Draft

STATE OF CONNECTICUT DEPARTMENT ENERGY AND ENVIRONMENTAL PROTECTION
BUREAU OF MATERIALS MANAGEMENT AND COMPLIANCE ASSURANCE
WASTE ENGINEERING AND ENFORCEMENT DIVISION
79 Elm Street
Hartford, CT 06106-5127

Guidance for Completing the Facility Plan For a Volume Reduction Plant

I. Introduction

The following guidance has been prepared to assist in the preparation of the Facility Plan for a permit to construct and/or operate a volume reduction plant (VRP) which is designed to process solid waste generated elsewhere. This guidance addresses the following types of volume reduction plants: Intermediate Processing Center; Composting Source Separated Organic Material; Construction and Demolition Waste; Land Clearing and/or Clean Wood Processing, and excludes Sludge Processing, Transfer Station, Biomedical Waste Treatment Facility, General Permitted Sites, Solid Waste Disposal Areas and Resource Recovery Facilities.

DEPARTMENT may amend these guidelines as necessary in order to insure that the facility is constructed and operated in compliance with all applicable laws.

When preparing the Facility Plan (Operation and Management Plan and Engineering Drawings) for the facility, the following design and operating criteria must be taken into account.

II. Facility Plan

In accordance with Section 22a-209-4(b) RCSA, a facility plan must be certified by an engineer responsible for the overall facility design and is licensed to practice in the State of Connecticut. The facility plan consists of engineering drawings and an operation and management plan (O&MP). The title sheet of the O&MP and all plan sheets must be stamped and signed by the licensed engineer.

A. General Operation and Management Plan

The Operation and Management Plan for all types of volume reduction plants (i.e. Intermediate Processing Center; Composting Source Separated Organic Material; Construction and Demolition Waste; Land Clearing and/or Clean Wood Processing), must provide, at a minimum, the following information:

Operation
Provide details for at a minimum those items listed below:

1. Types and quantities (tons per day) of waste to be received;

2. Sources of waste (e.g.; municipal, commercial, industrial, institutional, regional, out-of-state);

3. Daily operations (i.e., receiving, unloading, managing waste on a first in/first out basis, storing, sorting, processing, reloading, transfer, etc.);

4. Procedures for conducting periodic unannounced inspections of truck loads, pursuant to CGS Section 22a-220c(b) and any other routine inspections of incoming loads to at a minimum identify unacceptable waste types and inappropriately blended loads of waste such as loads of wastes bound for disposals containing greater than ten (10) % designated recyclables pursuant to RCSA 22a-241b or other percentage limit as specified in the permit;

5. Procedures for managing any unacceptable and/or inadvertently received unauthorized waste (e.g., hazardous materials, liquid waste) received at the Facility. At a minimum the unacceptable and or inadvertently received waste must be immediately upon discovery segregated from other wastes managed, stored and transferred from the Facility to a solid waste facility authorized to accept such waste. A record of the Facility's management of such waste shall be maintained and noted in the Facility's reports to the Department;

6. Method of measuring waste (i.e., scale, volume estimate, etc.);

Operation (continued)

7. Waste storage [i.e. type and amount (tons or cubic yards) of waste(s) stored both processed and unprocessed, location of storage areas, number and sizes of storage containers, indoor vs. outdoor, etc.] Under no circumstances shall processed waste be stored at the Facility for greater than forty-five (45) days;

8. Maximum tons per day of waste received at the Facility (design capacity);

9. If applicable, describe Quality Assurance and Control programs, including schedule(s) for testing market ready materials (e.g., asphalt roofing shingles, gypsum, and compost) generated by the Facility;

10. Destination of processed materials/wastes (e.g. recycling markets, specialized processing facilities, disposal facilities), including agreements with those facilities. Destination facilities shall be authorized to accept those processed materials/wastes identified;

11. The Facility's operation will be consistent with the recycling and diversion goals as outlined in the amended Solid Waste Management Plan, http://www.ct.gov/deep/cwp/view.asp?a=2718&q=325482&deepNav_GID=1639#SWMPWMP; and

12. Any other information pertinent to the operation and management of the Facility.

Management

Provide details for at a minimum the items listed below:

13. Organizational chart which shall include duties, responsibilities, experience and qualifications of management, Facility staff and operating personnel including names of operators certified pursuant to Sec. 22a-209-6 R.C.S.A (see application attachment J: Business Information). Responsibilities associated with the management of the Facility may include environmental compliance officer, health and safety officer, emergency coordinator, community outreach coordinator, etc;

14. If applicable, provide a copy of facility operating agreement with subcontractor(s) (see application attachment J: Business Information);

15. If the applicant is not the property owner, provide a current, signed lease agreement between the applicant or operator and the property owner (see application attachment J: Business Information);

16. Operating days with associated hours;

17. All available communication system(s) (such as two-way radios, land telephone lines, wireless phones

cellular phones, pagers, etc.) Such description shall also include criteria and/or trigger events for their use; and

18. Any other information pertinent to the management of the Facility.

Planning

19. A comprehensive list of required local, federal and other state permits and/or authorizations must be provided. It is the Applicant's responsibility to ensure that all local, federal and other state permits and authorizations are obtained prior to conducting activities authorized through a permit issued by the commissioner. During the technical review of the application the Department may request confirmation that the Applicant has initiated the processes to obtain additional permits and authorization described herein.

Recordkeeping

Provide details for at a minimum the following items:

20. The system to be used to record volume or tonnage information for each load received to include specifics on the waste types (e.g., in/outbound scale(s), computer programs, visual volume estimation(s), etc.). The same must be recorded and details provided for transfers from the Facility of processed and unprocessed wastes/materials;

21. Daily quantities of each type of waste received.

22. Documentation of unannounced inspections of truck loads for designated recyclable items and any other routine inspections of incoming loads to identify unacceptable waste types. Additionally, records must be maintained for all inspections (e.g. clean wood, facility condition, litter mitigation, equipment maintenance, staff training…) required by all solid waste permits issued by the commissioner.

23. Information required for quarterly reporting to the Department pursuant to Section 22a-209-10(13) RCSA and Sections 22a-208e and 22a-220 of CGS and how such information will be collected and maintained at the Facility. Reporting forms and information on the reporting requirements can be obtained by contacting the Waste Enforcement and Engineering Division at (860) 424-3366 or by visiting our solid waste and recycling reporting forms webpage www.ct.gov/deep/cwp/view.asp?a=2714&q=468660&deepNav_GID=1645

Maintenance

Provide details for at a minimum the following items:

24. Daily clean-up procedures;

25. All contracts, agreements and records of or pertaining to maintenance of the Facility;

27. All contract, agreements and records pertaining to equipment maintenance program(s) and shutdown prevention program(s);

28. Facility roads and areas being used or accessed by Facility staff and/or authorized users;

29. Required on-site signage; and

30. Any other information pertinent to the maintenance of the Facility.

Environmental Controls
Provide details for at a minimum the following items:

31. Procedures and equipment and/or supplies to be used for the control of nuisances pursuant to RCSA 22a-174, (e.g. odor, dust, noise, litter, vectors, etc.), spills, stormwater, and leachate, among others. Provide the specific actions that will be taken if unacceptable conditions (referenced above) occur at the Facility or beyond the property line of the Facility. Also provide a description of the protocols for responding to any complaints or requests that the Facility receives by any means including the required phone number accessible to the general public.

32. Describe methods to ensure that trucks are not left idling for longer than 3 minutes, pursuant to 22a-174-18(b)(3), such method may include verbal notification and/or signage.

33. Describe proposed procedures to conduct inspections and audits to ensure compliance with environmental regulations. This shall include visual facility inspections, inspections of incoming loads of wastes, compliance auditing, and all other inspections required by the permit.

34. Any other pertinent environmental controls employed at the facility.

Traffic
Provide details for at a minimum the following items:

35. Traffic routes and local roads to access the facility and to travel from the facility. The description shall include types, sizes and numbers of vehicles expected to access the facility. **Note that access to and egress from the facility must be shown on the Site Plan;**

36. Traffic flow and pattern within the property and within the facility structure(s). Such traffic includes at a minimum vehicles entering to use the facility and facility owned vehicles maneuvering. **Note that traffic flow at the facility and property must be shown on the Site Plan;**

37. Survey of traffic in the area and the expected environmental impact(s) associated with an increase of traffic resulting from facility operations. Depending on the size and location of the proposed facility, a traffic study may be required; and

38. All methods to keep separate the traffic flow(s) resulting from commercial operations/ commercial customers and traffic resulting from the general public's use of the facility as well as guests to the facility (FedEx, UPS, State inspectors…).

39. On site roads must be designed to accommodate expected traffic flow in a safe and efficient manner;

40. Road surfaces must be constructed of all weather materials suitable for heavy vehicles and designed to withstand expected loads;

Equipment
Provide details for at a minimum the following items:

41. All specifications, types, sizes, number(s) and design parameters of the all fixed equipment and mobile equipment (rolling stock) proposed to be used at the facility (i.e. containers for processed and unprocessed wastes, chippers, loaders, conveyers, bailers, compactors, scales, etc.); and

42. Capacities of all processing equipment (both fixed and mobile) must be provided.

43. Routine maintenance and inspections of all equipment including fire control equipment which shall be conducted in accordance with manufacturer(s) specifications and in no case less than annually.

Fire Control
Provide details for at a minimum the following items:

44. Method(s) used for fire control at the facility (both for mitigation and prevention) in each area;

45. For water based fire control systems the source and quantity of available water;

46. The mechanics of the fire control system(s) used at the facility. Including schematics of the fire control system(s) when appropriate; and

47. All arrangements made with the local fire protection agency to ensure prompt and appropriate response.

Emergencies
Provide details for at a minimum the following items:

48. Waste management procedures in any circumstances that inhibit the routine processing of wastes including transfer from the facility. Provisions for waste management must be made for planned or unplanned outages both at the facility and any destination facilities. Such procedures shall include agreements with alternate destination facilities and details pertaining to the method for transfer of the wastes to such facilities. Additionally procedures for maintaining all required data logs and subsequent reporting (to local authorities and the Department) required by the permit. The arrangements may include by-passing the solid waste flow using direct haul from generator to destination facilities or receipt at the facility, trans-loading and consolidation prior to transfer to a destination facility;

49. Protocols to be used in the event of an emergency event such as fire, medical or explosion including but not limited to response procedures, coordination with local medical, police and fire protection agencies as well as notification to neighboring property owners; and

50. Any other protocols that may be put into place to address emergency events.

Safety
Provide details for at a minimum the following items:

51. Description of Occupational Safety and Health Administration (OSHA) required personnel safety procedures and training pursuant to Section 22a-209-4(b)(2)(B)(iv) RCSA. (All applicable requirements of Part 1910 and Part 1926 of Title 29 of the Code of Federal Regulations resulting from specific on-site operations); and

52. Methods which may include signage to keep separate the traffic flow(s) resulting from commercial

operations/ commercial customers and traffic resulting from the general public's use of the facility as well as guests to the facility (FedEx, UPS, State inspectors…).

Financial Assurance Instrument

53. Solid Waste Volume Reduction Plants are by Department practice required to post a financial assurance instrument http://www.ct.gov/deep/cwp/view.asp?A=2718&Q=434406 and provide annual updates. Note that financial assurance amounts are calculated based on the total storage tonnage of waste authorized at the facility plus 15% contingency.

III. Specific Facility Type Design and Operating Criteria

A. VRP for the processing of Construction and Demolition Waste

In addition to the requirements of Section 22a-209-10 RCSA and Section A. General Operation and Management Plan, all volume reduction plants processing construction and demolition waste regardless of what other materials/waste are accepted or processed must be designed and operated to meet the following criteria:

1. Tipping, processing, storage and loading areas must be designed and sized to allow efficient waste management and unobstructed movement of vehicles;

2. Receiving, tipping, processing, storage and loading areas must be equipped with adequate drainage to prevent the accumulation of water. Stormwater and/or wastewater collection systems must meet all applicable design and permitting requirements imposed through the storm water and water discharge permitting program(s)of the Department;

3. Truck wheel curbs and guiderails must be provided at all elevated loading and unloading areas;

4. For facilities allowing residential drop-off, separate access must be provided to minimize potential accidents and unauthorized entry;

5. All construction and demolition waste tipping and processing areas must be located within an enclosed, roofed structure equipped with adequate ventilation and fire protection systems and an impervious floor (e.g. concrete, asphalt, etc.).

6. For new or modifications to existing facilities when processing and/or storage capacities are proposed the available storage at the Facility both indoors and outdoor storage only in covered watertight containers. must be considered and evaluated. The Facility's maximum storage capacity for construction and demolition waste should not exceed the following:

    a. For Unprocessed C&D
        i. For Facilities with operating capacities (receipt authorization in tons per day) of </=750 TPD then the maximum on-site storage for unprocessed C&D should not exceed 7 operating day's tonnage.
        ii. For Facilities with operating capacities >750 TPD the on-site storage of unprocessed C&D should not exceed 5 operating day's tonnage. On-site storage of unprocessed C&D waste should not exceed 20,000 cubic yards for any facility..

b. For Processed C&D
   i. For Facilities with operating capacities (receipt authorization in tons per day) of </=750 TPD then the maximum on-site storage for processed C&D should not exceed 7 operating day's tonnage;
   ii. For Facilities with operating capacities >750 TPD the on-site storage of processed C&D should not exceed 5 operating day's tonnage. On-site storage of processed C&D waste should not exceed 20,000 cubic yards for any facility.

7. Processed and unprocessed construction and demolition waste must be stored using one of the following methods:
   i. Outside in containers which are watertight and covered at all times, or
   ii. Indoors in piles and/or containers, or
   iii. otherwise covered and enclosed as approved by Department.

8. For processed construction and demolition waste stored in piles indoors:
   i. physical limits of the processed waste pile storage areas must be delineated (e.g., Jersey concrete barriers, cement block, temporary fencing),
   ii. pile height must not exceed 15 feet unless otherwise approved by Department.

9. Putrescible Municipal Solid Waste (MSW) may only be received and stored separately for transfer only. MSW may be stored outside provided it is kept in containers and the containers are watertight and covered at all times except when waste is being actively placed in or removed from the container. MSW must be removed from the Facility within forty-eight (48) hours of when the waste first entered the Facility. Volume Reduction Plants are prohibited from processing putrescible MSW **(transfer only).**

10. Designated recyclable items may be stored outside provided they are kept in containers and the containers are watertight and covered at all times except when recyclables are being actively placed in or removed from the container. Designated recyclable items must be removed from the Facility within two business days from when the container is full.

11. Construction and demolition Processing Fines may be stored outside provided such waste is kept in containers and the containers are watertight and covered at all times except when waste is being actively placed in or removed from the container.

12. Provide a detailed description of the monitoring protocol and method(s) for lead and air borne asbestos within the indoor processing area(s) of the Facility.

13. All analyses (e.g, lead, asbestos, metals, PCBs) conducted on marketable materials generated by processing construction and demolition waste must be performed by a laboratory certified by the State of Connecticut webpage: http://www.ct.gov/dph/cwp/view.asp?a=3139&q=387286.

B. VRP for the processing of **Landclearing Debris and Clean Wood Waste**

In addition to the requirements of Section 22a-209-10 RCSA and Section A. General Operation and Management Plan, all volume reduction plants processing landclearing debris and clean wood waste must be designed to meet the following criteria:

1. Provide a detailed description of protocols for the visual inspection immediately upon receipt, of all clean wood received for signs of possible pest infestations including the presence of the Asian Longhorn Beetle and the Emerald Ash Borer. Reference shall be made to the Department's website providing signs indicating possible Asian Longhorn Beetle infestation at: http://www.ct.gov/deep/alb,
2. as well as signs indicating possible Emerald Ash Borer infestation at: http://www.ct.gov/deep/eab.
3. Provide a detailed description of protocols to manage clean wood suspected of being infested by either the Asian Longhorn Beetle or the Emerald Ash Borer. Include documentation pertaining to the identification at the source of generation of suspected infested clean wood and method for the management in accordance with any existing quarantine agreements for such wood.
4. Provide a detailed description of protocols for documenting the acceptance of suspected infested clean wood if signs of infestation are observed which shall include but not be limited to:
5. Digital photos and careful identification notes to be provided to the Connecticut Agricultural Experiment Station (Deputy State Entomologist direct phone line: 203-974-8474; e-mail CAES.StateEntomologist@ct.gov.);
6. That the infested green waste shall be: segregated from other green waste; marked as segregated; securely stored and kept reasonably intact;
7. That any management activities (chipping; moving) must be postponed until an investigator from, or designated by, the Connecticut Agricultural Experiment Station, has examined the potentially infested green waste; and
8. That any truck load tickets and other documentation of deliveries shall note whether a pest infestation assessment has occurred.
9. Unprocessed and processed clean wood can be stored in containers and/or piles located in dedicated indoor or outside areas.
10. Unprocessed clean wood waste piles located outside must be on an earthen pad or other suitable base which will minimize problems with dust and standing water. Pads must be designed for heavy equipment use during all seasons.
11. .Pile height for unprocessed landclearing debris and clean wood waste shall not exceed twenty-five (25) feet unless a marketing plan for seasonal clean wood processing (e.g., landscape products) has been approved by the Department. Pile height for processed landclearing debris and clean wood waste shall not exceed fifteen (15) feet.
12. For new or modifications to existing facilities when processing and/or storage capacities are proposed available storage at the Facility both indoors and outdoors must be considered and evaluated. The Facility's maximum storage capacity for landclearing debris and clean wood waste should not exceed the following:

    i. For unprocessed landclearing debris and clean wood waste the maximum on-site storage should not exceed 7 operating day's tonnage.
    ii. For processed landclearing debris and clean wood waste the maximum on-site storage

should not exceed 7 operating day's tonnage.

Deviations from these storage limits may be proposed and may be approved at the discretion of the Commissioner.

13. Processed landclearing debris and clean wood waste piles located outside must be on an earthen pad designed with a 2% to 3% slope to maximize run off and to minimize the ponding of water. Slopes must not exceed a 5% grade. The pad must be at least 2 feet thick, constructed of compacted, well drained materials, and designed for heavy equipment use during all seasons.

14. The physical limits of the unprocessed and processed landclearing debris and clean wood waste pile storage areas must be delineated at a minimum on the site plan.

15. All storage piles must be shaped to allow adequate stormwater run off. For elongated piles, piles must be oriented so that the length of the pile runs parallel to the slope of the base. All landclearing debris and clean wood waste pile storage areas must be equipped with stormwater run on/run off controls which comply with all applicable stormwater management requirements of the Water Permitting and Enforcement Division.

16. A minimum separation distance of 25 feet must be maintained between and around all landclearing debris and clean wood waste piles to allow fire and emergency vehicle access

17. Provide a detailed description of protocols for emergency incidents and fire suppression. Such description shall include at a minimum:
    i. Monitoring of all piles on a weekly basis to minimize the potential for spontaneous combustion by including but not limited to . Locating the hottest part in all pile(s) for temperature hot spots; Temperature shall be monitored as close to internal center of the pile(s) as possible in multiple locations. If temperatures approach 300 degrees Fahrenheit then the hot spot should be removed; and
    . Locating vents which could propel a temperature hot spot to a fire. Also monitor for any smoke or burnt smell.
    ii. Protocols to be established in the event of emergency situations such as combustion or smoldering of piles including but not limited to immediate notification to the appropriate emergency response team (fire, police, etc.), avoiding aeration of the pile unless otherwise instructed by the fire department, prohibiting equipment operators from climbing on top of the material when a fire is suspected;
    ii. Proper emergency response procedures for managing fires or other emergencies to be developed with the input of the local Fire Department; and
    iii. Protocol for adequate ventilation and moisture content (above forty percent (40%) of the pile is maintained to release heat. Appropriate moisture content for wood piles is greater than 40%.

18. Provide detailed description of processing protocols and area(s) which shall include at a minimum:
    i. Locating processing areas at least 500 feet from any off-site residential building(s); and
    ii. Processing activities not generating noise, dust, fumes, smoke, vibrations or odors higher than their background levels at facility property lines.

C. Intermediate Processing Center

In addition to the requirements of Section 22a-209-10 RCSA and Section A. General Operation and Management Plan, all volume reduction plants that receive only recyclable materials (e.g., paper, plastic, metal, bottles and cans) must address the following protocols at a minimum:

1. For the receipt and indoor unloading of all recyclables;
2. The mechanical and/or manual processing of all recyclables on a first in first out basis;
3. The storage of sorted recyclable materials either inside or in covered containers outside;
4. The management of recyclables in such a manner as to prevent contamination or degradation that could render recyclables unmarketable; and
5. How all recyclable materials will be marketed for reuse and/or recycling.

D. Source Separated Organic Materials (SSOM)

The technology for processing and recycling source separated organics can be highly variable.. For example, anaerobic digestion is highly engineered as compared to windrow composting, which is relatively uncomplicated. The application must provide in minute detail the specifics of the proposed operations and technical aspects of the facility and every piece of equipment, keeping in mind that the document must be, to some extent, understandable by the general public. Please note that this guidance does not pertain to solid waste facilities which accept and process sewage sludge.

In addition to the requirements of Section 22a-209-10 RCSA and Section A. General Operation and Management Plan, all volume reduction plants that process source separated organic material must at a minimum include the following additional information in the operation and management plan; site plans and other mapping:

1. A detailed description of the specific source, quality, and quantity of all SSOM feedstock ("feedstock"). The description must include at a minimum the annual feedstock input, and any expected seasonal variations in the feedstock type or quantity;
2. A detailed description of any bulking agent(s) or amendment(s), ("additives"), proposed. The description must include at a minimum the annual receipt and volume blended with the ratio(s) proposed. A description of the source, quality and quantity of the additives. The description of the quality must include any analytical data for the additives regarding the physical and chemical makeup and characteristics of those additives. Also a statement of the purpose or benefit the additive(s) provides in the finished product or during the process.
3. A delineation of the facility's proposed service area and a list of all types of generators and quantity of waste that will be collected from each type of generator;
4. A description and capacity of the storage areas and storage methods used for additives, bulking agents, feedstock and final product(s);
5. If the facility proposes to accept compostable plastics, identification of the specific products (by brand) that will be accepted and proof that they are American Society for Testing and Materials (ASTM) 6400 and ASTM 6868 approved website: http://www.astm.org/Standard/index.shtml and certified compostable by the Biodegradable Products Institute (BPI), website: http://www.bpiworld.org/BPI-Public/Approved/1.html;

6. A detailed description of the facility's proposed method(s) (e.g., windrow, aerated static pile, in-vessel, anaerobic digestion), and protocols for the recycling of the feedstock explaining in detail at a minimum pad construction and maintenance, mixing ratios, nutrients, temperature, moisture content, pH, microorganisms, particle size, oxygen, expected processing and curing times, and any other information pertinent to the facility operation;

7. A description of the collection methods for the feedstock such as in bags, loose or a combination;

8. A description of the management practices for all feedstocks, such as immediate incorporation of the feedstock into on-site recycling processes, stockpiling of feedstock and for what duration, pre-processing of feedstock prior to its incorporation into on-site recycling processes;

9. A detailed description of the source separation program at the point of generation, including how non-compostables are kept out of the SSOM stream. Also include a description of all training to be provided to generators for the correct protocols for collection method(s) to be used;

10. A description of the type, function, size and associated detention times for the management equipment or structures for the feedstock and other components of the recycling processes. Also, provide the calculations that demonstrate that all equipment and structures have sufficient capacity for the feedstock and bulking agents that will be accepted and used;

11. Provide a description of the method(s) for measuring, shredding, mixing, and proportioning feedstock and other materials in the recycling processes;

12. A process flow diagram that includes all equipment proposed and quantities of materials to be composted on a wet weight, dry weight, and volumetric basis. An estimate of the time frames for each phase of the proposed process that shall include: receipt of feedstock; storage; processing, curing and generation of final (marketable) product.

13. A description of all methods, protocols for receipt and equipment to be used at the facility for pre-processing, processing, post-processing and finished product management. A description of protocols (such as screening), to be used for the identification and removal of all non-processible materials. A description of the criteria that will be used to reject an incoming load(s) and the documentation of such rejection including name of hauler, identification of originating or generating facility, business or municipality and the reason for rejection. A protocol for the notification to the generator(s) of the rejected load and the reason for rejection.

14. Copies of all agreements, of letters of agreement or letters of intent with generator(s) and disposal facilities for the non-processible materials. Copies of all educational materials and a description of educational activities that will be used to outline acceptable materials for the facility.

15. If windrows are used, pile dimensions and shape, including width, length, height, of a typical windrow, and length of each windrow, and a calculation of volume per linear foot of windrow.

16. A description of method(s) to control the generation and the migration of odors which shall include a description of air collection and control equipment if used.

17. Include a sample data sheet to be used for record keeping that shall include (but may not be limited to): condition of compost pad and corrective measures for any damage; temperature tracking; odor observation and mitigation method; weather conditions (e.g. ambient air temperature and wind direction); windrow moisture expressed as a percentage; and measures for dust control

18. A Quality Assurance Plan (QUAP) that details the protocol(s) to be used to ensure the consistent quality of the feedstock, the compost at each phase of composting and curing and the final product. Such plan shall include sample collection methods, sampling frequency (i.e. # of samples per # of cubic yards) and the schedule for the sample collection and analysis. The QUAP shall also outline the parameters for the analyses for each phase. Finally the QUAP shall include a statement regarding the consistency with all sampling protocols that may be required for the preservation of the samples and by the certified laboratory. For a Connecticut certified laboratory that can perform the analyses visit the following website: http://www.ct.gov/dph/cwp/view.asp?a=3139&q=387286.

19. A description of method(s) for determining the maturity of the compost and criteria for designating it final product designation. A list of expected uses for the final product(s) and any specific criteria for that use (e.g. residential compost shall have a moisture content of X%). Provide a schedule for the distribution and availability of the final product(s). Provide method(s) for amending, alternative uses for or disposal methods for final product that does not meet required criteria or as a result of fluctuations in the market.

20. A description of all odor and nuisance mitigation methods to be used at the facility. Such description shall incorporate methods to be used at each phase (i.e. receipt, storage and processing and describe aspects of the design of the facility that will mitigate those odors and other nuisances.

21. Provide an estimate of the quantity of waste water expected to be generated at each step in the process and its management.

Site Plan

22. The facility drainage characteristics, identifying soil type and properties, the direction of both site run-on and run-off, ditches and swales together with any drainage controls that exist or will be implemented.

23. Depth to seasonal high groundwater and bedrock including proper documentation (e.g. test hole data, groundwater/geologic mapping; monitoring data).

24. Direction of prevailing winds and windsock location.

25. Areas for loading and unloading trucks.

26. Staging areas for incoming compostable materials, and storage areas for in-process materials and finished products.

IV. Other Department Programs

A. Indian Lands

Is or will the Facility be located on federally recognized Indian lands? To determine if the proposed facility is located on federally recognized Indian Lands please contact Indian Affairs Coordinator, Office of Planning and Program Development at (860) 424-3066 for further assistance and any other Departmental requirements.

The State recognizes in accordance with Section of CGS 47-59a(b) of the statutes the following indigenous tribes: the Schaghicoke (Kent), the Paucatuck Eastern Pequot (North Stonington), the Mashantucket Pequot and the Mohegan (Ledyard) and Golden Hill Paugussett (Trumbull and Colchester). Currently, only the Mashantucket Pequot and the Mohegan (Ledyard) tribes have land that is held in trust by the federal government (i.e., federally recognized Indian lands). As self-governing entities with power and duties over tribal members and reservations, State and federally recognized tribes have the right to regulate trade and commerce on the reservation and make contracts (CGS § 47-59a). However, the State assumes civil regulatory jurisdiction under federal law and the agreement and gaming compact with the Mohegan Tribe of Indians of Connecticut (CGS § 47-65b). The State cannot provide funds or services to tribes that assist their commercial enterprises until they adopt an employment rights code (CGS § 31-57e). Currently, neither the Mashantucket Pequot nor the Mohegan tribes have adopted the code. Therefore, indicating that the facility will be located on federally recognized Indian lands may require the applicant to submit additional information to support a determination of the permit application. For more information please see OLR Research Report, Connecticut Law on Indian Tribes, 2007-R-0475, website: http://www.cga.ct.gov/2007/rpt/2007-R-0475.htm.

B. Coastal Area

Activities within the state's coastal area as defined in 22a-94(a) must be consistent with the Connecticut Coastal Management Act www.ct.gov/deep/coastalmanagement. **Activities within the coastal boundary:** The Applicant must submit the Coastal Consistency Review Form if the application is for a new activity or a modification of an existing permitted activity located within a coastal boundary as defined in section 22a-94(b) of the statutes. Coastal Areas are delineated on Department-approved coastal boundary maps which are available for review at the Department Office of Long Island Sound Programs (OLISP), the Department File Room, and municipal offices of towns located in the coastal area. Copies of these maps may also be purchased from Department Maps and Publications. **Activities outside the coastal boundary but within the coastal area:** Applications for new permits, modifications, or renewals are not required to submit a Coastal Consistency Review Form. The Department may request submission of this form.

C. Endangered or Threatened Species

Section 26-310(a) of the statutes requires that the existing or proposed activity location does not threaten the continued existence of any endangered or threatened species or result in the destruction or adverse modification of habitat designed as essential to such species. Please refer to the "Connecticut Natural Diversity Data Base- (NDDB) Review of Endangered or Threatened Species" located on the Department website at http://www.ct.gov/deep/cwp/view.asp?a=2702&q=323466&deepNav_GID=1628&deepNav=| (Review/Data Requests) to determine if your activity is located within an area identified as a habitat for endangered, threatened or special concern species.

D. Aquifer Protection Areas

The Aquifer Protection Area Program was established pursuant to Sections 22a-354a et sec. of the statutes to identify critical water supply aquifer areas and protect them from contamination by managing land uses in these areas. The Aquifer Protection Area Land Use Regulations 22a-354i-1 defines solid waste facilities as a "regulated activity". If the proposed new facility or an existing facility that is applying for a modification is located within a Level A or Level B map the Applicant is required to determine if the activity is regulated either by the Department aquifer protection program or by the local aquifer protection agency. Please refer to the Aquifer Protection Area Program www.ct.gov/deep/aquiferprotection maps and program contact information.

E. Conservation or Preservation Restriction

Pursuant to Section 47-42d of the statutes if the property is located in a conservation or preservation restriction area then a permit application can only be submitted for interior work in an existing building or for exterior work on an existing building that does not expand or alter the footprint of an existing building, related to the property. The Applicant can submit a letter from the holder of the restriction verifying that the application is in compliance with the terms of the restriction. There is no state program coordination for this issue, please contact the appropriate municipal official. If the Applicant has indicated that the activity will be located in a conservation or preservation restriction area the application shall contain proof of written notice of the application to the holder of such restriction or a letter from the holder of such restriction verifying that this application is in compliance with the terms of the restriction.

F. Environmental Justice Program ("EJ")

Solid Waste Facilities are subject to Section 22a-20a of the statutes and the Department's December 1993 Environmental Justice Policy. If the application is for a new or an expansion of an existing facility the Applicant will verify if the existing or proposed site location is located in an Environmental Justice Community (www.ct.gov/deep/environmentaljustice). Prior to application submission the Applicant must prepare and submit an Environmental Justice Public Participation Plan ("EJP") and receive written approval from EJ. After the implementation of the EJP, the Applicant must prepare and submit a final report to EJ prepared in accordance with The Environmental Justice Public Participation Guidelines (DEP-EJ-GUID-001, EJ Guidelines). The Applicant shall provide the Solid Waste Program with the final determination received from EJ's review of the final report. Please note that the Solid Waste Program cannot proceed to tentative determination (recommendation to the commissioner to approve or deny) regarding your application until the final report has been approved by EJ.

G. Wetland Area

Pursuant to Section 22a-38 of the statutes "wetlands" means land, including submerged land, not regulated pursuant to sections 22a-28 to 22a-35, inclusive, which consists of any of the soil types designated as poorly drained, very poorly drained, alluvial, and floodplain by the National Cooperative Soils Survey, as may be amended from time to time, of the Natural Resources Conservation Service of the United States Department of Agriculture. Each town's municipal inland wetlands agency regulates activities that affect inland wetlands and watercourses within their municipal boundaries. These activities, often referred to as "regulated activities", are those proposed or conducted by all persons other than state agencies. The Applicant should contact the municipal inland wetlands official for any necessary local approvals. For additional information regarding the

municipal inland wetlands agency regulatory process contact the Department's Wetlands Management Section at (860) 424-3019. Please note that wetland soils maps can be viewed at Connecticut Environmental Conditions Online http://www.cteco.uconn.edu/simple_viewer.htm.

H. Stormwater Management

The Applicant must contact the Water Permitting and Enforcement Division to determine the appropriate Stormwater Management General Permit for the facility. http://www.ct.gov/deep/cwp/view.asp?a=2721&q=325702&deepNav_GID=1654

I. Air Permitting

The Applicant must contact the Bureau of Air Management to determine the permits that may be required for your facility and to view the regulations that may pertain to activities proposed at your facility (e.g, emissions from processing equipment, anti-idling, odor , dust).

V. Engineering Drawings

The engineering drawings must include an area map, site map and detailed drawings and specifications of site structures and equipment. The detailed site map must meet the most recent standards of accuracy for Class A-2 Boundary Surveys as approved by the Connecticut State Board of Registration for Professional Engineers and Land Surveyors. The site map shall be based on the most recent Class A-2 Boundary Survey map which shall be referenced on the site map(s). All engineered drawings submitted in support of an application shall be sealed and signed (certified) by a engineer licensed to practice in the State of Connecticut (Professional Engineer or P.E.).

A. *Area Map*

An area map, at a scale of 1" = 100' and contour intervals of two (2) feet should be used unless another scale or contour interval seems more appropriate to the setting, must show the following information in detail:

1. Compass
2. Legend
3. Scale
4. Notes and references
5. Location of the proposed facility
6. Contour lines
7. Abutting properties' ownerships
8. The following features within 1/2 mile of the facility: existing homes; industrial buildings; land uses; roads and right-of-ways; overhead and underground utilities including but not limited to sewer lines, fuel pipelines, water distribution lines, telephone lines, power lines, and water diversions; archeological and/or historical sites; unique natural areas; conservation areas; watercourses (i.e. wetlands, lakes, ponds, streams), including boundary lines that delineate the 100-year flood zone.
9. Potable wells

Existing contour maps such as those prepared by the U. S. Geological Survey or web based resource can be used. However, these maps must be updated, enlarged and sufficiently detailed to present the required information in a clear, easily readable form.

B. *Site Map*

A site map, drawn at a scale appropriate to the setting, must show a **clearly labeled, detailed presentation** of all significant features of the proposed project, and within a 500 foot radius of the facility. This map must show information including but not limited to the following:

1. All items listed under "Area Map" Inset of Area Map;
2. Facility property boundaries;
3. Existing and final contour lines (two foot interval or other interval appropriate for the site);
4. Existing and proposed screening methods;
5. Proposed buffer zones adjacent to abutting properties and surface waters;
6. Boundaries of delineated wetlands;
7. Arrangement of proposed buildings and operational areas, storage containers, stationary equipment, any other pertinent features of the facility;
8. Limits of both unprocessed and processed waste storage area(s);
9. Storage table describing all unprocessed and processed materials stored on site (See Appendix B for examples);
10. Existing and proposed access roads, on-site roads, fencing, gates and guiderails;
11. Fire control apparatus (e.g., pump stations, hydrants, water supply network, water supply outside fire control system);
12. Stormwater management and sanitary sewer system;
13. Site traffic control, roadway plans/profiles and cross-sections, signage and traffic flow patterns within facility bounds, including ingress and egress;
14. Site grading and landscaping; and
15. Sediment and erosion control methods should be designed and implemented in conformance with the 2002 Connecticut Guidelines for Soil Erosion and Sediment Control, as amendedhttp://www.ct.gov/deep/cwp/view.asp?a=2720&q=325660&deepNav_GID=1654.

C. *Architectural and Supplemental Engineering Drawings*

The facility plan shall include a facility floor plan (including equipment layout) when an enclosed structure is proposed for construction or modification and may include as appropriate a complete set of architectural drawings and/or supplemental engineering drawings including but not limited to the following:

Architectural Drawings for:

1. Existing and proposed utilities;
2. Fencing, gates and natural barriers; and
3. Building elevations and details.

Mechanical Plans and Details for:

4. Equipment arrangements;
5. Pump stations;
6. Main distribution for indoor fire protection systems; and
7. HVAC system.

Electrical Plans and Details for:

8. Electrical master one-line diagram;
9. Main electrical distribution system; and
10. Security systems.

D. Attachments (as applicable)

Attach, any supplemental maps and plans used as reference materials for engineering and operational interpretations, and any other supportive materials you feel should be included for review as part of the application package.

Appendix A

Definitions

For the purposes of these guidelines, the following definitions apply:

“Clean Wood” as defined in Section 22a-208a-1 of the RCSA means any wood which is derived from such products as pallets, skids, spools, packaging materials, bulky wood waste, or scraps from newly built wood products, provided such wood is not treated wood as defined below or demolition wood.

“Composting facility" as defined in Section 22a-207 of the CGS means land, appurtenances, structures or equipment where organic materials originating from another process or location that have been separated at the point or source of generation from nonorganic material are recovered using a process of accelerated biological decomposition of organic material under controlled aerobic or anaerobic conditions.

"Construction and Demolition Waste" or “C&D” means waste building materials and packaging resulting from construction, remodeling, repair, and/or demolition operations on houses, commercial buildings, and other man-made structures. Demolition and construction waste includes but is not limited to lumber, rebar and plaster, but excludes concrete, bricks, ceramics, and asphalt paving fragments which are defined as clean fill in Section 22a-209-1 Regulations of Connecticut State Agencies (RCSA).

“Designated Recyclable Item” pursuant to CGS Section 22a-207(27) means an item designated for recycling by the Commissioner in regulations adopted pursuant to subsection (a) of section 22a-241b, or designated for recycling pursuant to CGS section 22a-256 or 22a-208v.

“EJ” means Environmental Justice Program.

“EJP” means Environmental Justice Public Participation Plan

“Facility Plan” as defined in Section 22a-209-1 of the RCSA means the Engineering studies, drawings and proposals necessary to construct, establish, alter, operated and close as solid waste facility. The Facility Plan at a minimum shall include the Operation and Management Plan and the engineering drawings and plan(s) for the facility.

“Intermediate Processing Center” or “IPC” as defined in Section 22a-208-1 of the RCSA means a facility at which glass, metal and plastic food and beverage containers as well as paper and cardboard is processed for recycling markets.

"Municipality" as defined in CGS Section 22a-207, means a city, town or borough of the state.

“Municipal Solid Waste” as defined in CGS Section 22a-207 means solid waste from residential, commercial and industrial sources, excluding solid waste consisting of significant quantities of hazardous waste as defined in section 22a-115, land-clearing debris, demolition debris, biomedical waste, sewage sludge and scrap metal.

"Commercial facility” or "Private facility" refers to a facility for which the permittee is an individual, a proprietor, a partnership, or a corporation.

Appendix A (continued)

“Processing” means the practice by which either the physical characteristics or the volume of solid waste accepted at the Facility is being altered through separating, sorting, baling, shredding, crushing, grinding, chipping, compacting, consolidation, transfer or reworking as part of recycling and/or volume reduction operations.

“Processing Fines” means solid waste, other than recovered materials remaining after the processing of incoming waste stream(s).

"Regional" refers to a facility which serves two or more municipalities.

“Source-separated” or “source-separated solid waste” means solid waste that is intended to be recycled and has been kept separate from other solid waste which is not intended to be recycled or composted at the location where such waste was generated, and includes organic materials, designated recyclables and other items suitable for recycling or composting.

"Transfer Station" as defined in Section 22a-207 of the CGS means any location or structure, whether on land or water, where more than ten cubic yards of solid waste, generated elsewhere, may be stored for transfer or transferred from transportation units and placed in other transportation units for movement to another location, whether or not such waste is stored at the location prior to transfer.

“Treated Wood” as defined in Section 22a-209a(a)(2) of the CGS means wood which contains an adhesive, paint, stain, fire retardant, pesticide or preservative.

“Volume Reduction Plant" or “VRP” as defined in Section 22a-207 of the CGS means any location or structure, whether located on land or water, where more than 2,000 lb/hour of solid waste generated elsewhere may be reduced in volume, including, but not limited to, resources recovery facilities and other incinerators, recycling facilities, pulverizers, compactors, shredders, balers and composting facilities.

Appendix B

Example(s) of tables describing all unprocessed and processed materials stored on site. Ensure all proposed/existing storage methods and locations are presented.

Facility Name and Address

Materials[1]	**Maximum Storage cubic yards (cy)**	**Density**	**Tons (estimated)**	**Storage Specifications**
Construction and Demolition (processed/consolidated)	400 cy	0.33	132.00	Containers Piles Indoors/Outdoors
Construction and Demolition (loose)	450 cy	0.31	139.50	Piles on tipping floor and/or containers
Municipal Solid Waste (consolidated)	600 cy	0.23	138.00	Containers
Municipal Solid Waste (loose)	2260 cy	0.10	226.00	In the enclosed building in piles on tipping floor [2]and/or containers
Clean Wood including land clearing debris	100 cy	0.20	20.00	Containers
Paper (loose)	40 cy	0.20	8.00	Containers
Commingled paper and cardboard	40 cy	0.20	8.00	Containers
Cardboard (loose)	40 cy	0.05	2.00	Containers
Scrap Metal	40 cy	0.33	13.20	Containers tonnage includes 60 CFC appliances
Scrap Appliances containing CFCs (sorted)	40 units	267lb/unit	5.34	Stored in designated area, included in scrap metal tonnage noted above.
Propane tanks with valves (sorted)	40 units	~20lb/unit	0.4	Stored designated area
Scrap tires (sorted)	50 cy	0.10	5.0	Containers
Total:	4020cy		697.44 tons	

Appendix B

Facility Name and Address

Materials[3]	Maximum Storage cubic yards (cy)	Density	Tons (estimated)	Storage Specifications
Paper (loose)	500 cy	0.20	100.00	Piles on tipping floor and/or containers
Paper (baled)	100 cy	0.39	39.00	Piles on tipping floor and/or containers
Cardboard (loose)	100 cy	0.05	5.00	Piles on tipping floor and/or containers
Cardboard (baled)	60 cy	0.78	46.80	Piles on tipping floor and/or containers
Commingled containers (glass, plastic and metal)	500 cy	0.10	50.00	Piles on tipping floor and/or containers
Glass containers (source separated, sorted)	30 cy	0.27	8.10	Containers
Plastic containers (loose)	30 cy	0.015	0.45	Piles on tipping floor and/or containers
Plastic Containers (baled)	30 cy	0.27	8.10	Piles on tipping floor and/or containers
Metal (Tin)Containers (loose)	30 cy	0.10	3.00	Piles on tipping floor and/or containers
Metal (Tin)Containers (baled)	30 cy	0.54	16.20	Piles on tipping floor and/or containers
Metal (Aluminum) Containers (baled)	30 cy	0.24	7.20	Piles on tipping floor and/or containers
Metal (Aluminum) Containers (loose)	20 cy	0.04	0.80	Piles on tipping floor and/or containers
Processing Fines	50 cy	0.25	12.5	Containers
Total:	1560cy		297.15 tons	

Appendix for Site Plan – storage table

Appendix C – Density Table
7/2011 - EST. DENSITIES OF VARIOUS TYPES OF SOLID WASTE

Type	Lb/cy	Ton/cy	Comments
C&D waste (may include oversized MSW)	620	0.31	(loose; received; unprocessed)
C&D waste (processed)	660	0.33	(after sorting/crushing/reloading in cont. / railcar)
Paper/Newspaper (loose)	400	0.20	
Paper/Newspaper (baled)	783*	0.39*	
Corrugated cardboard (loose)	100	0.05	
Corrugated cardboard (baled)	1565*	0.78*	
Commingled Containers	200	0.10	
Aluminum cans/containers (loose)	75	0.04	
Aluminum cans/containers (baled)	480	0.24	
Tin cans containers (loose)	200	0.10	
Tin cans containers (baled)	1086*	0.54*	
Plastic containers (loose)	30	0.015	
Plastic containers (baled)	556*	0.27*	
Glass containers (loose)	550	0.27	
Glass containers (crushed)	1000	0.50	
Scrap metal (sorted Al)	400	0.20	
Scrap metal (sorted Fe)	675	0.33	
Scrap tires (shreds)	810	0.40	44 tires/cy; 30 lb/cf; 810 lb/cy; 0.405 tons/cy
Scrap tires (6” shreds)	1200	0.60	
Scrap tires (crumb rubber)	1700	0.85	(100 tires/ton)
Scrap tires (tire tubes)	400	0.20	
Scrap tires (whole)	210	0.10	[21 lb/tire; 10 tires/cy; 5 tires = 1 truck tire; 0.0105 ton/tire] [(100x100x13) cell = 130,000 ft.x 0.75/27=3,611cy=36,110 wte or 1,462 tons of shredded tires]
Textiles (loose)	240	0.12	
Textiles (baled)	480	0.24	
Wood (land clearing debris, brush) - loose	400	0.20	
Wood (sorted wood; pallets stumps; etc.) – loose	500	0.25	
Woodchips	625	0.31	Stored outdoors
Leaves (loose/dry)	230	0.12	
Grass (loose/moist)	425	0.21	
Municipal solid waste (MSW) – loose	200	0.10	
MSW (after unloading on TF)	375	0.18	
MSW (in compactor)	450	0.23	
MSW (arriving at landfill)	500	0.25	
MSW(in landfill)	800	0.40	
MSW (baled)	2400	1.20	
MSW (in pit @ RRF)	425	0.21	

dRDF (@RDF)	1053	0.52	

Appendix C – Density Table

7/2011 - EST. DENSITIES OF VARIOUS TYPES OF SOLID WASTE

Type	Lb/cy	Ton/cy	Comments
Ash residue (@RDF)	1500	0.75	
Asphalt Roofing Shingle Waste - loose	500	0.25	May contain asbestos
Asphalt Roofing Shingle Waste – pre-consumer	2187	1.10	
Asphalt Roofing Shingle Waste – shreds	2250	1.11	
Soil	1320	0.66	Contaminated soil may have a higher density
Electronics	133	0.13	20,000 lb=20 tons = est 150 cy
Clean Fill			Not regulated

Notes:

Estimated densities suggested to calculate the amounts (cy; tons) of solid waste proposed to be stored at a SWF. These values were carefully selected based on: (a) agreed specifications from previously approved VRP & RRF projects; (b) actual (*) on-site weight (lb) readings of measured(cy) bales for various types of recyclables (done on 10/21/02 at the SBC facility located in Stratford, CT); and (c) data specified in technical literature:

- Resources Recycling, November 1991 (page 70; Table 1)
- Measuring Recycling (EPA document #530-R-97-011, dated September 1997)
- Handbook of Environmental Engineering (page 8.28)
- Opportunities and Constraints Associated w/ Using Wood Waste for Fuel In CT. (1990, Donovan Assoc. Inc.)
- Environmental Engineering & Sanitation (by J. Salvato, 4th Edition)