CHAPTER 21. PARTICIPATION IN THE PREPARATION OF THIS PLAN.

21.1 The Public Participation Process.

A public participation summary, including a chronology of activities, lists of participants, and written public comments, is contained in Appendix Volume 9.

21.1.1 Local Participants in this Planning Process.

This plan was developed with the active, ongoing participation of a uniquely qualified body of nationally recognized environmental advocates, technical experts, local civic groups, community and business representatives, and staff members of elected officials. Formal and informal citizens' advisory groups played a leading role in the public participation process. These included the five borough Citizens' Solid Waste Advisory Boards (SWABs) and the Citywide Recycling Advisory Board (CRAB) established by Local Law 19, a Sludge Management Citizens Advisory Committee (CAC) and Technical Advisory Committee formed by the Department of Environmental Protection, and a Medical Waste Advisory Committee coordinated by the Health and Hospitals Corporation for the medical waste study.

From the inception of this project, these groups were regularly briefed on the status of the planning process. Early in the process, each of the borough SWABs and the CRAB were provided with preliminary draft outlines of this document for their comments, which then were incorporated into a formal Draft GEIS Outline that was widely distributed as part of the formal scoping process for this plan. A "scope and process" document also was distributed with that Draft Outline to all of the City's 59 community boards and elected officials, as well as to various agencies and other interested parties. The Medical Waste Advisory Committee, which included representatives of the health-care community and other interest groups, met regularly with HHC staff and their consultants, and with Sanitation Department staff throughout the development of the medical waste study. DEP's advisory committees have been overseeing each stage of the sludge-management planning process.

One of the unique features of the public participation process for this plan is the role of independent technical consultants. With funds provided by the Sanitation Department, the Bronx and Manhattan SWABs each have retained independently selected consultants (the Queens College Center for the Biology of Natural Systems [CBNS] and Resource Recycling Systems, Inc. of Ann Arbor, MI, respectively) to assist them in their review of this plan. DEP's CAC also hired its own technical consultants, Engineering-Science, Inc. of Cary, NC to review aspects of the sludge plans.

Another unique feature of the planning process was the role of a Technical Working Group convened by the Department of Sanitation in January 1991 to review intensively the details of the planning process, focussing particularly on the technical data and alternative-scenario analyses. This informal group of about 20 regular participants, comprising environmental, civic, business groups and elected officials' representatives, met bi-weekly with Sanitation Department staff for about six months during the primary scenario-analysis phase of planning to review analysis results and other plan-development progress.

In addition, Department of Sanitation staff and other representatives of the Mayor's Interagency Solid Waste Management Planning Committee participated in and made presentations at a variety of local public forums and meetings.

21.1.2 Consultation with Representatives of Neighboring Jurisdictions.

The formal scoping documents for this Plan/GEIS that were distributed widely within New York City were also mailed to every county in New York State, to the NYS Legislative Commission on Solid Waste Management, to the New Jersey Department of Environmental Protection, and to regional agencies, including the Regional Plan Association, the Interstate Sanitation Commission, and the Port Authority of New York and New Jersey.

Department of Sanitation staff also provided briefings for the local offices of the U.S. EPA and Army Corps of Engineers, as well as for the EPA's Citizens Advisory Committee on the New York Bight, the Regional Plan Association, and the Port Authority.

21.2 Responsiveness Summary: Responses to Comments on the Draft Plan/Generic Environmental Impact Statement.

21.2.1 Responses to DEC Comments.

CAROL ASH, REGIONAL DIRECTOR, TO BARBARA FIFE, DEPUTY MAYOR FOR PLANNING AND DEVELOPMENT, 5-29-92.

I. Non-Compliance with General Municipal Law, Section 120-aa

The draft plan does not comply with the date (September, 1992) that DEC claims is the deadline for implementing (rather than simply enacting requirements for) a citywide source-separation program, and with the requirements for commercial waste to be source-separated rather than processed for post-collection separation.

See revised Chapter 19.

II. Air Emission Offsets

The plan does not address the need for emissions offsets in relation to the upgrading of existing incinerators or the development of new waste-to-energy capacity, as required by the Clean Air Act for construction after November, 1992.

The Sanitation Department intends to move forward with the construction of the proposed Brooklyn Navy Yard resource recovery project and to rehabilitate the Southwest Brooklyn incinerator. If permits to construct are not issued for the Brooklyn Navy Yard project or the upgrade of the Southwest Brooklyn incinerator prior to the projected November 15, 1992 elimination of the resource recovery plant emission offset exemption in the State New Source Review regulations (6 NYCRR Part 231), offsets may be necessary for the Brooklyn Navy Yard facility. They will not be needed for the Southwest Brooklyn upgrade.

At present, New York State has no in-place regulatory framework for offset-emissions-trading and -banking networks. As a result, offset-emissions planning for waste-to-energy plants must be somewhat speculative. Nevertheless, the City is investigating whether sufficient emission offsets for nitrogen oxides and carbon monoxide can be obtained from City sources. Offsets should be available as a result of the closure of the Betts Avenue incinerator, and, if it is closed, from the Greenpoint incinerator. The City DOS has also initiated discussions with the City DEP to determine how best to quantify the emissions produced by apartment house and hospital incinerators so that potentially available offsets can be accurately calculated and documented. We also will be discussing the possibility of other City sources. In addition, Wheelabrator, Inc., the waste-management company responsible for the construction of the Brooklyn Navy Yard facility, will be expected to secure the offsets necessary for the Brooklyn Navy Yard permit that the City does not supply. Another possible source of offsets associated with the Brooklyn Navy Yard project would be Con Edison's reduced need to burn oil to create steam, because steam will be sold to Con Edison as part of the Brooklyn Navy Yard agreements. The update to this plan will provide specific information on the results of the City's efforts to quantify emissions available for offsets.

The City is aware of California's costly emission-offset development experience, and recognizes that the cost of obtaining emission offsets and the uncertainty of the

application of still-developing regulations is likely to add to the cost of waste-to-energy projects. The City does not, however, believe that this cost will require that the incineration portion of the plan be replaced by an alternative waste-management technology.

III. Financing

The plan does not identify a committed funding source for financing the proposed programs. The Department of Environmental Conservation would look favorably on the formation of a solid-waste-management authority for managing the City's solid-waste-management programs as a method to insulate the City's proposed program from the vagaries of annual budget dynamics.

See new section 19.4 .

IV. Lack of an Implementation Program and Schedule

The plan does not propose a clearly defined implementation schedule for the development of specific facilities and programs.

See revised section 19.1.

V. Landfill Capacity

Probable export restrictions, potential delays in program implementation, or other factors, would affect the rate at which the capacity of the Fresh Kills landfill would be depleted. The "scenarios" that could impact the life expectancy of the Fresh Kills landfill should be addressed. The possible siting of a new landfill(s) within the City's boundaries should be addressed in greater detail. "Additionally, the City must address in greater detail in its plan the possibility of utilizing capacity at landfill(s) outside of NYC if it is demonstrated that sufficient capacity meeting the Part 360 requirements cannot be developed in the City."

A landfill life-expectancy analysis is presented in Figure 21.2.1-1.[1]

While a landfill could theoretically be of any size, there are very clear economies of scale related to volumetric capacity (and the life-expectancy associated with any new facility after the cost and time requirements involved in developing it): since many regulatory/infrastructural costs are fixed (e.g., liner requirements), the larger the base, the less expensive the per-ton costs. A reasonable judgement could therefore be made to support a minimum actual fill area of approximately 40 acres (the size of the

Figure 21.2.1-1: Fresh Kills Life Expectancy Under Various Waste-Input Assumptions

LANDFILL REMAINING YEARS AND FINAL DATES V/S. LANDFILLING RATE

ASSUMPTIONS:

1. LANDFILL VOLUME REMAINING AS OF JANUARY 1992: 100,000,000 CY
2. OPERATION AT 313 DAYS / YEARS AT STATED RATE

LANDFILL RATE (TPD)	2000		4000		6000		8000		10000		12000		14000	
EFFECTIVE DENSITY (LBS / CY)	REMAIN. YEARS	FINAL DATE	REMAIN. YEARS	FINAL DATE	REMAIN. YEARS	FINAL DATE	REMAIN. YEARS	FINAL DATE	REMAIN. YEARS	FINAL DATE	REMAIN. YEARS	FINAL DATE	REMAIN. YEARS	FINAL DATE
1000	79.9	2071.9	39.9	2031.9	26.6	2018.6	20.0	2012.0	16.0	2008.0	13.3	2005.3	11.4	2003.4
1200	95.8	2087.8	47.9	2039.9	31.9	2023.9	24.0	2016.0	19.2	2011.2	16.0	2008.0	13.7	2005.7
1400	111.8	2103.8	55.9	2047.9	37.3	2029.3	28.0	2020.0	22.4	2014.4	18.6	2010.6	16.0	2008.0
1600	127.8	2119.8	63.9	2055.9	42.6	2034.6	31.9	2023.9	25.6	2017.6	21.3	2013.3	18.3	2010.3
1800	143.8	2135.8	71.9	2063.9	47.9	2039.9	35.9	2027.9	28.8	2020.8	24.0	2016.0	20.5	2012.5
2000	159.7	2151.7	79.9	2071.9	53.2	2045.2	39.9	2031.9	31.9	2023.9	26.6	2018.6	22.8	2014.8

LANDFILL RATE (TPD)	16000		18000		20000		22000		24000		26000		28000	
EFFECTIVE DENSITY (LBS / CY)	REMAIN. YEARS	FINAL DATE	REMAIN. YEARS	FINAL DATE	REMAIN. YEARS	FINAL DATE	REMAIN. YEARS	FINAL DATE	REMAIN. YEARS	FINAL DATE	REMAIN. YEARS	FINAL DATE	REMAIN. YEARS	FINAL DATE
1000	10.0	2002.0	8.9	2000.9	8.0	2000.0	7.3	1999.3	6.7	1998.7	6.1	1998.1	5.7	1997.7
1200	12.0	2004.0	10.6	2002.6	9.6	2001.6	8.7	2000.7	8.0	2000.0	7.4	1999.4	6.8	1998.8
1400	14.0	2006.0	12.4	2004.4	11.2	2003.2	10.2	2002.2	9.3	2001.3	8.6	2000.6	8.0	2000.0
1600	16.0	2008.0	14.2	2006.2	12.8	2004.8	11.6	2003.6	10.6	2002.6	9.8	2001.8	9.1	2001.1
1800	18.0	2010.0	16.0	2008.0	14.4	2006.4	13.1	2005.1	12.0	2004.0	11.1	2003.1	10.3	2002.3
2000	20.0	2012.0	17.7	2009.7	16.0	2008.0	14.5	2006.5	13.3	2005.3	12.3	2004.3	11.4	2003.4

proposed Staten Island ashfill, within a 75 acre parcel that includes appropriate "buffers.") Given the other siting requirements for landfills -- e.g., distance from ground and surface water, buffer requirements, distances from airports, height restrictions, compatibility with adjacent land-uses -- which, combined, make landfills the most difficult type of facility to site (i.e., constitute the most restrictive set of siting requirements), it can be easily seen (see the computer maps of potentially appropriate areas in the draft plan, pp. 13-7 to 13-8; 17-10 to 17-14) that there are no such sites in the City of New York, with the possible exception of closed landfills.

Closed landfills present another set of difficulties. In view of the technological problems associated with installing liners on top of existing fills and the DEC's reluctance to permit such activities, and the fact that landfill mining is not yet established for New York City conditions (and again, the DEC has shown reluctance to allow pilot tests at Fresh Kills), the "re-opening" of a closed landfill for continued landfilling is not a prospect that has any appreciable probability of feasibility.

If sufficient landfill capacity for the City's needs is not available at Fresh Kills, the City will issue requests for proposals for landfill and waste-to-energy capacity outside the City. The Department of Sanitation's fiscal year 1993 budget includes $4,000,000 to research the availability of out-of-city disposal capacity for the City's MSW.

ATTACHMENT I

I. Export Issues

What will happen if commercial waste cannot be exported? (I.A.)

If restrictions on waste export eventually require the disposal of this waste within the limits of New York City, it will be disposed of at the Fresh Kills landfill (see the table attached to the end of this response to DEC comments) and/or in whatever waste-to-energy or in-vessel compost facilities then exist.

What is the status of bills on export restrictions? (I.B.)

Update of Appendix 2B "Legal Constraints on Out-of-City Waste Export" and update of Congressional proposals on interstate waste transport restrictions.

The United States Supreme Court, in Fort Gratiot Sanitary

Landfill v. Michigan Department of Natural Resources, __ U.S. __(June 1, 1992), held that a Michigan law permitting localities to prohibit the importation of out-of-state, out-of-county, and out-of-country waste to private landfills was an unconstitutional restriction on interstate commerce. The Court re-affirmed prior decisions holding that solid waste is an article of commerce. It therefore found that states or political subdivisions of states cannot, absent Congressional authorization, erect barriers to the movement of solid waste based solely on its origin. However, Congress is actively considering various proposals that would authorize states to place certain restrictions on interstate waste transport. The most recent Congressional proposals are summarized below:

HR3865 - Swift (D - Washington) 6/9/92 as amended 6/23/92 - The provisions of this bill would prohibit the acceptance of out-of-state waste at landfills, incinerators, or other waste disposal facilities unless the locality in which the facility is located authorized receipt of out-of-state waste. The prohibition would not apply to facilities meeting all applicable design and operating standards that accepted out-of-state waste as of November 26, 1991. Effective 30 months after the enactment of the bill, no out-of-state waste could be accepted for disposal if the waste was generated by a state that had yet to submit to the EPA a solid waste management plan. This restriction would also apply to states that met the 30-month deadline for submission of a plan but which failed to obtain EPA approval of the plan within 42 months of the bill's enactment. In addition, an importing state would lose its authority to control imports if it failed to submit and have approved a state solid waste management plan within the above timeframes. On June 23, 1992, the bill was amended to authorize a Governor to prohibit affected local government from approving receipt of out-of-state waste if the solid-waste-management capacity is identified under that state's plan for waste generated by the local government.

S.2877 - Coats, R-Indiana and Baucus D-Montana, 7/23/92 - The provisions of this bill would authorize governors to prohibit or limit the importation and disposal of out-of-state waste upon the request of the local government or planning unit in which the disposal facility is located. A governor's authority to restrict import would be limited where such action would result in a breach of contract, except that contracts between private parties for disposal of out-of-state waste may be abrogated if the contracts exceed the amount imported under such contracts in 1991 or twice the volume of the first six month of 1992, whichever

is less. The proposal would grandfather landfills that accepted out-of-state waste as of the enactment date. However, governors could, if requested to do so by the affected local government, limit the amount of waste that could be accepted at grandfathered landfills to 1991 levels, or twice the volume of the first six months of 1992, whichever is less. Governors of states that received more than 1 million tons of out-of-state waste in 1991 (Pennsylvania, Virginia, Ohio, and Indiana) would be authorized to impose, without local government request, additional restrictions, such as freezing imports at 1991 levels or imposing a 70% in-state/30% out-of-state volume limitation at certain landfills accepting large quantities of out-of-state waste. In 1998 and 1999 the Governor may impose further restrictions at the request of the local government and planning unit, if any, by imposing and 80% in-state/20% out-of-state volume limit. The volume limit may be further decreased to 90% in-state/10% out-of-state for the year 2000 and thereafter.

II. Waste-to-Energy Issues

How much waste is disposed of in the on-site apartment house incinerators, how much ash, and where will this material go after these incinerators have closed? (II.A.1.)

As noted on p. 3-20, these incinerators burn an estimated 570 tons of waste a day, producing 171 tons of ash. After the closure of these incinerators, this material will be landfilled or processed in waste-to-energy or in-vessel-compost facilities.

What about emissions off-sets for nitrogen oxides and carbon monoxide? (II.A.2.)

As noted above in the Ash II response, the City recognizes that incinerator and waste-to-energy facilities permitted after November 15, 1992 will require offsets, and that the available offsets will be in limited supply, and may add to the capital costs of new facilities. As also noted in the above response, the City will take steps to procure offsets after the regulatory requirements governing this new regulatory program have been established.

III. Regulated Medical Waste Issues

The NYS DOH has not yet approved chop-and-bleach technology. (III.A.)

This technology is proposed for implementation only if the

NYS DOH approves its use.

Appendix Volume 8, February 1991 - in the Executive Summary on p. 3, item 18 indicates that inadequate regulatory standards for non-incineration technologies exist. This should be revised for clarity since regulations for non-incineration technologies have been promulgated by the NYSDEC and regulations for autoclaves have been promulgated by DOH. The Department's 6 NYCRR Subpart 360-17, Regulated Medical Waste Treatment Facilities regulations became effective January 25,1992. The City must contact DOH to determine the status of the 10 NYCRR Subpart 70-3, and appropriately reflect those regulations in the Plan. (III.B.1., 5.)

This section has been updated. However, the sense of the statement will not change since the regulations cited provide standards only for spore kill and not for environmental discharges. Moreover, 6 NYCRR Subpart 360-17 applies only to regional non-incineration technologies and the proposed 10 NYCRR Subpart 70-3 applies only to autoclaves on the site of a NYS Department of Health-regulated facility.

Appendix Volume 8, Executive Summary, Page 7 indicates that approximately 370 tons per day of medical waste will require incineration. There is no indication of any non-incineration technology alternatives. Is this an oversight or is the incineration alternative sufficient to handle the RMW from NYC? New York City should also be aware that as of the date of this memorandum, two non-incineration treatment facilities have been proposed in NYC. Also, the BFI regional autoclave proposal has been withdrawn. (III.B.2., 3.)

The study intended to specify incineration for the 370 TPD of medical waste remaining after the waste reduction/recycling measures and on-site non-incineration treatment, because these wastes, by such physical and chemical nature, are not suitable for non-incineration technologies. In any case, treatment technologies are not disposal technologies. The treated waste still has to be either landfilled or incinerated. Since the plan and the State hierarchy place lowest reliance on landfilling, any treated material would ultimately be incinerated.

Appendix Volume 8 - Section 3, p 165 of Volume 5, indicates that treated RMW would be collected with the non-RMW from hospitals in the same compactors as their regular wastes. This practice is unacceptable under current Department regulations...The Plan must reflect compliance with these regulations. (III.B.4.)

The co-collection of treated RMW with NRMW was an assumption for transportation analysis in a preliminary option that was evaluated. RMW and non-RMW will not, in fact, be collected in the same compactor. The Medical Waste Plan recommends on-site or off-site treatment of segregated Plastic Medical Apparatus for recycling. This material is not recommended to be added to the NRMW for co-incineration.

IV. Plan Implementation Issues

Chapter 19 should include a timetable that extends past 1996; identify adminstrative structures for implementing the plan (including an organizational chart); identify new laws, ordinances, regulations, or amendments to existing local laws, ordinances or regulations that may be required; a cost analysis and an identification of financing mechanisms. (IV.A.)

See revised section 19.1.

What efforts have been made or will be made to include neighboring jurisdictions in this plan? Special attention should be given to the discussion of waste that may be deposited at private transfer facilities that is originating in Long Island and New Jersey. (IV.B.1., 2.)

Comments on the draft plan were received from the Regional Plan Association, and appear in Appendix Volume 10.2. A discussion of the impacts on regional recycling markets (and competition with other jurisdictions within the region) is presented below in response to Attachment III, #10; the conclusion of this analysis is that the City's plan should not have a significant "limiting" effect on other jursidictions' waste-management programs. Given New York City's population density -- and therefore, waste-generation rates in relation to available space -- importing out-of-city waste into the city for disposal, for large-volume waste types, is not likely to be a practicable or desirable solution. Some continued degree of export of wastes from the city is more likely to be a practicable and desirable option, while some degree of importation of specialized wastes (e.g., regulated medical wastes) may be feasible. The City will be seeking to obtain out-of-city disposal capacity over the next decade as in indicated in Section 19.1. In particular, the City will seek ashfill capacity in the region for the years after 1995. For the processing and end-use of recyclable materials, both the importing of these materials into the city and the export of these materials out of the city are likely to be feasible and desirable.

A certain amount of waste from Long Island and New Jersey is processed by privately owned transfer stations in the City. City rules and regulations with respect to private transfer stations do not discriminate on the basis of the origin of the waste being processed.

V. Land Disposal/Composting/Facilities Development

Re-evaluate the environmental impacts of the Fresh Kills landfill, since "most [of the relevant] statements [in the draft plan] greatly minimize the contamination being caused by this landfill's operation or are simply inaccurate." (V.)

See the responses to V.C.5. and 6. below.

What is the right number for the city's daily sludge production in dry tons? (V.A.)

1995: 378.7 dry tons per day
2000: 414.9
2010: 486.1
2020: 512.3

C&D waste composition and generation should be presented in the plan as well as in the appendix. (V.B.)

See pg. 5-20 and 5-21.

Transfer station numbers in the appendix and in the main volume should match. (V.C.1.)

The correct (i.e., most recent) number, as stated in Subsection 3.2.4, is 115 transfer stations. The information in the appendix (which has now been updated), was based on an earlier survey.

The difference between non-putrescible waste transfer stations and fill material transfer stations should be clarified. (V.C.2.)

Fill material transfer stations, according to the Department of Sanitation's draft rules, are a sub-category of non-putrescible waste transfer stations; fill material transfer stations can only receive rock and soil that can be used for "clean fill."

The Wards Island Sludge Pilot Project processes one dry ton per day, not six. (V.C.3.)

The correction has been made.

Is the Fresh Kills tipping fee for commercial waste "about $80" or $57 per ton? Which fee was used in all the economic evaluations elsewhere in this document? (V.C.4.)

The fee is $40 per cubic yard. Depending on the density of the waste, this can translate to anywhere between $57 and $80 per ton. As-received waste may be about 1,000 lbs per cubic yard (i.e., $80/ton), while in-place (landfilled) waste will have a higher density due to additional compaction and settling at the landfill, which is why the figure 1,400 pounds per cubic yard (which would translate to $57/ton) was used in the footnote referred to. Neither figure was used in any of the economic evaluations in the plan.

The description of Fresh Kills' hydrogeology is an oversimplification. (V.C.5.)

The following paragraphs have been added to Section 3.6.1.2 to reflect the most current site data and characterizations:

The majority of the sediments underlying the Fresh Kills landfill consist of fine-grained, hydraullically restrictive materials, although lenses of transmissive, generally discontinuous sand strata occur within the overburden soil matrix. The majority of leachate discharge, estimated to be on the order of 1.5 million gallons per day, is routed through the shallow flow system (refuse or transmissive upper strata) into the surrounding river channels: the Arthur Kill, Fresh Kills, Main Creek, and Richmond Creek. The potential for migration of leachate to deeper transmissive sand strata occurs only within portions of the southern landfill area.

The Sanitation Department is currently completing the first stage of a $20-million engineering and hydrogeological investigation, which is being performed to support the design of leachate-control and -treatment facilities. Pursuant to the requirements of the Fresh Kills Consent Order, construction of the leachate mitigation system must be completed by November, 1996, with initiation of leachate treatment by December, 1996.

The description of landfill gas migration is inaccurate. (V.C.6.)

The following paragraph has been added to Section 3.6.1.2, "The Fresh Kills Landfill:"

The inevitable decomposition of landfilled refuse also

generates gaseous emissions. These "landfill gases" are composed of equal parts of methane (natural gas) and carbon dioxide laced with a small percentage of other compounds. As gas is generated by decomposition, it builds up pressure and moves through the cracks and crevices in the garbage. This movement results in the venting of landfill gas to the atmosphere or migration into soils adjacent to the landfill. Currently, most of the gases generated at the Fresh Kills landfill are safely vented to the atmosphere. To prevent the subsurface movement of landfill gas into surrounding soils, a series of vents is being installed aroiund the perimeter of the landfill to a facility owned by GSF Energy, which refines and polishes the gas to supply the needs of 20,000 residential customers of Brooklyn Union Gas on Staten Island. Proposals for installing gas-recovery systems in the remainder of the landfill are being solicited through an RFP. In addition, the Department is in the process of installing landfill-gas-monitoring and -control systems.

The discussion of the sludge program should be updated. (V.C.7.)

Section 3.7 has been updated.

Discuss the effects of the Clean Air Act Amendments on Fresh Kills landfill gas emissions. (V.C.8.)

While final regulations have not yet been promulgated for gas emissions from MSW landfills, it is presumed that the Fresh Kills landfill will be required to control landfill gas pursuant to the Clean Air Act (42 USCA Section 7401 et seq.). To meet this goal, the Department of Sanitation has included this requirement in the scope of its RFP for the Fresh Kills Gas Recovery Concession. The active gas collection system installed to recover gas from the landfill will be designed and operated to meet the regulatory efficiency requirements.

The references in section 3.12 should be to Chapter 552 of 1988, not Chapter 560. (V.C.9.)

Appropriate amendments have been made.

Discuss the effects of the newly published 40 CFR Parts 257 and 258 regulations on Fresh Kills. (V.C.10.)

For the most part, regarding Fresh Kills' compliance with these regulations, the criteria set forth in 40 CFR Parts 257 and 258 for the Fresh Kills landfill are subsumed by more stringent criteria in the 6NYCRR Part 360 regulations and the Department of Sanitation's obligations under the

Fresh Kills Landfill Consent Order. The Department of Sanitation expects that any provisions not already included in these provisions will be added to the NYS DEC's regulations through amendment.

A significant number of the currently operating C&D transfer/processing facilities do not have operating permits. (V.D.)

This has been noted in the text.

"Extensive demonstration projects" may not be necessary in most cases for approval to use compost as landfill cover. (V.E.1.)

The text has been amended.

What is meant by "green compost?" (V.E.2.)

Source-separated organics.

Some de minimis airborne particulate emissions will be generated from an ashfill. (V.F.)

This clarification has been made in the text.

What are the alternatives for future ash disposal (other than the proposed Fresh Kills facility that is discussed in Chapter 3)? (V.G.1.)

In the final plan, the City's preferred method for ash disposal after 1995 is to export to out-of-city ashfills and/or to contract for beneficial re-use of the ash (See Section 19.1). A facility would be developed at Fresh Kills or elsewhere in the City, only if these preferred options prove not to be feasible. As noted on p. 11-3, the 25-acre neck of Edgemere may be suitable for a variety of types of waste-management facilities; an ashfill might be one of these. See also the Draft EIS for the proposed Fresh Kills ashfill (section 5.2.1), which contains a discussion of alternative ashfill sites within New York City. It concludes that there are only three alternative locations in the city: the Coop City site in the Bronx, the former Ferry Point landfill in the Bronx, and the neck of the former Edgemere landfill in Queens.

Fresh Kills height limits have been amended. Volume computations should be re-evaluated, if necessary. (V.G.2.)

The text has been changed to reflect the slightly lowered heights. (The current height limits are 437' for sections

1&9, 270' for sections 6&7, 151' for sections 2&8, and 170' for sections 3&4.) This does not reduce the conservative volume calculations used.

Provide an assessment of landfill site alternatives. What acreage requirements were assumed for landfills? (V.G.3., H.1.)

See the response to Carol Ash comment V. above. The "reference facility" sizes assumed (although these were not used as binding limitations, since a new landfill could obviously be somewhat smaller, as noted in Ash response V.), as noted in Appendix 5-A, was 100 acres for an ashfill and 400 acres for an MSW landfill.

The statement is made that "the only facility type among those considered in the universe of feasible alternatives for this planning effort that has direct discharges to surface water other than normal runoff is a dredge-spoils-dewatering facility." Fresh Kills also has direct discharges to surface water. (V.H.2., J.3.)

The quoted statement, in context, is correct: among the "universe of reference facilities" considered for <u>new</u> implementation, only a dredge-spoils facility would have direct surface-water discharges.

References for sludge-pollutant reductions should be cited more specifically. (V.I.1.)

A footnote has been added to section 16.1.2, which states that a description of the New York City Industrial Pre-treatment Program is contained in the Task 15 report on the Long-Range Sludge-Management Plan produced by Stone & Webster Engineering Corporation, dated October, 1989.

Compost market assessments should include competition from other localities in the region. (V.I.2.)

The market study did recognize the existence of competing products and recognizes the difficulties in introducing new products, given the tight economic circumstances that the City is currently facing. The numbers shown in Table 16.3.1 and Table 9.4.2-1 show only modest (10 to 30 percent) penetration into most markets. If the City is to produce significant amounts of compost, it will need to develop a comprehensive educational and marketing program to ensure that even these goals can be met. The New York City Department of Environmental Protection has taken the first preliminary steps in this direction as part of its compost demonstration program.

Clarify the differences between a sludge compost facility and an MSW compost facility. (V.I.3.)

The final sentence in the first paragraph of section 16.3.3 has been revised to read, "In terms of facility design and operations, there are no significant differences between a facility designed to compost MSW alone and a facility designed to co-compost both MSW and sludge."

Fresh Kills is prohibited from use for sludge disposal; discuss the alternatives. (V.I.4.)

The prohibition on the use of Fresh Kills is understood; landfilling of sludge, as necessary, will be done at the out-of-city landfills that are part of the DEP's current interim management plan.

Table 17.1.2-1 lists a municipal solid waste landfill as having no volatile organic compound air emissions. This is not correct. Many volatile compounds are released to the air from a municipal solid waste landfill. The City of New York should look to their own data base to supply the accurate numbers for this category. (V.J.1.)

The VOCs emission factor shown for an MSW landfill in the Summary Matrix dated 4/10/92 in Appendix Volume 6 is outdated. The correct emission factor is 2.38E-02, not 2.38E-11 as shown in the revised facility sheet dated 3/92 in the appendix.

Using the correct VOCs emission factor, the ratio shown in the revised Table 17.1-2 is 3, as opposed to 0 as shown in the draft (3-30-92) version of the table.

Table 17.1.2-2 lists an ashfill as one of the eight facility types that were the most significant pollutant sources modeled by computer. Yet, as noted in a previous comment, ash landfills were cited as not generating any particulate emissions (one of the categories in this table). Ash landfills should be removed from this table and municipal solid wastes should be added since they are a far greater source of air pollutants than an ash landfill. (V.J.2.)

Emissions from an ash landfill were modeled as opposed to an MSW landfill for the following reasons:

- Fugitive emissions from MSW ash contains higher concentrations of heavy metals than fugitive emissions from landfills because they are concentrated into a smaller mass through incineration. Fugitive emissions

from an ashfill can therefore be considered more dangerous to human health.

- Of special concern with MSW ash landfills is the potential to volatilize mercury from exposed ash, less of an issue with a landfill.

- Modeling a landfill would be modeling an existing facility. This would be inconsistent with the rest of the prototypical modeling, which involved modeling only proposed facilities, such as the ash landfill.

An extrapolation of landfill particulate emission factors from ashfill modeling can be done in a very approximate way.

- The landfill particulate emission factor is several times higher than the ashfill particulate emission factor for two main reasons:

  - Travel on unpaved roads (the greatest contributor of particulate emissions) in a landfill is assumed to be about 16 times greater than for an ashfill.

  - The ashfill particulate emission factor is in terms of lb/ton of MSW as opposed to lb/ton of ash processed (a factor of 5) in order to make the emission factor comparable to other particulate emission factors.

- The ashfill emission factors and modeling results indicated that emissions from the unpaved access road accounted for nearly all of the particulate emissions. Therefore, a first approximation for impacts from a landfill would be to multiply the impacts from the ashfill by the ratio of the landfill particulate emission factor due to travel on the unpaved access road in lb/day by the ashfill particulate emission factor due to travel on unpaved roads in lb/day (119 lb/day/8.33 lb/day = 14.3).

- Dividing this ratio by the factor of 3 seen in Table 17.1.2-2 indicates that, as a first approximation, landfill impacts would exceed the particulate standard used in this study (the PSD increment) by a factor of almost 5.

It must be noted that the particulate standard used for this analysis is the Prevention of Significant Deterioration (PSD) increment, designed to provide a sufficient margin of clean air that allows for new sources of particulates. The PSD increment is a small fraction of the National Ambient

Air Quality Standard (NAAQS) for particulate. Based on this approximation, the incremental addition to the NAAQS for particulate from the landfill would be about 93%.

Site-specific measurements will establish more accurate data on particulate emissions. DOS has recently been required to provide NYSDEC with up to $750,000, and DEC to provide additional $250,000 to monitor the landfill to characterize specific emissions from the Fresh Kills Landfill, their contribution to the ambient air and their relevant contribution to the overall composition of air pollutants on Staten Island. This site-specific data will provide a sounder basis for comparison to health based standards.

Fresh Kills leachate data should be used in Table 17.1.3-1. (V.J.4.)

Table 17.1.3-2 depicts concentrations of several parameters typical of an ash landfill and of an MSW landfill. The ranges fall well within those documented by previous investigators (see Gleason, P. J., "Hydrogeologic Investigations for Landfill Remediation and Closure," in Groundwater Hydrology, Contamination, and Remediation, Scientific Publications Co., 1986, edited by Reza Khanbilvardi and John Fillos).

Additional representative concentrations from leachate characterizations for the Fresh Kills landfill have been added to a footnote to the table cited.

A night noise standard should be inserted for landfills in Table 17.1.11-1. (V.J.5.)

Landfill nighttime noise would not exceed daytime noise, which, as shown in the table, is well below both the nighttime and daytime standards.

Landfill costs should be added to Tables 17.1.11-1 and -2. (V.J.6., 7.)

These costs, which are presented in Appendix 5, were not originally in these tables because these costs are calculated somewhat differently than the costs of other facilities. However, these costs are now included in these tables.

The Fresh Kills permit application is due in March, 1995, not September. (V.K.)

This correction has been made in Chapter 19.

Section 3/4 of the Fresh Kills landfill must close in FY '93; so must section 2/8. (V.L.)

The noted clarification has been made in Chapter 19.

Updated sludge sampling data should be presented. (V.M.)

This has been done in Appendix 1-D.

Provide a discussion of pumping within the perimeter leachate containment system. (V.N.1.)

This has been done in Appendix 4-F.

Note that Part 360 requires "pipe within a pipe" construction of leachate transmission lines. (V.N.2.)

This is now reflected in Appendix 4-F.

Edgemere is closed. (V.N.3.)

The table in Appendix 4-L has been corrected.

The commercial tip fee at Fresh Kills is $40 per cubic yard, not per ton. (V.N.4.)

This correction has been made in Appendix 4-L.

The Sanitation Department regulates transfer stations for putrescible transfer stations as well as C&D transfer stations. (V.N.5.)

This regulatory change occurred after Appendix 4-L was originally drafted; this correction has now been made.

When will a new survey be conducted to update commercial transfer station tonngage? (V.N.6.)

It will be included in the update of this plan two years from now.

The leachate data in Tables 3, 4, and 5 of Appendix 4-N should be updated, and compared to ground-water standards. (V.N.7., 8.)

This has been done.

The "reference" ashfill is 100 acres, while the proposed Fresh Kills facility is only 70 acres. Please clarify. (V.O.1.)

"Reference facilities" were developed for planning and

analytical purposes. They do not reflect minimum size requirements (as noted in the response to comments Ash V and V.G.3./H.1.).

The discrepancy between 400 acres and 675 acres for the reference MSW landfill in two sections of Appendix 5 should be corrected. The facility description should be updated to reflect Part 360. (V.O.2.)

400 acres is the correct figure; the table in Appendix 5-G has been corrected. The description in Appendix 5-A has also been corrected.

Tables 8 and 9 of Appendix 5-H do not include landfill costs. (V.O.3.)

The cost structures of landfills is not amenable to their being presented in these tables. Detailed cost figures for landfills are instead presented at the end of Appendix 5-H.

VI. Sludge-Management and Dredge-Spoils-Management Issues

All sludge-management-plan documents prepared by the DEP should be appended to the plan. (VI.A.1, VI.E. and passim)

The waste-management plan now includes about 15,000 pages. "Appending" the many volumes pertaining the DEP's sludge-management plans that the DEP has already published and distributed and placed in public depositories would increase this amount several-fold, clearly adding insurmountable printing logistics and costs. Any copies of these materials desired by DEC staff will be sent to them directly.

Provide a timeline for the construction and operation of the proposed de-watering facilities. (VI.B.)

This has been added to section 4.6.

Provide a discussion of what the City is doing to obtain upland disposal sites for dredge-spoil disposal facilities. (VI.C.)

The Department of Sanitation is in the process of contracting with Frederic R. Harris for a comprehensive analysis of the Sanitation Department's dredging program, and development of alternative dredge-spoil disposal methods and sites. The scope of work for this $1.8 million contract includes site analysis and permitting services as well as an analysis of and recommendations concerning alternative technologies. Use of an alternative technology may preclude the need for the Department to develop its own de-watering facility at its own site. This

contract for consultant services should be in place by August, 1992, and work will begin at that time.

Where will sludge be landfilled if out-of-city export of sludge is curtailed? (VI.D.)

It is anticipated that sludge disposal in out-of-state landfills will be "grandfathered" if the current attempts to ban out-of-state shipments of waste are passed at the federal level. The contractor handling the sludge at the landfill has continuously kept the state and local municipality informed of the source of sludge being landfilled and no concerns have been raised.

VII. Construction and Demolition Debris Issues

Daily and intermediate cover are not synonymous. (VII.A.)

This clarification has been made on page 3-31.

Where is it documented in Appendix 4.2 that "there is sufficient landfill capacity for C&D debris within an economically feasible transport range to last beyond the planning period?" (VII.B.1.)

There are no restrictions on disposing of C&D debris in any MSW landfill. The amount of landfill capacity physically available within feasible transport distances of NYC is documented in Appendix 2-A. (The reference to Appendix 4.2 on p. 5-19 has been corrected.)

What would be the impact on Fresh Kills capacity if export of C&D waste were curtailed? (VII.B.2.)

See the table on landfill rates versus capacity depletion over time in the response to Carol Ash comment V above.

C&D screenings contain many materials, not just "dirt." The planned use of C&D screenings as cover material at Fresh Kills should be addressed in more detail. (VII.B.3.)

The inappropriate use of the term "dirt" on p. 5-19 has been corrected. See the response to 12.u. for a discussion of cover-material alternatives.

VIII. Other Issues

Local Law 19 should be appended to the plan. (VIII.1.)

Local Law 19 has been appended to Appendix 4-B.1.

Provide a schedule for future household hazardous waste (HHW) collection days. (VIII.2.)

The Sanitation Department plans to sponsor an HHW public-education program and HHW collection day in a community board in each of the five boroughs during May/June of 1993. It is expected that the collections will be held on approximately consecutive weeks to enable people to participate if they cannot attend the event located closest to their neighborhoods. The Department plans to continue to sponsor one-day collections in the spring and fall in subsequent years until such time that a program that includes fixed facilities or a mobile network can be funded and established.

How was the "useful life" of the proposed Fresh Kills ashfill derived? Provide a time line for its development. (VIII.3.)

The final plan proposes that the City contract for out-of-city ashfill capacity and attempt to develop a program for beneficial re-use of ash in lieu of developing the Fresh Kills ashfill. The useful life of the proposed Fresh Kills ashfill was taken from the Draft Environmental Impact Statement (DEIS) for the project, which was deemed complete by the Department of Environmental Conservation, as lead agency, in March 1991. Specifically, section 2.5.2 of the DEIS describes the proposed five-phase fill-progression plan for the facility; total landfill volumes and projected cell-by-cell lifespans are presented in Table 2-1. As proposed, the ashfill would have a total volume of 3.8 million cubic yards, of which 3.547 million cubic yards would be available for ash disposal (the remaining volume would be consumed by intermediate and final cover). Assuming an ash-delivery rate of 250 TPD during the facility's first three years of operation and 1200 TPD thereafter (with an assumed in-place density for ash of 2500 pounds per cubic yard), the facility would last for about 13 years. If the facility were used for ash only from the three upgraded City incinerators (at an estimated rate of 900 TPD) it lifespan would be roughly 20 years.

"Manufacturing, commercial and/or industrial waste" is not among the waste streams listed in the Executive Summary. (VIII.4.)

That is because "industrial" waste is specifically precluded from consideration under Part 360-15. Industrial waste regulations fall outside the regulatory framework for most "municipal" solid wastes. "Municipal solid wastes" are included in this plan; the definition of "MSW" -- as

opposed to "industrial waste" -- is generally understood to include non-hazardous commercial wastes, as indeed this plan does.

What is meant by "high quality" in the context of the proposed "high quality recycling program?" (VIII.5.)

Various definitions of the universe of targeted materials for a source-separated recycling program were considered. The label "high quality," which was used to describe the proposed program, as opposed to more narrowly or expansively defined sets of materials, was used to denote the most expansive universe of materials that would be relatively amenable for re-use in the manufacture of new products.

Provide a discussion of what the City plans to do if it cannot reach an agreement with the Sanitation union to achieve desired labor efficiencies. (VIII.6.)

If a satisfactory agreement is not reached, collection system costs will be greater than they would otherwise be. The proposed plan, however, would still be less expensive than the no-action projected baseline costs. Precisely because of these cost savings, which would be shared between the City and the union according to the labor agreement now in the process of negotiation, both sides will have a strong economic incentive to reach an agreement.

How would pre-processing be handled at the proposed Brooklyn Navy Yard facility? (VIII.7.)

Pre-processing is not proposed for the Navy Yard facility, because site size constraints preclude it.

Provide a discussion of the planned disposal of Port Authority waste. (VIII.8.)

Port Authority wastes are included among other "institutional" wastes addressed in the plan (as are also, for example, "federal" wastes from 26 Federal Plaza).

ATTACHMENT II

General Comments

The plan is not in compliance with Section 120-aa of the General Municipal Law in regard to the citywide implementation date and in regard to commercial source-separation requirements. (1.)

See revised Section 19.1.

The implementation program and schedule is not sufficiently specific, nor does it cover the entire planning period. (2.)

See revised Section 19.1

Detailed Comments

1. WASTE COMPOSITION

Provide yearly projections of future waste generation by composition category. (1.a.)

This has been done as an addition to Appendix Volume 1.1.

Provide a clear designation of waste composition sample boundary definitions at the beginning of Appendix 1-A, as well as in the main volume. (1.b., c.)

This has been done. The density definitions, as were noted on p. 2-5 and elsewhere, are:
High Density = Buildings of more than four units and five or more stories.
Medium Density = Buildings of more than four units but under five stories.
Low Density - 1-4-family buildings.

Provide a map that shows the individual census tracts sampled in the waste-composition study. (1.d.)

This has been done.

Certain categories of harbor debris appear to be double-counted in Appendix 1-C. (1.e.)

The relevant table has been re-done.

Provide the analysis used to calculate yard waste quantities which is cited in Appendix 1-A. (1.f.)

This analysis has been added to that appendix.

Discuss the effect of the proposed use of plastic bags for collection. (1.g.)

Since plastic bags are now used for the great majority of Sanitation-Department collections, the proposed use of plastic bags for collection will not appreciably change the city's waste composition. Generators who wish to continue to use blue bins for recyclables, or who have containerized collection, can choose not to use plastic bags. The plastic

bags for the recycling program will be of a specified resin (e.g., low-density polyethylene) so that it can be readily processed for recycling.

According to Appendix 1-F, there appear to be potential problems with the textile and metal portions of certain of the commercial samples. A plan for verifying this data should be established. (1.h., 3.c.)

This comment is based on a preliminary draft; this appendix appears in revised form in the Draft GEIS. Refined commercial waste sampling will be conducted in conjunction with the next bi-annual update of this plan.

In Appendix 1-A, subappendix L, yard waste for the "printing" sector is much greater than that of the other commercial generators evaluated. If appropriate, a tailored plan for assisting these specific generators with this waste component should be formulated. (1.i.)

The difference, 2%, is presumably a function of sample size, rather than an indication that a specially tailored yard-waste program should be developed for NYC printing companies.

What does the word "residential" mean in the labels pertaining to harbor drift and harbor dredge in Appendix 1-A, subappendix V? (1.j.)

This label is an artifact of the WastePlan computer model, which distinguished between "residential" and "commercial" categories. Since there is obviously no such distinction pertaining to these waste categories, the label is meaningless.

In Appendix 1-F, Exhibit 3-4, there appear to be significant differences in the generation rates between the individual census tracts sampled in the low-density sectors. (1.k.)

The variability between the individual census tracts is the reason that two tracts, providing a sample size of 500 stops, was used for the low-density sector. (500 stops are in each medium-density census tract, and high-density tracts have more than a thousand.) Differences in demographic parameters such as median age might explain some of this variability in generation.

Why was data from North Carolina used in Appendix 1-A as a primary basis for NYC C&D debris forecasts? (1.l.)

This comment refers only to the compostion of C&D waste, not to its generation rate. The development of the generation rate is described in Appendix 1-A, p. 3-36 and 3-37. From the composition data available in the literature (as reported in Appendix 1-B, p.11, the most disaggregated data is from Orange County, NC. That was why these data were chosen for this purpose.

Identify the "non-NYC" waste composition studies that were used to supplement the City's sorting study, as noted in Appendix 1-A. (1.m.)

These references have been added to the pertinent table in Appendix 1-A.

Only returnable containers that were not redeemed should have been included in the composition analyses. (1.n.)

This was how the sort was conducted.

Why was ethnicity not chosen as a "driver" in the waste-composition analysis. (1.o.)

Because there are no known data pertaining to ethnicity and waste generation, and because of the lack of reliable data for current ethnicity patterns by census tract and of forecasts for future ethnic population distributions, this factor was considered of significantly less relevance than population density and income.

The City's intentions concerning the recommendations in Appendix 1.2 should be specified. (1.p.)

The identified needs for more refined data will be addressed to the extent feasible in the next bi-annual update of this plan; some of these measures are specified in Chapter 20.

A sentence in Appendix 1-F (formerly 1-E) does not make sense. (1.q.)

This comment is based on a preliminary draft; the relevant appendix was re-written in the Draft GEIS.

There is a typographical error on Table 3.2.8 of Appendix 1-A.

This comment is based on a preliminary draft appendix, the relevant table was corrected in the draft version.

2. IDENTIFICATION OF RECYCLABLES

The recyclability of high-grade paper, non-corrugated paper, telephone books, car batteries, dry cell batteries, used oil, household hazardous waste, and C&D materials should be addressed.

All paper (including telephone books) are designated for the proposed source-separation program, along with dry cell batteries; long-term markets for all of these materials (with the possible exception of batteries) are considered reasonably favorable. Car batteries are covered by the State's deposit law, and will not enter the municipal waste stream. Used oil is also covered by State disposal requirements, and will also not enter the municipal waste stream. Household hazardous waste will be collected through voluntary drop-off programs; as the pilot test conducted in Brooklyn (which is documented in the plan) shows, a significant portion of this material (e.g., paints) can be recycled. About half of the overall C&D waste stream is recyclable, including metal, corrugated, and plastics, in addition to stone aggregate and wood.

Why does Appendix 4-C, p. 9 say that "Tellus determined that textiles and fines could not be readily source separated," when the other relevant sections of the plan say that textiles can and will be source-separated for recycling? (2.a.)

The appendix cited was an analysis of source-separation options of organics for <u>compost</u>.

Appendix 3-A, p. 26 says that "it is probable that there are cost differences that favor using virgin feedstock rather than OCC." The use of the word "probable" seems inappropriate. Is it the case or not? (2.b.)

It is.

The recyclability of aluminum foil (in addition) to cans, should be addressed in the appendix on non-ferrous metals. (2.c.)

This has been done.

Why does Table 15 of Appendix 3-A say that it was assumed that integrated steel mills would take only 10% steel scrap, when 20-30% levels were described as "routine?" (2.d.)

This was a conservative assumption, which affects projected system revenues, but not system design.

The recyclability of aerosol cans should be addressed in the ferrous metal appendix. (2.e.)

This has been done.

Pages 3-6 and 3-7 of Appendix 3-E suggests that the use of glass in the construction of roadways is limited to 20-25%, which seems too low, and may artificially limit the potential market for mixed-glass usage. (2.f.)

The reference was to the use of mixed glass in roadbed construction only. As noted in various places in the plan, another use of mixed glass -- use in asphalt for roadways (above the roadbeds) -- can absorb all of the mixed glass that the City could recover.

What effect will the new polystyrene recovery facility located in Bridgeport, New Jersey have on the City's proposed recyclables recovery program? (2.g.i.)

Polystyrene is one of the materials proposed for the high-quality source-separation program. Generally speaking, the more markets that are available for this material, the more favorable revenues for this product should be.

On page III-11 of Appendix 3-I, it is said that a particular plastic compactor in use in a particular program "may have a limited value." Why is the word "limited" used when the compactor largely eliminates extra truck trips? (2.g.ii.)

The word "limited" is used because, as noted, some of the plastic material springs back to its original shape (as opposed to remaining permanently compacted) in spite of the compactor.

In Appendix 6-E, the energy analysis, three plastic products were excluded because, it was claimed, they are used to produce plastic lumber, a product that is not produced from virgin material. This is inappropriate. (2.g.iii.)

Although some polypropylene and polystyrene are used for other purposes, this generalization -- within the context of this broad analysis -- does not affect any of its conclusions.

Why, in Appendix 3-A, does it say that "specific recommendations [for the marketing of] film and other plastics and textiles are beyond the scope of this study"? This seems inappropriate. (2.h.)

The study which focussed on overcoming market barriers for recyclable materials -- in order to make the most appropriate use of the City's limited resources -- focussed

on those items of greatest strategic significance. For a number of reasons, having to do with their volume in the waste stream, and more importantly, on the relatively favorable market circumstances projected for these materials, they were not among the set of materials that received greatest attention.

Provide more detail on commercial recycling. (3.a.)

The data presented in the plan will be updated, expanded, and refined in the next biennial update of this plan.

The publications cited on page 3-16 should be appended to the plan. (3.b.)

Copies of these previously published documents will be sent to anyone who requests them.

What will be the impact of the proposed recyclables recovery program on existing commercial, industrial, institutional, and private recyclables recovery programs? (4.)

The proposed program should not significantly affect these efforts (which have been spurred by Local Law 19 and existing market and disposal-cost incentives), except that certain private efforts (e.g., buy-back and drop-off centers) will be augmented.

The Department of Economic Development Office of Recycling Market Development should be contacted and listed as a resource. (5.)

The DED has reviewed the market sections of this plan; their comments are printed in this volume along with the DEC's.

The results of a survey of potential markets for ferrous metals, non-ferrous metals, glass, newspaper, magazines, mixed paper, plastics, stone aggregate, textiles, tires, wood, C&D debris, batteries, and used oil are not provided, and should be. In addition,, the label "dirty" on Table 2 of Appendix 3-A on the "paper" column does not make sense, since it appears that this classification is more stringent than the "clean" column. This should be adjusted accordingly. (6.)

Surveys of these materials were presented in Appendix 3.1 and 3.2.

The labels "dirty" and "clean" on the cited table simply refer to the proportions of material that are projected to fit these relative categories.

Identify market services that can provide processing and transportation for recovered recyclables. (7.)

Market services which can provide processing for recovered recyclables include the following (for wastepaper processing): Alpine Paper Recycling, Hoboken NJ; Arrow Recycling, Jersey City NJ; Chambers Paper Fibres, Brooklyn; Nekboh Recycling, Brooklyn; NMS Wastepaper, Queens; Paper Fibres Corporation, Bronx; V. Ponte & Sons, Jersey City NJ; Recycling Specialists, Inc., Jersey City NJ; Rutigliano Paper Stock, Brooklyn.

For metal, glass and plastic processing: Omni Recycling, Westbury NY; REI Distributors, Newark NJ; Resource Recovery Systems, Inc., East Harlem and Staten Island; Waste Management Inc., Brooklyn.

For scrap metal, white goods and C & D processing: BQE Services, Brooklyn; Central Iron and Steel, Manhattan; Naparano Scrap Iron, Bronx; Newtown Metal Corporation, Brooklyn; Pascap Co., Inc., Bronx; Red Hook Recycling, Brooklyn; Star Recycling, Brooklyn and Queens.

Market services for transportation: DOC Trucking, NJ; FJD Trucking, NJ; Rutigliano Paper Stock; Conrail; China Ocean Shipping Company (COSCO); Evergreen Line, Hanjin Container Lines Ltd.; "K" Line; Maersk Line; Orient Overseas Container Line; Zim Container Service.

The NYS DED will provide comments. (8.)

(See "Attachment IV" below.)

Provide more detail on the recycling alternatives considered and the proposed program:

For tires, batteries, telephone books, white goods, C&D, used oil, and household hazardous waste; (9.a.)

Alternative recycling programs considered for **tires**: Department purchase and operation of a tire shredder to be used at the landfill; contracting out for tire shredding services; contracting out for collection, processing and marketing or disposal of tires.

Alternatives for **telephone books**: Separate collection by Sanitation; collection and recycling by NYNEX; legislative ban on use of hot-melt glues, yellow-dyed pages, other difficult to recycle components of telephone directories.

Alternatives for **white goods and C & D**: Mixed bulk (white goods and all large bulky items from households) collection and post-collection processing by contractors; use of Department drop-off locations; private contractor pick-up of selected items; separation by Sanitation of scrap metals and clean waste wood for pick-up or delivery to private vendors.

Batteries: Limited recycling markets are available for a small percentage of dry cell batteries in the U.S. and abroad, specifically for nickel-cadmium (rechargeable) and some button cell (e.g., wrist watch, hearing aid) batteries. A representative of the Department of Sanitation is participating in a working group to a Governor-appointed Task Force that will be submitting recommendations pertaining to toxicity reduction, collection, and recycling of batteries. The Department has also accepted proposals from qualified consultants to assist in a battery information, collection, and management project to be sponsored in the Park Slop Intensive Recycling Zone. It is anticipated that battery collection in Park Slope will begin by the fall of 1992. This project is intended to assist the Department in evaluating issues pertaining to the establishment of a citywide program. Batteries will also be collected at the Department's household hazardous waste collection days, and recycled to the extent possible. Batteries are also one of the materials targeted in the "high-quality" source-separation program.

Used Motor Oil: New York State law requires service stations that change in excess of 500 gallons of oil per year, and retailers that sell in excess of 1,000 gallons per year, to accept up to 5 gallons of used oil per day from any individual, and to send the oil for re-refining. The City publicizes this law through its household hazardous waste public-education brochures. The Sanitation Department recognizes, however, that service stations and retailers do not always comply with the law. Therefore, residents are allowed to bring used oil for recycling at the Department's household hazardous waste collection days.

Household Hazardous Waste: During fiscal year 1991, the Sanitation Department sponsored a pilot household hazardous waste (HHW) education and management project in Park Slope. The project educated residents about the hazards of common household products and about methods for reducing the generation of HHW, and provided residents with an opportunity to empty out their homes of unwanted HHW. Public education and publicity, including direct mailing of 50,000 brochures, local newspaper ads, posters, and public

speaking, was focussed in Community Board 6 in Brooklyn; however, the program was also promoted on a limited basis citywide through radio public-service announcements and environmental group newsletters, since residents from anywhere in the City were allowed to bring HHW to the June 1 collection day.

A specially licensed hazardous waste contractor was hired to receive, package, and remove the HHW from the school parking lot collection location. As much HHW as possible was targeted for recycling (e.g., paint, motor oil, batteries, anti-freeze). Recycled paint was donated by the Department to various community groups. The remainder was disposed at licensed hazardous waste treatment, storage, and disposal facilities outside of the city.

The pilot program serviced 445 participants and resulted in the collection of 222 drums of HHW. Building on the success of the pilot, the Department is planning a similar program for a community board in each of the five boroughs during fiscal year 1993. The Department is also studying the feasibility of establishing a more permanent citywide program which would include the establishment of fixed facilities and/or a mobile collection network.

For drop-off and buy-back and self-help facilities;

The Department of Sanitation envisions drop-off centers initially serving as recycling alternatives in those districts that currently do not receive curbside service. Subsequently, the Department will encourage these drop-off centers to supplement the curbside program -- providing educational material, collecting additional materials, and experimenting with on-site composting. These drop-off centers will be located in each of the City's community districts, and be accessible to pedestrians.

Self-help sites will provide residents with a location to which bulk items can be brought for recycling. As in the case of drop-off centers, these will be situated throughout the City. However, pedestrian access will be of less importance, since most of these items will be transported by automobile.

Buy-back centers will supplement the drop-off centers -- providing markets for the materials that they collect. In addition, buy-backs will be evaluated as alternatives to curbside collection in districts where participation is poor. Consideration will be given the economic-development and job-creation potential of buy-backs.

For commercial waste:
The commercial sector is not mentioned in conjunction with the proposed high-quality program. Why not? (9.c.i., iii., iv.)

It is assumed that many private sectors will have a source-separation program that resembles the "high-quality" universe of targetted materials, although commercial generators and carters will have the option of recovering many of these materials from mixed commercial waste (with the exception of high-grade office paper, for which it is likely that the City will propose new regulations) at processing/transfer facilities, if circumstances warrant. In addition, commercial carters, where appropriate, already have -- in a trend that is expected to increase -- dedicated routes for materials such as office paper, textiles, corrugated paper, and organic kitchen waste.

Why were numerous scenarios not evaluated for the commercial waste-collection scheme, as was performed for the residential waste stream? (9.c.ii., vi.)

Commercial wastes are not currently collected by the Department of Sanitation, and there appear to be no sound reasons why the Department should assume this responsibility, given that the private industry generally collects this material cost-effectively (in terms of carter-industry costs) and expeditiously, and has developed systems for source-separated collection of certain high-value materials, and has in-place an infrastructure for separation/processing of recyclables and transfer. The sorts of scenarios considered for the residential waste stream (e.g., wet/dry separations, multiple trucks, etc.) are not as applicable to the commercial waste stream (for a variety of reasons that include the relatively less heterogeneous wastes and the relative involved). The existing basic system (barring detailed questions of routing and the institutional questions of franchises, pricing, etc.) appears likely to maximize the potential for feasible recycling diversions.

A survey performed for the plan found "a general awareness of the waste crisis and a general willingness to try new systems if they would be beneficial towards the environment." This information should be taken into consideration when evaluating options for the commercial sector. (9.c.v.)

(No response necessary.)

On page 17.2-17, it says that 2 more million vehicle miles would be travelled in System B than in System A. How was this

calculated? (9.d.i.)

This calculation is presented in Appendix 7-C. In System A, a projected 98,355 truck miles per day would be travelled, while 105,501 would be travelled in B. In addition, B would entail 3 more tug miles per day, and 2,397 automobile miles travelled by truck drivers driving to work; B would involve, however, an estimated 321 miles less for facility employees driving to work.

The chart in Appendix 7-A that shows the logical flow of the WastePlan computer model should have the words "materials markets" coming from waste-to-energy facilities.

Done.

On page 74 of Appendix 4-B, a table presents results from the Chicago "blue-bag" pilot test. Bags that appear the same seem to have had different success rates (in terms of being recognized by sorting personnel and becoming untied). Why? (9.e.)

It is unclear from this limited data from a limited Chicago pilot test why this similar result should have taken place. A likely explanation is simply that sorting workers were more experienced at this task on the second sampling day.

The conceptual facility shown in Figure 4 of Appendix 4-B should accommodate additional paper and plastic materials. (9.f., 12.e.)

The purpose of the analysis of different facility options was to determine which facility types should be recommended in the plan. The proposed plan concluded that a "high-quality" recycling system -- with a series of processing facilities designed to accomodate this range of material -- would best meet the City's needs. Another alternative considered, labelled "defined sorting," would involve a narrower range of materials (those that would be most readily marketable at the most favorable rates). The appropriate type of MRF to handle this less-expansive range of materials is shown in this Figure. The plan's overall analysis concluded that the more expansive, rather than the more narrow, system design would be most beneficial overall.

The residue rates for the conceptual recycling facilities appear higher than those reported by the Department of Sanitation for the East Harlem facility in 1990. Why? (9.g.)

This more conservative rate is based on the greater variety of targetted materials, the greater compaction rate in the

two-compartment trucks, and on the use of more automated operations.

In Appendix 4-B, p. 172, it is stated that "the percentage of glass container breakage could be anywhere from 50% to 80%." However, on p. 76, it says, "Glass breakage was determined to be in the range of 5%." This significant difference should be addressed.

Page 76 provides a data point from a pilot program for a "blue-bag" system in Pittsburgh. At compaction rates of 2:1 to 3:1, glass breakage was about 5%. Page 172 refers to engineering estimates concerning the net amount of glass breakage in the City's program after processing at a MRF of the type proposed. The preceding two sentences say, "Bagged commingled containers will require a bag-breaker trommel to puncture and tear open the bags. This action will also cause a percentage of the glass containers to break in all likelihood." The paragraph then continues, "Fortunately, from the processing standpoint, the glass percentage in the New York City waste stream is only 4% to 5%. The loss of 40% to 80% of the above percentage [as color-sorted cullet -- the plan notes that markets are expected to be available for all cullet, including unsorted cullet from broken glass], while of consequence, is not an insurmountable burden on the IPC [i.e., MRF]." In short, whether glass breakage turns out to be 5% (an obviously too-low estimate) or 80% is immaterial to the design of the City's system, and would have only a negligible impact on overall system economics due to differential market revenues.

Concerning the reference facilities presented in Appendix 5 (9.i.):

Certain facilities seem to have miscalculated the proportion of their sites that would be covered by buildings. (9.i.i.)

The term "building," as used in these facility descriptions, includes all built structures on the site, i.e., any part of the site that is "covered" (including buildings, driveways, etc.).

Facility drawings should match the facility size descriptions. (9.i.ii.)

These drawings are not necessarily precisely to scale, but are meant to illustrate lay-outs and designs as clearly as possible. They conform to the descriptions in the text, and accurately convey size relationships.

The site acreage for the Commercial Mixed Waste Processing Facility cannot be 515 acres! (9.i.iii.)

Typographical error. The correct figure (as shown elsewhere in the plan) is 5.5 acres.

Someone inserted editorial comments concerning the leaf-and-yard-waste reference facility -- concerning the desirability of paper bags as opposed to plastic bags -- which seem valid. The reference facility should be modified accordingly. (9.i.iv.)

This comment is based on margin notes in a preliminary draft; this appendix was revised in the Draft GEIS. Plastic vs. paper bags were carefully considered, and plastic bags were determined to be more suitable for this application within an overall system context. The Department of Sanitation's engineering consultants for this task, specialists in compost technologies, developed this reference facility recommendation. However, this reference facility design does not preclude the use of paper bags, which the City may pursue as it expands its leaf-and-yard-waste collection program.

The "MSW Incinerator" description should detail the system for the recovery of materials from the facility. (9.i.v., j.)

See the "Mixed-Waste Processing" facility, the description of which begins, "This facility is a front-end adjunct to an incinerator or a landfill. It therefore does not have separate 'support' systems such as roadways, queuing space, weighing, or unloading areas or administrative space. It is assumed that the facility is operated in conjunction with the proposed 'high-quality' recyclables program, and that the mixed refuse that would be received at it would be that portion of the MSW that is <u>not</u> collected in the high-quality program.

"Equipment includes conveyors, hand-sorting stations, trommels, a magnetic separator, and balers...."

The acreages for drop-off and buy-back facilities seem high relative to materials-recovery and mixed-waste-processing facilities. (9.k.)

These facilities must receive members of the public making many trips to deliver (relatively speaking) very small quantities of material, which must be safely received in an orderly way, stored, and packed for transport.

"In Table 3-1 of Appendix 2-A, it is noted that all tires will be

replaced at 70,000 miles at a cost of $300 each then recap 16 after 50,000 miles at $120 each. It should be explained why the initial replacement will not be with recaps?" (9.1.i.)

This table lays out assumptions used to estimate current out-of-city transport costs; it is not a prescription for the proposed plan. The assumptions for tire costs are: "Recap 16 tires after 50,000 miles at $120 each. Replace all tires (20) after 70,000 miles at $300 each. Repair 20 flats a year at $75 each, including service."

Externally [sic] costs should be incorporated in the figures on truck transport costs. (9.1.ii.)

Externality costs are shown, as are direct truck costs.

On page 3-3, it is stated, "How independent truckers actually calculate charges is not at all clear and requires additional calculation." It should be indicated whether or not this is a program plan and if so, it should be included in the overall plan and schedule. (i.1.ii.)

The full paragraph reads: "Because virtually all truck transport is carried out in backhauling tractor-trailers, many drivers are likely to settle for less than the actual cost of operation (in terms of cost per mile) represented by these estimates since the use of backhauling vehicles frequently represents a bonus to the driver. Much of their actual cost in terms of equipment depreciation, maintenance, tires, etc., are included in the price they are paid for the direct haul of materials to New York City. How independent truckers actually calculate charges is not at all clear and requires additional investigation."

Since this subjective calculation bears little relevance to the design of the City's solid-waste-management plan, there is no current intention to pursue this research objective.

On page 6 of Appendix 2-A's "Draft Report on MSW Transport Costs," a note states that "Newer aerodynamic tractors, with fully enclosed trailers are getting as much as 8 to 9 MPG for highway travel." The effect this increased MPG has on the analysis should be evaluated and presented. (9.1.iv.)

This trivial change has no bearing on the analysis. Since all of the relevant numbers involved in this calculation are presented, this conclusion can be checked by anyone who desires to do so.

"On page 3-5, it is stated that 'These externalities, or third-

party economic effects, are not shared by alternative rail and water modes of transporting MSW.' It should be explained why these externally [sic] costs do not exist for rail and water transport. It would appear that congestion, accidents, wear and damage to the rail or water system and certainly pollution would be factors for rail and water transport modes. This concept should be addressed to allow for an appropriate transport mode comparison." (9.1.v.)

The preceding sentences in the full paragraph read: "Total disposal costs dictate how far waste can be transported. However, the decision on how far to export waste by truck is generally made by taking into account only the direct costs of truck transport, such as labor, equipment depreciation, maintenance, fuels, tolls and road taxes. The price paid by truckers does not reflect the cost to society of pollution, pavement damage, congestion, and accidents. It is estimated that each heavy truck creates as much damage to highways and bridges as 9,600 automobiles. Trucks also contribute to urban congestion and urban air and noise pollution, and use three times as much energy to transport freight than do competing railroads." It has been so well established as to be a truism that, relative to these highway effects, the economic, environmental, energetic, and public-health impacts of rail and barge transport are insignificant. To take just two examples, compare the net air emissions per ton mile of barge transport vs. truck transport and the fuel relative usage, which are presented in Appendix 7-C.

Copies of legal cases cited in Appendix 2-B are not attached. (9.1.vi.)

This comment is based on a preliminary draft appendix, which was revised in the Draft GEIS.

On page 17.1-18, it says that nearly 8 million gallons of water a day could be required to rinse recyclables. Could the City's water supply system handle this additional demand? (9.m.)

Yes.

In Appendix 7-A, the "beverage cans" designation on tables should indicate only non-redeemed cans. (9n.)

As noted in the response to comment #1.n., only non-redeemed cans are in the waste stream.

"In Appendix Volume 7.1, Appendix 7-A Table (Four 2-13.XLS) "Organic Materials in Commercial Waste Stream," the note regarding the 20 percent of various specific paper materials

being classified as organic material should include non-corrugated as well." (9.o.)

This comment pertains to a preliminary draft, as is no longer applicable.

What are the "national data" referred to in Appendix 4-O, p. 9, in reference to the selection of capture rate assumptions? (9.p.)

The capture rates estimated for establishing the NYC baseline were based on data that reflects actual attempts to measure capture rates. The major source of these data was the Phase I and II Master Recycling Planning Study conducted by the Rhode Island Department of Environmental Conservation and the Rhode Island Solid Waste Management Corporation. This study both reviews the literature on capture rates and reports data collected in Rhode Island programs.

Provide an analysis of the Btu values of the City's waste before and after the proposed recycling program. (10.)

This analysis has been added to Appendix 7-A.

Provide an estimate of expected landfill life at Fresh Kills, assuming that the proposed recyclables program will be fully implemented. (11.)

If by the year 2000 the City reduces, recycles and composts 50% of the residential, institutional and commerical waste streams, the City has on line 3,750 tons per day of waste-to-energy capacity, private carters are still able to export approximately half the commercial waste, and the daily use of Fresh Kills stabilizes at 7,200 tons per day, the life of Fresh Kills would be between 28 and 37 years depending on what assumptions are made about density and the total capacity of Fresh Kills. 28 years is based on a density of 1400 pounds per cubic yard. 37 years is based on a density of 1800 pounds per cubic yard. For purposes of this calculation, the capacity of Fresh Kills is assumed to be 100 million cubic yards.

Provide more detail on implementing the proposed recycling program. Specifically:

Provide more detail on the existing proposals for system changes in Chapter 4, and for the monitoring steps in Chapter 20. (12.a.)

Revisions have been made to these chapters.

The Executive Summary mentions "innovative market applications" for tires. These applications should be detailed. (12.b.i.1.)

See Appendix 3-L.

The City's tire-deposit or -reclamation program should be outlined and enacted. (12.b.i.2., 3.)

The Sanitation Department does not consider the implementation of tire-deposit programs at the municipal level to be effective. Instead, it supports legislation at the state and federal levels which will allow for implementation of such programs across a larger geographic area.

Tire-reclamation options which have been examined to date have been economically or technically infeasible. The Department will continue to evaluate tire-recycling concepts, technologies and proposals in an effort to determine a fiscally responsible program.

The City should re-cap as many tires from its fleet as possible. (12.b.i.4.)

The City is committed to re-capping as many of its fleet tires as is feasible.

A program for testing the use of rubber in asphalt should be identified. (12.b.i.5.)

The Sanitation Department is working with the Engineering Department at Cooper Union and the NYC Department of Transportation to test the effectiveness of rubberized ashphalt on City streets. Cooper Union is developing a grant proposal to provide for detailed laboratory and field testing.

Concerning batteries:

No details are provided on the proposed household battery program. (12.b.ii.1., 2., 3., 4.)

Dry cell batteries are one of the materials designated for source-separated collection in the high-quality recyclables program, for delivery to and processing at materials-recovery facilities, with marketing of the batteries that can be sold and disposal of the remainder as hazardous wastes. Batteries may also be collected in household hazardous waste drop-off programs, and in other drop-off and buy-back programs.

Telephone books should be targetted for recycling. (12.b.iii.)

They are already part of the City's program.

Provide more detail on the program for buy-back facilities. (12.b.iv.)

(See the response to comment 9.)

Concerning composting:

"Would" is used on page 16-21, rather than a more definitive word. (12.c.i., j., z.i.)

"Would" is used throughout the proposed plan, since the proposed plan has not yet been approved by the DEC. The use of the conditional tense is in no way meant to suggest that the City is not committed to implementing this plan if it is approved.

Provide details about the pilot-scale in-vessel compost facility proposed by the Sanitation Department, which could be used for tests of co-composting MSW and sewage sludge. (12.c.ii.)

This is the in-vessel compost facility proposed for source-separated institutional and commercial organics, which is scheduled for construction in 1996.

Provide more details about the City's planned backyard compost program. (12.c.iii.)

The City will continue to establish home-composting demonstration/education sites, with the goal of having at least one in every borough in 1993. The City will continue to work with community and botanical gardens and other groups to demonstrate and promote home composting to New Yorkers.

Provide more details about the City's planned leaf-and-yardwaste compost program. (12.c.iv.)

The City will ultimately expand yard waste collection to 33 districts, thus collecting leaves and brush from all areas where significant quantities are generated. The City will continue to work with the landscaping industry to compost yard waste collected by the private sector. Residents will be educated and required to leave grass clippings on the lawn, compost them in their own backyards, or make arrangements with private landscapers to have them removed.

Clarify the materials other than paper and plastic that will be recovered in the recycling program. (12.d.)

These other materials are identified and discussed in many places throughout the plan and the appendices. A summary list is on page 16-13.

(12.e.: see response 9.f.)

Add "mixed paper" and "non-corrugated paper" to the table on page 44 of Appendix 4-C.

Done.

What programs are planned to develop glass markets? (12.g.i., ii., iii., iv.)

None: the projections presented in the plan suggest that markets are adequate for clear (flint) glass, and all of the remaining green, brown, and mixed cullet that the City could recover could be used in glassphalt production.

Provide more details on the proposed program for "re-use-it" centers. (12.h.)

The Department of Sanitation's Office of Waste Prevention, Re-Use and Recycling will be responsible for contracting out for services with an organization such as Goodwill or the Salvation Army to collect re-usable goods from residents.

When the Department has buy-back centers or drop-off centers on-line, residents could bring re-usable items in and, in the case of the buy-back centers, receive a small monetary amount for the re-usable item. Electronic items would also be tested to be sure that they work. The items could then be sold to Goodwill or the Salvation Army for a nominal charge, and these organizations would sell the items in their stores.

The Department could also sponsor a program, based on Materials for the Arts, which would accept re-usable items for distribution to non-profit groups and City agencies.

Provide more details on "food-bank" programs. (12.i.)

The City will continue working with existing food banks to expand the quantity and types of food stuffs they collect and utilize. Use of foods such as produce from commercial markets will increase the diversion of these materials from the waste stream, as well as improve the nutritional value

of food-bank meals.

(12.j.: see response 12.c.i.)

Post-collection separation of commercial recyclables is not allowed by Section 120-aa. (12.k.)

See the discussion of this issue in the revised Chapter 19.

Provide more detail on research and pilot studies of quantity-based user fees for residential and institutional waste. Why are commercial establishments not included in the City's plans? (12.l.)

Commercial waste is already part of a "quantity-based user fee system." The problems with this current system are also identified, and programs proposed for addressing these problems to make waste-prevention more effective. The basic proposal is a voluntary waste-audit system, cooperatively carried out through City agencies and trade associations, which would (in addition to helping to identify generator-specific waste-prevention techniques) provide a basis for documenting appropriate reductions in waste-collection charges. It is further proposed that private carters participate in this program, in which a formula for apportioning the cost savings would be devised so that they could be fairly shared by both carters and generators.

The Department of Sanitation will also take steps to put institutional user fees in place, as is already done in the case of hospital black-bag waste. There are no particular technical difficulties with instituting these institutional user fees.

Residential user fees -- particularly for apartment buildings -- are considerably more complex. The Sanitation Department is studying the options for such a system, and will conduct research-and-development efforts to test them.

Will the proposed harbor-debris processing equipment be installed at the Southwest Brooklyn incinerator or not? (12.m.)

The feasibility of this installation will be assessed during the course of developing more detailed plans for the upgrade of the Southwest Brooklyn incinerator. If it is established to be feasible, this equipment will be included at this facility. If it is not feasible, this equipment will be installed elsewhere.

Provide more detail on methane-recovery plans. (12.n.)

The existing Fresh Kills methane-recovery facility produces high-Btu pipeline-quality natural gas from sections 1&9 of the landfill. This gas is sold to the Brooklyn Union Gas Company and piped into the Company's natural-gas line. The Sanitation Department is preparing a request for proposals for methane recovery from the remaining sections of the landfill. Depending upon the proposal of the selected vendor, the future gas-recovery facilities may produce high-Btu or medium-Btu gas or pipeline shipment, or may be of the gas-to-electricity type. A vendor is expected to enter into a contract by mid-1993. Implementation of this project, in conjunction with the existing gas-recovery plant, will result in a significant improvement in the surrounding environment. The City has also entered into agreements with developers for methane-recovery projects at the closed Fountain Avenue (Brooklyn) and Pelham Bay (Bronx) landfills. Progress on these projects has been impeded due to the classification of these landfills as inactive hazardous-waste sites. Both of these sites are now under the jurisdiction of the Department of Environmental Protection.

Provide details on the City's plan to use old newspaper as expansion joint filler in place of asphalt. (12.o.)

Use of a product containing ONP for filling the space between concrete sections will need to be evaluated by the relevant city agencies (particularly the Department of Transportation) as to its effectiveness and cost. Sanitation is aware of potential vendors of this product, and will be researching their ability to supply the City with a suitable product.

What are the City's plans to assist the private sector in establishing markets for aggregate from C&D processing facilities? (12.p.)

Specifications are being written and included in City and State contracts to accept recycled aggregate in road construction. The rock-crushing plant at Fresh Kills accepts material from private vendors who have City construction and roadway contracts material. This material is processed into landfill cover. The Sanitation Department is supportive of the research proposal concerning the use of screened C&D material. This proposal was submitted by a group of local firms in response to Program Opportunity Notice #225-ER-92 issued by the New York State Energy Research and Development Authority (NYSERDA) earlier this year.

The details of a potential waste-pallet program mentioned on page

39 of the portion of Appendix 4-C pertaining to commercial food waste are not provided elsewhere in the plan. Ditto grease. (12.q., r.)

The pallet program is not one proposed in the plan, as is clear from the context. The portion of the appendix cited, a survey of food businesses designed to develop an understanding of source-separated organics options, simply reported: "The [Bronx Terminal Market] Coop has recently been compiling feasibility studies regarding the diversion of several materials....The Coop has taken several steps to study the feasibility of reducing the amount of waste generated....Some of the projects which they have been studying include:...3. Numerous attempts have been made to remove discarded pallets from the waste stream. These include: an entrepreneurial scavenger, use of reusable oack pallets, purchase of a chipper, and use of pallets made from alternative materials." Ditto grease.

What will be done with ash after the proposed Fresh Kills ashfill is filled? (12.s.)

Rather than developing the proposed Fresh Kills ashfill, the City intends to contract for out-of-city capacity or -- if beneficial re-use programs have been determined to be feasible -- processed for beneficial re-use.

The specific plans for researching, developing, and using landfill islands and landfill mining should be presented. (12.t.)

At this time the Department of Sanitation has no specific plans to research or test landfill islands, although the Department will continue to monitor research conducted elsewhere in order to evaluate its future feasibility for the City. Nor does the Department of Sanitation have current plans for testing landfill mining (a planned pilot project was cancelled after the DEC withdrew promised funding), although it is likely that the Department will pursue research-and-development efforts on this technology in the mid-term future.

Specific plans for alternative landfill cover materials -- including admixtures of soil and glass and/or rubber, and paper mache -- should be provided. (12.u.)

The Fresh Kills landfill, the only active landfill in the city, operates 24 hours a day, six days a week. Its operation therefore requires only minimum amounts of "daily" cover. As the landfill is brought to intermediate grades

and the working face advances, intermediate cover is placed over the garbage. The performance requirements for daily cover pertain primarily to odor and vector control (e.g., rodents, insects, gulls, etc.); those for intermediate cover are very different. Intermediate cover is generally in place for several months to several years, so it must remain intact for a far longer time. To meet this objective, soil-based materials are used, so that they can be planted with grasses. The soil covers the garbage, while the grasses protect the soil form wind and water erosion. It is therefore essential that any alternative landfill-cover material be a soil-type material. The City currently uses dried dredge spoils and crushed and screened concrete and rock "fines." In addition, on-going research is focussing on using incinerator bottom ash. Based on the current schedule, a demonstration project for bottom ash as intermediate cover is planned to be proposed next year. The study will probably run for about two years.

In the event that the operation of Fresh Kills is changed from the current 24-hour-a-day operation, the issue of alternative daily cover materials such as wood chips, paper mache, foams, rubber shards, etc., would be explored.

What is the target date for drafting and adopting the zoning resolution amendment mentioned on page 17.1-26? (12.v.)

The ULURP application was filed on March 31, 1992, and adoption is anticipated in the summer of 1993.

What are the specific building-code revisions that will be sought to facilitate recycling? (12.w.)

The Sanitation Department, in consultation with its Solid-Waste Advisory Boards, other City agencies, the American Institute of Architects, the Real Estate Board of NYC, architectural firms, the New York City Architects, Designers, and Planners for Social Responsibility, and others, has developed recommendations to submit to the Department of Buildings, the City Council, and the Mayor's Office, intended to facilitate recycling in NYC. The recommendations include requirements for central and individual-floor storage space, posting of signs, freight elevators, and loading docks, and would allow the use of chutes for residents to use for depositing designated recyclable materials.

Provide specific details on how the Sanitation Department will "refine its structure" and "forge cooperative links" with other City agencies in order to effectively implement this plan.

(12.x.)

The Inter-Agency Committee on Solid Waste-Management, which was established by Mayoral Executive Directive and is chaired by the Deputy Mayor for Planning and Physical Development, will be a primary mechanism for ensuring inter-agency cooperation and mediating inter-agency disputes. For a discussion of proposed administrative changes within the Sanitation Department, see the revised Chapter 19.

Identify the staffing requirements for the overall program. (12.y.)

See revised Section 19.2.

(12.z.i.: see response 12.c.i.)

"On page 16-9, it is stated that 'This system, however, presumes that the City's recycling program is already well-established in all five boroughs and that there is adequate MRF capacity to separate these materials.' This seems to be an odd statement as one of the purposes of this plan is to chart out how to make this happen and not just presume it will happen." (12.z.ii.)

From the context, it is clear that this statement refers to the mid-range future, and means that the full range of targetted recyclables will be included in the source-separation program after the prior steps to which the City is committed in this plan have been implemented. The following sentence is: "In the immediate term, the City will collect the six currently designated materials, along with leaf and yard waste and bulk metal."

Provide a detailed schedule for implementing this plan. (13.a.)

See revised section 19.1.

The DEC believes that 120-aa means that a citywide recycling program should be implemented, not just adopted, by September, 1992. (13.b.)

The City does not believe implementation is required by September 1992. In any event, Citywide curbside collection will be in-place by the end of June 1993.

(13.c.i. is the same as 9.b.)

In Appendix 4-C, pp. 167-8, in the presentation of participation and capture rates for the commercial organics program, the participation rates appear low for restaurants, motels, food

stores, and wholesale food stores, and the capture rates appear low for restaurants. Why are pulping systems assumed for institutional food waste, and not for commercial establishments? (13.c.ii.)

> These participation and capture rates were not the rates used in modeling the institutional and commercial organics-collection program in Systems A, B, and C. The participation rates used were 65% and the capture rates were 85% (as shown in "Collection: Commercial #2: Methodology for Modeling Commercial Waste-Management Programs," in Appendix 7-A.5.) In the modeling of alternate scenarios, no pulping systems were assumed. Appendix 4-C simply points out that, from a practical standpoint, it would be feasible and desirable to have pulping systems in most large-scale kitchens. This would be equally true for both commercial and institutional generators of food waste.

Christmas tree diversion estimates appear low. (13.c.iii.)

> The table in sub-appendix 3-3 of Appendix 4-C.1 has been re-done to show a range of estimates for diversions from the Christmas-tree program.

Footnote 11 of Appendix 4-O on p. 9 says "It is worth noting that the container recycling programs should possibly be modeled with higher capture rates than the paper recycling programs." This concept should be more completely explained and applied in the projections if appropriate. (13.c.iv.)

> This statement refers to the computer modeling of 1990 baseline waste quantitities. Since waste quantities were known (i.e., were inputs to the model), the calculation produced derived capture rates, as explained in the text and the remainder of this footnote. The footnote simply points out a substantively irrelevant modeling artifact, to wit: that, in actuality, the per-container capture rate for beverage containers is probably higher than that for paper, since -- as noted above -- redeemed containers were not included in the waste composition study, but some of these containers were likely to have been collected in the City's later recycling program.

In Appendix 7-A, participation and capture rates for backyard composting appear low. (13.c.v.1.)

> There are very few substantive data on participation and capture rates for backyard composting programs. The most well-documented program is Seattle's. The 10% participation rate was based on realizing the participation rate realized

in Seattle after several years of promotion. (See Mark Grey memo to Joel Alpert, March 28, 1991, in Appendix 4-C.)

Since, of the 17,000 tons of leaves and grass estimated to be captured by the backyard-composting and leave-grass-on-the-lawn programs, roughly 3,000 tons are leaves, doubling the backyard composting participation rates to 20% would only reduce the City's waste stream by another 3,000 tons per year -- that is, by 0.03%.

In Appendix 7-A, capture rates for film plastic appear low. (13.c.v.2.)

The projected capture rate for films and bags is significantly lower than for all other plastics because the majority of these materials consist of the bags in which waste is collected. They are therefore not available for recovery in source-separation programs. (A significant proportion of these bags, however, may be captured through post-collection processing.)

"Dry wall" is not listed on Table 16.2.4-1. This should be re-evaluated. (13.c.v.3.)

The targeted materials and capture rates in this table were based on the data in Appendix 4-I, on the basis of which it is estimated that 50% of the C&D waste stream (1,246,246 out of a total 2,494,738 tons generated) is currently being recycled. This rate was dependent on whether loads delivered at C&D processing facilities were "mixed" or "separated," and that 25-30% of mixed C&D loads would be recoverable for recycling, while 70-90% of separated loads would be recoverable. If drywall were also assumed to be recovered at a 50% rate (and if drywall were not already included in the estimated 50% of material recovered), this would increase the recycling rate by roughly 140,000 tons, or an additional 5.6% of the C&D waste stream. This would not affect the number or size of C&D processing facilities, since these were designed to process the entire C&D waste stream.

"In light of the Commissioner's September 19, 1990 Interim Decision and his December 1991 Decision in the Broome County Resource Recovery Facility proceedings ("Broome County"), and guidance from legal counsel, we are compelled to require this Solid Waste Management Plan (SWMP) include an evaluation of the processible waste stream and the projected recovery rates for those materials.

"The Commissioner held in Broome County that:

"'While for purposes of planning the 40% goal must account for all waste streams, in the context of resource recovery facilities, compliance with the goal requires a showing that 40% of the wastes that are processible in such facilities are going to be recycled. Processible waste streams exclude those that cannot be burned due to physical and technical limitations as well as those waste streams that are excluded for environmental reasons (e.g., yard waste and batteries)...'" (13.d.)

This comment is illogical. First, "the 40% goal" includes recycling and composting, so excluding compostibles such as "yard waste" from the analysis is illogical. Second, this is not a "resource recovery facility" EIS, but a generic plan for the management of all the City's solid wastes in accordance with the State's hierarchy of prevention, recycling, composting, waste-to-energy, and landfilling. Third, this is a numbers game: should the "prevented" wastes first be subtracted from the total? -- in which case the percentage figures for "recycling/composting" presented in Chapter 18 (which compares the City's plan to State goals) would be higher; apart from grass and leaves (2.75% of the residential waste stream), batteries (0.06%), the only other "non-processible" among the waste components sampled by the City is bulk waste (9.8%) -- subtracting these items from the calculation would not significantly affect net recycling/composting percentages. Since the figures necessary for doing this calculation in any way imaginable are presented in the plan, any reviewer's options are limitless.

The "recycling plan" required by Local Law 19 should be part of this plan. (13.e.)

It is.

The schedule for upgrading the municipal incinerators presented in the sequencing analysis in Appendix 7-A is inconsistent with the schedule actually proposed. (13.f.)

Right. The purpose of the sequencing analysis -- one of the many "sensitivity analyses" performed -- as explained in the document cited, was to show the effect on costs and landfill life if the incinerator/waste-to-energy components of this plan were built as quickly as possible (i.e., <u>earlier</u>-than-planned) or at a <u>later</u>-than-planned time. (The conclusions of this analysis, as documented in this appendix, are that the effects on 20-year net-present-value costs would be negligible, and that about 25% more landfill capacity would be required for the "slow-tracked" scenario than for the "fast-tracked" scenario.)

How often will the plan be updated? (13.g.)

Every two years.

(13.h.: see response to comment 12)

Materials other than paper that would be recycled from regulated medical wastes should be included in the Table 17.2.2-6. (13.i.)

The major material that is currently included in the "regulated medical waste stream" that should not be disposed of with "regulated medical wastes" is paper. This table represents the amount of recyclable paper that, based on the sampling performed in support of this study, appears to be inappropriately disposed of with regulated wastes. The proposed "chop-and-bleach" system for sharps and i.v. bags is not yet a technology approved by the NYS DOH, the marketability of this recovered material is not certain, and the quantities involved are relatively trivial.

Statements in the plan such as "While some such industries (e.g., plastics molding and extrusion plants) may be developed, and while the City will take steps to encourage appropriate new manufacturing, it is not likely that in-city utilization of secondary materials will be a dominant economic force," do not appear to reflect other statements in the plan that pertain to specific industry proposals. (14.a.)

There are some current proposals for new manufacturing plants in the city, some of which -- with City encouragement -- may be developed. Nonetheless, in terms of predicting favorable economic impacts that may accrue from recycling programs, this plan has taken an appropriately conservative approach that is in line with informed projections of future manufacturing growth in the city (cf, e.g., the Department of City Planning's current NYC industry study). This assessment in no way constrains the expansion of the City's recycling program, inhibits industrial development, or reflects the City's lack of commitment to maximizing recycling. If it proves to understate actual industrial growth, the economic benefits of the proposed plan will simply be greater than they are currently predicted to be.

What are the City's plans in regard to modifying the building code to allow the use of old newspaper as insulation? (14.b.)

The City is prepared to approve for use as insulation a product consisting of old newspaper, provided the product meets the applicable reference standards in Article 7 of the

City Administrative Code, in particular R.F. 5-5(ASTME-84), which requires a maximum flame spread of 25 and maximum smoke development of 50, and the toxicity standards of the Pittsburgh UPI Protocol.

What are the City's plans in regard to proposed de-inking facilities in the city? (14.c.)

The City is negotiating with a private company that has made a proposal to purchase the City's newsprint for a period of 20 years and to construct a de-inking facility in the City.

What are the City's plans in regard to a proposed bio-mass conversion (i.e., newspaper to ethanol) facility in the city? (14.d.)

The City has no plans for a bio-mass conversion facility in the city.

Several recommendations in consultant market surveys for specific recyclable materials are not reflected in the plan. (14.e.)

This is because the City does not consider that they would contribute effectively to its recycling program.

Provide more detail on the proposed "public relations and education" programs. (15.)

The Department of Sanitation plans to employ an ad agency to create a multi-media ad campaign for the City's various waste-prevention, reuse, and recycling programs. Such a campaign will include a Citywide campaign using electronic and print media, as well as specialized campaigns targeting various ethnic groups, age groups, and economic backgrounds.

In addition, the Sanitation Department plans to augment its own staff of community organizers with a network of community-based recycling coordinators. These coordinators, as well as the Department's community organizers, will undertake "grass-roots outreach." This will involve participation in local civic events, street fairs, door-to-door canvassing, and other activities. In addition, they will undertake school presentations, building-owner and -manager seminars, and commercial seminars.

Provide a more specific discussion of legislative constraints, and on compliance with Local Law 19. (16.)

The Plan proposes amending Local Law 19 to conform to the implementation schedule in the Plan. Legislative

constraints and Local Law 19 are discussed in detail in Chapter 19. Supreme Court Justice Irma Santaella has ruled that the City is not in compliance with Local Law 19. NRDC v. Department of Sanitation (Index 1264). Her opinion, which imposes a schedule for complying with Local Law 19, is on appeal.

Provide a more specific discussion of local laws, ordinances, or amendments that must be adopted to facilitate the implementation of the recycling program and to enhance markets for recyclables. (17.)

See Chapter 19.3.

"On page ES-16 of the Executive Summary, it is stated that 'These systems share a common set of assumed waste-prevention programs, which, on a material-specific basis, would divert a total of just over seven percent of municipal solid waste from the collection, processing, and disposal system. This set of proposed programs was not intended to reflect either the limits of prevention programs or a quantitative prediction of the effects of specific prevention strategies.' Consistent with the concept discussed in Comment 13, a projection of the effects of a maximized 'waste prevention' program the City plans to implement must be provided." (18.a.)

One way to have approached this planning process would have been to set arbitrary percentage goals, and then to back-calculate into them. Instead, the approach selected was to build this plan from the ground up, starting with data and specific programs, and then trying to calculate the effect of specific programs on diverting specific types and quantities of materials in the city's waste stream. The 7-8 percent figure in the plan reflects the City's best judgement of what the specific programs proposed are likely to accomplish, although the effects may be greater than estimated. The analysis of feasible prevention programs produced no other alternatives that are considered to be particularly effective or significant in terms of tonnage diversion. A "what-if" sensitivity analysis of the impacts of higher-than-projected prevention achievements is presented in Appendix 7-A.

Page 7-2 should say "The State solid-waste-management policy requires each locality in the state to take every reasonable step to reduce its waste by 8-10% through waste reduction [not "prevention"] activities by 1997 [not "1998"]. (18.b.)

Done.

Provide more detail on the waste prevention program. (18.c.)

The following has been added to the plan:

Section 7.1.4.1 Programs for Attacking Structural Barriers

Creating Incentives for City Agencies to reduce waste

Enable City Agencies to receive a PEG credit for reducing their consumption (on a per employee basis) of certain common office products such as paper, writing implements, note pads, etc. A baseline will have to be established from which to evaluate reductions. The PEG credit would be administered by the Office of Management and Budget.

Section 7.1.4.2 Programmatic Opportunities

Food Waste Backyard Composting

Educate New Yorkers living in low-density districts about backyard composting, and encourage the incorporation of vegetative food waste into home composting practices.

The New York City Partnership for Waste Prevention

The New York City Partnership for Waste Prevention was launched in the Fall of 1991 to gain the cooperation of the private sector in the effort to reduce solid waste at the source. Participating groups commit to implementing waste prevention measures that make sense in their establishments, and in exchange the Department provides assistance in promoting their efforts. The goals of the Partnership are to reinforce the waste prevention education New Yorkers receive as residents by targeting them when they are consumers in the marketplace and to work with business to put waste prevention into practice.

While DOS has so far sought participation largely from retailers, it plans to extend invitations more broadly to designers, distributors, and manufacturers.

Multiple Cities Coalition

Waste minimization will be achieved in the long run only if manufacturers and government entities are required by law to incorporate waste prevention principles in their purchasing, production, and marketing tactics. While municipal governments around the country have been articulate about the need for state and federal legislation to reduce waste, these higher levels of government have been limited in their

response.

Successful waste-prevention policies will be conceived best at the municipal level because localities are the locus of waste management. It is incumbent upon DOS, as the principal institution managing the solid wastes of one of the nation's largest cities, to engage other U.S. cities in the development of model waste-prevention legislation suitable for implementation at the local level. Participating cities would agree to delay putting into effect the waste-prevention legislative program until a critical mass of cities' legislative bodies passes it. This strategy will make it easier to gain the support of product and packaging manufacturers, designers and distributors whose markets are broad. In addition, such a strategy will help motivate support for waste-prevention policy initiatives at the federal level.

Reducing retail packaging waste

Encourage retailers to avoid in-store packaging practices that lead to redundant packaging, such as providing bags for one-item purchases and packaging produce.

Mandate placement of signs in certain types of retail stores encouraging shoppers to avoid taking unnecessary bags.

A "Good Samaritan law" should be promoted by the City to assist food-bank programs. [The rest of this comment duplicates prior comments.] (18.d.)

In order to reduce waste, one objective of the "good will" assistance program (described in Appendix 4-A, pp. 44-5) is to identify those commercial-sector establishments that produce a quantity of excess food and divert salvageable materials to shelters and food pantries. One barrier to such programs (as noted on p. 228 of Appendix 4-C) is that "A major concern by the generators [of food waste] is fear of liability: for which a comprehensive 'Good Samaritan Law' could be instituted." At present, there are no Good Samaritan laws that directly relate to donations of excess food. The Public Health Law 3000a, however, provides that "any person who voluntarily and without expectation of monetary compensation renders first aid or emergency treatment...to a person who is unconscious, ill, or injured" is exempt from liability unless there is a showing of gross negligence. Likewise, Education Law Section 6527(2) incorporates a special provision that allows licensed physicians to volunteer their medical services in emergency situations without the fear of potential liability unless

they act with gross negligence.

A parallel may be made between the good faith donation of medical services and food, and a provision similar to PHL section 3000a and Educa. Law section 6527(2) could be drafted. The City will evaluate the public-health implications of such a provision, and if appropriate, it will seek an amendment to the Public Health Law.

Provide details on the Environmental Shopping and Labeling program mentioned in Appendix 4-A, pp. 32-4. (18.e)

The Sanitation Department, through the NYC Partnership for Waste Prevention, will seek cooperation from food merchants and other retailers to undertake voluntary shelf labelling or other in-store environmental labelling initiatives that focus on waste prevention and recycling. The Department will pursue the feasibility of establishing a program featuring seminars and/or retail tours to teach the principles of environmental shopping, including the buying of products and packaging that minimize waste generation, that are recyclable in New York City and/or contain post-consumer recycled content.

(18.f. duplicates 12.b.i.4.)

Air dryers should be used in the restrooms of all City buildings and in all new construction and remodeling projects. (18.g.)

The City plans to evaluate the costs and benefits of installing air dryers to replace paper towels for hand-drying in City restrooms and in all new construction and remodeling projects. Air dryers will virtually eliminate the use of paper towels in civilian offices, thus bringing the City closer to achieving the 8-10 percent 1997 solid-waste-reduction goal. Converting to air dryers will affect energy consumption and labor practices; the benefits of conversion will be evaluated in terms of these parameters in addition to the impacts on solid-waste generation.

Wooden vegetable crates should be "actively included into a specific recovery program targetted at" retail food stores. (18.h.)

Through the New York City Partnership for Waste Prevention, the City is working with retail food merchants to develop waste-reduction and recycling programs that decrease the amount of materials used for in-store packaging. Among the many strategies under investigation are reusable boxes for home delivery; bulk retail delivery of certain staples such

as coffee, beans, rice and nuts; reusable plastic crates for produce similar to those used for milk; and eliminating the common in-store practice of packaging produce for quick sale.

Why is the use of in-sink garbage grinders not proposed in the plan, in spite of a consultant report prepared on behalf of the industry that appears to support their use, which appears in an appendix? (18.i.)

The industry report cited, which was evaluated by consultants to the Sanitation Department, was inadvertently included in the printing of a preliminary draft of this appendix. It does not appear in the appendix published with the Draft GEIS. That analysis is refuted in both the preliminary draft and the Draft GEIS. The conclusion of the plan's analysis is that the use of in-sink garbage grinders would increase City waste-management costs significantly, and produce more adverse environmental impacts.

Provide more details on plans for redemption centers. (18.j.)

The City is proposing an amendment to the State Beverage Container Law which would allow the City to receive the nickel deposits through a network of redemption centers. This network would include one redemption center in each of the community boards, and would provide additional outlets to those intent on redeeming deposit containers.

If higher projections were used in the assumptions listed on p. 76 of the waste-prevention appendix, the calculations of waste-prevention diversions would be somewhat higher. These would include several new programs which you have not suggested, but which seem to us good ideas -- such as a program for recirculating magazines. According to the plan, the more waste that is prevented, the more cost-effective the City's overall waste-management system will be. (18.k., l.)

True. However, the City considered it more responsible to use these assumptions, which might be considered "conservative." Since they in no way constrain program design or implementation, if they prove to be understatements, so much the better. As for "programs" such as recirculating magazines, the City is aware of no reason to believe that they would be practical or cost-effective on a scale that would have any significance to the management of the City's overall waste stream. Instead, the City's analysis of prevention options focussed on "big-ticket" structural issues -- such as waste audits and user fees -- that are considered most likely to have a significant effect

in reducing waste tonnage.

Provide more details on other specific prevention recommendations. (18.m.)

(See the response to 18.c.)

Provide a specific plan for how the City will take specified steps to facilitate commercial-sector recycling. (19.)

Over the past year, the Sanitation Department has developed an extensive technical-assistance and outreach program designed to help businesses explore their recycling options in compliance with Local Law 19. Working closely with representatives from the business community, the private recycling industry, and environmental organizations, the Department produced a general-interest brochure and four supplemental information booklets on recycling and waste prevention. The brochure was mailed to virtually every private business in New York, 212,000 in all. Another 75,000 were distributed through paid advertising and outreach to various trade associations, elected officials, private carters, and uniformed Sanitation personnel. Over 15,000 supplemental information booklets were sent to businesses that requested them.

The Department of Sanitation plans to continue its efforts to facilitate commercial-sector recycling in New York City. The Department has developed a new informational brochure for mass distribution to businesses. It is putting together a series of workshops on how to recycle in the workplace, in conjunction with the New York Chamber of Commerce, the Real Estate Board of New York, the Institute of Scrap Recycling Industries, and other organizations. The Department's Marketing Unit is working on measures designed to stimulate market development in the public and private sector. Finally, the Department's Enforcement Division will continue to check businesses, private carters, and transfer stations to make sure that they are in compliance with the mandatory recycling law.

Provide a plan for citywide public-space waste-prevention and recycling. (20.)

The Department will implement and evaluate a pilot program to collect newspaper, bottles, and cans in mid-town Manhattan near subway exits and clusters of food vendors, and will pursue a similar program with the Parks Department at City parks.

Who was "the Little Flower" who is mentioned on page 1-7? (21.a.)

This is a term of endearment used by New Yorkers in referring to Mayor Fiorello H. LaGuardia (1934-45). He evidently does not enjoy a state-wide reputation.

"In Appendix Volume 1.1, Appendix 1-C, on page 4,..."crack vials" are specifically noted as a contributor to harbor debris. If "crack vials" are truly a significant contributor to harbor debris then it should be specified, as was specified with the other specifically noted wastes, what percentage of the waste stream these crack vials represent. If they are not a significant contributor then the relevance of this notation is not understood and it should be removed accordingly." (21.b.)

The paragraph in which the term "crack vials" appears reads, in its entirety, "The source of most CSO debris is believed to be street litter, due to the low concentration of sanitary and medical wastes. Medically related waste ranged from 0 to 0.5 percent (average 0.3 percent) of the wastes, depending on the location sampled. Generally, medical waste consisted of 1-cc syringes. Sanitary sewage items accounted for an average of 3.7 percent of the waste stream in the form of condoms and panty liners (1.7 percent each) and plastic tampon applicators (0.3 percent). On a monthly average for the New York CSOs, approximately 7,000 condoms, 5,000 tampon applicators, and 850 medical-related items are discharged. The remaining 93.5 percent of CSO debris is considered street litter, including: candy wrappers, plastic bags and bag fragments, cigarette butts, straws, crack vials, bottle caps/lids, juice bottles, styrofoam cups, and plastic utensils." Since none of the illustrative materials used to characterize typical materials found in "street litter" is identified in terms of a "percentage" -- the purpose of the paragraph is clearly to convey an understanding of the source of most "floatables," which are commonly misunderstood to be largely made up of "medical wastes" -- the import of this comment is unclear.

"In Appendix 4-C, on page 134, it is stated that 'The use of various chemical stimulants has been proven to be effective in promoting short-term worker efficiency, although the long-term impact on worker productivity has not yet been established.' It should be explained what relevance a statement such as this has to the plan and why it appears in the plan. If not relevant, it should be removed accordingly." (21.c.)

Occasionally a consultant, in order to "test" his project managers, will insert "markers" -- much as a biologist may

use a radioactive isotope to track an organism's physiological processes -- to see if they are "awake." They were. This comment is based on such an "isotope" in a preliminary draft of this appendix, which did not appear in the Draft GEIS.

What are the "'local cultural practices' due to large ethnic populations," which are mentioned in Appendix 1-D as "one reason cited for NYC sludge generation rates being lower than those found in other major urban areas"? (21.d.)

This statement refers to differences in food preparation practices and other differences in water use which could impact on suspended solids, etc. However, there are no definitive studies which have been performed to substantiate this statement. Therefore, the sentence has been removed.

Minor wording changes are suggested on four pages. (22.a., b., c., d., e., f., g.)

Done.

ATTACHMENT 3

Conflicts with 120-aa. (1.)

See the revised Chapter 19.

Implementation plan and schedule (2., 3., 4.)

See the revised Chapter 19.

Tires in the waste stream must be accounted for, and their potential for recycling addressed. (5.a.)

Tires are addressed in Appendix 3-L (generation rates, processing options, recycling markets). A waste-tire processing (i.e., shredding) facility is one of the "reference facilities" evaluated (the characteristics of this facility are presented in Appendix 5).

The City's recyclables-recovery program must seek to maximize, to the extent economically and technically practicable, the recovery/reuse of solid waste in each of the major waste-stream categories. (5.b.)

This is the goal of the plan. See the revised Chapter 19 for a more detailed implementation program.

Provide more detail on the proposed household-hazardous-waste

program. (6.)

See the response to Attachment II, 9.a.

What is the plan for the disposal of dredge spoils after the closure of the Mud Dump Site? (7.)

As noted in the plan, the U.S. Corps of Engineers is responsible for the disposal of the great majority of dredge spoils generated in the city, and the Corps' plans for this material after the closure of the Mud Dump site is to use "borrow pits" on the ocean floor. The Department of Sanitation plans to develop an alternative management system for disposing of the small proportion of this material that is generated by the Department of Sanitation (see the relative tonnage figures presented in the plan). (For more detail on what the Department of Sanitation is doing, see the response to Attachment I, VII.B.3.)

What is the proposed throughput for the upgraded Southwest Brooklyn incinerator -- 750 tpd as requested in the permit application, or 1,000 tpd as stated in the plan? (8.)

750 tons per day. The reference to "1,000 tpd" in Chapter 15 represents a rounding that occurred during the scenario-construction and -evaluation process.

List in detail the financing mechanisms for all plan implementation costs. (9.)

See the new Section 19.4.

Address the effect that marketing the City's recyclables will have on the market abilities of neighboring jurisdictions, and the measures that will be taken to prevent market saturation. (10.)

The City has been an active participant in the Regional Plan Association's "Discarded Materials Management Plan" for the 31-county metropolitan region. This study has modelled the effect of the waste-management plans of all 31 counties, and thus has assessed the total tons of "prevention" that the region is proposing, as well as the total tons of recyclables coming into the region as a whole. Thus, although NYC is proposing to recover 2.7 million tons of recyclables by 2000, the RPA region will be generating 6.7 million. The next phase of the RPA study will be examining the question of a region-wide market-development strategy to address the over four-fold increase in recyclables that will be generated by this region between 1990 and 2000. The

City's major emphasis, as well as the RPA's, will be to focus on content legislation for all paper grades and for all types of packaging materials, at the state, regional, and federal levels. This will be the only solution that ensures that market development will occur at a sufficient level to account for all of the region's recyclables. The State of California's experience suggests that the development of individual reuse facilities will readily follow. Steps were taken to site and develop over 1500 tons/day of newsprint de-inking capacity within the first year after the passage of California's legislation requiring that newsprint contain 50% old newspaper.

Identify the measures that will be taken to produce recyclable materials that will be of marketable grades. (11.)

The proposed "high-quality" source-separation/recycling program is designed to produce materials of the highest-quality possible, while maintaining processing flexibility so that changing market conditions can be met. The use of plastic bags will keep newspapers and textiles clean and dry and prevent bleaching through exposure to sunlight. The segregation of paper and textiles from other materials will prevent the contamination of these materials by food or liquids from containers, as well as from glass shards.

At the processing centers, paper grades will be sorted and baled (most newspaper is projecte to meet specifications for #8 news; the rest will meet #6 specifications -- see Appendix Volume 4 and Appendix 5-A for the projected relative volumes of these grades, as well as for other processing details). After magnetic separation to sort steel and bi-metal cans, cans will be flattened and baled according to metal type (aluminum and ferrous). Plastic will be sorted (PET, HDPE, film, and perhaps more grades as appropriate to meet market conditions), shredded, and baled. Unbroken glass will be sorted by color and crushed and containerized for shipping. Other glass colors and broken glass will be crushed, containerized, and sold for use in glassphalt (or to equal or superior markets). In conjunction with the steps that have been noted elsewhere which will be taken to strengthen the markets for these materials, and to improve the City's contracting procedures (e.g., long-term contracts), the City expects to be able to market most of the recyclables that it recovers.

Provide more specificity on the percentages of materials that will be recycled, on a year-by-year basis. (12.)

See the revised Chapter 17.4.

Provide more detail on private-sector recycling: exact amounts and types of material that commercial generators are expected to recycle. (13.)

See response to Attachment II, 3.a.

The statistical projections based on the waste-composition study used only one demographic variable -- population density. While it is true that population density is the most important "driver" of waste generation, income is also a factor. Therefore, provide a correlation, with the numerical correction factor R-squared, for income as well as for density. (14.)

Population density was selected as the primary "driver" for statistical extrapolation purposes, even though income data was also used in developing samples for the waste-composition/generation study. This is because, in analyzing the correlations between these two factors and waste compostion and generation, it became apparent that by far the most significant correlation was with density; adding income did not significantly improve the degree of statistical confidence. Another reason for relying on the density factor was that the income data was based on the 1980 census, and thus had to either be adjusted for inflation (a questionable method to use), or be updated with 1990 data -- but these latter were not available at the time of the study.

In order to investigate the effects of income and density on waste-generation, the Sanitation Department's Operations Management Division did a study of linear and non-linear models on the 20 census tracts sampled during the four seasons of the waste-composition study. The major purpose of this study was to analyze the efficacy of using income in the model. Both models were tested with one variable (units/stop), and with two variables (income) and (units/stop).

Linear Model: lbs/unit = a + b*(income) + c*(units/stop)

Non-Linear Model: lbs/unit = a*(income)^b*(units/stop)^c

Linear Model

(one variable):

lbs/unit=49.236-0.351*(units/stop) R-squared=.531

(two-variable):

lbs/unit-55.516-0.0005*(income)-0.346*(units/stop) R-squred-.540

In both cases, the (units/stop) variable is significant, but the two-variable model has an income coefficient with a t-value of 1.03, which is not significant.

Non-Linear Model

(one variable)

lbs/unit=60.288*(units/stop)^-0.206 R-squared=.729

(two-variable)

lbs/unit=648.503*(income)^-0.250*(units/stop)^-0.204 R-squared=.757

In both cases, the (units/stop) variable is significant, but the two-variable model has an income co-efficient with a t-value of 1.392, which clearly is also significant. The F-test for the inclusion of the income variable revealed an F-statistic of F(1,17)=1.958, which indicates that the two-variable model (which includes income) is nominally better than one that uses density alone.

This is the major finding of this analysis. The linear model shows that income has no effect on waste generation. This model has a low R-squared, and has limited value. The non-linear model demonstrates a connection between income and waste generation. It also has a higher R-squared. However, for simplicity, the one-variable model may be used, with only 2.8% less accuracy.

ATTACHMENT 4

EXPLOITING THE CITY'S POTENTIAL MARKETING ADVANTAGE: At the heart of a City marketing strategy there needs to be a discussion of how it will manage the risk associated with marketing materials to single outlets, price fluctuations, and other aspects that may contribute to the market volatility for a given material. In particular, the City's approach to procuring long-term materials contracts -- by RFP rather than by negotiation -- may not be the best approach. The City should also consider a commitment to purchase materials as a means of securing long-term contracts with consuming mills.

The Sanitation Department's marketing approach is cognizant of the issues raised in this paragraph. It will minimize its risks by not marketing to one outlet only; it has also developed price-adjustment mechanisms for both processing

and marketing contracts. In terms of procurement alternatives, Sanitation is working with the Department of General Services and the NYC Economic Development Corporation's Economic Policy and Marketing Unit to develop a cost-benefit model which could be used to justify a sole-source agreement. Such a model would enable the City to show the solid waste, purchasing and economic development benefits to a contract with a vendor who would use Sanitation recyclables in a City location to manufacture a product which DGS or other agencies could purchase.

While the RFP method of procurement is lengthy and can be considered cumbersome, the Department developed a prototype RFP (for wastepaper) which can be readily adapted to other secondary materials. In reference to the wastepaper RFP, it received a substantial number of proposals, and in a competitive process the Department was able to select the most beneficial proposal. Such a competitive process, and the attendant benefits, would not be possible with a sole-source contract.

The Deparment of Sanitation believes that it always has a fiduciary obligation to obtain the best possible combination of price and terms in any contract and regardless of the method of solicitation employed. Indeed, the achievement of such a combination is the primary driver in choosing which method of solicitation will be used. As an example, in a non-routine solicitation or where factors other than price and easily measurable qualifications are to be evaluated, the use of a request for proposals (RFP) can, in the Department's experience, produce optimal contract arrangements. There is no inherent reason why an RFP process need be either long or cumbersome.

When appropriate, the Department does intend to engage in competitive bidding for certain long-term contracts. At this time, revenue contracts are not subject to the City's Procurement Policy Board (PPB) rules, and it would therefore be permissible to negotiate directly with the selected proposer or the apparent high bidder to obtain a higher price or better terms. Currently, there is a bill before the City Council which would subject all contracts, including revenue contracts, to the PPB rules. Imposition of those rules to revenue contracts would preclude the Department's ability to negotiate with an apparent high bidder after bid opening.

In general, the Department would be opposed to engaging in direct private negotiations with potential purchasers of recyclable materials, outside a recognizable solicitation

framework intended to protect open competition and fairness. The opportunities for and appearances of conflict of interest would rise dramatically in such situations. Moreover, in the absence of broad solicitation, whether by RFP or invitation for bids, there is no reason to believe that such negotiations would result in better terms or prices.

The Department is requesting an opinion from the City's Law Department regarding the potential effects of PPB imposition on revenue contracts and, if necessary, the City could seek a State Comptroller ruling at that time.

DEVELOPING A SUPPLY INFRASTRUCTURE: The plan does not provide sufficient linkages between its proposed recyclables collection/processing system and marketable end-user specifications.

On the contrary, the clear objective of the proposed "high-quality" program -- which was developed through precisely such an integrated analysis of system-wide economics as this comment advocates -- is to produce as high-grade materials as possible to achieve the most favorable marketing position. This analysis is documented in the ground-breaking study (Appendix 3-A [see subappendix E for a particularly detailed analysis of the most significantly problematic material in this regard -- old newspapers]) prepared by Cal Recovery, Inc.

DEVELOPING MANUFACTURING CAPACITY: the plan should include a strategy which identifies a set of action steps that the City will take to create new or expanded local capacity and influence the development of out-of-city capacity.

The market studies contained in the Appendices provide the basis for determining where manufacturing capacity is lacking, and the Sanitation Department's work with the Economic Development Corporation (EDC) and its predecessors has focussed on specific private-sector initiatives. To date, locations within the five boroughs have been found wanting by potential manufacturers. The combined cost-benefit model discussed above will provide a unified method of determining the value of particular projects, and research being conducted by EDC will allow the City to focus on projects which are most likely to be viable.

The Sanitation Department's influence on out-of-city capacity is limited. In its legislative agenda for RCRA, it stresses the need for federal minimum-content requirements, expanded procurement guidelines, increased leadership from

federal agencies, and the trading of recycling credits. All of these measures would expand manufacturing capacity for secondary materials at the national level. On a state/regional level, the Department has a good working relationship with municipal recycling officials, state agencies, Chambers of Commerce and manufacturers; its position is that if a given manufacturing operation cannot be sited successfully in New York City, it is our objective to steer that project to somewhere else in the state (or region -- New Jersey and Connecticut also offer potential sites), since in the marketplace additional capacity will indirectly improve conditions for the Department's materials.

More specifically, the plan should identify the kinds of manufacturing capacity the City will seek to develop, and how it will employ its economic development resources in doing so. In assessing these opportunities, the City should not rule out the desirability and feasibility of attracting new manufacturing industries on a large scale.

The Department of Sanitation is working with the Economic Development Corporation to attract manufacturing industries to the city that use recycled materials. At present, the City is negotiating with a private company that has made a proposal to construct a de-inking facility in the city.

MARKET ANALYSES: Insufficient information is provided about the relative substitutability of unprocessed secondary materials for virgin alternatives.

See the addition on this subject that has been added to Appendix 3-A.

The market analysis seems to be premised on the notion that material supplies and demand adhere to strictly defined regional boundaries (i.e., the Northeast). In reality, what constitutes an appropriate region for assessing the demand for NYC's recyclables varies significantly by material.

True. This issue has been treated in more detail in a revision to Appendix 3-A.

OTHER ISSUES: The plan is not specific about how City agencies -- not just the Department of Sanitation -- will act in concert to develop markets. Nor is there a discussion of how the plan will be financed.

The Department of Sanitation is working with the Department of General Services to use the City's procurement system to

develop a market for recycled materials. The Department is also working with the Port Authority and the Environmental Defense fund to find markets abroad for recycled materials as well as to develop infrastructure in the region to use recycled materials.

21.2.2 Responses to Advisory Board Comments.

21.2.2.1 Comments from the Bronx Solid-Waste Advisory Board.

Analysis of "A Comprehensive Solid Waste Management Plan for New York City and Draft Generic Environmental Impact Statement, March 1992," Submitted to Bronx SWAB by CBNS.

I.A.1. The plan does not consider the ...City Charter's Fair Share criteria.

Section 203 of the Charter authorizes the City Planning Commission to establish criteria for the location of City facilities. The Commission adopted the criteria on December 3, 1990.

These criteria will be used in selecting and evaluating sites for the new City facilities contemplated in the plan. The plan does not itself propose specific sites for new facilities.

The siting criteria and analyses in the draft plan, in which individual collection programs and facility components were evaluated in the context of overall, integrated systems, in order to assess their individual and overall economic and environmental impacts, are consistent with the fair-share criteria. One of the most significant components of the siting analysis, as stated in the plan, are the proposed wastesheds, which would minimize transport distances to the greatest extent feasible (thus reducing costs and environmental impacts), while maximizing the equitable distribution of waste-management facilities throughout the city in a way that will minimize adverse environmental impacts. Moreover, the SEQRA fair-share factors will be considered during the process of siting individual facilities.

I.A.2. In siting new proposed waste-management facilities, the plan fails to consider local areas of saturation...

The plan did not "site" new waste-management facilities, but simply identified areas that might potentially be suitable for facilities of the types proposed, based on appropriate land-uses, transportation access, and other relevant criteria. Site selection for specific facilities will take place through subsequent environmental analyses and applicable land-use-approval procedures. In such analyses, detailed evaluations of