Technical Manual

for

CLASS C RECYCLING CENTER APPROVALS

Office of Permitting and Technical Programs
Division of Solid and Hazardous Waste

December 2002

MISSION STATEMENT

The mission of the New Jersey Department of Environmental Protection is to conserve, protect, enhance, restore and manage our environment for present and future generations. We strive to prevent pollution; ensure the efficient use of safe, environmentally sound and reliable energy resources; provide opportunities for recreation and enjoyment of natural and historic resources; and promote a healthy and sustainable ecosystem.

Office of Permitting and Technical Programs
Division of Solid and Hazardous Waste
NJDEP
401 East State Street
P.O. Box 414
Trenton, New Jersey 08625-0414
(609) 984-5950

PROLOGUE

This manual has been produced by the Department of Environmental Protection (DEP) to make the permit process less complicated and time-consuming for you. This manual is one of a series of technical manuals produced by DEP under the requirements of the Environmental Management Accountability Plan (P. L. 1991, Chapter 422) with the goal of making the permit application process more consistent and predictable. In each technical manual, you will find summaries and explanations of policies that may not be fully described or explained in environmental laws or regulations. In addition, the manuals contain guidance on how the Department defines other standards, such as "state-of-the-art" control technologies or "best management practices."

Unless otherwise required by federal or state law, the policies and procedures contained in a technical manual on the date an application is filed will be binding on both the DEP and the applicant. The technical manuals may be updated every six months or whenever a regulatory change requires revisions. Any revision made to a technical manual will have no effect upon a permit application that was submitted to the department prior to adoption of the revision. This is a technical manual prepared pursuant to N.J.S.A.13:1D-111 to 1D-113. Because it by necessity condenses and summarizes statutes, regulations, and other documents, it may not always precisely reflect all the requirements set forth in same. In the case of any inconsistency between this technical manual and any statutes, regulations, or policy determinations based upon same, the requirements of the statutes, regulations, or policy determinations shall prevail. Accordingly, this technical manual should not be used as a substitute for a through analysis of the law and the facts as they apply to any specific project or proposal. The State of New Jersey, including its Department of Environmental Protection and all agents and employees thereof, hereby disclaims any warranties (express or implied) and any legal liability for the accuracy, completeness, or usefulness of any of the information set forth in this technical manual.

In addition to the information contained in this manual, the department endorses the environmental management hierarchy which establishes an order of preference, placing multi-media pollution prevention first, followed by recycling, reuse, treatment and finally, disposal options. Therefore, pollution prevention is the first and preferred practice in environmental management as defined in the 1991 New Jersey Pollution Prevention Act (N.J.S.A. 13:1d-35 et seq.). Pollution prevention practices reduce the demand for and the generation of hazardous substances prior to treatment, control, storage, or recycling. This reduction is typically attained through process modifications, product reformulations, improved operation and maintenance, raw material substitution and in-process recycling

The department considers the term "state-of-the-art" to include a process whereby the applicant considers the environmental management hierarchy in the effort to encourage pollution prevention. The department believes that the applicant has primary control over consideration and implementation of pollution prevention options while the department retains control over allowable release limits based on treatment and control requirements. This division of responsibility is designed to encourage the applicant to implement pollution prevention measures before exploring treatment and control options under department review.

Only after pollution prevention options are determined to be infeasible should control options be considered. Therefore, it is the department's policy that "state-of-the-art" reflects a demonstration of the applicant's having sequentially considered the environmental management hierarchy.

TABLE OF CONTENTS

I. Introduction

This document describes the procedural and substantive requirements for the completion of an application for each type of approval administered by the Office of Permitting and Technical Programs for recycling centers who receive, store, process or transfer Class C Recyclable Materials.

This manual, together with the New Jersey Recycling Regulations found at N.J.A.C. 7:26A-1 et seq. and the applicable Administrative Completeness Checklist, provides the applicant with the technical guidance necessary to prepare a complete application. The manual includes information on how to submit the required information, how the Department will review the submittal, clarification of the Department's interpretation of applicable regulations, and a description of pertinent Department policies that are not defined by the regulations. This manual was developed pursuant to N.J.S.A. 13:1D-111 to 113.

Questions concerning this technical manual or the applicable regulations should be directed to the Office of Permitting and Technical Programs, Division of Solid and Hazardous Waste, NJDEP, 401 East State Street, P.O. Box 414, Trenton, New Jersey 08625, telephone 609-984-5950. Office hours are 8:00 a.m. thru 4:30 p.m. Monday thru Friday. Copies of the Recycling Regulations may be obtained by contacting West Group, 610 Opperman Drive, P.O. Box 64526, St. Paul, Minnesota 55164-0526, telephone 800-808-9378. A nonjudicial version of the regulations may be viewed by visiting the Division's web site at www.state.nj.us/dep/dshw.

II. Application Submission

The application for each permit or approval should be submitted in accordance with the instructions, guidance and Administrative Completeness Checklist for each type of approval (detailed in each specific section of item VI. below), applicable sections of the Class C Recycling Center Approval Application Review Checklist (Appendix A), the GIS Mapping and Digital Data Standards (Appendix B) and the regulations at N.J.A.C. 7:26A-1 et seq.

III. Application Review

A Department project manager will perform an administrative review of the information submitted using the applicable Administrative Completeness Checklist as a general guide and, within 30 days of receipt of the application, will determine whether the application is administratively complete. If the application fails to meet the criteria for administrative

Checklist and the regulations as a general guide and, within 90 days of issuance of the letter of administrative completeness (depending upon the type of approval and whether technical deficiencies are noted and addendum to the application are required), the Department will issue the approval.

IV. Interpretation of Regulations

The Department's interpretation of pertinent specific regulatory requirements for Class C Recycling Center approvals are detailed in Appendix A and in each specific section of Item VI. below.

V. Explanation of Policies

The Department’s policies related to Class C Recycling Center approvals that are not directly addressed in the regulations are detailed in Appendix A and in each specific section of Item VI. below.

VI. Specific Sections Applicable to Each Permit or Approval

The numbered sections below include specific instructions, technical guidance, and an Administrative Completeness Checklist for each approval related to Class C Recycling Centers.

Section 1

General Approval for a Class C Recycling Center

I. Introduction

This section presents the requirements for the preparation and submission of an application for a general approval to operate a Class C Recycling Center.

II. Applicable Regulations

Title 7, Chapter 26A, the rules of the Division of Solid and Hazardous Waste, should be consulted when preparing an approval application. Where applicable, these regulations will be discussed in greater detail below.

7:26A-1.3	Definitions
7:26A-2.1	Application Fees for General or Limited Approval
7:26A-2.3	Payment of Fees
7:26A-3.1	General Requirements
7:26A-3.2	Application Procedures
7:26A-3.4	Supplemental Requirements
7:26A-3.5	General Approval
7:26A-3.18	Additional Application Requirements
7:26A-4.1	Design and Operational Standards
7:26A-4.2	Inclusion in District Solid Waste Management Plans
7:26A-4.5	Additional Design and Operational Requirements

The applicant should be familiar with the regulations prior to preparing an application. A copy of the regulations found at N.J.A.C. Title 7, Chapter 26A can be obtained by contacting West Publishing, 610 Opperman Dr., P.O. Box 64526, St. Paul, MN 55164-0526 or phone 1-800-808-WEST. A nonjudicial version of the regulations may be viewed by visiting our web site at www.state.nj.us/dep/dshw.

III. Pre-Application Procedures

The applicant is encouraged to arrange a pre-application meeting with the Office of Permitting and Technical Programs to obtain information on the components of an application, the application

recycling center application to the Department, the applicant must obtain inclusion in the relevant district solid waste management plan.

Prior to filing the recycling center application and concurrent with or subsequent to filing for inclusion in the relevant district solid waste management plan, the applicant must publish a newspaper notice indicating that the applicant will be seeking district plan inclusion and approval to operate a recycling center. The procedures and criteria for such newspaper notice are set out at N.J.A.C. 7:26A-3.1(d) and (e). Once the notice requirement has been complied with, and once the applicant has obtained inclusion in the relevant district solid waste management plan, the application may be submitted to the Department for a recycling center approval.

IV. Application Procedures

The requirements set forth at N.J.A.C. 7:26A-3.5 establishes the Department's procedures and associated time frames to review a complete application. Subchapters 3.1, 3.2, 3.4 and 3.5 describe the requirements for a complete application, the application review procedures, the public notice procedures, the public comment period procedures and the approval decision procedures.

As the lead agency for the review of a recycling center approval application, the Division may transmit copies of the application to other agencies for review and comment. During this review process, other State and Federal approvals and/or permits are identified. These may include, but are not limited to, the following:

* New Jersey Pollutant Discharge Elimination System (NJPDES) Permit
* Waterfront Development Permit
* Stream Encroachment Permit
* Air Quality Permit
* Soil Erosion and Sediment Control Certification
* Army Corps of Engineers 404 Permit
* Tidelands Grant
* Coastal Area Facility Review Act (CAFRA) Permit
* Freshwater Wetlands Permit
* Pinelands Commission Approval
* Water Quality Management Plan Certification
* Road Access (Department of Transportation)
* A-901 Approval (for privately owned material recovery facilities and/or transfer stations)
* Federal Aviation Administration

One copy of bound application documents and appurtenant drawings required for review should also be submitted to the county solid waste or recycling coordinator and to the municipal clerk. Confidential end-market information may be deleted from these submittals.

The Department assesses a fee for the processing of applications for general approval to operate a recycling center, in accordance with N.J.A.C. 7:26A-2.1. This fee is subject to change on an annual basis. The fee must be paid at the time of application submission.

V. Interpretation of Regulations

In addition to the regulatory interpretations detailed in Appendix A, the Department's interpretation of pertinent specific regulatory requirements for Class C Recycling Center general approvals are as follows:

1. GIS Mapping Standards [N.J.A.C. 7:26A-3.2(a)]

The Department considers "All maps of the proposed recycling center" to mean the site plan map that must be submitted pursuant to N.J.A.C. 7:26A-3.2(a)9 as part of an application for a Class C Recycling Center approval.

The Department considers "prepared in a manner and format consistent with N.J.A.C. 7:1, Appendix A" to mean that the site plan map is prepared in accordance with one of the following:

i. The standards contained in the latest version of the Department's GIS Mapping and Digital Data Standards (attached as Appendix B to this manual); or

ii. All of the following:

(1) Be prepared in a digital environment that is compatible with the Department's Geographic Information System. Compatible digital formats are delineated in Appendix B to this manual;

(2) Contain at least four widely spaced reference points (tics) for which the geographic coordinates are known in New Jersey State Plane Feet (North American Datum 1983); and

(3) Contain a legend block stating the name and affiliation of the preparer of

adjacent properties.

3. Effective Visual Screen Buffer [N.J.A.C. 7:26A-4.1(a)11]

The Department considers "effective visual screen buffer" to include any landscaping or other provisions that effectively prevent individuals on adjacent and proximate properties from seeing recycling center operations. This may include solid fencing material in addition to grassed berms and trees/shrubs or other materials.

4. Sensitive Land Uses/Areas of Human Use or Occupancy [N.J.A.C. 7:26A-4.1(a)11, 4.5(a)6 and 4.5(a)7vii]

The Department considers both "sensitive land uses" and "areas of human use or occupancy" to mean the same as "sensitive receptors" as stated in N.J.A.C. 7:26A-3.2(a)10 (e.g. homes, schools, hospitals, playgrounds, etc.). Required buffer distances are to the nearest property line of the sensitive land use.

5. Areas Used For Acceptance [N.J.A.C. 7:26A-4.5(a)6]

The Department considers "accepted only in areas of the site" to mean those areas of the site that are used for the initial receipt and pre-mixing (if applicable) of grass or vegetative food materials.

6. Buffer Distance Requirements [N.J.A.C. 7:26A-4.5(a)7vii]

The Department considers "Use for grass - Yes" to mean that the required buffers for leaves using an intermediate technology method will also apply to the outdoor composting of grass and vegetative food materials. The 1000 foot "Buffer with grass" requirement is applicable to the initial receipt and pre-mixing of grass and/or vegetative food materials.

7. Composting Floor [N.J.A.C. 7:26A-4.5(b)2]

The Department considers "floor" to mean the surface (indoor or outdoor) on which recyclable materials are placed for composting.

8. Vegetative Food Material Buffers [N.J.A.C. 7:26A-4.5(b)4]

The Department considers "the buffer requirements for recycling centers handling grass

1. Pre-Application Conference

The Department strongly recommends that all applicants for a Class C Recycling Center general approval schedule and complete a pre-application conference with the Office of Permitting and Technical Programs. The purpose of the conference is to discuss and clarify application requirements in order to eliminate confusion and submission of unnecessary information.

[1]

CHECKLIST FOR GENERAL APPROVAL TO OPERATE A CLASS C RECYCLING CENTER

1. Owner Identification Per N.J.A.C. 7:26A-3.2(a)1.
2. Facility Location Information Per N.J.A.C. 7:26A-3.2(a)2.
3. Additional Ownership Information Per N.J.A.C. 7:26A-3.2(a)3.
4. Recyclable Materials Listing Per N.J.A.C. 7:26A-3.2(a)4.
5. Materials Quantity Information Per N.J.A.C. 7:26A-3.2(a)5.
6. Products and Residues Information Per N.J.A.C. 7:26A-3.2(a)6.
7. End-Markets Information Per N.J.A.C. 7:26A-3.2(a)7.
8. Description of Equipment Per N.J.A.C. 7:26A-3.2(a)8.
9. Site Plan Map Per N.J.A.C. 7:26A-3.2(a)9.
10. USGS Quadrangle Per N.J.A.C. 7:26A-3.2(a)10.
11. Copy of Deed Per N.J.A.C. 7:26A-3.2(a)11.
12. Description of Facility Design Capacity Per N.J.A.C. 7:26A-3.2(a)12.
13. Copy of Air Permit Applications Per N.J.A.C. 7:26A-3.2(a)13.
14. Narrative Explanation of Center Operation Per N.J.A.C. 7:26A-3.2(a)14.

20. Description of Noise Control Measures Per N.J.A.C. 7:26A-3.2(a)20.

21. Description of Traffic Impacts Per N.J.A.C. 7:26A-3.2(a)21.

22. Additional Design and Operating Information Per N.J.A.C. 7:26A-3.2(h).

23. Additional Design and Operating Information Per N.J.A.C. 7:26A-3.2(j).

24. Additional Information Per N.J.A.C. 7:26A-3.18(a).

25. Additional Information for Materials Other Than Or In Addition To Yard Trimmings Per N.J.A.C. 7:26A-3.18(b).

26. Documentation of Public Noticing Per N.J.A.C. 7:26A-3.1(d) and (e).

27. Supplemental Application Information Per N.J.A.C. 7:26A-3.4(a) and (b).

28. Financial Assurance Documentation Per N.J.A.C. 7:26A-3.4(c).

29. Documentation of Submittal of Copy of Application to Local Officials Per N.J.A.C. 7:26A-3.2(d).

30. Certifications and Signatures Per N.J.A.C. 7:26A-3.2(b).

31. Application Fee Per N.J.A.C. 7:26A-2.1(a)1.

The completed application and fee payment should be mailed to the following address:

Office of Permitting and Technical Programs
Division of Solid and Hazardous Waste
New Jersey Department of Environmental Protection
P.O. Box 414
Trenton, New Jersey 08625-0414

Telephone Number: (609) 984-5950

Section 2

Modification to General Approval for a Class C Recycling Center

I. Introduction

This section presents the requirements for the preparation and submission of an application for a modification to a general approval to operate a Class C Recycling Center.

Modifications require the prior approval of the Department and are required for any change affecting the conditions of the general or limited approval or any change to previously submitted application information, except that changes in end-market information shall require Department approval, but not prior approval. Modifications are also required for an increase in design capacity at a Class C Recycling Center, pursuant to N.J.A.C. 7:26A-3.11.

II. Applicable Regulations

Title 7, Chapter 26A, the rules of the Division of Solid and Hazardous Waste, should be consulted when preparing an application for a modification. Where applicable, these regulations will be discussed in greater detail below.

7:26A-1.3	Definitions
7:26A-3.1	General Requirements
7:26A-3.2	Application Procedures
7:26A-3.4	Supplemental Requirements
7:26A-3.5	General Approval
7:26A-3.7	Limited Approval
7:26A-3.10	Modifications
7:26A-3.11	Increase In Design Capacity
7:26A-3.18	Additional Application Requirements
7:26A-4.1	Design and Operational Standards
7:26A-4.5	Additional Design and Operational Requirements

The applicant should be familiar with the regulations prior to preparing an application. A copy of the regulations found at N.J.A.C. Title 7, Chapter 26A can be obtained by contacting West Publishing, 610 Opperman Dr., P.O. Box 64526, St. Paul, MN 55164-0526 or phone 1-800-808-WEST. A nonjudicial version of the regulations may be viewed by visiting our web site at

The requirements set forth at N.J.A.C. 7:26A-3.10 establishes the Department's procedures and associated time frames to review a complete application.

One original and two copies of bound application documents and appurtenant drawings required for review should be submitted to the following address:

Office of Permitting and Technical Programs
Division of Solid and Hazardous Waste
New Jersey Department of Environmental Protection
P.O. Box 414
Trenton, New Jersey 08625-0414

One copy of bound application documents and appurtenant drawings required for review should also be submitted to the county solid waste or recycling coordinator and to the municipal clerk

IV. Interpretation of Regulations

In addition to the regulatory interpretations detailed in Appendix A, the Department's interpretation of pertinent specific regulatory requirements for Class C Recycling Center modifications are as follows:

1. GIS Mapping Standards [N.J.A.C. 7:26A-3.2(a)]

The Department considers "All maps of the proposed recycling center" to mean the site plan map that must be submitted pursuant to N.J.A.C. 7:26A-3.2(a)9 as part of an application for a Class C Recycling Center modification.

The Department considers "prepared in a manner and format consistent with N.J.A.C. 7:1, Appendix A" to mean that the site plan map is prepared in accordance with one of the following:

i. The standards contained in the latest version of the Department's GIS Mapping and Digital Data Standards (attached as Appendix B to this manual); or

ii. All of the following:

(1) Be prepared in a digital environment that is compatible with the Department's Geographic Information System. Compatible digital formats

2. Geographic Description [N.J.A.C. 7:26A-3.2(a)2]

The Department considers "description of the geographical location" to include not only the name of the municipality but also the name of the county in which the recycling center will be located; and to include not only the tax map lot and block numbers and current land use of all adjacent properties, but also the names of the current property owners of all adjacent properties.

3. Effective Visual Screen Buffer [N.J.A.C. 7:26A-4.1(a)11]

The Department considers "effective visual screen buffer" to include any landscaping or other provisions that effectively prevent individuals on adjacent and proximate properties from seeing recycling center operations. This may include solid fencing material in addition to grassed berms and trees/shrubs or other materials.

4. Sensitive Land Uses/Areas of Human Use or Occupancy [N.J.A.C. 7:26A-4.1(a)11, 4.5(a)6 and 4.5(a)7vii]

The Department considers both "sensitive land uses" and "areas of human use or occupancy" to mean the same as "sensitive receptors" as stated in N.J.A.C. 7:26A-3.2(a)10 (e.g. homes, schools, hospitals, playgrounds, etc.). Required buffer distances are to the nearest property line of the sensitive land use.

5. Areas Used For Acceptance [N.J.A.C. 7:26A-4.5(a)6]

The Department considers "accepted only in areas of the site" to mean those areas of the site that are used for the initial receipt and pre-mixing (if applicable) of grass or vegetative food materials.

6. Buffer Distance Requirements [N.J.A.C. 7:26A-4.5(a)7vii]

The Department considers "Use for grass - Yes" to mean that the required buffers for leaves using an intermediate technology method will also apply to the outdoor composting of grass and vegetative food materials. The 1000 foot "Buffer with grass" requirement is applicable to the initial receipt and pre-mixing of grass and/or vegetative food materials.

7. Composting Floor [N.J.A.C. 7:26A-4.5(b)2]

V. Explanation of Policies

In addition to the policies detailed in Appendix A, the Department's policies related to Class C Recycling Center modifications which are not directly addressed in the regulations are as follows:

1. Pre-Application Conference

The Department strongly recommends that all applicants for a Class C Recycling Center modification schedule and complete a pre-application conference with the Office of Permitting and Technical Programs. The purpose of the conference is to discuss and clarify application requirements in order to eliminate confusion and submission of unnecessary information.

2. Compliance with New Requirements

The Department will require that applications for a modification to a general or limited approval demonstrate compliance with all new regulatory requirements that have been adopted since the date of issuance of the approval being modified. The Department may also require that the application demonstrate compliance with new policy determinations that have been made by the Department since the date of issuance of the approval being modified.

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CHECKLIST FOR MODIFICATION TO GENERAL APPROVAL

1. Written description of the proposed change(s) containing relevant factors and rationale supporting the request.

2. Updated application information Per N.J.A.C. 7:26A-3.2(a) et seq.

3. Documentation of submittal of a copy of the application for modification to the county solid waste or recycling coordinator and the municipal clerk per N.J.A.C. 7:26A-3.10(c).

The completed application should be mailed to the following address:

Office of Permitting and Technical Programs
Division of Solid and Hazardous Waste
New Jersey Department of Environmental Protection
P.O. Box 414
Trenton, New Jersey 08625-0414

Telephone Number: (609) 984-5950

Section 3

Renewal of General Approval for a
Class C Recycling Center

I. Introduction

This section presents the requirements for the preparation and submission of an application for the renewal of a general approval to operate a Class C Recycling Center.

II. Applicable Regulations

Title 7, Chapter 26A, the rules of the Division of Solid and Hazardous Waste, should be consulted when preparing an application for renewal. Where applicable, these regulations will be discussed in greater detail below.

7:26A-1.3	Definitions
7:26A-3.1	General Requirements
7:26A-3.2	Application Procedures
7:26A-3.4	Supplemental Requirements
7:26A-3.5	General Approval
7:26A-3.6	Renewal Applications
7:26A-3.10	Modifications of General or Limited Approvals
7:26A-3.18	Additional Application Requirements
7:26A-4.1	Design and Operational Standards
7:26A-4.5	Additional Design and Operational Requirements

The applicant should be familiar with the regulations prior to preparing an application. A copy of the regulations found at N.J.A.C. Title 7, Chapter 26A can be obtained by contacting West Publishing, 610 Opperman Dr., P.O. Box 64526, St. Paul, MN 55164-0526 or phone 1-800-808-WEST. A nonjudicial version of the regulations may be viewed by visiting our web site at www.state.nj.us/dep/dshw.

III. Application Procedures

Renewal applications must be submitted to the Department at least three (3) months prior to expiration of the current general approval to operate a recycling center for Class C recyclable materials. An administrative completeness checklist is included at the end of this section to assist

The requirements set forth at N.J.A.C. 7:26A-3.6 establish the Department's procedures and associated time frames to review a complete renewal application.

One original and two copies of bound application documents and appurtenant drawings required for review should be submitted to the following address:

Office of Permitting and Technical Programs
Division of Solid and Hazardous Waste
New Jersey Department of Environmental Protection
P.O. Box 414
Trenton, New Jersey 08625-0414

One copy of bound application documents and appurtenant drawings required for review should also be submitted to the county solid waste or recycling coordinator and the municipal clerk.

IV. Interpretation of Regulations

In addition to the regulatory interpretations detailed in Appendix A, the Department's interpretation of pertinent specific regulatory requirements for the renewal of Class C Recycling Center approvals are as follows:

1. Meaning Of Changes In Operations [N.J.A.C. 7:26A-3.6(b)]

The Department considers "changes in the operations of the recycling center" to mean not only physical changes to the facility, equipment or actual operation of the recycling center, but also any changes in previously submitted application information.

V. Explanation of Policies

In addition to the policies detailed in Appendix A, the Department's policies related to the renewal of Class C Recycling Center approvals which are not directly addressed in the regulations are as follows:

1. Payment of Fees

The Department will not issue a renewal of a Class C Recycling Center approval until the

CHECKLIST FOR RENEWAL OF GENERAL APPROVAL

1. Written certification that there have been no changes in the recycling center operations since issuance of the general approval pursuant to N.J.A.C. 7:26A-3.5, if applicable.

2. Application for modification of the general approval in accordance with Section 2 of this manual, if recycling center operations have changed since issuance of the general approval pursuant to N.J.A.C. 7:26A-3.5, or if changes in the recycling center operations are proposed.

3. Documentation of submittal of a copy of the renewal application to the county solid waste or recycling coordinator and the municipal clerk per N.J.A.C. 7:26A-3.6(a).

The completed application should be mailed to the following address:

Office of Permitting and Technical Programs
Division of Solid and Hazardous Waste
New Jersey Department of Environmental Protection
P.O. Box 414
Trenton, New Jersey 08625-0414

Telephone Number: (609) 984-5950

Section 4

Transfer of Ownership of a
Class C Recycling Center

I. Introduction

This section presents the requirements for the preparation and submission of an application for the transfer of a general approval to operate a Class C Recycling Center to a new owner or operator. Pursuant to N.J.A.C. 7:26A-3.15 (a), approval to operate a recycling center shall not be transferred to a new owner or operator without the Department's prior approval.

II. Applicable Regulations

Title 7, Chapter 26A, the rules of the Division of Solid and Hazardous Waste, should be consulted when preparing an application for transfer of ownership. Where applicable, these regulations will be discussed in greater detail below.

7:26A-1.3	Definitions
7:26A-3.1	General Requirements
7:26A-3.2	Application Procedures
7:26A-3.4	Supplemental Requirements
7:26A-3.5	General Approval
7:26A-3.15	Transfer of Ownership

The applicant should be familiar with the regulations prior to preparing an application. A copy of the regulations found at N.J.A.C. Title 7, Chapter 26A can be obtained by contacting West Publishing, 610 Opperman Dr., P.O. Box 64526, St. Paul, MN 55164-0526 or phone 1-800-808-WEST. A nonjudicial version of the regulations may be viewed by visiting our web site at www.state.nj.us/dep/dshw.

III. Application Procedures

Applications for transfer of ownership must be received by the Department at least sixty (60) days in advance of the proposed transfer of ownership or operational control of a recycling center. An administrative completeness checklist is included at the end of this section to assist the applicant in submitting a complete application for a transfer of ownership.

Office of Permitting and Technical Programs
Division of Solid and Hazardous Waste
New Jersey Department of Environmental Protection
P.O. Box 414
Trenton, New Jersey 08625-0414

One copy of bound application documents for the transfer of ownership of a general approval should also be submitted to the county solid waste or recycling coordinator and the municipal clerk.

IV. Interpretation of Regulations

The Department's interpretation of pertinent specific regulatory requirements for transfers of ownership are detailed in Appendix A.

V. Explanation of Policies

The Department's policies related to transfers of ownership which are not directly addressed in the regulations are detailed in Appendix A.

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CHECKLIST FOR TRANSFER OF OWNERSHIP OF A CLASS C RECYCLING CENTER

1. Name, address and social security number of all prospective new owners or operators per N.J.A.C. 7:26A-3.15(a)1i.

2. Written certification by the transferee that the terms and conditions contained in the general or limited approval will be met by the proposed transferee per N.J.A.C. 7:26A-3.15(a)1ii.

2. A written agreement between the current owner or operator of the recycling center and the proposed new owner or operator containing a specific future date for transfer of ownership or operational control.

3. Documentation of submittal of a copy of the request to transfer ownership to the county solid waste or recycling coordinator and the municipal clerk per N.J.A.C. 7:26A-3.15(c).

The completed application should be mailed to the following address:

Office of Permitting and Technical Programs
Division of Solid and Hazardous Waste
New Jersey Department of Environmental Protection
P.O. Box 414
Trenton, New Jersey 08625-0414

Telephone Number: (609) 984-5950

APPENDIX A

NJDEP-CLASS C RECYCLING CENTER
APPROVAL APPLICATION REVIEW CHECKLIST

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NJDEP-CLASS C RECYCLING CENTER
APPROVAL APPLICATION REVIEW CHECKLIST

		COMPLETE (Y/N)	TECHNICALLY ADEQUATE (Y/N)	NOT APPLICABLE	COMMENTS	N.J.A.C. 7:26A CITE
1. GENERAL INFORMATION REQUIRED FOR RECEIPT, STORAGE, PROCESSING OR TRANSFER OF ALL CLASS C RECYCLABLE MATERIALS						
1.1	Owner Identification The name, address and telephone number of the person(s) seeking to own and operate the proposed recycling center, and the address of the recycling center if different from the above.					3.2(a)1
1.2	Facility Location Provide the following location information:					3.2(a)2
1.2.1	Tax Map Data Tax Map Lot and Block numbers and name of Municipality and County for the recycling center property and all adjacent properties.					
1.2.2	Zoning Map Data Show current land use of the recycling center site and all adjacent properties and owners names for all adjacent properties.					
1.3	Ownership Information Provide the following additional ownership information:					3.2(a)3
1.3.1	Owner Listing Name, address and telephone number of all persons owning five percent or more of corporation stock in the recycling center, or a listing of the general or limited partners where applicable. Note: In the case where no persons own 5 percent or more list the names of the corporation principals.					
1.3.2	Intra-Corporate Relationships Describe any relationships between the recycling center and any solid waste hauler or disposal operation registered with the Department.					
1.4	Materials Description Describe the materials to be received, stored, processed or transferred at the recycling center. Include a description of anticipated contaminants.					3.2(a)4

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1.5	Materials Quantity Indicate the maximum amount of recyclable material, including contaminants, to be received, stored, processed or transferred at the recycling center per day, expressed in tons, cubic yards or cubic feet. Note: Provide weight to volume conversion ratio.					3.2(a)5
1.6	Products and Residues Quality Describe all products and residues which will result from the recycling activity and indicate the maximum amounts to be generated per day, expressed in tons, cubic yards or cubic feet. Note: Provide weight to volume conversion ratio.					3.2(a)6
1.7	End-Market Information Provide the following information regarding end markets:					3.2(a)7
1.7.1	Identification Name, address and telephone number of planned end markets for the recycled materials.					
1.7.2	Contracts Provide end-market contracts or agreements as evidence of the applicant's ability to sell products resulting from the recycling activities, OR					3.2(a)7i
1.7.3	Letters of Interest Provide letters of interest from prospective end-market users of the recycled product. Letters of interest may be based on information provided by the applicant to the prospective end-market user, such as descriptions of equipment to be used and specifications of products resulting from the recycling operation.					3.2(a)7ii
1.8	Equipment Description Provide a manufacturer’s specification sheet, including the following information for all equipment to be utilized for the receipt, storage, processing or transfer of recyclable materials:					3.2(a)8
1.8.1	Manufacturer					
1.8.2	Model Number					
1.8.3	Operating Capacity In Tons Per Hour (TPH)					

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1.8.4	Statement Provide a written statement indicating that no recyclable materials will be received, stored, processed or transferred at the recycling center until the equipment identified by the applicant is installed or situated at the recycling center site.					3.2(a)8
1.9	Site Plan Map Provide a site plan map as follows:					3.2(a)9
1.9.1	Mapping Requirements The site plan shall be prepared in accordance with the following:					
1.9.1.1	GIS Mapping Standards The preparation of the site plan map shall conform to either 1.9.1.1.1 or 1.9.1.1.2 below:					3.2(a)
1.9.1.1.1	Mapping and Digital Data Standards The latest version of the Department's GIS Mapping and Digital Data Standards found at N.J.A.C. 7:1, Appendix A (attached as Appendix B to this manual), or					
1.9.1.1.2	Each of the Following:					
1.9.1.1.2.1	Digital Environment The map shall be prepared in a digital environment that is compatible with the Department's GIS system. Compatible digital formats are delineated in Appendix B to this manual.					
1.9.1.1.2.2	Reference Points The map shall contain at least four widely-spaced reference points (tics) for which the geographic coordinates are known in New Jersey State Plane Feet (North American Datum 1983).					3.2(a)
1.9.1.1.2.3	Legend Block The map shall contain a legend block stating the name and affiliation of the map preparer, the scale(s) employed and the sources of the data used.					
1.9.1.2	Map Scale The map shall be drawn to a scale not larger than 1 inch equal to 100 feet.					3.2(a)9i

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1.9.1.3	Certification The map shall be prepared and certified by a New Jersey Licensed Professional Engineer or Land Surveyor in accordance with N.J.S.A. 45:8-45.					3.2(a)9
1.9.2	Map Contents The site plan map shall show the following:					
1.9.2.1	Equipment Location					3.2(a)9
1.9.2.2	Buildings Location					
1.9.2.3	Recycling Activities Location					
1.9.2.4	Traffic Flow On-site and nearby off-site traffic patterns.					
1.9.2.5	Traffic Safety The map shall indicate provisions to ensure safe and efficient vehicular and pedestrian movement, parking, loading and unloading.					3.2(a)9ii
1.9.2.5.1	Vehicular Usage Areas Design details of areas of the recycling center that are subject to vehicular usage. Note: To provide adequate support for vehicles, to minimize dust generation and to prevent tracking of soil off site, these areas shall be suitably compacted and, where necessary, paved.					3.2(j) 4.1(a)13
1.9.2.6	Floodplain Delineation of the floodplain as defined at N.J.A.C. 7:13-1.2.					3.2(a)9iii
1.9.2.7	Wetlands					3.2(a)9iv
1.9.2.8	New Jersey Pinelands					
1.9.2.9	Prime Agricultural Lands					
1.9.2.10	Historic Sites					
1.9.2.11	Other Environmentally Sensitive Areas					
1.9.2.12	Runoff Directions On-site and nearby off-site stormwater runoff direction.					3.2(a)9v

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1.9.2.13	Screening and Landscaping Site screening and landscaping provisions, including a visual screen buffer separating the perimeter of recycling operations from any adjacent residential, commercial and/or other sensitive land uses.					3.2(a)9v 3.2(j) 4.1(a)11
1.9.2.14	Topography Topographic contours at two-foot intervals.					3.2(a)9vi
1.9.2.15	Materials Stockpile Areas Show the following information for unprocessed and processed materials stockpile areas:					
1.9.2.15.1	Unprocessed Materials Stockpiles					3.2(a)9vii
1.9.2.15.1.1	Locations					
1.9.2.15.1.2	Dimensions Show length, width, height and side slope ratio.					
1.9.2.15.1.3	Storage Capacity Expressed in cubic yards. Include volumetric calculations. Note: Capacity should be sufficient to handle projected incoming volumes of recyclable materials.					3.2(a)9vii 3.2(h) 4.5(a)2, 4.5(b)1
1.9.2.15.1.4	Intended Use Indicate whether the applicant wishes to reserve the right to use unprocessed material stockpile space as processed material stockpile space in certain instances.					3.2(a)9vii
1.9.2.15.1.5	Composting Information For facilities performing composting, the map shall indicate the following:					
1.9.2.15.1.5.1	Windrow or Curing Pile Dimensions					3.2(h) 4.5(a)7
1.9.2.15.1.5.2	Windrow or Curing Pile Cross Sectional Views					
1.9.2.15.1.5.3	Windrow Spacing Identify spacing distance between windrows.					
1.9.2.15.1.5.4	Windrow Positioning To facilitate drainage and to reduce surface water ponding, demonstrate that each windrow will be constructed and positioned in such a manner that it is perpendicular to the contours of the ground surface.					3.2(h) 4.5(a)7iv

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1.9.2.15.1.5.5	Buffer Distances Demonstrate that the staging and processing of recyclable materials will be performed in areas on the site which meet the following buffer distance requirements: Note: Levels of technology listed below correspond to the composting methods listed at N.J.A.C. 7:26A-4.5(a)7vi.					
1.9.2.15.1.5.5.1	Composting of Leaves Only					
1.9.2.15.1.5.5.1.1	Minimal Technology 2500 feet from operations to sensitive land uses.					
1.9.2.15.1.5.5.1.2	Low Technology 50 feet from operations to property lines; 500 feet to sensitive land uses.					3.2(h) 4.5(a)7vii
1.9.2.15.1.5.5.1.3	Intermediate Technology 50 feet from operations to property lines; 150 feet to sensitive land uses; 250 feet to inhabited structures.					
1.9.2.15.1.5.5.1.4	High Technology 50 foot building setback for enclosed operations.					
1.9.2.15.1.5.5.2	Composting With Grass Note: Only Intermediate and High Technology methods may be used for grass composting.					
1.9.2.15.1.5.5.2.1	Intermediate Technology 1000 feet from outdoor grass clipping initial receipt and pre-mixing areas to sensitive land uses. 50 feet from composting operations to property lines; 150 feet to sensitive land uses; 250 feet to inhabited structures.					
1.9.2.15.1.5.5.2.2	High Technology 50 foot building setback for enclosed operations.					
1.9.2.15.1.5.6	Receiving Area					
1.9.2.15.1.5.7	Pre-Processing Area					3.2(h)
1.9.2.15.1.5.8	Composting Areas					4.5(a)7
1.9.2.15.1.5.9	Curing Areas					

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1.9.2.15.1.5.10	Storage Areas All storage areas, including residue storage areas. Note: All residues shall be stored separately from recyclable material and in a manner which prevents run-off, leakage or seepage from the residue storage area into, on or around the soil of the residue storage area.					3.2(j) 4.1(a)4
1.9.2.15.1.5.11	Grass Clippings Co-Mixing Areas The map shall indicate that grass materials are held and processed only in areas at least 1000 feet from any areas of human use or occupancy.					3.2(h) 4.5(a)6
1.9.2.15.1.5.12	Composting Surfaces Details of all active composting surfaces demonstrating the following:					3.2(h) 4.5(a)7
1.9.2.15.1.5.12.1	Improved The composting surface shall be an improved surface, such as compacted clay, gap-graded crushed aggregate, asphalt or other surface that will withstand heavy equipment use.					3.2(h) 4.5(a)7ii
1.9.2.15.1.5.12.2	Sloped The composting surface shall be sloped to prevent ponding of liquids and to prevent surface runoff from directly entering surface waters.					
1.9.2.15.2	Processed Materials Stockpiles					3.2(a)9vii
1.9.2.15.2.1	Locations					
1.9.2.15.2.2	Dimensions Show length, width, height and side slope ratio.					
1.9.2.15.2.3	Storage Capacity Expressed in cubic yards. Include volumetric calculations.					
1.9.2.16	Access Controls Site access controls to be employed at the recycling center. Note: The entrance to the access road shall be fenced or otherwise secured to prevent unauthorized access to the site.					3.2(a)9viii 3.2(j) 4.1(a)12
1.9.2.17	Utilities					3.2(a)9ix
1.9.2.17.1	Water Supply Lines					

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1.9.2.17.2	Sanitary Sewer					3.2(a)9ix
1.9.2.17.3	Storm Sewer					
1.10	USGS Quad Provide a USGS Quadrangle as follows:					3.2(a)10
1.10.1	Original The quad shall be an original, 7.5-minute series USGS Quadrangle map.					
1.10.2	Quadrangle Contents The quad shall show (or have plotted on it) the following:					
1.10.2.1	Center Boundaries The boundaries of the recycling center, plotted on the quad.					
1.10.2.2	Public Access Roads					
1.10.2.3	Streams or Ponds					
1.10.2.4	Sensitive Receptors Sensitive receptors, such as hospitals, schools, playgrounds, homes, etc. within a one-half mile radius of the recycling center site.					
1.11	Deed or Lease Agreement A copy of the deed of record establishing ownership of the recycling center proper or, if the applicant is not the landowner, a legal agreement to use the real property for the intended purpose.					3.2(a)11
1.12	Design Capacity A description of the design capacity of the recycling center, including the number, type and capacity of vehicles transporting recyclable materials to the center for processing and the number, type and capacity of vehicles transporting recycled products or residues from the recycling center on a daily basis. Note: Also provide a description of the anticipated quantities (in cubic yards) and variation of each recyclable material to be handled by the facility on an annual basis, indicating "on-site" capacity and maximum annual capacity, if different.					3.2(a)12

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1.13	Air Permit Applications A copy of any applicable New Jersey pollution control permit application required pursuant to N.J.A.C. 7:27-8.2(a)1.					3.2(a)13
1.14	Description of Operation A written narrative explanation of the recycling center operation from the receipt of recyclable materials to the point of transfer of end products. The narrative should be directly related to the information shown on the site plan map, where appropriate. Note: The narrative should also indicate how the center will be operated in compliance with each of the applicable operating standards of N.J.A.C. 7:26A-4.1(a)1-3 and 5-9; 4.1(b); 4.5(a) 3-5, 6, 7i, 7iii and 7viii-xi; 4.5(b)7, 9-12, 14, 17, 20, and 21; and 4.5(c).					3.2(a)14 3.2(h) 4.1(a) & (b) 4.5(a), (b) and (c)
1.15	District Plan Inclusion Documentation establishing that the recycling center has been included in the applicable district solid waste management plan.					3.2(a)15
1.16	Operations Plan Provide an Operations Plan which shall include, at a minimum, the following:					3.2(a)16
1.16.1	Hours of Operation The hours and days of operation during the active composting season, and during the final curing/distribution season, if different.					3.2(a)16i
1.16.2	Incoming Materials Specification Sheet A copy of an Incoming Materials Specification Sheet which shall be provided to all persons delivering recyclable materials to the center and which shall include the following:					3.2(a)16ii
1.16.2.1	Materials Listing A listing of the types of recyclable materials which may be accepted.					3.2(a)16ii(1)
1.16.2.2	Specification The materials specification or other restrictions on the recyclable materials to be received.					3.2(a)16ii(2)

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1.16.2.3	Notice of Incoming Shipment Inspection A notice that incoming shipments of recyclable materials will be inspected and/or analyzed and, if found to contain unauthorized materials or excessive contamination as specified per N.J.A.C. 7:26A-3.5(e)3i will be barred from offloading.					3.2(a)16ii(3)
1.16.2.4	Notice of Incoming Shipment Certification A notice requiring that persons shipping recyclable materials to the center certify the amount of material per load, the municipality of origin of the recyclable material and other information contained on the Recyclable Materials Receipt Form.					3.2(a)16ii(4)
1.16.3	Recyclable Materials Receipt Form A Recyclable Materials Receipt Form which shall be provided to all persons shipping recyclable materials to the center and which shall include the following information for each vehicle delivering recyclable materials to the recycling center:					3.2(a)16iii
1.16.3.1	Amount Received The amount of recyclable material received expressed in tons, cubic yards or cubic feet. Note: Indicate methods used to measure incoming materials and provide weight to volume conversion ratio.					3.2(a)16iii(1)
1.16.3.2	Municipality of Origin					3.2(a)16iii(2)
1.16.3.3	Name of Transporter					3.2(a)16iii(3)
1.16.3.4	Vehicle License Plate Number					3.2(a)16iii(4)
1.16.3.5	NJDEP Registration Number					
1.16.3.6	EPA ID Number					
1.16.3.7	Certification A certification (to be completed and signed at the time of delivery by the transporter delivering the recyclable materials) that the information contained on the Recyclable Materials Receipt Form is true, accurate and complete.					3.2(a)16iii(5)

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1.16.4	Incoming Materials Inspection Plan An Incoming Materials Inspection Plan which details the manner in which incoming material loads will be inspected and/or analyzed to determine if the shipment contains unauthorized materials or excessive contamination per Item 1.16.2.3 above. Note: Also describe methods of removal (from incoming shipments) and off-site disposal of any hazardous wastes, including designation of destination facilities; and methods for removal and either recovery for recycling or disposal of all other non-compostable wastes, including designation of disposal sites.					3.2(a)16iv
1.17	Description of Traffic Control Methods Describe the methods to control traffic and expedite unloading.					3.2(a)17
1.18	Drainage Control Systems A description of leachate and storm water drainage control measures.					3.2(a)18
1.19	Soil Erosion Control A description of methods used to control soil erosion and to comply with the New Jersey Soil Erosion and Sediment Control Regulations found at N.J.A.C. 4:24-43.					3.2(a)19
1.20	Noise Control Systems A description of methods used to minimize, manage and monitor noise at nearby residential and/or commercial property lines in compliance with the New Jersey Noise Control regulations found at N.J.A.C. 7:29. Provide manufacturer's specifications on sound level ranges for all equipment to be used.					3.2(a)20
1.21	Traffic					3.2(a)21
1.21.1	Traffic Impacts Describe the impact the recycling center will have on existing transportation patterns.					
1.21.2	Compliance With Code Demonstrate that traffic associated with recycling center operations will not result in an unacceptable decrease in the existing level of service as defined in the NJ State Highway Access Management Code (Appendix C to this manual) for any major intersection or public roadway within a one-half mile radius of the recycling center.					3.2(j) 4.1(a)10

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1.22	Compost Quality Assurance A description of methods used to monitor, sample and test the composting materials for process control and product quality assurance, as specified at N.J.A.C. 7:26A-4.5.					3.18(a)1 4.5(a) and (b)
1.23	Contingency Plan Provide a contingency operations plan in the event of wind, heavy rains, snow, freezing temperatures or other inclement weather conditions.					3.18(a)2
1.24	Fire Protection Describe the fire protection and control procedures to be employed at the site.					3.18(a)3
1.24.1	Water Supply Demonstrate that an adequate water supply will be readily available to fight fires.					3.2(j) 4.1(a)14
1.24.2	Fire Fighting Equipment Demonstrate that adequate fire-fighting equipment will be readily available on site.					
1.24.3	Posting of Phone Number Indicate that the telephone number of the local fire department will be posted at the entrance to the recycling center.					
1.25	Vector Controls					3.18(a)4
1.26	Dust Controls					
1.27	Litter Controls					
1.28	Sensitive Receptors Describe the nearest sensitive neighboring receptors (residential, commercial, institutional). Provide approximate distances to property lines from the recycling center.					3.18(a)5
1.29	Soils Characteristics Describe the soils characteristics of the site according to soil surveys published by the appropriate Natural Resource Conservation Service District.					3.18(a)6

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1.30	Odor Control Systems A description of methods used to minimize, manage and monitor odors to prevent the detection of odors off-site and to comply with the New Jersey Air Pollution Control Regulations found at N.J.A.C. 7:27.					3.18(a)7
1.31	Environmental Impact Describe the impact the facility will have on the following:					3.18(a)8
1.31.1	Surface Water Quality					
1.31.2	Ground Water Quality					
1.31.3	Wetlands					
1.31.4	Pinelands Areas					3.18(a)9
1.31.5	Agricultural Development Areas					
1.31.6	Dedicated Recreational Areas					
1.31.7	Dedicated Open Space Areas					
1.31.8	Floodways					
1.31.9	Endangered Or Threatened Wildlife					
1.31.10	Endangered Or Threatened Vegetation					
1.32	Composting Information For facilities performing composting, include the following:					3.2(h) 4.5(a)7
1.32.1	Aeration Process Describe the aeration process, including:					
1.32.1.1	Composting Method Methods listed at N.J. A.C. 7:26A-4.5(a)7vi, or any other composting method approved by the Department may be employed.					3.2(h) 4.5(a)7, 7vi
1.32.1.2	Frequency Describe the frequency of turning operations. Note: A windsock shall be installed at the recycling center in order to indicate wind direction so that the operator may determine appropriate times for windrow turning operations.					3.2(h) 4.5(a)7, 7v

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1.32.1.3	Equipment Describe the composting equipment to be used.					
1.32.2	Additives Provide a list of additives (e.g. water to maintain proper moisture content or nitrogen sources to maintain carbon to nitrogen ratios).					
1.32.3	Process Term Provide the term of the composting process, from the time of windrow formation to such time as the curing pile is broken down for final product processing and distribution.					
1.32.4	Staging Steps Provide the following information regarding the staging of recyclable materials:					
1.32.4.1	Delivery Rates Provide anticipated daily, hourly and peak hourly delivery rates, expressed in numbers of trucks and in volume and weight of materials brought on site.					3.2(h) 4.5(a)7
1.32.4.2	Staging Procedures Describe procedures for staging of materials prior to formation of windrows.					
1.32.4.3	Storage Procedures Describe procedures for storage of finished compost prior to shipment off-site.					
1.32.5	Grass Composting Information If grass will be accepted for composting, provide the following additional information:					
1.32.5.1	Quantity Maximum quantities to be composted.					
1.32.5.2	Storage Time The length of storage time upon acceptance.					
1.32.5.3	Mixture Ratio Ratio of mixture (e.g. 3 parts leaves to 1 part grass).					

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1.32.5.4	Mixing Methods Describe methods of mixing grass with partially decomposed leaves, including the equipment to be used.					
1.32.5.5	Aeration Frequency					3.2(h) 4.5(a)7
1.32.5.6	Composting Duration					
1.32.6	Refinement Steps A description of any refinement steps (e.g. screening) which will be employed prior to finished product distribution.					
1.33	Approvals To Locate On Green Acres Lands Provide evidence of NJDEP and State House Commission approvals, if the recycling center will be located on land which has been purchased with money from any Green Acres bond act or which is designated as land for recreation and conservation purposes and is listed in the Green Acres recreational land inventory prepared by individual municipalities and counties and approved by the Department pursuant to N.J.S.A. 13:8A-1, 13:8A-20, 13:8A-35 and N.J.A.C. 7:36. Include a demonstration that any and all conditions of said approvals are complied with.					3.2(h) 4.5(a)1

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2. ADDITIONAL INFORMATION REQUIRED FOR RECEIPT, STORAGE, PROCESSING OR TRANSFER OF RECYCLABLE MATERIALS OTHER THAN OR IN ADDITION TO YARD TRIMMINGS						
2.1	Additional Information For Class C Recycling Centers who receive recyclable materials other than or in addition to yard trimmings, provide the following additional information:					3.18(b)
2.1.1	Process Flow Diagram A flow diagram of the proposed processing steps for all recyclable materials received.					3.18(b)1
2.1.2	Mass Balance A total mass balance of the proposed processing operation.					
2.1.3	Equipment Description A description of all equipment to be used, including the information required by item 1.8 above and a demonstration that the equipment is compatible with the proposed process and thruput.					3.18(b)2
2.1.4	Profile Views Provide profile views of the facility site showing the following:					3.18(b)3
2.1.4.1	Access Roads					
2.1.4.2	Drainage Systems Swales, ditches, etc.					
2.1.4.3	Existing and Final Grades					
2.1.4.4	Facility Superstructure Include a demonstration that recycling center operations are fully enclosed, unless vegetative food material is the only food material received by the recycling center.					3.18(b)3 3.2(h), 4.5(b)3
2.1.4.5	Utilities Any utilities not listed under Item 1.9.2.17 above					3.18(b)3
2.1.4.6	Other Structures					
2.1.5	O & M Manual An Operations and Maintenance Manual, including the following:					3.2(h) 4.5(b)5
2.1.5.1	Sequence of Operations					
2.1.5.2	Routine Maintenance Schedules					

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2.1.5.3	Plans					
2.1.5.4	Policies					
2.1.5.5	Procedures					
2.1.5.6	Legal Requirements					3.2(h)
2.1.5.7	QA/QC Plan A Quality Assurance/Quality Control Plan which outlines the following plans for testing the compost process and product:					4.5(b)5
2.1.5.7.1	Monitoring Plan					
2.1.5.7.2	Sampling Plan					
2.1.5.7.3	Analysis Plan					
2.1.5.8	Equipment Specifications Manufacturer and/or vendor specifications (including modifications) for recycling center equipment.					3.2(h) 4.5(b)6
2.1.6	Composting Surface Requirements In addition to Item 1.9.2.15.1.5.12 above, the composting surface shall meet the following requirements:					
2.1.6.1	Impermeability The composting floor shall be impermeable (10^{-5} cm/sec or greater).					3.2(h) 4.5(b)2
2.1.6.2	Leachate Collection The composting floor shall be sloped to direct leachate to a leachate collection system. Leachate control shall be provided wherever leachate is generated.					
2.1.7	Composting Process Requirements Indicate that the composting process used will meet the criteria for a process to further reduce pathogens (PFRP) in accordance with 40 CFR 503. One of the following methods shall be used:					3.2(h) 4.5(b)13
2.1.7.1	Windrow The Windrow Method, which meets PFRP as follows:					3.2(h) 4.5(b)13i

		COMPLETE (Y/N)	TECHNICALLY ADEQUATE (Y/N)	NOT APPLICABLE	COMMENTS	N.J.A.C. 7:26A CITE
2.1.7.1.1	Maintenance Of Aerobic Conditions					3.2(h) 4.5(b)13i(1)
2.1.7.1.2	Turnings A minimum of 5 turnings over 15 consecutive days.					3.2(h) 4.5(b)13i(2)
2.1.7.1.3	Temperature Maintain a temperature of not less than 55 degrees Celsius (131 degrees Fahrenheit).					
2.1.7.2	Aerated Static Pile The Aerated Static Pile Method, which meets PFRP as follows:					3.2(h) 4.5(b)13iii
2.1.7.2.1	Insulation Insulate the pile with 6 to 12 inches of insulating material (e.g. sawdust, cured compost, wood chips).					
2.1.7.2.2	Temperature Maintain a temperature of not less than 55 degrees Celsius (131 degrees Fahrenheit) throughout the mixture for 3 consecutive days.					3.2(h) 4.5(b)13ii(2)
2.1.7.3	Enclosed Vessel The Enclosed Vessel Method, which meets PFRP as follows:					3.2(h) 4.5(b)13iii
2.1.7.3.1	Enclosed The composting process must be performed within an enclosed vessel.					
2.1.7.3.2	Temperature Maintain a temperature of not less than 55 degrees Celsius (131 degrees Fahrenheit) throughout the mixture for 3 consecutive days.					3.2(h) 4.5(b)13iii(1)
2.1.8	Buffer Distances A demonstration that the staging and processing of recyclable materials will be performed in areas on the site which meet the following buffer distance requirements:					3.2(h) 4.5
2.1.8.1	Operations Not Fully Enclosed 1000 feet from outdoor initial receipt and pre-mixing areas to areas of human use or occupancy. 50 feet from composting operations to property lines; 150 feet to sensitive land uses; 250 feet to inhabited structures.					3.2(h) 4.5(b)4, 4.5(a)6 4.5(a)7vii
2.1.8.2	Fully Enclosed Operations 50 foot building setback.					3.2(h) 4.5(a)7vii

		COMPLETE (Y/N)	TECHNICALLY ADEQUATE (Y/N)	NOT APPLICABLE	COMMENTS	N.J.A.C. 7:26A CITE
2.1.9	Storage Capacity Limitation A demonstration that the design capacity of the finished compost storage area does not exceed 15 months of production.					3.2(h) 4.5(b)15
2.1.10	Storage Time Limitation An indication that finished compost will not be stored at the recycling center for more than 15 months.					3.2(h) 4.5(b)16

		COMPLETE (Y/N)	TECHNICALLY ADEQUATE (Y/N)	NOT APPLICABLE	COMMENTS	N.J.A.C. 7:26A CITE
3. ADDITIONAL INFORMATION REQUIRED FOR RECEIPT, STORAGE, PROCESSING OR TRANSFER OF ALL CLASS C RECYCLABLE MATERIALS						
3.1	Public Notice Provide a demonstration that the following public noticing procedures have been complied with:					3.1(d) and (e)
3.1.1	Type of Notice The notice shall have been published in a newspaper of general circulation within the host municipality.					3.1(d)
3.1.2	Contents of Public Notice The notice shall have included the following:					3.1(d)
3.1.2.1	Statement of Intent An indication that the applicant will apply to the county for inclusion of a recycling center in the district solid waste management plan and will apply to the Department for a recycling center approval.					
3.1.2.2	Names The name of the proposed recycling center and the name of the owner or operator of the proposed recycling center.					3.1(d)1
3.1.2.3	Address The street address and the Tax Map Block and Lot numbers of the proposed recycling center.					3.1(d)2
3.1.2.4	Description A description of the proposed recycling center activities.					3.1(d)1
3.1.2.5	Statement of Availability of Application An indication that a copy of the application for inclusion in the district solid waste management plan may be examined at the offices of the municipal clerk or the county solid waste or recycling coordinator.					3.1(d)3
3.1.2.6	Statement of Acceptance of Comments An indication that public comments regarding the application for inclusion in the district solid waste management plan may be submitted to the county clerk's office or the office of the county solid waste or recycling coordinator, or may be made in person at the public hearing to be held by the board of chosen freeholders.					3.1(d)4
3.1.3	Timing of Publications The public notice shall be published twice, as follows:					3.1(e)

		COMPLETE (Y/N)	TECHNICALLY ADEQUATE (Y/N)	NOT APPLICABLE	COMMENTS	N.J.A.C. 7:26A CITE
3.1.3.1	First Publication The first notice shall have been published prior to filing an application with the Department for a recycling center approval, and concurrent with or subsequent to filing for district solid waste management plan inclusion.					3.1(e)
3.1.3.2	Second Publication The second notice shall have been published no less than 15 days prior to the public hearing held by the board of chosen freeholders.					
3.2	Supplemental Application Requirements Submit the following, as applicable:					3.4
3.2.1	Additional Information Any additional information the Department determines is needed to adequately address public or environmental health, safety or welfare.					3.4(a)
3.2.2	Other Permits Or Approvals A demonstration that the applicant will obtain all applicable local, State or Federal permits or other approvals prior to the receipt of recyclable materials or the commencement of operations at the recycling center.					3.4(b)
3.2.3	Financial Assurance Evidence of financial assurance (if needed) meeting the following requirements: Note: The Department will consider the criteria found at N.J.A.C. 7:26A-3.4(c)1-7 in determining whether financial assurance is needed.					3.4(c)
3.2.3.1	Privately-Owned Recycling Centers For privately-owned facilities, the financial assurance shall meet the following requirements:					
3.2.3.1.1	Type Of Instrument The evidence of financial assurance shall be a performance bond or letter of credit.					
3.2.3.1.2	Wording The wording of the performance bond or letter of credit must be exactly as specified in N.J.A.C. 7:26A-3.4(d) or (e).					3.4(d) and (e)

		COMPLETE (Y/N)	TECHNICALLY ADEQUATE (Y/N)	NOT APPLICABLE	COMMENTS	N.J.A.C. 7:26A CITE
3.2.3.1.3	Amount The amount of the performance bond or letter of credit shall be an amount determined by the Department as necessary to achieve the proper removal, transportation and disposition of all materials which may be abandoned at the recycling center. Note: The Department will consider the criteria found at N.J.A.C. 7:26A-3.4(c)1-7 in determining the necessary amount of the performance bond or letter of credit.					
3.2.3.2	Publicly-Owned Recycling Centers For publicly-owned facilities, the financial assurance shall meet the following requirements:					
3.2.3.2.1	Type Of Financial Assurance The evidence of financial assurance shall be an identification of specific funds, which are to be wholly dedicated to ensure payment of the full amount of the financial obligation.					3.4(c)
3.2.3.2.2	Amount The amount of the wholly dedicated funds shall be an amount determined by the Department as necessary to achieve the proper removal, transportation and disposition of all materials which may be abandoned at the recycling center. Note: The Department will consider the criteria found at N.J.A.C. 7:26A-3.4(c)1-7 in determining the necessary amount of the wholly dedicated funds.					
3.3	Submittal Of Application To Local Officials Provide documentation that a copy of the application for general approval has been submitted to the following officials:					
3.3.1	County The County Solid Waste or Recycling Coordinator.					3.2(d)
3.3.2	Municipality The Municipal Clerk.					

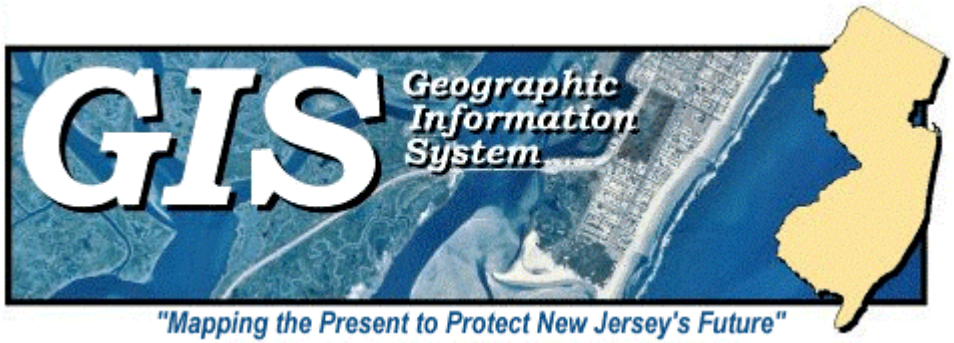
		COMPLETE (Y/N)	TECHNICALLY ADEQUATE (Y/N)	NOT APPLICABLE	COMMENTS	N.J.A.C. 7:26A CITE
4. CERTIFICATION AND SIGNATURES						
4.	CERTIFICATION AND SIGNATURES Applications shall be signed and certified as follows:					3.2(b)
4.1	Certification Statement Provide a written certification as follows: " I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment. I understand that, in addition to criminal penalties, I may be liable for a civil administrative penalty pursuant to N.J.A.C. 7:26-5 and that submitting false information may be grounds for denial, revocation or termination of any solid waste facility permit or vehicle registration for which I may be seeking approval or now hold".					3.2(b)1
4.2	Signatures The certification in Item 4.1 above shall be signed by the applicant as follows:					3.2(b)2
4.2.1	Corporation For a corporation, by a principal executive officer of at least the level of vice-president OR					3.2(b)2i
4.2.2	Partnership For a partnership, by a general partner, OR					3.2(b)2ii
4.2.3	Sole Proprietorship For a sole proprietorship, by the proprietor, OR					
4.2.4	Public Agency For a municipality, county, State, Federal or other public agency, by either a principal executive officer or ranking elected official.					3.2(b)2iii

APPENDIX B

New Jersey
Department of Environmental Protection
Geographic Information System

Mapping and Digital Data

Standards



Summary

APPENDIX

SUMMARY

The New Jersey Department of Environmental Protection (DEP) maintains a Geographic Information System (GIS) for the storage and analysis of cartographic (mapped) and related environmental scientific and regulatory information for use by the Department. A GIS is a computer mapping system used to display and analyze geographic information and spatial databases.

By Administrative Order (No.1994-15), the NJDEP requires mapped information be submitted to the NJDEP according to the standards of this document by contractors. In addition, many NJDEP programs require the submission of mapped data to a GIS standard. The submission of mapped data by all sectors based on this standard will facilitate data input into the NJDEP GIS and the integration of data with the New Jersey Environmental Management System (NJEMS). Much of these data can be shared back with the regulated community and public as appropriate. Important concepts regarding the creation, capture and delivery of digital mapped information are addressed in this document.

There are three basic concepts that must be followed.

The first concept addresses the need for all mapping to meet accepted accuracy standards. All digital data must meet or reference published standards such as those defined by the Federal Geographic Data Committee or a defined survey standard, regardless of scale. The accuracy of data are determined by testing against base maps or photography of known accuracy. This will assure appropriate positional accuracy of the geographic data and, therefore, compatibility of digital information.

Secondly, digital data provided to or produced for the Department, are required to be in North American Datum 1983 (NAD83) horizontal geodetic datum and in the New Jersey State Plane Coordinate system (SPC). SPC is a geographic reference system in the horizontal plane describing the position of points or features with respect to other points in New Jersey. All coordinates of the system are expressed in meters. The DEP, however, prefers to receive and maintain data in U.S. survey feet. The official survey base of the state is known as the New Jersey State Plane Coordinate System whose geodetic positions have been adjusted on the NAD83 as per Chapter 218, Laws of New Jersey 1989.

Lastly, GIS data must also be documented using the Federal Geographic Data Committee (FGDC) Metadata Standard or be compliant with the FGDC metadata standard. Metadata is information about the digital data being provided. It is important to know the positional coordinates of mapped information, but how the data were produced and the accuracy of the data being made available. The Federal Spatial Data Transfer Standard (SDTS) requires that a quality report accompany the data. This information should include a statement of the positional accuracy of the data and testing procedures used to determine positional accuracy. Geographic data must be delivered according to standard media and digital formats. Accepted formats and media currently used by the NJ DEP are presented in the

MAPPING AND DIGITAL DATA STANDARDS
GEOGRAPHIC INFORMATION SYSTEM
NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION

1.0 INTRODUCTION

Geographic Information System technology has become a tool for innovative efforts to protect the natural environment and the public health of citizens, nationally and within the State of New Jersey. To adequately address these and other issues, the DEP must make decisions based on sound data of known and adequate accuracy. This document provides guidance for the basic standards for creating, describing and distributing spatial data on a GIS. Basic standards will ensure consistent data quality and documentation, provide for compatibility between data sets, facilitate interactive analysis within the DEP and ensure the highest quality of results derived from the GIS.

The New Jersey Department of Environmental Protection endorses the Federal Geospatial Standards (FGDC, 1998) for positional accuracy as the most comprehensive and current standard. The Department continues to support National Map Accuracy Standards.

2.0 GEOSPATIAL POSITIONING ACCURACY STANDARDS AND TESTING

There are two widely accepted standards for positioning accuracy for mapped data, the Federal Geographic Data Committee (FGDC) "Geospatial Positioning Accuracy Standards Part 3: National Standard for Spatial Data Accuracy" (1998) and National Map Accuracy Standard (1947). The NJDEP supports both these standards and either standard can be usedfor mapped data. The NJDEP recommends the more current FGDC (1998) standard.

2.1 Federal Geographic Data Committee (FGDC)

The Federal Geographic Data Committee (FGDC) in 1998 released the endorsed version of "Geospatial Positioning Accuracy Standards Part 3: National Standard for

The NSSDA uses root-mean-square error (RMSE) to estimate positional accuracy. RMSE is the square root of the average of the set of squared differences between dataset coordinate values and coordinate values from an independent source of higher accuracy for identical points.

Accuracy is reported in ground distances at the 95% confidence level. Accuracy reported at the 95% confidence level means that 95% of the positions in the dataset will have an error with respect to true ground position that is equal to or smaller than the reported accuracy value. The reported accuracy value reflects all uncertainties, including those introduced by geodetic control coordinates, compilation, and final computation of ground coordinate values in the product.

Horizontal accuracy shall be tested by comparing the planimetric coordinates of well-defined points in the dataset with coordinates of the same points from an independent source of higher accuracy. Vertical accuracy shall be tested by comparing the elevations in the dataset with elevations of the same points as determined from an independent source of higher accuracy.

Errors in recording or processing data, such as reversing signs or inconsistencies between the dataset and independent source of higher accuracy in coordinate reference system definition, must be corrected before computing the accuracy value.
A minimum of 20 checkpoints shall be tested, distributed to reflect the geographic area of interest and the distribution of error in the dataset. When 20 points are tested, the 95% confidence level allows one point to fail the threshold given in product specifications.

Horizontal Root Mean Square Error is known as $RMSE_r$.

If error is normally distributed and independent in each the x- and y-component and error, the factor 2.4477 is used to compute horizontal accuracy at the 95% confidence level (Greenwalt and Schultz, 1968). When the preceding conditions apply, $Accuracy_r$, the accuracy value according to NSSDA, shall be computed by the formula:

$$Accuracy_r = 2.4477 * RMSE_x = 2.4477 * RMSE_y$$
$$= 2.4477 * RMSE_r / 1.4142$$
$$Accuracy_r = 1.7308 * RMSE_r$$

Note that because this formula is based on statistical probabilities, the satisfaction of the underlying assumptions is important, and the formula also applies to a specific number of error measurements (20 points). The full FGDC document gives more information on what to do in cases where either of these requirements cannot be satisfied. It also gives direction on additional topics, and a worked example.

The NSSDA test described above has been embodied in the ArcView 3.x extension RMSEr2.avx, written by Gregory Herman of the New Jersey Geological Survey; the extension is available from the ESRI web site (http://gis.esri.com/arcscripts/scripts.cfm). Note that the extension does not provide a test of the validity of the assumptions.

A data set that has been tested for horizontal accuracy per the NSSDA standard should be reported in the metadata as "*Tested _____(meters, feet) horizontal accuracy at 95% confidence level.*" Tests and reporting statements for vertical accuracy are analogous, and are shown in the FGDC document.

1. Determine if the test involves horizontal accuracy, vertical accuracy, or both.
2. Select a set of test points from the data set being evaluated.
3. Select an independent data set of higher accuracy that corresponds to the data set being evaluated.
4. Collect measurements from identical points from each of those two sources.
5. Calculate a positional accuracy statistic using either the horizontal or vertical accuracy statistic worksheet.
6. Prepare an accuracy statement in a standardized report form.
7. Include that report in a comprehensive description of the data set called metadata.

The Positional Accuracy Handbook provides a very clear explanation of NSSDA and excellent examples of testing methods and non-testing assessments. It can be found at http://www.mnplan.state.mn.us/press/accurate.html.

The NSSDA itself does not include threshold values, i.e. values of accuracy that are required for particular purposes. Sources for appropriate threshold values are discussed further below in Section 2.3.

2.2 National Map Accuracy Standard (NMAS)

The National Map Accuracy Standard, designed for paper maps, has been used since their adoption in 1941 to set accuracy requirements and to describe accuracy levels of maps. The 1947 revision is quoted in part below:

> 1. Horizontal accuracy for maps on publication scales larger than 1:20,000, not more than 10% of the points tested shall be in error by more than 1/30 inch, measured on the publication scale; for maps on publication scales of 1:20,000 or smaller, 1/50th of an inch. These limits of accuracy shall apply in all cases to positions of well-defined points only. Well-defined points are those that are easily visible or recoverable on the ground, such as the following: monuments or markers, such as benchmarks, property boundary monuments; intersections of roads, railroads, etc.; corners of large buildings or structures (or center points of small buildings); etc. In general what is well defined will also be determined by what is plottable on the scale of the map within 1/100 inch. Thus, while the intersection of two road or property lines meeting at right angles would come within a sensible interpretation, identification of the intersection of such lines meeting at an acute angle would obviously not be practicable within 1/100 inch. Similarly, features not identifiable upon the ground within close limits are not to be considered as test points within the limits quoted, even though their positions may be scaled closely upon the map. Examples of data in this class would be timberlines, soil boundaries, etc.
>
> 2. Vertical Accuracy, as applied to contour maps on all publication scales, shall be such that not more than 10 percent of the elevations tested shall be in error more than one-half the contour interval. In checking elevations taken from the map, the apparent vertical error may be decreased by assuming a horizontal displacement within the permissible horizontal error for a map of that scale.

NMAS accuracy is described in map units (inches on the map), rather than ground units

As discussed above, NMAS is based on statistical testing; however the confidence level is set at 90%, in contrast to the 95% confidence level required by NSSDA. This means that the same map or data set will have a different accuracy level description (i.e. different numerical accuracy value in feet or meters) for NMAS vs. NSSDA. One

can think of the horizontal accuracy as a circle of that radius around each well-defined position point: the confidence level expresses the likelihood that the actual location of the point falls within that circle. For a given "quality" of data, one needs a larger circle for a 95% confidence level than for a 90% confidence level. Appendix 3-D of the NSSDA document gives a fuller treatment of the relationship between NMAS and NSSDA.

The full text of National Map Accuracy Standards (1947) is shown in Appendix A.

2.3 Threshold Accuracy Values

The NJDEP continues to support positioning data to meet the accuracy level of the NMAS, but using the testing methodology and reporting language of NSSDA. One approach to satisfying this requirement is to establish an appropriate nominal scale for the data/mapping in question, and use the NSSDA equivalent of NMAS threshold values for accuracy. The mathematical relationship is described in the NSSDA document (Appendix 3-D). Table 2.3.1 below shows the results of this calculation for a range of scales.

Table 2.3.1 Threshold accuracy values in ground units.

Scale	NMAS accuracy (feet)	NSSDA $Accuracy_r$ (feet)	NMAS accuracy (meters)	NSSDA $Accuracy_r$ (meters)
Large scale	1/30 inch (map)			
1:1,200	3.3	3.8	1.0	1.2
1:2,400	6.7	7.7	2.0	2.3
1:6,000	16.7	19	5.1	5.8
1:12,000	33.3	38	10.1	12
Small scale	1/50 inch (map)			
1:24,000	40	46	12.2	14
1:63,360	106	120	32.3	37

When the FGDC began work on the NSSDA, the subcommittee used Accuracy Standards for Large-Scale Maps (Interim, 1990) from the American Society for Photogrammetry and Remote Sensing (ASPRS) as the basis for updating NMAS. The ASPRS standards use $RMSE_x$ and $RMSE_y$ as their base statistics, and state threshold values for various scales. (Note that $RMSE_x$ and $RMSE_y$ are NOT the same as $RMSE_r$.) Discussion of these standards can be found in the NSSDA document (section 3.1.5 and Appendix 3-D). Table 2.3.2 below shows the threshold values of the ASPRS Class 1 mapping standards and their translation into $Accuracy_r$ of NSSDA (note that statistical assumptions are involved in making this calculation). As comparison of $Accuracy_r$ values between the two tables shows, the ASPRS standards are stricter than NMAS.

Should the map producer not be able to test the quality of the submitted data by either of these two tests, then the producer shall document this fact in the metadata submitted with the digital GIS data. The NJDEP strongly recommends that when a producer of mapped information is not required to submit data to a quality standard by regulation or by contract, that an accuracy statement be submitted with the GIS data and referenced in the metadata.

Table 2.3.2 Threshold accuracy values in ground units.

Scale	Class 1 Planimetric Accuracy, limiting RMSE (feet)	Equivalent $Accuracy_r$, NSSDA (feet)	Class 1 Planimetric Accuracy, limiting RMSE (meters)	Equivalent $Accuracy_r$, NSSDA (meters)
1:60	0.05	0.12		
1:1,200	1.0	2.4		
1:2,000			0.50	1.2
1:2,400	2.0	4.9		
1:5,000			1.25	3.1
1:6,000	5.0	12.2		
1:10,000			2.50	6.1
1:12,000	10.0	24.5		
1:20,000	16.7	40.9	5.00	12.2

Derived from American Society for Photogrammetry and Remote Sensing Class 1

3.0 NEW JERSEY DEP - GIS DATA STANDARDS

The remainder of this document describes standards adopted by the NJDEP to facilitate data sharing and provide the basic standards for creating, describing and distributing spatial data on its GIS. The objective is to facilitate interactive analysis of data of the highest quality within the DEP.

3.1 Datum and Projection

3.1.1 Horizontal and Vertical Datums

The North American Datum of 1983 (NAD83)is required for mapping in the horizontal plane .The North American Vertical Datum of 1988 (NAVD 88) should be used when possible rather than the older National Geodetic Vertical Datum of 1929 (NGVD29).

3.1.2 Projection and Coordinate System

Based on the Chapter 218, Laws of New Jersey 1989, New Jersey State Plane is required in meters (NJDEP prefers feet), NAD83. The State of New Jersey is entirely contained within one state plane zone (2900). Special situations may require other projection systems for small-scale maps of regional (interstate) or national interest. The NJ DEP GIS prefers to use feet as the units of measure and serves all of its data in the following Projected Coordinate System: **NAD_1983_StatePlane_New_Jersey_FIPS_2900_Feet**

3.2 Data Capture Methodology and Procedure

GIS information comes from a variety of sources, which can produce a wide range of positional accuracy. Consequently, each source must be evaluated to determine whether redrafting is necessary to prepare the data for entry into the GIS. Heads-up digitizing, Tablet digitizing, Scanning, and Global Positioning Systems (See Section 4.0) are all viable

3.2.1 Heads-Up Digitizing

Heads-Up digitizing is a technique that is useful for capturing or updating data from digital imagery on screen. High-resolution digital imagery now allows GIS users to edit and delineate features directly on the screen using desktop GIS software. The following considerations should be carefully planned out in advance.

1. The user must document procedures when using this technique.
2. A Scale used for data capture should be established & documented. Recommended scales for digitizing should be between 1:2000 to 1:4000 over DOQQ. Below 1:1200 the imagery becomes extremely blurred. Above 1:4000 accuracy could be compromised.
3. Digitizing tolerances should be established and documented.
4. Users should maintain clear definitions or classifications of features that are being interpreted and delineated.
5. Ground truth (field verification) remains an important step in establishing the quality of heads-up digitizing, particularly for land cover delineation.
6. Make sure appropriate entries concerning the quality of the data are documented in the metadata files.

Detailed classification systems and resolution of imagery may require that features be captured on the screen and then photo-interpreted from aerial photography to the digital image. Photo-interpreting and heads-up digitizing at the same time can be extremely difficult even for experienced users.

All attribute coding shall be 100% correctly coded. A full description of each code should be provided as part of the metadata. The coding of features should follow an approved classification system as adopted by state and federal agencies. These codes follow specifications of organizations responsible for deriving and maintaining the data. For example, the DEP uses the Cowardin et al. (1979) system for the Classification of Wetland and Subaqueous Lands in the United States as adopted by the National Wetlands Inventory of the U.S. Fish and Wildlife Service. In addition the Department supports a modified version of Anderson et al. (1976), USGS, for classifying land use/land cover. For prototype classification schemes, clear concise documentation describing the classes is required.

prior to digitization to eliminate cartographic errors and reduce digital problems. Digital accuracy shall be evaluated by proof plotting the digital data to the base at the same scale as the manuscript and overlaying the data to the original map. The line work should be digitized in such a way as to create a digital copy that is within +/- one line width of the original. Edits can be flagged and corrected such that the standard is met. Coverage TICS should be identified and RMS errors documented in the metadata.

3.2.3 Scanning and Recompilation

Scanning of features from hardcopy sources or the recompilation of existing digital data, involves the redrafting of features from one source to a more accurate, planimetric source based on identifiable features. This method is commonly used to improve the quality of data that has been delineated on sources of unknown or unspecified quality or paper manuscripts. It is also commonly used to transfer data or non-rectified photography to a rectified orthophoto basemap based on a series of local fits of common photo-identifiable features, such as roads.

Other data sources without photo-images may be recompiled to planimetric sources by using other coincident features. For instance, grids on source data may be generated and plotted to planimetric basemaps and used as a guide for the redrafting of information that would otherwise not be usable in a digital form. This has been used to draft historical purveyor boundaries from old atlas sheets to the photoquads, for instance. Whatever the technique, metadata must be completed describing the recompilation techniques employed.

4.0 GLOBAL POSITIONING SYSTEM (GPS)

The NAVSTAR Global Positioning System (GPS) has become a mainstream technology for data collection for GIS. In New Jersey, state, county and municipal government agencies, academic institutions, public utilities, non-profit organizations, and private firms are using the technology to collect positions of features associated with their activities. A GPS receiver is able to determine its 3D position (latitude, longitude, and elevation) on the surface of the earth, store location information and convert the coordinates into features for use in a GIS. Users can not only capture a feature's location, but also enter descriptive attribute data that significantly adds to the final data layer's value in GIS.

processing techniques used, the horizontal range of accuracy can be 15 meters to sub-centimeter.

Positional data collected with GPS must, at a minimum, meet within a 5 meter, 95% confidence standard. This requires all GPS data to be differentially corrected. If accuracy requirements call for higher accuracy, parameter settings have to be adjusted accordingly in order to meet the higher standard.

NJDEP has adopted standards for the critical settings for rover (field data) receivers that are consistent regardless of which receiver model is being used. Users should not deviate from these standards. These settings include:

Table 4.0.1 Critical and Recommended Settings for Data Collection

Standard GPS Collection Parameter Settings

Position Mode	Manual 3D is the normal setting.
Elevation Mask	15 degrees above horizon.
PDOP Mask	6
Signal to Noise Ratio Mask (SNR)	6
Minimum Positions for Point Features	200 (100 for Trimble Pro XL, 60 for Pro XR)
Logging Intervals	Intervals for point features will be 1 second or faster. Intervals for line and area features depend on the velocity at which the receiver will be traveling and the nature of the feature and the operating environment. Under normal circumstances (i.e., when the user is walking with the receiver) the interval for line and area features will be set to a 5-second interval.
Logging of DOP	Turned On.

For detailed information on recommended GPS receiver settings and collection procedures, see NJDEP's *Standards for Using Code-Based Global Positioning Systems (GPS) for the Development of Accurate Location Data for Use with Arc/Info and ArcView Geographic Information Systems*. (http://www.state.nj.us/dep/gis)

metadata standard which all federal agencies are required to follow for each digital data layer. The DEP requires that metadata be provided with each digital data layer and that the metadata be FGDC compliant. Standard FGDC compliant metadata is a critical component of information management systems (clearinghouses) on the World Wide Web (WWW) and for any interactive mapping applications provided across the WWW.

The following is a statement from the FGDC on the metadata standard:

> The objectives of the standard are to provide a common set of terminology and definitions for the documentation of digital geospatial data. The standard establishes the names of data elements and compound elements (groups of data elements) to be used for these purposes, the definitions of these compound elements and data elements, and information about the values that are to be provided for the data elements.
>
> This standard is the data documentation standard referenced in the executive order (Executive Order 12906, "Coordinating Geographic Data Acquisition and Access: the National Spatial Data Infrastructure)." The standard was developed from the perspective of defining the information required by a prospective user to determine the availability of a set of geospatial data, to determine the fitness the set of geospatial data for an intended use, to determine the means of accessing the set of geospatial data, and to successfully transfer the set of geospatial data. As such, the standard establishes the names of data elements and compounds elements to be used for these purposes, the definitions of these data elements and compound elements, and information about values that are to be provided for the data elements.

For more information on metadata, go to the New Jersey Spatial Data Clearinghouse and "Search" for data. Examples of metadata for GIS coverage's are there. For a description of metadata and a free metadata tool, go to www.state.nj.us/dep/gis and click on "ENDEX." Additional information can be found at www.fgdc.gov/metadata/metadata.html.

6.0 DATA TRANSFER STANDARDS

In order to enhance data exchange, the following standards should be followed. Presented below are recommended exchange standards for ESRI's Arc suite of products.

Table 6.1.1 NJDEP GIS Compatible Configurations

PLATFORM	*UNIX Workstation*	*PC*
OPERATING SYSTEM	**UNIX**	**Windows 2000, NT**
SOFTWARE/ File Format	**ArcGIS 8.x** **Geodatabase** **Coverage** **Shape Files** **Arc/INFO 7.x** **Coverage** **Shape Files** **ArcView 3.x** **Coverage** **Shape Files** **DXF**	**ArcGIS 8.x** **Geodatabase** **Coverage** **Shape Files** **ArcView 3.x shape files** **DWG (AutoCad)** **DGN (Microstation)** **DXF**
DATA TRANSFER	**Arc/Info Interchange File (*.e00)**	**Arc/Info Interchange File (*.e00)** **Winzip**
MEDIA	**CD-ROM (CD-R)** **8 MM**	**CD-ROM (CD-R)** **3 1/2" HD 1.44MB**

6.2 DATA DISTRIBUTION

6.2.1 Digital Transfer Methods

Data are available in the following a variety of formats from a variety of sources today. The formats, usually available in compressed Zip file format, should be compatible with Table 6.1. The NJ Spatial Data Clearinghouse (***http://njgeodata.state.nj.us/)*** is the preferred centralized location and method for data distribution to users outside the DEP.

6.2.2 Data Supplied by NJDEP

For data supplied by the NJDEP the following Distribution Agreement (NJDEP) shall accompany all data transfers. The users agrees to abide by the terms and conditions of the following:

I. Description of Data to be provided

The data provided herein are distributed subject to the following conditions and restrictions.

For all data contained herein, (NJDEP) makes no representations of any kind, including, but not limited to, the warranties of merchantability or fitness for a particular use, nor are any such warranties to be implied with respect to the digital data layers furnished hereunder. NJDEP assumes no responsibility to maintain them in any manner or form.

II. Terms of Agreement

1. Digital data received from the NJDEP are to be used solely for internal purposes in the conduct of daily affairs.

2. The data are provided, as is, without warranty of any kind and the user is responsible for understanding the accuracy limitations of all digital data layers provided herein, as documented in the accompanying Metadata, Data Dictionary and Readme files. Any reproduction or manipulation of the above data must ensure that the coordinate reference system remains intact.

3. Digital data received from the NJDEP may not be reproduced or redistributed for use by anyone without first obtaining written permission from the NJDEP. This

Department of Environmental Protection Geographic Information System digital data, but this secondary product has not been verified by NJDEP and is not state-authorized."

5. Users shall require any independent contractor, hired to undertake work that will utilize digital data obtained from the NJDEP, to agree not to use, reproduce, or redistribute NJDEP GIS data for any purpose other than the specified contractual work. All copies of NJDEP GIS data utilized by an independent contractor will be required to be returned to the original user at the close of such contractual work.

   Users hereby agree to abide by the use and reproduction conditions specified above and agree to hold any independent contractor to the same terms. By using data provided herein, the user acknowledges that terms and conditions have been read and that the user is bound by these criteria.

6.2.3 GIS Data on CD-ROM Order Process

Some Departmental data are currently available on CD-ROM and can be purchased through NJDEP Maps and Publications. However, the trend has been to post GIS data at the NJ Spatial Data Clearinghouse, http://njgeodata.state.nj.us. The 1995/97 Digital imagery is available on CD-ROM for $30.00 per CD. See www.state.nj.us/dep/gis for an up-to-date discussion of data on CDROM and links to other CD-ROMs and data sources. (Note: some CD-ROMs may no longer be available. Check the NJ Spatial Data Clearinghouse).

Please contact Map & Publications directly at:
NJ Department of Environmental Protection Maps and Publications
P.O. Box 438
428 E. State Street
Trenton, NJ 08625
(609) 777-1038

Make checks payable to: Treasurer, State of New Jersey.

APPENDIX

Appendix A. National Map Accuracy Standard (NMAS)

NATIONAL MAP ACCURACY STANDARDS
United States National Map Accuracy Standards
U.S. Bureau of the Budget, Revised June 17, 1947

With a view to the utmost economy and expedition in producing maps, which fulfill not only the broad needs for standard or principal maps, but also the reasonable particular needs of individual agencies, standards of accuracy for published maps are defined as follows.

1. Horizontal accuracy, for maps on publication scales larger than 1:20,000, not more than 10% of the points tested shall be in error by more than 1/30 inch, measured on the publication scale; for maps on publication scales of 1:20,000 or smaller, 1/50th of an inch. These limits of accuracy shall apply in all cases to positions of well-defined points only. Well-defined points are those that are easily visible or recoverable on the ground, such as the following: monuments or markers, such as benchmarks, property boundary monuments; intersections of roads, railroads, etc.; corners of large buildings or structures (or center points of small buildings); etc. In general what is well defined will also be determined by what is plotable on the scale of the map within 1/100 inch. Thus, while the intersection of two road or property lines meeting at right angles would come within a sensible interpretation, identification of the intersection of such lines meeting at an acute angle would obviously not be practicable within 1/100 inch. Similarly, features not identifiable upon the ground within close limits are not to be considered as test points within the limits quoted, even though their positions may be scaled closely upon the map. In this class would come timberlines, soil boundaries, etc.

2. Vertical Accuracy, as applied to contour maps on all publication scales, shall be such that not more than 10 percent of the elevations tested shall be in error more than one-half the contour interval. In checking elevations taken from the map, the apparent vertical error may be decreased by assuming a horizontal displacement within the permissible horizontal error for a map of that scale.

3. The accuracy of any map may be tested by comparing the positions of points whose locations or elevations are shown upon it with corresponding positions as determined by surveys of a higher accuracy. Tests shall be made by the producing agency, which shall also determine which of its maps are to be tested, and the extent of such testing.

scale published map."

7. To facilitate ready interchange and use of basic information for map construction among all Federal mapmaking agencies, feasible and consistent with the uses to which the map is to be put, shall conform to latitude and longitude boundaries, being 15 minutes of latitude and longitude, or 7.5 minutes, or 3-3/4 minutes in size. (From Thompson, 1987).

Appendix B. Digital Imagery Which Meets NMAS

The State Mapping Advisory Committee, Aerial Photo Subcommittee, has produced a 1995-97 statewide digital imagery in partnership with the USGS, National Mapping Division. The imagery conforms to the standards of USGS "standard product" for digital orthophoto quarterquads (DOQQs). Many organizations including DEP use these high quality images as digital base maps for mapping applications.

The 1995/97 imagery is color infrared (CIR), has 3 bands, 1 meter resolution, and is NAD83 in UTM (meters). The standard product is available through the USGS EROS Data Center. The DEP has made the data available on the GIS server and on a set of CD-ROMs in SPC feet, NAD83. The CD-ROMs are available through Maps and Publications.

Federal Resource: http://edcwww.cr.usgs.gov/webglis
http://mapping.usgs.gov/
USGS (703) 648-5931

State Resource: **Maps and Publications (609) 777-1038**
http://njgeodata.state.nj.us **NJ Spatial Data Clearinghouse**

The 1991-92 digital imagery is available at 5-ft (quarter quad) resolution or 10 ft (quad) grayscale (1 band) digital files, NAD83. These images meet NMAS at the production scale (1:12000) and are the manuscript images from which the 1991-92 Mylar basemaps were made. The files are *.gis* (ERDAS) files and are 16mb each. These digital images are available only from MARKHURD.

Contractor Resource: **MARKHURD, Minneapolis, MN (1-800-MAP-HURD).**

Appendix C. New Jersey Basemaps Which Meet NMAS

The New Jersey Department of Environmental Protection (DEP) has created several source basemaps that are available for mapping initiatives that meet or exceed NMAS. Basemaps provide the foundation for many mapping projects and for the display of mapped information. As such, basemaps must meet uniform, rigorous standards for positional accuracy and cartographic integrity. Over the years, several series of quality basemaps that meet or exceed NMAS have been produced. Basemaps can be either hardcopy (Mylar or acetate) or digital (softcopy). A statewide synoptic set of hardcopy basemaps for New Jersey was made from aerial over-flights sponsored by the DEP in 1991 and 1986. In both cases, both quadrangle (1:24000) and quarter quadrangle (1:12000) hardcopy Mylar basemaps were produced. Other basemaps cover specific areas only, such as the 1977-78 Tidelands photo basemaps. Two series of digital (softcopy) basemaps have also been produced, from the 1991 and 1995/97 over-flights. The digital images were produced at quarterquad scale (1:12000).

* Hardcopy (Mylar) Basemaps

Listed below in order of general overall quality is available New Jersey basemap series that were produced on stable base mylar and meet a definable mapping standard (NMAS). The first four series listed are photo basemaps, derived from aerial photography. The 1991/92 and the 1986 wetland series are both orthophoto basemaps compiled from a sophisticated aero-triangulation process. They should be used whenever possible to generate GIS compatible data and/or to use as a recompilation base.

All the hardcopy basemaps described herein with the exception of the 1991/92 products are referenced in NAD27. For this reason, the 1991/92 mylar basemap quads (1:24000) and quarterquads (1:12000) series, referenced in NAD83 are highly recommended by the DEP over all other sources listed for mapping at these scales. Stable base site maps of large scale meeting NMAS, produced by surveying, mapping or photogrammetric firms may qualify as GIS compatible if they contain a minimum of four registration tics in the New Jersey State Plane Coordinate System, North American Datum 1983 (NAD83), the official survey base of New Jersey. The USGS topoquad series are not recommended as a delineation source because they are generally available only on paper and are not synoptic data sources. Rather, they represent variable data sources and dates.

datum, NAD83. This basemap series is highly recommended by the DEP for mapping efforts at these scales.

* **1986 Freshwater Wetlands Orthophoto Quarterquad Basemaps (1:12000)**

The passage of the Freshwater Wetlands Act of 1987 required the state to produce a composite map of the freshwater wetlands (FWW) for the state. Subsequently, a set of 635 chronoflex photo quarterquads for the entire state from the March 1986 overflight was produced. The maps represent an excellent source for both photo-interpretation and recompilation at a county, municipal or site level. However, these maps are dated and are referenced in the old datum (NAD27). The 1991/92 series now supercedes these maps. There is also a set of composite hardcopy FWW maps with the delineation superimposed on the image.

* **1986 Photoquad Basemaps (1:24000)**

A statewide overflight in March 1986 produced a complete set of stable base photoquads at 1:24000. The control for the production of these basemaps was the mylar USGS 7.5-Minute topoquads. The photoquads have been widely used both to create data layers and to recompile other data sources from paper or non-planimetric sources. These basemaps did not follow rigorous orthophoto techniques and are referenced in the old datum. The 1991/92 basemaps supercedes these maps.

* **1977/78 Tidelands Basemaps (1:2400)**

The tidelands maps are a series of 1:2400 base maps for the coastal zone that include all tidal areas in the state to delineate the State's claim to all tide-flowed lands. The series consists of 1628 photo basemaps. These maps are rectified products that meet NMAS below the ten-foot contour. The photo-image is late summer of 1977 and 1978. These maps cover the entire coastal zone up to the head-of-tide.

* **USGS 7.5-Minute Series Topoquad Basemaps (1:24000)**

The USGS has published an entire series of 172 topographic maps for the state at a scale of 1:24000. The base information ranged from the late 1940's to the 1980's with photo-updates into the mid 1990's. Because these maps vary in source date, and becaus

Appendix D. Basemap Resources

Mylar photo basemaps from 1991, 1986 and 1977/78 and the digital imagery from 1991 may be obtained from MARKHURD, Minneapolis, MN (1-800-MAP-HURD). There are several sets of the 1986 and 1991 chronoflex (mylar) basemaps in the Department. The GIS Unit has a set of each for reference.

Paper prints of 1986 and 1991 orthophoto basemap series, as well as paper prints of USGS topoquads, may be obtained from DEP Maps and Publications; (609) 777-1038. Paper prints from the 1977/78 series are available from the Tidelands Element: (609) 292-2573.

Topoquads and other USGS federal maps (and aerial photos) may be ordered from (1-800-USA-MAPS or (703) 648-5931.

* Aerial Photograph Resources

Historic aerial photography is available for inspection at the DEP Tidelands Management Program (TMP) by scheduled appointment. The 1986, 1991/92 and 1995/97 photo color infrared frames are also available for inspection at the TMP. Appointments are required. The 1991/92 and 1995/97 photos may also be purchased from the USGS EROS Data Center.

Federal Resource:	http://mapping.usgs.gov/ **USGS (703) 648-5931**
DEP Resource:	**Tidelands Management Program (609) 633-7369**

Appendix E. Metadata

For examples of metadata please go to the New Jersey Spatial Data Clearinghouse and search for GIS data (http:\\njgeodata.state.nj.us. For additional resources go to the NJDEP GIS website (www.state.nj.us\dep\gis) for a description of metadata and a free metadata tool.

Appendix F. Internet Resources

NJDEP, GIS http://www.state.nj.us/dep/gis

GPS Resource: http://www.state.nj.us/dep/gis

FGDC Resources:
http://fgdc.er.usgs.gov/standards
http://geochange.er.usgs.gov/
http://www.fgdc.gov/
http://www.fgdc.gov/standards/standards.html
http://www.fgdc.gov/standards/documents/proposals/swathpr3.html

USGS Resource: http://edcwww.cr.usgs.gov/
(EROS) Data Center

ASPRS Resource: http://www.asprs.org/asprs/resources/standards.html

NOAA Resource: http://www.csc.noaa.gov/ccap/protocol/protocoltxt.html
Coastal Change Analysis Program (C-CAP): "Guidance for Regional Implementation"

Private Resource: http://www.spaceimaging.com/
Contains Landsat TM ortho-corrected processing procedures.

Surveyor Resource: http://www.njspls.org/
(NJ Society of Professional Land Surveyors)

APPENDIX C

NEW JERSEY
STATE HIGHWAY ACCESS
MANAGEMENT CODE

(New Jersey Administrative Code Title 16 Chapter 47)

Electronic copies of this document are not yet available for download. To obtain a hard copy of the published version, please contact the following office:

New Jersey Department of Transportation
Engineering Documents Unit
1035 Parkway Avenue
Trenton, New Jersey 08625
609-530-5587