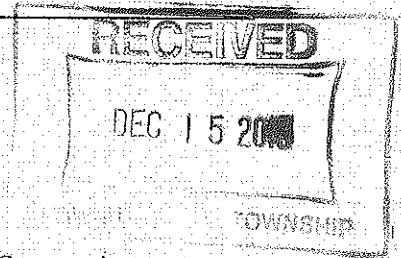


# Hanover

Engineering Associates Inc



December 15, 2015

Mr. Jack Cahalan, Manager  
Lower Saucon Township  
3700 Old Philadelphia Pike  
Bethlehem, PA 18015-5426

RE: IESI PA Bethlehem Landfill Corporation  
Facility ID 100020  
Phase IV and Southeastern Realignment  
Land Development Plan  
2335 Applebutter Road  
Tax Map Parcel P7-5-33  
LST Project LD01-2015  
Hanover Project LS15-28

Dear Jack:

We have reviewed the submission for the above-referenced project, consisting of a Plan dated August 17, 2015, last revised October 12, 2015, as prepared by Martin and Martin, Inc.

IESI proposes to raise the height of the landfill from Elevation 707 to Elevation 725 (feet above sea level) and expand further to the east.

Public sewage disposal and public water facilities exist and are to be retained, with some modifications proposed in the area of the citizen drop-off area. According to the Zoning Map, the site is located in the Light Industrial (LI) Zone, and only the portion of the property directly along Applebutter Road is identified to be within the Carbonate Geology Overlay District.

We offer the following comments, which are numbered in accordance with the comments in our October 29, 2015 letter, for your consideration:

## A. GENERAL COMMENTS

S

### ROUTING

- Council
- Manager
- Asst. Mgr.
- Zoning *orig*
- Finance
- Police
- P. Works
- P/C
- P & R
- EAC
- Engineer
- Solicitor
- Planner
- Landfill
- EMC

1. The changes would allow an increase in total landfill solid waste disposal capacity, for which a Major Permit Modification would be required. The Township Technical Consultant Committee issued review comments on the proposal in a December 14, 2015 letter. Any approval by the Township should be contingent upon approval of the Major Permit Modification.
2. The Plan proposes the construction of a retaining wall along the southern access road that is approximately 65' tall. The design for this retaining wall which is certified by a Professional Engineer must be provided to the Township.
3. The methods of stormwater management provided (to address peak runoff rate) are generally consistent with those of the original approval for this

project. However, these methods do not appear to be consistent with the current regulations (governing runoff volume, recharge volume, and water quality).

**B. GRADING ORDINANCE COMMENTS**

1. Section 77-5 – The work performed would appear to require a permit per this Ordinance. The Applicant shall consult with the Zoning Officer as to whether any separate application is necessary and whether the Land Development Plans submitted may also serve as the Grading/Earth Disturbance Permit Plans.
3. Sections 77-5.E(3)(a)[7], 7.A.J, K, 145-33.E(3), (4), (5) and 48 – See Stormwater and General/Technical Comments.
4. Sections 77-5.E(5) and 137-11.O -- The Plans and Stormwater Reports, if revised, must be signed and sealed by the registered professional engineer that prepared them.
7. Sections 77-7.G and 137-23.G – All topsoil stockpiles must be noted to be protected from erosion, and a topsoil stockpile must exist until topsoil is spread over the site. The topsoil stockpile is currently only shown on Sheet ES-1 and ES-2, in a location that is proposed to be disturbed by the proposed expansion to the southeast. The Plans should clarify where topsoil will be stockpiled while this area is being disturbed.

**C. STORMWATER MANAGEMENT COMMENTS**

1. Sections 137-6.D and 29 – Significant revisions have been made and the Drainage Plan is subject to the provisions of Chapter 137. However, this review letter discusses only those features that have been revised and does not comment on the current Ordinance compliance of existing facilities (swales, pipes, basins) that were previously analyzed for drainage areas that have stayed the same or been reduced in size.
2. Sections 137-11.K and 13.A – The Plan does not propose stormwater runoff volume controls. It has been determined that the site is not subject to infiltration requirements as infiltration is prohibited on Hot Spot Land Uses (per Section 137-15.L), and this development qualifies as a Hot Spot Land Use (per Section 137-15.K(1)) as it is an Industrial Use with an NPDES Permit for industrial stormwater discharge.
7. Section 137-13.R – The materials submitted to obtain the NPDES Permit must be provided and be consistent with the Plans the Township approves.
8. Sections 137-14.B and 26.C(2) – The tributary hydrographs to detention basins and time/elevation/storage volume/release rate tables for each routed hydrograph should be provided.

The Plan notes Formula B seed (ryegrass, fescue, and bluegrass) for non-stormwater management areas. The post-closure maintenance of this surface has not been identified.

Post-closure maintenance provisions for rock-lined swales must be provided on the PCSM Plans.

14. Sections 137-18.C and L – Basin 2 does not dewater in eight (8) hours as required by Township regulations or three (3) days per PA DEP BMP design standards. On Page H-24 of the analysis, the draindown time from the 100-year storm is anticipated to be 17.56 days, assuming a dry basin at the beginning of the storm.

If ponding or longer storage durations are to be permitted, the Designer should confirm that basin routing analysis is performed as if the basin starts full or partially filled in the analysis. Analysis has been provided in Appendix I that determines that the basin will not overtop when it is full at the start of the storm, however the release rates (69 or 158 cfs, depending on assumed storage volume at the start of the storm) would significantly exceed the permitted release rate (13.1 cfs). If this design is to be permitted, the Designer must identify that adequate downstream conveyance exists for the spillway discharge.

15. Section 137-18.E – The basin analyzed (Basin 2) uses an orifice size of 2 inches rather than one meeting the minimum 3 inch orifice size required. Basin 4 uses an orifice size of 2 inches. Details for the outlet structures for the other basins have not been provided as the Developer does not propose to change them. The Applicant seeks a waiver of the requirement similar to the previous conditionally approved Cell 4F Modification Plans.
18. Sections 137-18.H and L(6) – The basin is not fenced as required. The Applicant seeks a waiver of the requirement similar to the previous conditionally approved Cell 4F Modification Plans.
19. Section 137-18.I – Basin landscaping is required by this section.
21. Section 137-18.L – The basin maximum slope, storage depth, and storage duration are exceeded. The applicant seeks a waiver of the requirement similar to the previous conditionally approved Cell 4F Modification Plans.
22. Section 137-18.N – This section requires permanent detention basins to have a minimum bottom slope of 1%. Flat bottoms are only permissible for sedimentation basins and for approved infiltration basins. The plan proposes a flat bottom for Basin 2.
23. Section 137-18.O – This section requires a 0.5 freeboard separation between the 100 year water surface elevation and the bottom of spillway. The designer has demonstrated compliance for Basin 2, but assumes that the

basin is empty at the start of the storm. Since the basin is designed with a lengthy drain time, this assumption may not be valid and should be reconsidered by the designer.

26. Sections 137-19.G(8), (10), and Appendix A.B – These sections require all stormwater structures to be consistent with PennDOT Design Standards (including PennDOT Publication 408 Section 605 and Publication 72M, Standards for Roadway Construction). Most of the endwalls and detention basin outlet structures are not consistent with PennDOT standards. Concrete footers for endwalls have not been identified, as required. The Applicant seeks a waiver of the requirement for temporary erosion control structures, similar to the previous conditionally approved Cell 4F Modification Plans. Postconstruction design has not been provided for all basins.
27. Section 137-19.G(14) – Flow is required to be conveyed overland to the same destination if storm sewers fail. If the C-17 endwall is clogged, water will drain northward rather than southward to Basin 2. A waiver has been requested.
28. Sections 137-21 and 22 – Copies of all Plans and calculations submitted to other government agencies shall be submitted to the Township and shall be consistent with the design presented in the Subdivision Plan submissions to the Township.
29. Section 137-23.M – The Plan shows slopes in excess of the maximum 3:1 permitted. At the southeastern corner of the site, slopes are proposed at 2:1. The grading proposed at the retaining wall is 1:6. The Applicant seeks waivers of these requirements. The Applicant notes that they believe IESI has the equipment necessary to maintain this slope. It is not clear how these slopes are to be maintained after active maintenance of the site has ended.
30. Section 137-26.C(4) – See General/Technical Comments.
31. Sections 137-26.D, E, 34, 36, 37, 38, and 145-34.D(5) – Legal Agreements (addressing easements and maintenance responsibilities) must be addressed. The Applicant seeks a waiver of the requirement, pending satisfaction of the Township Solicitor with the postclosure maintenance of the site, similar to the previous conditionally approved Cell 4F Modification Plans.  
  
Stormwater Management Facilities are to be inspected and maintained (per notes on PCSM Plan Cover Sheet) after closure on a quarterly basis and any “major storm event.” The definition of a “major storm event” must be clarified.
33. Sections 137-37.B and C – Easements have not been identified on and around culverts, swales, and basins as required by this section. The Applicant seeks a waiver of the requirement, pending satisfaction of the Township Solicitor

with the postclosure maintenance of the site, as previously conditionally approved with the Cell 4F Modification Plans.

34. Section 137-Appendix I – The Storm Drainage Easement Maintenance Covenant is not provided. The Applicant seeks a waiver of the requirement, pending satisfaction of the Township Solicitor with the postclosure maintenance of the site, similar to the previous conditionally approved Cell 4F Modification Plans.

**D. SUBDIVISION AND LAND DEVELOPMENT COMMENTS**

1. Sections 145-19.C(4)(b),(e), (f), and 145-34.D(8) – Adequate copies of the approved Erosion and Sedimentation Control Plans and Narratives must be provided.
3. Section 145-21.B(1)(d)[7] – Comments from the Fire Chief and Police Chief should be obtained and considered.
4. Section 145-26.A – Deeds (and descriptions) for all easements shall be prepared per this section.

Additional Stormwater Easements may be required; see Stormwater comments.

The Stream Easement Boundary Lines are not visible on the plans. The Designer should confirm that the lines are consecutive around the boundary of the easement. The Designer should provide a closure review of the easements.

5. Sections 145-30 and 34.D.(6) – Insurance for the construction is required per these sections. The Applicant seeks a waiver of the requirement to allow use of existing liability insurance, similar to the previous conditionally approved Cell 4F Modification Plans.

An Improvements Agreement, with security, as found acceptable by the Township, shall be provided.

6. Section 145-33.A – A separate Preliminary Plan is required. The Applicant seeks a waiver of the requirement similar to the previous conditionally approved Cell 4F Modification Plans.
7. Sections 145-33.C(1) and (2) – Some of the required existing features information has not been provided. The Applicant seeks a waiver of the requirement to not show any further detail than is currently on the plans, and to use 2013 aerial survey information.
8. Sections 145-33.C(1) and (5) – The Developer has requested a Jurisdictional Determination from the Army Corps of Engineers to delineate the wetland

boundary. All correspondence to and from the Army Corp of Engineers shall be furnished to the Township.

15. Sections 145-33.E(8) and 34.C(10) – The sequence of construction must provide approximate durations and dates.  
  
The sequence of construction must be corrected to include all proposed development. Several cells (Cells 3A, 3B, 3D, 4A, 4B, 4D) which are proposed to be changed are not noted or are noted as “Completed” in the Sequence.
16. Section 145-33.F(1)(a) – A plan note for drainage easements is required. The Applicant seeks a waiver of the requirement, pending satisfaction of the Township Solicitor with the postclosure maintenance of the site similar to the previous conditionally approved Cell 4F Modification Plans.
17. Section 145-34.D(5) – Agreements are required for the operation and maintenance of stormwater management facilities. The Applicant seeks a waiver of the requirement, pending satisfaction of the Township Solicitor with the postclosure maintenance of the site as previously conditionally approved with the Cell 4F Modification Plans.
24. Sections 145-33.F, 34.C(8), and 34.E – All signature blocks must be properly executed (signed, sealed, and/or notarized) prior to unconditional Plan approval.
25. Sections 145-41.B(4) and 45.B(9) – These sections require that existing roads adjacent to the property must be improved to Township construction standards.
27. Section 145-45.B(3) and Appendices A-2.A and M – Sidewalk and curb are required for collector roads; neither has been proposed along Applebutter Road (a collector road).
28. Section 145-45.G(2) – Driveways are required to meet the minimum specifications of this section. The Applicant seeks a waiver of the requirement, similar to the previous conditionally approved Cell 4F Modification Plans. The waiver justification references temporary drives being used during waste hauling, but does not discuss post-closure drives for site access. A Detail on Sheet 13 of 17 proposes an unpaved drive from Station 201+69 to Station 29+41.
29. Section 145-46.B(3) – Drainage easements are required for stormwater conveyance. Drainage easements have not been provided over the swales, culverts, and basins. The Applicant seeks a waiver of the requirement.

31. Sections 145-51.D and E – Land dedication or fee for recreation/open space may be required per these sections; we are not aware that the Township is seeking this as the use of the property is not changing.
33. Section 145-52.B – Street trees are required by this section. The Applicant seeks a waiver of the requirement.
35. Appendix A-2 – Additional details must be provided for any widening proposed to existing streets.
35. Appendix A-5.C(4) – Wetland plantings are required for detention basins unless the Township approves another wet-tolerant planting. The Note on Sheet ES-18 references Formula D seed throughout the basin, however the Sheet PC-3 which details Basin 2 identifies “Retention Basin Floor Seed Mix” for the lower portion of the basins. The Plan must clarify what “Retention Basin Floor Seed Mix” is proposed.

#### E. ZONING COMMENTS

1. Section 180-98 – The Applicant is required to address any traffic impacts caused by the development.

The Traffic Impact Study indicates that no additional traffic will occur as the rate of refuse deliveries will not change; however, 6 days per month an additional 50 trucks per day would be added to the normal truck traffic of approximately 172 trucks entering and leaving the site. It is reported that all trucks will access and leave the site by way of Applebutter Road west of the site.

The Study shall evaluate the ability of any additional types of trucks to negotiate the multiple areas of curvature along Applebutter Road within their respective cartway lanes.

Crash Histories shall be submitted/reviewed to determine any crash patterns attributable to truck traffic.

The adequacy of roadway signage, particularly advance warning signs for roadway curvature shall be evaluated for truck traffic along the proposed Applebutter Road Route.

While the daily refuse traffic may not change, the duration of the traffic will increase as the duration of landfill operation increases; therefore, the structural adequacy of Applebutter Road shall be evaluated for the additional truck traffic and duration.

Additional traffic concerns may be identified in the review letter from the Township Technical Consultant Committee.

F. GENERAL/TECHNICAL COMMENTS

2. The approved Modification Plans and Land Development Plans must be consistent. Copies of the approved Modification Plans will need to be provided to the Township.
3. The narrow access strip in the northeast that looped from the maintenance building to the access drive no longer connects to the access drive.
4. The citizen drop off area is proposed to be relocated closer to the entrance, between Basin 1 and Basin 2.
6. As the construction sequence is to be based upon the sequence of Cells, the map of Cells must be included in the Erosion Control Plans.
7. The Cover Sheets should be numbered and included in the Table of Contents of the Plans.
8. The Table of Contents should identify the current revision date for Sheet 17 of 17.
9. The Designer should confirm the Stations provided on Sheet 13 of 17 for the beginning and end of cross-section details and for the stormwater culvert crossings (C-26 and C-22) shown on the profile.
10. The Plan should clarify the discharge point of the bench (swale) in the southeastern corner of the site between Channel N and the Access Road.
11. The Summary of Culvert Pipes appears to have the Outlet Structures reversed for MH 13 and MH 12 relative to plan and profile views. MH 16 is shown as I 16 in plan and profile view.

Due to the number of comments that could impact the design if ordinance requirements are not waived, we have issued this letter without a complete technical review. Additional technical review, and thus related additional comments, may be best addressed after it has been determined whether significant items (such as the runoff coefficients, natural resource protections, previous prohibitions on expansion, and waivers from infiltration and basin design requirements) have been resolved.



Mr. Jack Cahalan, Manager  
Lower Saucon Township

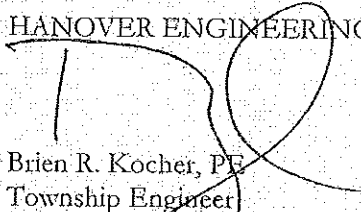
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December 15, 2015

If you have any questions concerning this review, please contact the undersigned.

Respectfully,

HANOVER ENGINEERING ASSOCIATES, INC.

  
Brian R. Kocher, PE  
Township Engineer

brk/dad:jle

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cc: Ms. Leslie Huhn, Assistant Manager  
Mr. Chris Garges, Zoning Officer  
B. Lincoln Treadwell Jr., Esquire  
Ms. Judith Stern Goldstein, ASLA, RLA  
Mr. Richard M. Bodner, PE, Martin & Martin, Inc.  
Mr. Al Schleyer, IESI  
Mr. Dave Buzzell  
Ms. Mary Anne Garber