.

All recycling and transfer vehicles using the facility must have obtained a CRRA permit prior to delivering recyclable materials to the RF. As part of the permitting process the tare weight of vehicles is determined and is stored in the scale computer system so that, except on an as-needed basis determined by CRRA's scale operator, vehicles do not normally have to be weighed empty.

## **2.3 Parking**

Seventy-five parking spaces in an off-road lot in front of the RF are provided for employee and visitor parking.

## 3. MANAGEMENT

### 3.1 Organizational Plan

The following are descriptions of the RF-related organizational plans for the CRRA and the Contractor.

#### 3.1.1 *Connecticut Resources Recovery Authority*

The organizational chart for CRRA is Attachment 5 to this Plan.

CRRA's Director of Recycling and Enforcement has primary responsibility for overseeing the operation of the RF. CRRA is responsible for operating the scales and having a facility operator, certified by CTDEEP in accordance with Section 22a-209-6 of the Regulations of Connecticut State Agencies (RCSA), on site at any time the RF is in operation.

In addition to the CTDEEP certified facility operator, CRRA will occasionally have an Scale/Enforcement Specialist on-site. The Scale/Enforcement Specialist is responsible for the following:

- Routinely performing checks of incoming recyclables to ensure that all recyclables meet CRRA regulations and are delivered under a valid customer agreement (see Section 8.4 of the Plan);
- Turning back vehicles and/or recyclables that do not meet CRRA regulations;
- Periodically checking the origin of recyclables by surveillance of vehicles and examination of recyclables and taking appropriate action, including reporting all violations to CRRA management;
- Maintaining records of violations and making recommendations regarding the restriction of repeat violators;
- Gathering evidence of violations and preparing reports for CRRA management; and
- Meeting with haulers to educate them on CRRA regulations and procedures and violations thereof.

#### 3.1.2 *Contractor*

The organizational chart for the Contractor is Attachment 6 to this Plan.

The Contractor will assign two employees for plant management: the Operations Manager and the Plant Supervisor. If the Contractor runs a second processing shift, the Contractor will assign a third employee for plant management, the second shift Plant Supervisor.

##### 3.1.2.1 Operations Manager

The Operations Manager is directly responsible for all Container, Fiber and Single Stream Processing operations including overseeing Contractor staff, personnel safety, scheduling of

incoming and outgoing container shipments and daily bookkeeping. The Operations Manager also has the following responsibilities:

- Directing the processing of all materials entering the RF processing areas consistent with prescribed quality, accuracy and performance standards;
- Reporting obsolescence of equipment and facilities and submitting recommendations regarding replacements or improvements;
- Reviewing and reporting on facility and equipment condition with regard to current governmental requirements;
- Ensuring that plant property is in good repair and appearance;
- Directing the proper utilization of all plant tools, equipment and facilities;
- Reporting periodically to upper management on the current status of the RF processing areas, and making recommendations on ways to improve efficiency, effectiveness and quality;
- Chairing safety committee meetings; and
- Ensuring that safety standards are followed.

### 3.1.2.2 Plant Supervisor

The Plant Supervisor is responsible for assisting the Operations Manager and for directing all activities on the floor of the RF processing areas, including productivity, traffic control, record keeping and quality control. The Operations Manager also has the following responsibilities:

- Supervising the implementation of the RF processing areas quality standards;
- Maintaining records detailing quality of incoming and outgoing materials;
- Organizing and maintaining production;
- Ensuring that the preventive maintenance schedule is followed;
- Maintaining shift production records for each commodity;
- Training/arranging for training of new employees;
- Recommending employees for further training;
- Enforcing safety rules and regulations; and
- Ensuring that the RF processing areas are kept clean and neat.

### 3.1.2.3 Baler Operator

The Baler Operator has the following responsibilities:

- Operating the baler in accordance with the Operations and Maintenance Manual;
- Checking input material for quality;
- Regular cleaning of the baler;
- Maintaining the baler count and sampling;
- Checking outgoing material for conformance with quality specifications;
- Reporting any questionable loads to the Plant Supervisor;
- Reviewing completed loads at the designated storage area;
- Checking bales on outgoing trailers;
- Cleaning spillage after bales are removed from the baler;

- Checking the baler's oils and other fluids daily; and
- Repairing problems or, if that is not possible, reporting them immediately to the mechanic on duty.

#### 3.1.2.4 Forklift Operator

The Forklift Operator has the following responsibilities:

- Operating the Forklift in accordance with the Operations and Maintenance Manual;
- Checking input material for quality;
- Regular cleaning of the forklift;
- Checking outgoing material for conformance with quality specifications;
- Reporting any questionable loads to the Plant Supervisor;
- Taking completed loads to designated storage areas;
- Loading and checking bales on outgoing trailers;
- Reporting the number of bales loaded onto trailers to the scale operator;
- Cleaning spillage after bales are stored;
- Keeping bales stacked neatly and safely;
- Emptying all bins at the end of the day; and
- Repairing problems or, if that is not possible, reporting them immediately to the mechanic on duty.

#### 3.1.2.5 Lead Mechanic

The Lead Mechanic has the following responsibilities:

- Ensuring the safety of the equipment;
- Checking and repairing safety guards;
- Checking and repairing hydraulics;
- Checking operating vehicles;
- Maintaining the inventory and supply of replacement parts;
- Ordering parts, as approved by the Operations Manager;
- Keeping all equipment in operating condition;
- Performing preventive maintenance for all machinery and vehicles;
- Performing mechanical repairs for all machinery and vehicles;
- Assisting/training operators to do their own maintenance;
- Ensuring that Lock-out/Tag-out procedures are followed before any repair;
- Keeping management informed of wear factors and possible breakdowns;
- Keeping logs of all repairs;
- Keeping all repair areas clean; and
- Scheduling and prioritizing all repairs and preventive maintenance.

### 3.1.2.6 Line Leaders (Fiber and Plastic)

The Line Leaders (Fiber and Plastic) have the following responsibilities:

- Supervising the work of the material sorters ensuring that performance and quality standards are followed;
- Keeping records on quality of materials;
- Reporting any questionable loads or quality concerns;
- Smoothing out clumps of material to ease in sorting;
- Removing any objects that are too large to be processed;
- Enforcing safety rules and regulations;
- Recommending employees for more training or changes in position;
- Ensuring that the area is kept clean and neat;
- Making sure that the preventive maintenance schedule is followed; and
- Reporting any equipment problems to the Maintenance Supervisor.

### 3.1.2.7 Payloader Operator

The Payloader Operator has the following responsibilities:

- Operating the payloader in accordance with the Operations and Maintenance Manual;
- Checking incoming material for conformance to quality specifications;
- Taking materials to designated areas;
- Loading materials onto the proper lines;
- Working with other operators to help maintain safety practices;
- Cleaning spillage after loading materials;
- Keeping material stacked neatly and safely;
- Straightening the floor at the end of the shift; and
- Repairing problems or, if that is not possible, reporting them immediately to the mechanic on duty.

### 3.1.2.8 Quality Control Sorters

The Quality Control Sorters have the following responsibilities:

- Remove all conforming material from the sorted material stream;
- Removing any other trash;
- Reporting any questionable material or loads to the Line Leader; and
- Maintain their work area's clean and neat.

### 3.1.2.9 Plastic Sorters

The Plastic Sorters have the following responsibilities:

- Separating out non-recyclable material and trash from the line;

- Removing residue, rejects and contaminants;
- Reporting any questionable loads to the Line Leader;
- Sorting the plastics according to type and placing the types in the proper hoppers; and
- Keeping the processing area clean and neat.

## **3.2 Operating Schedule**

### Receiving Hours

The RF shall receive Acceptable Recyclables as follows: (i) Monday through Friday from 7:00 a.m. through 4:00 p.m. and (ii) Saturdays following Holidays from 7:00 a.m. through 11:00 a.m. The term “Holidays” in the foregoing subsection (ii) shall mean the following calendar days: New Year’s Day, Good Friday, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, and Christmas Day. At its sole discretion, CRRA reserves its right to change the foregoing receiving hours for accepting Acceptable Recyclables at the New RF, at the charge set forth in Section 2.9 of the Operating Agreement, provided such changed receiving hours are permissible under all Applicable Laws and Permits. The Contractor may request that the RF processing hours be extended. CRRA shall use its reasonable, commercial, good faith judgment when determining whether to grant any such request.

### Processing Hours

The RF shall process Acceptable Recyclables as follows: (i) Monday through Saturday from 6:30 a.m. through 4:30 a.m.

## **3.3 Personnel Training**

CRRA and the Contractor are each responsible for providing their own training for their own employees.

### **3.3.1 CTDEEP Training**

CRRA and the Contractor must provide training programs specifically structured to achieve the CTDEEP operator certification for commercial operation of an intermediate processing center (IPC) in accordance with Section 22a-209-6 of RCSA. At least one person from each shift must be CTDEEP trained and certified as a facility operator.

The following Contractor personnel must be CTDEEP trained and certified as facility operators:

- Operations Manager;
- Plant Supervisor

### **3.3.2 Contractor Training**

In addition to CTDEEP certification training, the Contractor's Operations Manager and Plant Supervisor undergo extensive training in the day-to-day operation of the plant. During training, they receive instruction in many areas, including, but not limited to:

- Employee safety;
- Administrative details of the operations;
- Overview of equipment operation;
- Environmental concerns; and,
- Residue handling procedures.

Maintenance people undergo extensive hands-on training in the maintenance requirements of the facility utilities, process equipment and rolling stock.

The training program for operators of processing equipment must utilize hands-on training and must include a presentation on the safety and maintenance features of the equipment.

Training for each position includes, but is not limited to, the following:

- Orientation;
- Study of the material in the technical or operation manual for the pertinent equipment;
- Demonstration of the operation and basic maintenance of the pertinent equipment;
- Familiarization with RF quality standards and expected levels of output;
- Demonstration and/or explanation of important safety measures; and,
- Explanation of the order of operation, i.e., the priority of various duties.

In addition to the general training program, there are some specific items included in the training for various jobs. They are detailed in the following sections.

A trainer is assigned to each new employee. The trainer assesses the trainee's level of job-related experience and knowledge and alters the training program, if appropriate, to better suit the trainee. The trainer evaluates the trainee until both the trainer and trainee are confident in the trainee's ability to do the job. The length of training varies by job and by abilities, experience and knowledge of the trainee.

#### **3.3.2.1 Mechanic**

The Mechanic's training includes:

- Familiarization with engineer's drawing for each machine, study of the workings of each machine, explanation of characteristics of common problems of each machine and methods of repair.
- Familiarization with the general workings (building utilities) of the plant, including common problems and methods of repair.



- Instruction on when to call for assistance from the equipment manufacturer.

### 3.3.2.2 Baler Operator

The Baler Operator's training includes:

- Demonstration of the start-up, operational and shutdown procedures, as well as basic preventive maintenance for baler.
- Explanation of the order of operation (i.e., order of materials to be sent up to the baler) and reasoning behind directions given to the tipping floor workers to direct the flow of material.
- Explanation of common problems that may occur and the corrective procedures.

### 3.3.2.3 Line Leaders (Fiber and Plastic)

The Line Leaders for (Fiber and Plastic) training includes:

- Explanation of the overall workings of the appropriate recyclables line.
- Explanation of the jobs of the Fiber and Plastic Sorters, and supervisory duties including performance evaluations, employee absence record keeping and disciplinary role.

### 3.3.2.4 Payloader Operator

The Payloader Operator's training includes:

- Demonstration and explanation of truck unloading procedures.
- Demonstration and explanation of properly loading the infeed conveyors.

### 3.3.2.5 Forklift Operator

The Forklift Operator's training includes:

- Instruction in the reporting process (number of bales loaded onto outgoing transport).
- Explanation of the relationship with Baler Operator, who determines the type of material loaded onto the conveyor.

### 3.3.2.6 Quality Control Sorter

The Quality Control Sorters' training includes:

- Review and understand product quality guidelines and specifications.
- Instruction on the importance of the quality of the sorted material.

### 3.3.2.7 Plastic Sorter

The Plastic Sorters' training includes:

- Demonstration of the process of plastic sorting by type and the proper bins in which to place the sorted plastic. Demonstration of alternative tossing methods.
- Instruction on the importance of the quality of the sorted material.

### **3.3.3 Safety Training**

The Contractor will provide the following safety related training to all employees:

- Fire extinguisher use training - employees are provided with individual training associated with the proper use of fire extinguisher;
- First Aid team assignment and training - These teams consist of trained members on each work shift. Training includes CPR and basic first aid procedures;
- Floor plans must be developed and maintained to indicate primary and secondary emergency routes. The routes must be described to employees. Semi-annual fire drills must be conducted; and,
- State and Federal safety requirements must be identified, implemented, documented and emphasized during training.

## **3.4 Financial Capability**

The Contractor has provided a \$2,000,000 surety bond to guaranty it complies with its operating responsibilities.

## 4. FIRE PROTECTION

The Contractor's general office and Operations Manager's office are equipped with telephones and emergency telephone numbers are posted at the telephones. In the event of a fire, the Operations Manager, Office Administrator and Plant Supervisor, depending on who is immediately available, are responsible for alerting the Fire Department, CRRA and the insurance carrier.

The Contractor shall conduct fire safety training in accordance with the relevant NFPA standards and periodic, but at a minimum semiannual, fire drills for all employees.

The building is equipped with an automatic fire alarm system and a sprinkler system. In addition, numerous fire extinguishers are located throughout the facility. Fire extinguishers located throughout the RF shall be inspected periodically by site personnel and an outside vendor. Records of all such inspections shall be provided by Contractor to the CRRA facilities manager and retained at RF. All "hot work" permits for repairs to the RF or the equipment therein shall be provided to CRRA in advance of the work being performed. All "hot work" shall be performed in accordance with the relevant National Fire Protection Association (NFPA) standards.

A drawing depicting the pull stations, fire extinguishers, and sprinkler system is included in **Attachment 2** – "Fire and Safety Devices Floor Plan".

Smoking is not allowed in the RF or within 200 feet thereof. Smoking is allowed in that portion of the parking lot for Contractor's employee vehicles that is beyond the building which includes the CRRA offices. Contractor shall at all times provide a smoking tube that safely extinguishes cigarettes and cigars in the area where Contractor employees smoke, and Contractor shall empty and otherwise maintain such smoking tube.

The City of Hartford has a fire department with numerous firehouses that provide fire protection for the Capitol District. The fire station that is nearest to the RF is at 410 Franklin Avenue, approximately two miles from the RF. The nearest fire hydrant is approximately 275 feet from the RF.

### 4.1 Building Sprinkler System

The entire RF building is protected by a dry pipe sprinkler system that has the following features:

- An exterior water motor gong and electric water flow switch for connection to a general monitoring station;
- A fire department pumper connection; and,
- Interior control valves with tamper switches.

The 12-inch main along Murphy Road connects to a 10-inch line that, by test, provides a residual pressure of 105 pounds per square inch with a delivery of 1,150 gallons per minute. The 10-inch sprinkler line supplies water to a valve pit where a transition is made to an 8-inch line that supplies the facility sprinkler system.

Any modifications of the existing building sprinkler system that may be necessary due to equipment installation will be in accordance with the relevant NFPA Code.

A description of fire emergency procedures is presented in the Safety Procedures Section (Section 10).

## **5. EQUIPMENT**

The residential container and paper recyclables processing market is very dynamic. The supply of recyclables fluctuates significantly as does the demand for products from the RF. The following sections describe equipment representative of the equipment that Contractor may employ in the RF. The Contractor may replace this equipment with like equipment, after obtaining the approval of CRRA, without resubmitting a permit modification application.

### **5.1 Rolling Stock Owned by Contractor**

The RF rolling stock shall consist of: at least one (1) payload, two (2) forklifts and one (1) skid steer.

### **5.2 Processing Area Equipment**

5.2.1 The container processing area equipment includes but is not limited to the following major items:

- *Air Rotary Screw Compressor*
- *Material Storage Silo*
- *Harris Badger – Baler*
- *PET Optical Sorter*
- *Trash Compactor*
- *Steel package including platforms and support*
- *Multiple conveyors*

5.2.2 The paper processing area equipment includes but is not limited to the following:

- *OCC Screens*
- *Harris baler*
- *Steel package including platforms and support*
- *Transition Chutes and Hoppers*
- *Multiple Conveyors*

5.2.3 The single stream processing area equipment includes but is not limited to the following:

- *Steel package including platforms and support*
- *OCC Screens Transition Chutes and Hopper*
- *Multiple Conveyors*
- *Multiple deck screens*
- *ADS system*
- *OCC Baler*

## **6. RECORDS**

All vehicles entering and exiting the RF facilities will be weighed on the scales, which are operated by CRRRA, except that vehicles containing residue may be weighed at the CSWS waste-to-energy facility.

Data from the scales is automatically entered into a computer from which all logs and reports are generated. There are two primary components to the system: the Autoscale A500 Weighing System (A500) and the Autoscale Central Management Record-Keeping System (CMRS). These systems were developed by Automated Services Incorporated (ASI) Kentucky, a nationally recognized software company specializing in weighing, tracking and reporting systems for the coal, sand and gravel, asphalt, grain, landfill and solid waste management industries. The A500 database system is a computerized system for recording trucks weights and accounting data on truckloads for flow management and billing purposes. The CMRS updates files, imports data from different Autoscale sites, and transmits cumulative transactions to an accounting system. The software program is generally flexible in its ability to provide reported items in a preferred format. It records information on the vehicles and the types and quantities of the materials delivered and their origin. Note that this includes software and hardware currently used within this industry. Future upgrades in this technology may be implemented to perform these same functions. Also note that neighboring property owners have agreed to the use of their

scales by CRRA in emergency situations; this is documented in scale use agreements between CRRA and these owners.

The data management system records data necessary for reporting all parameters required by CTDEEP in accordance with *Connecticut General Statutes* Section 22a-220. The information is collected for each vehicle, and the data can be compiled and reported on a variety of reporting periods (daily, quarterly, etc.), by municipality or by hauler. The material codes that are used are attached. They consist of separate residue figures for the container and paper lines.

Based on this level of detailed data, and the flexibility of the software program, CRRA is able to provide CTDEEP, project managers, towns and the regions detailed or summarized reports of recycling activities at the RF.

## **7. MAINTENANCE**

### **7.1 Equipment and Building Maintenance**

The Contractor shall provide an annual plan for maintaining the RF. The Contractor shall prepare and submit to CRRA semi-annual and annual maintenance reports for the RF. The Contractor shall maintain and repair property and equipment in accordance with the annual maintenance plan, best industry practices and manufacturers' standards. The Contractor shall employ predictive and preventative maintenance programs, enforce existing equipment warranties and maintain all warranties on equipment.

The Contractor shall maintain at the RF accurate and complete records of all such maintenance activities performed and shall make such schedule and records available to CRRA for inspection and audit with reasonable advance notice.

The Contractor must use its best efforts to perform maintenance during periods when the RF is not open for acceptance and processing of recyclable materials. If, however, the Contractor must perform maintenance during normal hours of operations, the RF shall continue to be responsible for accepting incoming recyclable materials to the extent of the guaranteed facility capacity, and provide for the safe and adequate storage of the materials.

The maintenance of the building exterior (including the roof but not including building siding and loading dock) and site (beyond what Contractor is required to perform under the terms of the Operating Agreement or this Plan) is a CRRA responsibility. Any maintenance or repair will normally be performed by contract on an as-needed basis. CRRA is responsible for contracting for snow removal and grounds maintenance. The Contractor will perform building and adjacent grounds maintenance in accordance with the terms of the Operating Agreement, including but not limited to sweeping the interior of the RF.

The maintenance of the scales at the RF is a CRRA responsibility.

The on-site roads and maneuvering parking areas will be cleaned by the Contractor using a street sweeper as necessary to effectively maintain the paved areas.

Individual on-off switches must control all processing equipment in the Container and Paper Processing Areas. Emergency-stop switches must also be located throughout the processing lines. Lock-out/Tag-out procedures must be implemented.

## **7.2 Maintenance Budget**

The Contractor must employ a full-time mechanic or maintenance supervisor. This person oversees routine equipment maintenance and cleanup. Sufficient funds must be budgeted annually to maintain equipment and keep the building and equipment in proper working condition. Proper maintenance procedures reduce unscheduled shutdowns of the process. The Contractor is responsible for all interior maintenance activities in the processing areas.

CRRA, as part of the CSWS, develops and executes an annual budget for operations and maintenance of the RF building and grounds. This budget requires the approval of the CRRA Board of Directors.

## **7.3 Equipment Shutdowns**

The Contractor must inform CRRA of all scheduled shutdowns for any scheduled maintenance which is expected to cause the facility to stop accepting deliveries of recyclable materials. Any such notice must indicate the expected time, duration, and nature of shutdown or maintenance. If unscheduled shutdown is necessary, the Contractor, as appropriate, must notify CRRA promptly by telephone or facsimile of the time, duration, and nature of the breakdown and required repairs. This electronic notice must be followed up in writing.

## **7.4 Daily Cleanup Procedures**

All process area floors must be swept manually after each shift. The debris collected during cleanup procedures is disposed of at properly licensed facilities.

The tipping floors areas must be policed and swept as a normal procedure during hours of recyclable deliveries. The enclosed tipping areas greatly reduce the potential of windblown debris.

On a daily basis, a litter patrol must police the roads and remove any debris that may be on or along the side of the road.

## **7.5 Preventive Maintenance**

The Contractor must implement, either itself or through contracts with others, preventive maintenance programs that help to insure proper operation of equipment while maximizing useful life of the equipment. Preventive maintenance must be performed on a regular basis (i.e., daily or weekly) based on the recommendations of the equipment manufacturers as indicated in respective operations manuals. Recommended replacement parts must be kept on hand at the

RF. Preventive maintenance must be performed prior to start-up and during operation so that progressive interruptions are minimized.

Acceptance of materials shall never be delayed due to preventive maintenance procedures.

### **7.5.1 Daily Maintenance**

The Contractor's maintenance supervisor/mechanic is responsible for the following daily maintenance items for the processing areas:

- Inspection: at the start of and during each shift, walk around the recycling system to inspect belts and insure they are running in the center of the conveyor (tracking properly) and the splices have not torn apart. Visually inspect all moving equipment for proper operation.
- Janitorial: clean the area at the end of each shift, including cleaning broken glass, plastic, etc.

### **7.5.2 Lubrication and Inspection**

The Contractor's maintenance supervisor/mechanic is responsible for the following lubrication and inspection activities for the processing areas:

Weekly:

- Grease all bearings with manufacturer recommended lubricant or equivalent.
- Visually inspect all gearboxes for leaks. If unit is leaking, check the gear lube level. Fill as required with manufacturer recommended lubricant or equivalent. Make note of leak for researching during scheduled maintenance.
- Prior to starting equipment and with equipment power locked out, remove inspection plates and check for wear and debris build-up. Clean out debris, make note of extent of wear and adjust for wear if adjustment is advisable according to the equipment manufacturer's manual recommendations.

Monthly:

- Check all gear boxes for gear lube. Fill as required with manufacturer recommended lubricant or equivalent.

Semi-Annually:

- Perform recommended inspection and repair and check equipment tolerances and alignments as directed by the equipment manufacturer manuals.



## **7.6 Confinement of Recyclables**

Recyclables are collected by haulers using rear-end packers, roll-offs or state-of-the-art recycling vehicles specifically designed to collect recyclables. In any case, the vehicles must be closed and covered during collection and while in transport to the RF. All recyclable material must be delivered inside the RF building where the delivery vehicle dumps the material onto the tipping floor.

All open top trailers and roll-offs must be covered prior to leaving the RF.

## **7.7 Dust and Odor Control**

The recyclable materials processed at the RF are generally clean and free of putrescible matter. Therefore, there should be minimal offensive-odor causing materials associated with RF operations. Contractor will schedule and conduct regular daily cleanings of the processing equipment during the processing of material, consistent with OSHA guidelines. In addition at the end of each shift Contractor shall clean and perform dust removal operations on the machines and catwalks, and underneath conveyors, before the start of the next shift. Contractor shall expeditiously remove dust from any equipment that is a source of heat such as motors. Contractor shall coordinate with CRRA to schedule quarterly facility-wide cleaning to remove any dust that has accumulated in the RF utilizing a vacuum truck owned by CRRA. Contractor shall, in consultation with CRRA and its designee, train its employees in the proper operation of the vacuum truck. Contractor shall operate the vacuum truck with its personnel at its sole cost (but at no charge from CRRA) in accordance with the operations manual, generally accepted industry standards and consistent with OSHA guidelines. Contractor shall be responsible for the cost of fuel for the vacuum truck used in cleaning the RF and any maintenance and repairs needed to the vacuum truck as a result of Contractor's use not resulting from ordinary wear and tear. Contractor shall purchase all the non-collapsible hose required to reach all areas in the RF where dust has accumulated. Contractor shall be responsible for the proper disposal of any dust collected by the vacuum truck in cleaning the RF, which may be disposed of at the CSWS Resource Recovery Facility as Residue under the provisions of Section 1.24 of the Agreement.

## **7.8 Vector Control**

The Contractor must retain the monthly services of a local exterminator for the entire RF facility.

# **8. OPERATION**

## **8.1 Design Capacity of Process Equipment**

The RF is designed and permitted to accept the amounts of recyclables specified in the following sections. The RF is permitted by the DEEP to accept and process 560 tons per day of single stream recyclables (paper and cardboard; and plastic, metal and glass containers). Although most of the material delivered to the facility arrives as "Single Stream" material, some of the

material may arrive as “Dual Stream” material (i.e., segregated commingled containers or segregated paper and cardboard).

The maximum storage volumes for unprocessed and processed materials are presented in the table below.

### Maximum Storage Volumes

Material		Maximum Cubic Yards (CY)	Storage Specifications
A	Unprocessed Designated Recyclable Items	3,545	in piles & containers on the tipping floor
B	Processed Designated Recyclable Items	3,821	in bales on the interior storage area
C	Processed Designated Recyclable Items	504	in bales in rail cars
D	Processed Designated Recyclable Items	700	in bales in trucks
E	Residue	80	in compactor boxes or roll off containers
F	Crushed Glass	80	in two bunkers
<b>Total</b>		<b>8,730</b>	

## 8.2 Operations

The processing areas are located in separate parts of the RF building and can function independently with the exception that single stream material needs to be processed through the fiber processing infeed.

### 8.2.1 Container Processing

The Contractor utilizes a separation and sorting process for residential commingled containers delivered to the RF. The location of the container processing area is indicated in **Attachments 1 and 2**. The following description is an example of how the commingled containers can be processed. CRRA and the Contractor may make changes in particular aspects of the processing operation as may be necessary or convenient to reflect changes in materials, markets and technologies.

Commingled containers are received through overhead doors. After inspection and the separation of non-recyclables, commingled containers are dumped on the tipping floor. A payloader piles incoming loads in proper areas and makes room for future loads. The payloader pushes the material into the system supplying the container processing system.

Material is automatically transferred and is elevated by box belt conveyor to sorters at an inspection station along this conveyor to remove large non-conforming contaminants. These contaminants are conveyed directly to residue compactor. The remaining material is conveyed to

the next processing step of magnetic separation. The magnetic belt separators automatically remove tin and bimetal cans and other trace ferrous materials from the recyclables stream and transfer them by a conveyor to the Ferrous storage hopper.

After the magnetic separation, the remaining stream of mixed recyclables discharge from the box belt conveyors through a chute onto a glass breaking roll screen, where all the glass is broken and separated from the light fraction (Plastic/Aluminum) material. The Light fraction material (plastic/A-septic and Alum) is discharged from the roll screen and conveyed to the plastic sorting conveyor. Plastic material (Pigmented and Natural HDPE, 3-7's) and A-septic containers are then manually extracted by grade directly into storage hoppers.

The remaining material, PET/Aluminum and residue, are then conveyed into an optical near infra-red/Air assisted sorting unit, which splits the material into three individual streams. Each stream of material is then conveyed from the optical unit and past quality control stations to ensure product quality. Each material is then discharged into a blower transfer tube and blown to their respective storage hopper for baling.

The material then passes over a grate screen to separate the small lights from the large lights. The "fines" primarily consist of aluminum containers and small plastics.

The small plastic and aluminum containers are conveyed to the eddy current nonferrous separator. Any aluminum materials automatically separate from the PET and HDPE containers by the alternating magnetic field that propels the aluminum and plastic at different trajectories. By opening individual gates at the bottom of each Storage hopper, the stored aluminum cans and plastic containers flow directly in sequence by gravity onto the inclined baler feed conveyor and are conveyor to the baler. As bales eject from the baler, a forklift moves each of the baled products to the designated storage areas.

A front-end loader travels through the doors at the rear of the building to perform the glass load out.

#### 8.2.1.1 Quality Control

The container processing area has engineered machinery built into the process line that aids each workstation in quality control. Automatically sorted material ensures a smaller percentage of manual sorting, which enhances quality.

Material is visually inspected when dumped onto the tipping floor. Material that is too large to be processed or meet market specifications is manually removed. A well-trained quality inspector along with each sorter ensures that end products are of the highest quality.

The baler operation and the loading operation are two additional checks for quality. Finally, quality is checked prior to loading material for shipment.

Specifications for material quality are a very important aspect of quality control.

There are some contaminants that may cause environmental or human danger. Two of these are syringes and pressurized tanks. The following are the procedures followed for these two contaminants.

#### **8.2.1.1.1     *Syringes (non-regulated disposal)***

Usually when a syringe is found in a load of mixed recyclables, it is the result of accidental improper discarding. In the event a syringe is identified on the line, the line is immediately stop and trained personnel dispose of the syringes into a proper container. The syringes are disposed of in a residue compactor.

#### **8.2.1.1.2     *Pressurized Tanks***

In the case of receipt of any type of pressurized gas tank or vessel (e.g., compressed gas cylinder) the tank is removed from the system by Contractor and set aside before the tank reaches the conveyor or sorting lines. Contractor places pressurized cylinders in a hopper for removal. Contractor shall coordinate communications with an appropriate propane cylinder recycler to have these pressurized vessels removed from the RF site. CRRA's written consent shall be required for Contractor's selection of an appropriate propane cylinder recycler. Any disposal costs associated with any pressurized gas tank or vessel brought to the RF by or on behalf of CRRA and charged by any propane cylinder recycler shall be paid by CRRA. Any disposal costs associated with any pressurized gas tank or vessel brought to the RF by or on behalf of Contractor and charged by any propane cylinder recycler shall be paid by Contractor. The phrase "pressurized gas tank or vessel" does not include aerosol cans and is not intended to preclude Contractor's management of aerosol cans. Aerosol cans may be accepted and processed at the RF by the Contractor.

### **8.2.2     *Paper Processing***

The Contractor utilizes a separation and sorting process for residential paper delivered to the RF. The location of the paper processing area is indicated in **Attachments 1 and 2**. The following description is an example of how the paper can be processed. CRRA and the Contractor may make changes in particular aspects of the processing operation as may be necessary or convenient to reflect changes in materials, markets and technologies.

Paper is received through overhead Doors. After inspection and the separation of non-recyclables, paper is dumped on the tipping floor. A payloader piles incoming loads in proper areas and makes room for future loads. The payloader pushes the material into the receiving hopper and onto a metering conveyor that supply's the paper processing system.

Material is automatically transferred from the metering conveyor and onto the paper processing system incline feed belt. This belt is equipped with a metering drum to further ensure proper material burden depth into the system. From the incline feed conveyor, material is deposited on a quality control conveyor where any non-conforming material/residue is removed. Any non-conforming residue extracted from the paper stream is deposited into a residue storage bunker located beneath the sorting system.

Material is then conveyed directly into the OCC separator and the material is split into two streams, OCC and ONP rich paper. The ONP rich paper is automatically separated from the OCC and is deposited onto an ONP transfer conveyor, which conveys the material to the ONP sort belt where the material is further quality sorted. Material on this belt then gets deposited into a live floor storage bunker. Any contaminants extracted from the ONP stream are deposited into storage bunkers directly beneath the sorting system.

The OCC stream that is separated at the OCC screen is conveyed to a transfer conveyor, which transfers the material to the OCC baler feed conveyor that directly feeds into the baler and is baled.

### **8.2.3 Single Stream Processing**

The Contractor utilizes a separation and sorting process for residential single stream delivered to the RF. The location of the single stream processing area is indicated in **Attachments 1 and 2**. The following description is an example of how Residential Single Stream can be processed. CRRA and the Contractor may make changes in particular aspects of the processing operation as may be necessary or convenient to reflect changes in materials, markets and technologies.

Single Stream is received through overhead doors and dumped on the tipping floor. A payloader piles incoming loads in proper areas and makes room for future loads. The payloader pushes the material into the receiving hopper, which is the same as the paper processing system so only one system is used at a time, and onto a metering conveyor that supply's the Single Stream processing system.

Material is automatically transferred from the metering conveyor onto the Paper/Single Stream system incline feed belt. This belt is equipped with a metering drum to further ensure proper material burden depth into the system. From the incline feed conveyor, material is deposited on a quality control conveyor where any non-conforming material/residue is removed. Any non-conforming residue extracted from the Single Stream is deposited into a residue storage bunker located beneath the sorting system.

Material is then conveyed directly into the OCC separator, a glass breaking system and a series of deck screens and the material is split into four streams: OCC, ONP, Glass and commingled containers. The ONP is automatically separated from the OCC and is deposited onto ONP transfer conveyors, which convey the material to the ONP sort belt where the material is further quality sorted. Material on this belt then gets deposited into a live floor storage bunker. Any contaminants extracted from the ONP stream are deposited into storage bunkers directly beneath the sorting system.

The OCC stream that is separated at the OCC screen is conveyed to a transfer conveyor, which transfers the material to a-baler feed conveyor, then into the OCC baler. The OCC conveyors and baler are designed to have the ability to back up the fiber processing in the event of downtime or if scheduled preventive maintenance is required.

The glass is separated and transferred directly thru a series of conveyors that feed the glass upfeed/transfer conveyor and is dumped into a concrete storage bunker.

All containers (plastic, tin, aluminum) are transferred thru a series of conveyors that carry the material to the container processing area.

## **8.2.4 Emergency Operations**

### **8.2.4.1 Storage Area**

There are approximately 9,000 square feet of floor space available in the container processing area for storage during extended disruption of facility operations. The amount of space available in the paper processing area is approximately 9,000 square feet. Drawing ST-1 in **Attachment 2** depicts the proposed bale storage areas within the RF. The Contractor may store bales of any product within designated areas depending on storage area needs per product.

Based on a 17-foot high stockpile, about two 8-hour shifts worth of material storage for incoming deliveries is available for the container processing area. Based on a 20-foot high stockpile, about one 8-hour shift worth of material storage is available for the Single Stream processing area.

### **8.2.4.2 Procedures**

During extended periods of operation disruption, beyond maximum incoming materials storage capacity, CRRA and the Contractor shall divert or transfer materials to other properly licensed recycling facilities with suitable capacity that are approved by CRRA in accordance with the Operating Agreement.

When the RF resumes normal operation, CRRA shall, within a reasonable time, resume normal delivery of recyclable materials to the facility.

The Contractor is responsible for the security and protection of the RF facility during the period of shutdown. After the shutdown, CRRA and the Contractor shall use their best efforts to resume normal operation of the RF as soon as practicable.

### **8.2.4.3 Contingency Plans**

In the event that something occurs that shuts down the RF, the Contractor will adhere to the following contingency plans.

#### **8.2.4.3.1 *Equipment Failure***

Equipment failures and/or repairs rarely result in the equipment being down for more than 24 hours, so it is unlikely that it will be necessary to divert material to another facility for this reason.

If part of the facility is shut down due to equipment failure, the available process equipment will be used to process as much material as possible. The remaining materials will be stored for later processing to the extent possible and thereafter transferred to another IPC or other properly licensed recycling facility with suitable capacity in accordance with the Operating Agreement.

In the event of total equipment failure or backup overflow beyond storage capacities of incoming materials, all materials to be processed thereafter will be transported to properly licensed recycling facilities with suitable capacity in accordance with the Operating Agreement.

If the RF cannot operate and perform as intended, whether as a result of Force Majeure, Change in Law, and/or any other reason not due to an action or inaction of CRRA, and if for such reason Contractor requests that CRRA direct Acceptable Recyclables to Diversion Facilities, the Contractor shall pay to CRRA amounts provided for in Section 7.4 of the Operating Agreement.

#### **8.2.4.3.2 *Fire or Explosion***

If the RF is shut down because of a fire or explosion for more than 24 hours, the Contractor will ensure that a security person is placed at the RF to monitor the situation and guard against the spread or recurrence of a fire or explosion. All damaged materials will be disposed of or stored properly depending on the severity of damage. All pipes, valves and pressure gauges will be monitored for unusual behavior. A full cleanup procedure will be followed when it is determined that such procedures can be performed safely. A full report of the circumstances and actions taken will be made and submitted to CRRA by the Contractor as appropriate.

#### **8.2.4.3.3 *Adverse Weather Conditions***

The CRRA Director of Recycling and Enforcement or his designee is the only one authorized to close the RF because of adverse weather conditions. If the CRRA Director of Recycling and Enforcement determines that weather conditions are such that the RF should not be opened in the morning, he will contact the Contractor's Plant Manager and inform them about the closing.

The Contractor's Operations Manager will contact the Plant Supervisor and inform him/her about the closing. The Plant Supervisor will be instructed to telephone employees to inform them of the closing.

CRRA will contact municipal and hauler customers to announce the closing. Except under the worst of weather conditions, the Operations Manager or the Plant Supervisor will stay at the plant to inform any employee who arrives for work that the plant will be closed.

## 8.3 Quantities

### 8.3.1 Delivery Responsibilities

As of September 1, 2013, there were forty-four (44) towns in CRRA's CSWS that are entitled to ship their acceptable recyclables to the RF for processing. In addition, haulers are permitted to deliver acceptable recyclables from certain Connecticut municipalities under hauler agreements with CRRA. Certain municipalities are permitted to utilize CRRA's Essex, Torrington and Watertown transfer stations. CRRA owns additional transfer stations in Stratford and Ellington that are currently inactive but may become operational should the need arise. The lists below are subject to change based on contract terms with municipalities and haulers, and CRRA shall promptly notify the Contractor of any such changes.

The following are the towns in the CSWS that have an agreement with CRRA to send acceptable recyclables to the RF:

Avon	Ellington	Norfolk
Barkhamsted – RRDD1	Essex	North Canaan
Beacon Falls	Farmington	Old Lyme
Bethlehem	Glastonbury	Old Saybrook
Bloomfield	Goshen	Oxford
Canaan	Granby	Portland
Canton	Haddam	Rocky Hill
Chester	Hartford	Roxbury
Clinton	Harwinton	Thomaston
Colebrook	Killingworth	Torrington
Cornwall	Lyme	Watertown
Deep River	Marlborough	Wethersfield
East Granby	Middlebury	Winchester – RRDD 1
East Hampton	New Hartford – RRDD 1	Woodbury

The following are the towns that haulers are permitted to deliver acceptable recyclables from Connecticut municipalities to the RF under hauler agreements:

Bolton	Madison	Suffield
Coventry	Middletown	Tolland
Cromwell	New Haven	Vernon
East Hampton	Newington	Waterbury
East Hartford	North Branford	West Hartford
East Windsor	Somers	Westbrook
Enfield	Southbury	Windsor
Guilford	Stafford	Windsor Locks
Hebron		



In addition to shipments of recyclables from individual towns, CRRA has three recycling transfer stations (Essex, Torrington and Watertown) that collect and transfer commingled containers and single stream paper from towns to the RF or directly to another properly licensed facility.

As of September 1, 2013, the following are the towns that ship recyclables through the Essex Transfer Station:

Chester	Essex	Old Saybrook
Clinton	Killingworth	Old Lyme
Deep River	Lyme	

As of September 1, 2013, the following are the towns that ship recyclables through the Torrington Transfer Station:

Canaan	Goshen	North Canaan
Colebrook	Harwinton	RRDD 1
Cornwall	Norfolk	Torrington

As of September 1, 2013, the following are the towns that ship recyclables through the Watertown Transfer Station:

Beacon Falls  
Bethlehem  
Middlebury  
Oxford  
Roxbury  
Thomaston  
Watertown  
Woodbury

### **8.3.2 Marketing Responsibilities**

Contractor is responsible for marketing all products that it processes and for delivery of the residue generated by it to the CSWS Resource Recovery Facility.

## **8.4 Delivery Standards**

All municipal and hauler customers delivering Acceptable Recyclables to the RF shall strictly adhere to the CSWS Permitting, Billing and Disposal Procedures attached as Exhibit C to the Operating Agreement.

## **8.5 Facility Availability**

The entire facility shall be utilized for the RF.

## **8.6 Markets**

The Contractor is responsible for processing and marketing of all respective recyclable materials unless otherwise specified under the Operating Agreement.

# **9. ENVIRONMENTAL CONTROL**

## **9.1 Odor**

The recyclable materials processed at the RF are generally clean and free of putrescible matter. There are minimal offensive-odor causing materials associated with RF operations. The rapid turn-around of the materials limits the amount of odors that may be present. In addition, the recyclables are stored inside a fully enclosed building that contains the majority of odor that might be generated in processing the recyclables. At the end of each day, all facility doors must be closed. Process residue must be shipped out when a container is full to minimize odor.

## **9.2 Noise**

The operation of the facility does not create any adverse noise impacts on the surrounding community. The primary outdoor noise source is generated by a cyclone/fan system located inside the building and attached to the ceiling in the southwest quadrant of the building. The buffer area surrounding the building adequately attenuates the noise of operation to an acceptable level. The processing areas are enclosed inside the building, eliminating outdoor noise problems.

As specified in Section 10 of this Plan, all employees are required to wear earplugs and eye protection in accordance with OSHA regulations. CRRA, the Regional Recycling is committed to strictly conform to all OSHA, ANSI and CTDEEP guidelines for employee safety.

### **9.3 Dust Control**

In the areas where dust may be generated in the RF, employees shall be given the option to wear dust masks. These masks protect anyone wearing them and working in the RF. Contractor shall deal with dust in accordance with Section 7.7 above.

### **9.4 Liquid Waste**

The de minimis quantities of liquid waste generated by the facility are collected using wet/dry vacuums that are designed to vacuum out the solids. The wastewater is discharged to the sanitary sewer system pursuant to the General Permit for Miscellaneous Discharges of Sewer Compatible Wastewater issued by the Connecticut Department of Environmental Protection.

### **9.5 Stormwater**

The RF qualifies under and is subject to the requirements of the "General Permit for the Discharge of Stormwater Associated with Industrial Activity" (CTDEEP, 09/24/03). CRRA has registered the RF (GSI000814) under the General Permit. CRRA conducts the sampling, submits the reports and maintains the records required by the General Permit.

## **10. SAFETY PROCEDURES**

### **10.1 Safety Policy**

It is the policy of CRRA and the Contractor to ensure to the highest degree possible, a safe and healthful working environment for all employees.

In order to achieve the goal of a hazard-free working environment, employees and non-employees who use the RF are required to obey the rules set forth in the Contractor's safety programs or be subject to disciplinary action.

The Contractor must meet or exceed the standards established by any local and/or federal laws and regulations pertaining to the construction industry.

Individual on-off switches must control all components in the RF processing systems. Emergency-stop switches must also be located throughout the processing lines. The Contractor must implement lock-out/Tag-out procedures.

The Contractor shall conduct fire safety training in accordance with the relevant National Fire Protection Association (NFPA) standards and periodic, but at a minimum semiannual, fire drills for all employees.

Fire extinguishers located throughout the RF shall be inspected periodically by site personnel and an outside vendor. Records of all such inspections shall be provided by the Contractor to the CRRA facilities manager and retained at RF. All "hot work" permits for repairs to the RF or the

equipment therein shall be provided to CRRA in advance of the work being performed. All “hot work” shall be performed in accordance with the relevant National Fire Protection Association (NFPA) standards.

A drawing depicting the pull stations, fire extinguishers, and sprinkler system is included in **Attachment 2** – “Fire and Safety Devices Floor Plan”.

## **10.2 Safety Standards and Rules**

The following are the RF safety standards and rules. The standards and rules must be followed at all times by all employees of CRRA and the Contractor. Failure to follow the safety standards and rules could result in disciplinary action against the offender up to and including immediate termination. Employees are urged to report to their supervisor any unsafe condition so that immediate attention can be given and corrective action can be taken.

### General Safety Standards for Employees

1. Report all injuries, no matter how slight, to a supervisor immediately; first aid should be sought immediately; first aid should not be administered unless a supervisor is present;
2. Report any unsafe condition or practice to a supervisor;
3. Do not use compressed air to clean clothing or a person; an air gun must not be pointed toward anyone;
4. Keep all aisles, passageways, platform and stairways clear of all obstructions; keep your work area clean and orderly; perform all work in an orderly manner;
5. Materials must be properly stacked to avoid creating hazards; bales are to be stacked no more than four high;
6. Do not fail to stop, look and listen before stepping into a trucking aisle; walk, do not run, while you are in the RF or on RF property; use only marked aisles when walking through the plant; do not take short cuts through departments or process areas; do not climb conveyors or balers;
7. Drivers of motor vehicles must stop and sound the horn at cross aisles and where vision is obstructed and sound the horn when backing up; no hitch hikers are allowed on forklifts;
8. Work within prescribed weight limitations when lifting or pushing;
9. Do not wear ties, loose clothing, rings, bracelets, watches, necklaces or other items which are hazardous around machinery;
10. Do not block access to fire extinguishers or hoses with equipment or materials; do not interfere with firefighting operations;
11. All combustible, flammable materials or liquids must be stored in approved safety areas;

12. Use assigned tools and follow prescribed methods for each job; do not use defective tools or equipment of any kind;
13. Guards are placed on moving machinery for the employees protection; do not operate equipment unless all guards are in place and machinery is cleared of objects and people;
14. Never clean, oil or adjust any machinery while it is in motion, unless it is so designed;
15. Observe all “danger,” “safety” and “no smoking” signs.

### Basic RF Rules and Regulations

The following are prohibited in the RF:

1. Endangering the safety and health of other employees or threatening, intimidating or striking another employee;
2. Engaging in sabotage, espionage or restricting production; damage to or theft of RF property or that of another employee;
3. The operation of any machine except by an authorized employee;
4. Bringing weapons into the RF;
5. The use, possession, promotion, purchase, transfer, sale, distribution or manufacture of unauthorized or illegal drugs or the misuse of any legal drugs, alcohol, or other chemical substances or any combination thereof, on RF premises;
6. Insubordination;
7. Sexual harassment;
8. Failure to wear eye safety protection at all times in all RF areas; failure to wear proper footwear; failure to wear prescribed safety equipment;
9. Smoking is solely permitted in accordance with Section 4 above;
10. Gambling or promoting gambling;
11. Violation of any criminal law; and
12. Failure to adhere to RF policies.

## **10.3 Safety Procedures And Responsibilities**

### **10.3.1 Safety Committee**

The Contractor must form its own safety committees. The safety committee must meet at least once per month to discuss safety and health related issues.

### **10.3.2 Employee Safety Sheet**

One of the forms that an employee of the Contractor is required to sign when he/she is hired is the Employee Safety Sheet. The sheet is designed to familiarize the employee with the general safety rules of the plant. By signing this sheet the employee assures that his/her actions will be conducted in accordance with these rules and in a manner that will help guarantee plant safety for each employee.

### **10.3.3 Daily Safety Inspection**

Each morning prior to start-up of the first shift, the Contractor's Plant Supervisor must conduct a safety inspection of all plant equipment, passageways, fire system, valves, first aid kits, and storage areas. The status of each item must be noted on a Safety Checklist. If there are no problems with an item on the list, "OK" is entered under the corresponding day column. If there is a problem, "ACTION NEEDED" is entered. The problem is noted on another sheet and the proper personnel notified so that immediate action can be taken. This usually means notifying the maintenance person on duty and having him correct the problem.

Along with preventive and emergency maintenance, the maintenance person is responsible for assisting in the inspection of mechanical equipment.

Prior to start-up, the Plant Supervisor must also make sure that employees are wearing all proper safety equipment. Inspections are also made to assure that no long winter clothing is worn in the plant (e.g., scarves, long coats).

## **10.4 Personal Protective Equipment (PPE)**

Persons who must work where hazards cannot be eliminated or controlled at the source and where ordinary work clothes do not afford sufficient protection should use PPE that, if necessary, can protect the person from head to toe.

An important aspect of PPE is Supervision and Enforcement. The Plant Supervisor must be familiar with the equipment so that he/she can explain and demonstrate its use. This is done during training and at Safety Meetings.

Any PPE can be obtained from the Operations Manager or the Plant Supervisor.

An employee is responsible for all maintenance and upkeep of any form of PPE. If an article of PPE becomes damaged, it should be immediately reported to the Plant Supervisor. The damaged piece of PPE must be turned in before a new item is issued.

The Contractor must maintain a supply of the following OSHA approved PPE:

- Hard Hats
- Eye Protection
- Ear Protection
- Hearing Protection
- Rain suits (for construction workers)
- Gloves
- Dust Masks

## **11. EMERGENCY PROCEDURES**

### **11.1 Emergency Contacts**

Telephone numbers of the emergency contacts for the RF are found in **Attachment 4**. This will be updated as necessary when there is a change in the personnel listed.

### **11.2 Fire**

In the event of a fire, the Operations Manager, Office Administrator and Plant Supervisor, depending on who is immediately available, are responsible for the following:

- Alert all RF personnel;
- Call the Fire Department, CRRA and the insurance carrier; and,
- Utilize available fire extinguishers and/or yard hydrants to fight the fire if possible. RF employees should not put themselves or any of their co-workers in danger to combat a fire.

An effective fire protection program is the best way to minimize the possibility of fire at the RF. The need for good housekeeping and cleanliness cannot be over-emphasized. The maintenance program should take into account fire prevention measures pertaining to all mechanical and electrical equipment.

The Contractor should evaluate all potential fire hazards and implement a program to eliminate or minimize the hazards that could result in an emergency. The following steps are suggested:

- Smoking is solely permitted in accordance with Section 4 above;
- "No Smoking" signs should be posted where necessary;
- Employees should watch for danger spots even if no warning is posted (e.g., temporary storage area that contains combustibles).

- Employees should never dispose of a cigarette in a wastebasket or trash can.
- Employees should never clean out a pipe in such a way that the contents of the pipe empty into a wastebasket or trash can.

The following special precautions related to flammable and combustible liquids will be taken:

- Employees must keep flammable and combustible liquids away from open flames and motors that might spark.
- When an employee transfers flammable liquids, he/she must bond the containers to each other and ground the one being dispensed from, to prevent sparks from static electricity.
- Employees must clean up spills right away, and put oily rags in a tightly covered metal container.
- Employees must change clothes immediately if they get oil solvents on their clothes.
- Employees must watch out for empty containers that contained flammable or combustible liquids because vapors might still be present.
- Flammable and combustible liquids must be stored in approved containers in well-ventilated areas away from heat and sparks.
- Employees must be sure that all containers for flammable and combustible liquids are clearly and correctly labeled.

The Contractor shall conduct fire safety training in accordance with the relevant NFPA standards and periodic, but at a minimum semiannual, fire drills for all employees. The Contractor should make arrangements for the plant personnel to meet with the local fire department and insurance personnel and receive instructions on fire prevention techniques, emergency firefighting methods, and use of emergency compressed air breathing apparatus. Such instruction should be on an annual basis and should be periodically reviewed. The fire chief should be invited to inspect the plant and advise the Contractor of any fire hazards that may exist. The Contractor should take immediate steps to eliminate or minimize such fire hazards.

Fire extinguishers located throughout the RF shall be inspected periodically by site personnel and an outside vendor. Records of all such inspections shall be provided by the Contractor to the CRRA facilities manager and retained at RF. All “hot work” permits for repairs to the RF or the equipment therein shall be provided to CRRA in advance of the work being performed. All “hot work” shall be performed in accordance with the relevant NFPA standards.

### **11.3 Explosion**

Fires and explosions are closely related. One can easily be the cause or the result of the other. Explosions are most likely to occur in enclosed areas.



In the event of explosion, the Operations Manager, Office Administrator and Plant Supervisor, depending on who is immediately available, must do the following:

- Administer first aid if required;
- Call the fire department, CRRA and the insurance company.
- Alert plant personnel;
- Locate and shut down possible sources of combustion (e.g., fuel and gas lines, flammable materials, etc.);
- Assess damage to property and mechanical equipment and file a report in written form.

The Contractor must make every effort to minimize the possibility of explosion. Each piece of equipment in the processing areas is designed so that the likelihood of an explosion resulting from an internal malfunction of that equipment is very low. Precautions must be taken, however, in the event that potentially explosive materials, such as pressurized gas containers, are received at the plant as part of a mixed recyclable load.

The Contractor's Tipping Floor Coordinator, in-feed conveyor inspectors and all sorters on the mixed recyclable line must be trained to identify any piece of material that may be of a pressurized nature. In the event that such material is found, the system must be shut down and the container removed. This procedure prevents a possible explosion that could occur if a pressurized container is introduced to any type of baler or compactor.

The following steps are also recommended to minimize the possibility of explosion:

- Strictly enforce no-smoking rules;
- Post signs indicating potential explosion hazard areas;
- Use positive mechanical ventilation prior to entering or when working in a potentially explosive or suspected oxygen deficient area.

## **11.4 Evacuation Plan**

The Contractor must develop and evacuation plan for their employees to be used in case of fire or other emergency that, in the judgment of the Contractor's Operations Manager, warrants the evacuation of the building. The evacuation plans must include primary and secondary evacuation routes.

The Contractor must instruct its employees that evacuation is to begin immediately at the sound of the fire alarm. They are also to evacuate when instructed to do so by the Contractor's Operations Manager.

All supervisors and members of the safety committee must keep an up-to-date listing of all employees. These copies should be kept in these individuals' automobiles for easy access. A roll call must be taken immediately upon completion of the evacuation. Missing or unaccounted employees must be identified to emergency personnel. The roll call must be made by a supervisor or appointed member of the safety committee.

A copy of all MSDSs for chemicals used in the RF should be attached to the employee listing. When emergency personnel arrive at the RF, the MSDSs should be given to them.

## **11.5 Personal Occupational Emergencies and Procedures**

### **11.5.1 Emergency Procedures**

The procedures that are followed for an accidental injury depend on the type and severity of the injury. Listed below are the procedures to follow for various types of injuries.

#### **11.5.1.1 Major Injury - Outside Medical Attention Required**

The injured person or a person nearby should alert either the Plant Supervisor or Office Administrator using a plant telephone or two-way radio, if necessary. Whoever is contacted will first call an ambulance or paramedics. The person contacted will then notify a Supervisor or one of the Red Cross Basic First Aid and CPR certified personnel. There is always at least one Red Cross Certified person in the RF, usually one of the supervisors.

Immediate first aid will be performed if necessary. A person designated by the Supervisor will wait outside the building until the ambulance arrives and will direct the ambulance team to the injured person. After the ambulance takes the injured person away, the supervisor will notify the person's family of the incident. Reporting and investigation procedures are then followed.

#### **11.5.1.2 Minor Injury - In Plant Medical Attention Necessary**

The injured person or a person nearby should alert the Plant Supervisor who will then perform first aid if necessary. After first aid is performed, the employee will be instructed to go to the break room and relax for a while. If hospitalization is subsequently required, an ambulance will be called. If the person needs to go home and is incapable of transporting him/herself, the Supervisor will notify the person's family to pick them up.

### **11.5.2 Accident Reports**

Immediately following any recordable injury or illness of any kind at the RF, OSHA Form No. 300, "The Log and Summary of Occupational Injuries and Illnesses" will be filled out. Except where prohibited under OSHA requirement, this form requires that the name of the employee and his/her department be indicated and that the illness or injury be described. A workers' compensation "First Report of Injury" form must be completed and sent to the Office of the Connecticut Commissioner of Labor.

For the Contractor's personnel, whenever there is an injury that requires medical attention, a Contractor report must be filled out. The report includes an accident description, preventive actions taken, witnesses, equipment involved, unsafe conditions which led to the accident, other factors which contributed to the accident, and recommendations and comments.

Records of all first aid provided to an employee must be kept in the Contractor's administrative office.

After an accident has occurred, the person has received the appropriate treatment and the appropriate reports have been filled out, an investigation will be conducted. Contractor shall provide CRRA with copies of all accident reports and investigation reports.

Unsafe conditions that lead to any accident in the plant are to be immediately rectified to prevent further injury. Contractor shall promptly notify CRRA of any unsafe conditions and how Contractor has rectified said conditions to prevent further injury.

### **11.5.3 Accident Investigation**

The Contractor's Operations Manager or Plant Supervisor will conduct a full investigation of any accident and the events that led to it. In addition, he/she will conduct an investigation of all linear-misses II. The goal of the investigation is to detect and prevent lapses in safety that resulted in an accident or potential accident.

## **11.6 Hazardous Waste Management**

The facility does not accept any types of hazardous materials. If any hazardous material is inadvertently delivered, specific actions specified in Section 8.4 of this Plan must be followed. All pertinent requirements of OSHA, CTDEP and the United States Environmental Protection Agency (USEPA) must also be complied with.

# **12. RESIDUE**

## **12.1 Waste Control Plan**

A Waste Control Plan is a set of procedures that are followed by all employees of the Contractor to assure that a minimal amount of process residue is combined with each incoming load of recyclable material. Maintaining a minimum level of these contaminants is important in order to reduce the amount of waste that passes through the system.

The mixed glass system in the Container Processing Area must be maintained so that glass contained in the process residue will be minimized. There is a final inspection station prior to the residue entering the compactor container where recyclables that have inadvertently entered the residue line may be removed.

The Operating Agreement contains business incentives to maximize product output to ensure minimum residue.

Residue amounts must be 10% or less of total incoming materials to the facility. Examples of residue types are:

- Ceramics
- Mailboxes
- Plate Glass
- Flat Glass
- Toys (except rigid plastics)
- Auto Glass
- Liquids
- Stones, Rocks
- Paper Wrappers
- Plastics Bags
- Stretch Wrap
- Styrofoam
- Tool Scraps
- Certain Plastic containers
- Plastic Film
- Non-Container Metals
- Oil Containers
- Syringes
- Paint Cans

All residue must be maintained within containers and must be stored in a manner to prevent wind from blowing the material onto the site and to prevent the materials from detracting from the appearance of the site.

## **12.2 Residue Disposal**

Residue meeting the delivery standards in the Procedures is shipped by Contractor to the following facility:

- CSWS Waste Processing Facility
- Gate 70
- 300 Maxim Road
- Hartford, CT 06114

All other residue, such as electronics and computers, shall be shipped by Contractor to a properly licensed facility for disposal

# **OPERATION AND MAINTENANCE & SAFETY MANUAL**

## **ATTACHMENT 1**

### **SITE DRAWINGS**

# **OPERATION AND MAINTENANCE & SAFETY MANUAL**

## **ATTACHMENT 2**

### **FACILITY PLANS**

# **OPERATION AND MAINTENANCE & SAFETY MANUAL**

## **ATTACHMENT 3**

### **TRAFFIC STUDY**

**DMJM Harris**

October, 2005

**OPERATION AND MAINTENANCE & SAFETY MANUAL**

**ATTACHMENT 4**

**EMERGENCY CONTACT TABLE**



## Emergency Contact Information

Emergency-Medical, Fire and Police 911

Routine Police Calls, HPD (860) 527-6300

CTDEEP – Oil and Chemical Spills (860) 424-3338

CRRA Headquarters (860) 757-7700

### After Hours

#### CRRA

Tom Gaffey (860) 757-7759 and 7735 (w); (860) 922-7048 (c)

Maryanne Bergenty (860) 757-7761 (w); (860) 250-1463 (c)

George Carlson (860) 757-7756 (w); (860) 729-0081 (c)

#### RF Operator

Ron Santos (860) 278-8629 (w); (860) 729-4350 (c)

Mark Winch (860) 278-8629 (w); (860) 306-6802 (c)

RJ Huck (860) 384-0336 (c)

Joe Milici (203) 339-0678 (c)

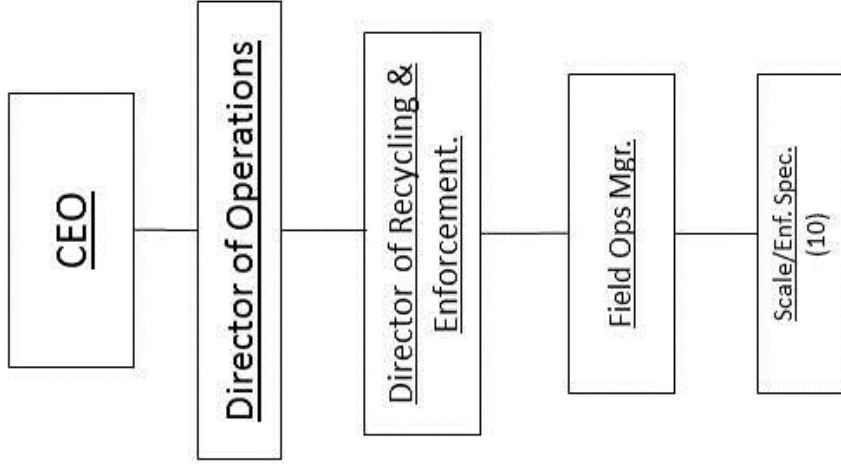
**OPERATION AND MAINTENANCE & SAFETY MANUAL**

**ATTACHMENT 5**

**CONNECTICUT RESOURCES RECOVERY AUTHORITY  
ORGANIZATIONAL CHART**

# Connecticut Resources Recovery Authority Organizational Chart – Recycling and Field Operations

(as of September 2013)



# **OPERATION AND MAINTENANCE & SAFETY MANUAL**

## **ATTACHMENT 6**

### **CONTRACTOR ORGANIZATIONAL CHART**

# Contractor Organizational Chart

