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Environmental Standards for Fill Advisory Committee
DRAFT Report
December 12, 2005

During the fall of 2005, the Environmental Standards for Fill Advisory Committee, was appointed by the Acton Board of Selectmen and the Acton Board of Health as an advisory committee to the Acton Board of Health.

A. Goal

The goal of the committee was to examine existing Municipal, State, and Federal regulations, that are applicable to the use of fill within the Town of Acton, especially as applicable to the Acton landfill, to determine whether or not changes should be made to local regulations or bylaws, to better protect Acton's natural resources, public health, and safety.

B. Environmental Standards for Fill Advisory Committee

Chair: Mary Michelman, (ACES)
Secretary: Carol Holley, (ACES, Life After NESWC Committee)
Peter Ashton, (Acton Board of Selectmen)
Mary Bassett-Stanford, Esq, (member at large)
Joanne Bissetta, (Acton Board of Health)
Doug Halley, (Acton Health Director)
Sue Kennedy, (Acton First)

C. Background

In an effort to determine the current worth of the Acton Landfill, and potential scenarios for recapping the site, the Acton "Life After NESWC" (LAN) Committee issued a series of RFPs in the fall of 2004. A redevelopment proposal that was received by the Town included the provision to bring in large quantities of fill to help defray the cost of redevelopment of the site.

A citizens group named "Acton First" formed in response to the development proposal. One of their concerns was that current regulations might allow the use of fill materials, including construction and demolition (C&D) wastes, that contained contaminants that might pose a risk to the community and its natural resources. In particular they were concerned about the potential for the fill material to contain asbestos, lead, and other potentially hazardous materials. The Acton First group met with the Board of Selectmen, and circulated a citizens petition which placed a warrant article, (which was reviewed by Town Counsel), on the June 13, 2005 Special Town Meeting.

After discussion with the chairman of the Acton Board of Health, a representative of the Acton First group agreed to request that no action be taken on the article at the June 2005 Special Town Meeting, with the understanding that a working group would be formed in the fall to study the concerns brought up by the warrant article. This working group would review the Town's existing Hazardous Materials Bylaw and any other relevant bylaws or regulations or other information, and make recommendations for any appropriate changes to address the concerns about environmental standards for fill material.

D. Process

The Environmental Standards for Fill Advisory Committee considered five possible areas of concern:

1. Asbestos and asbestos containing materials
2. C&D Wastes
3. Use of contaminated soils at the capped landfill
4. Possible future redevelopment of landfill; use of hazardous materials
5. Other areas in Town

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Information relevant to these areas of concern was gathered from various sources and reviewed. (See Resource list below.) The committee especially considered regulations/protocols currently in place that are intended to minimize risk from potential contamination in fill. The goal was to determine whether or not additional protections are needed, and to make recommendations for adjustments to local bylaws/regulations/protocols as needed.

E. Resources

Resources consulted by the Environmental Standards for Fill Advisory Committee included the following: (Copies of documents, available on request.)

- Warrant Article 3 "Environmental Standards for Fill Material Bylaw", June 13, 2005, Acton Special Town Meeting
- Acton's Hazardous Materials Control Bylaw, Chapter I of Town Bylaws
- Acton Zoning Bylaw Section 4.3 (also includes DEP & Federal references) http://doc.acton-ma.gov/dsweb/Get/Document-9328/Zoning+Bylaws+2005.pdf
- DEP Policy # COMM-97-01, "Reuse and Disposal of Contaminated Soil at Massachusetts Landfills" (http://www.mass.gov/dep/bwp/dswm/files/97-001.pdf)
- DEP definition of C&D waste within 310 CMR 19.006 (http://www.mass.gov/dep/recycle/laws/310cmr19.htm#006)
- DEP classification of "Special Wastes" See 310 CMR 19.061
- Asbestos info on DEP and EPA websites. (See: http://www.mass.gov/dep/air/asbhom01.htm and http://www.epa.gov/asbestos)
- "Asbestos Information and Resource Guide", MADEP Bureau of Waste Prevention, Revised Oct. 2003 (http://www.mass.gov/dep/air/asbguid.doc)
- DEP Construction and Demolition Wastes revisions, current status---verbal update Oct. 2005
- Correspondence re: Clay delivery to the Forest Road Landfill Acton, (Central Artery Tunnel Clay Distribution Program)
- DEP Permit for Post Closure Reuse of Acton landfill, November 2005
- Characterizations of Building Related Construction and Demolition Debris in the United States, EPA Report No. EPA530-R-98-010 (Definitions for C&D Wastes in various states: (http://www.epa.gov/epaoswer/hazwaste/sqg/c&d-rpt.pdf See p. 1-5 to 1-7))
- DEP standards for contaminants in soils: 310 CMR 40.0975 (6)(a) Table 2 at http://www.mass.gov/dep/cleanup/laws/0975_6a.htm
- Conversations with Acton Town staff and DEP staff
- Various relevant Boston Globe articles
- Bylaws/requirements re: fill in other local communities

F. Discussion

Five areas of concern were identified:

1. Asbestos

Under current DEP regulations asbestos and asbestos containing materials are categorized as "Special Wastes" rather than "Hazardous Waste". There is concern that this different designation may inadvertently provide a loophole in Acton's current Hazardous Materials Bylaw that should be explicitly closed. The detrimental health effects caused by exposure to asbestos are well documented.[1] One of the major goals of Article 3 (the proposed "Environmental Standards for Fill Material Bylaw"), on the June 13, 2005 Acton Special Town Meeting warrant, was to ensure that Acton's local bylaws/regulations specifically prohibited the disposal, or use of fill that contains asbestos. Acton's current Hazardous Materials Bylaw does not make specific reference to either asbestos or DEPs designation of "Special Wastes".

[1] See: http://www.mass.gov/dep/air/asbguid.doc

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2. C&D Wastes

In Massachusetts the regulatory definition of construction and demolition (C&D) wastes, (in 310 CMR 19.006), does not explicitly preclude the presence of hazardous materials in these wastes:

> Construction and Demolition Waste means the waste building materials and rubble resulting from the construction, remodeling, repair or demolition of buildings, pavements, roads or other structures. Construction and demolition waste includes but is not limited to, concrete, bricks, lumber, masonry, road paving materials, rebar and plaster.[2]

Other states' definitions of C&D wastes do explicitly prohibit the inclusion of hazardous materials.[3]

Because of the possible inadvertent presence of hazardous materials, there has been concern about the potential use of large quantities of C&D wastes at the Acton Landfill if the site were to be redeveloped and recapped. Nuisance odors are an additional concern with the potential use of high volumes of C&D wastes at the Acton Landfill, especially given its close proximity to an elementary school and residential properties. This has been an issue in other towns. For example, a September 11, 2005 Boston Globe article entitled "Landfill Odor Riles Newburyport Residents" (by Globe correspondent Erika Lovey), states "The bulk of the material being transported to the landfill is drywall, which contains sulfur. Mixed with the chemistry of the landfill, it creates noxious-smelling hydrogen sulfide gas." The company responsible for capping the landfill in Newburyport violated its contract with the Town, and has been fined by the DEP "for leachate violations and the odor problem."

The DEP has recently revised its solid waste regulations.[4] The revised regulations will become effective by July 2006 [need to confirm date]. DEP employees have verbally stated that the new regulations will encourage further recycling of C&D materials, so that they are removed from the waste stream and used for "beneficial uses". They stated that the new regulations prohibit the disposal of unprocessed C&D wastes and C&D wastes containing hazardous materials in landfills. The C&D wastes that are not recycled are ground up into "fines" which are three inches or smaller, or residuals which are 6 inches or smaller. Both "fines" and "residuals" are allowed to be used as alternative daily cover and for post closure grading and shaping at landfills.

3. Capped Landfill

The DEP has issued a post closure reuse permit to the Town of Acton that states that the Acton Landfill is capped. The permit approved proposed changes/improvements to the site and stated the following as a permit condition: "This approval for post-closure use of the Town of Acton Landfill shall be accomplished such that the integrity of the existing cap and the function of the facility's monitoring systems shall not be impaired in any way. There is to be no penetration of the cap." The proposed post closure uses include improvements to the current recycling center, and the development of recreational uses including a possible driving range or playing fields on top of the cap. The current Board of Selectmen has stated that there are not any immediate plans to implement a recreational use on top of the landfill.

The Town's permit application proposed to use material currently stockpiled at the site, as grading/shaping material under the proposed fields/driving range, etc. This almost 24,000 cubic yards of stockpiled material came from the Central Artery Tunnel Clay Distribution Program ("Big Dig"). Accompanying paperwork shows test results for petroleum hydrocarbons, and arsenic, but not for asbestos, chromium, cadmium, lead, mercury or PAHs. Chlorides were tested, but specific test results were not provided for PCBs, VOCs, or SVOCs. As noted by Massport, (EnviroNews" Issue No. 2, Quarter II – 2000), "Common contaminants in urban fill include heavy metals (e.g. arsenic, lead, chromium) and coal tar derivatives that are the result of early industrial activities". It is in Acton's best interest to know what is in the "Big Dig" material and to act accordingly to proactively protect its natural resources, including groundwater quality, as well as human health and safety.

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[2] http://www.mass.gov/dep/recycle/laws/310cmr19.htm#006

[3] See pages 1-5 to 1-7 at http://www.epa.gov/epaoswer/hazwaste/sqg/c&d-rpt.pdf for definitions of C&D wastes in various US states.

[4] See 310 CMR 19.000 Solid Waste Regulations at: http://www.mass.gov/dep/recycle/laws/310cmr19.htm

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4. Future redevelopment / recapping of Landfill; hazardous material:
There is a possibility that sometime in the future the Town may decide to either redevelop the landfill site itself, or to lease or sell the land to another party and allow them to redevelop it to include structures, which could cause the penetration of the cap. Any such redevelopment would require Town Meeting action and is not contemplated at this time. In that case, the landfill would need to be recapped, and redevelopment could potentially include the use of large quantities of fill in order to defray recapping/redevelopment costs. The Life After NESWC Committee's consultant, CDM, estimated that the site could accommodate approximately 140,000 cubic yards of additional fill.

DEP regulations allow higher levels of contamination to be disposed in unlined landfills than is permissible for fill in residential settings. In particular, the DEP allows Massachusetts unlined landfills to accept the reuse and disposal of contaminated soils generated from 21E sites from instate and out of state locations. Up to 1000 mg/kg of lead and 2,500 mg/kg of total petroleum hydrocarbons are allowed to be used in unlined landfills as daily cover, intermediate cover, and pre-capping contour material.[5] Compare this to a maximum of 300mg/kg of lead and 200 mg/kg (S-1 Soil; GW-1) or 800 mg/kg (S-1 Soil; GW-2 or GW-3) of total petroleum hydrocarbons allowed in residential settings.[6] Lead and asbestos could potentially raise concerns within a community, if large quantities of contaminated fill were brought onto a landfill site, and there was potential for airborne exposure to contaminants. Petroleum hydrocarbons could be a potential concern due to their mobility in groundwater.

Concentrations of contaminants allowed by DEP*

	Lead (mg/kg)	Total Petroleum Hydrocarbons
Unlined Landfill	1000*	2,500*
Non-landfill locations: Soil-1 GW-1	300	200
Non-landfill locations: Soil-1 GW-2 or GW-3	300	800

*DEP may choose to allow even higher concentrations in landfills through the issuance of a permit

Given the proximity of the Acton landfill to an elementary school and a residential neighborhood, and its location between two public water supply fields, the Town should act conservatively and proactively to ensure maximum protection of human health and the environment in relation to any possible future redevelopment of the site.

Other Towns have taken active steps to protect their communities from possible contaminants in fill material. The Town of Wilmington is an example of a community where the issue of reuse of contaminated soils in a local landfill was a motivating factor for strengthening its local bylaws and regulations. Adopted June 9, 2003, Wilmington's bylaw read in part:

> Section 46.2 Zone II Prohibition
>
> Contaminated soil which results from a release to the environment is prohibited from being brought into the Town of Wilmington to be disposed of, stored, stockpiled, spread onto the ground surface for any purpose, used for shaping, grading, or closure of a landfill or former landfill area, or used as fill material for any and all purposes within any Zone II aquifer protection area which has been approved by the Department of Environmental Protection.

This bylaw was approved by the MA Attorney General on August 25, 2003.

The Wilmington bylaw is stricter than DEP's standards as stated in the DEP Policy on Reuse and Disposal of Contaminated Soil at Massachusetts Landfills (DEP Policy # COMM-97-01), in that the bylaw prohibits

[5] See . DEP Policy # COMM-97-01 Table 1. at: http://www.mass.gov/dep/bwp/dswm/files/97-001.pdf

[6] See 310 CMR 40.0975(6)(a), Table 2, at: http://www.mass.gov/dep/cleanup/laws/0975_6a.htm

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contaminated soil from being used in any Zone II area in Wilmington, including a landfill. DEP's policy would allow contaminated soils to be used in a landfill as long as the contamination levels did not exceed concentrations listed in Table 1 of DEP Policy # COMM-97-01. DEP could allow soils with even higher contaminant concentrations to be used in a landfill by issuing a permit for their reuse.

In DEP Policy # COMM-97-01, contaminated soil is defined as: "soil that contains oil and/or hazardous materials as a result of a release to the environment. This includes anthropogenic contaminants, regardless of whether the contaminant levels exceed the applicable Reportable Concentration (RC) under section 310 CMR 40.0006 since it includes soil contaminated at less than the RCs."

Since the 2003 Wilmington bylaw was passed, the Wilmington Board of Health has passed a Board of Health contaminated soils regulation that includes enforcement provisions and defines contaminated soil as follows:

> Contaminated soil means, soil or sediment which has been subjected to a release of one or more hazardous materials and contains an amount of hazardous materials which either separately or in combination with any substance or substances, constitutes a present or potential threat to human health, safety, welfare, or to the environment, and for which notification is required by the Massachusetts Contingency Plan (MCP) at 310 CMR 40.300 and 40.1600.[7]

In November 2005 Wilmington Town Meeting passed a revised contaminated soils bylaw that includes definitions, and enforcement provisions. It is currently under review by the Massachusetts Attorney General.

The state legislature is also considering a bill, HR1275, limiting the use of contaminated soil in Zone II areas. This bill has been reported favorably out of committee.

These local and state legislations show precedence for acting on concern regarding contaminants in fill materials. It should be noted that Acton's landfill is located in a zone III area, rather than a more protective zone II area, and our landfill has been designated by DEP as already being appropriately capped.

5. <u>Other areas of Town</u>:
Fill may be used at other sites in Acton in order to make changes in grade and otherwise change land contours during construction projects, septic installations, homeowner or business landscaping, roadbuilding, etc. Acton's Town Zoning Bylaw specifically prohibits the use of hazardous materials in fill anywhere in Acton, including in a zone 4 area, and it references the Town's Hazardous Materials Control Bylaw, as well as relevant State and Federal laws and regulations.[8] Acton's Hazardous Materials Control Bylaw, controls the discharge of hazardous materials within Acton and prohibits their discharge within zones 1, 2, and 3, unless otherwise exempted under the bylaw.[9]

Due to budgetary constraints, these bylaws are largely self regulated. The Acton Health Department performs occasional spot checks of fill used for septic purposes. Developers are not currently required to file any paperwork with the town to document the source of fill, the quantity used, or its quality; or to certify that they are in compliance with Acton's bylaws regarding the quality of fill. Enforcement of the applicable bylaws is generally reactive, rather than proactive.

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[7] See: http://mhoa.home.comcast.net/wilmington.htm#20

[8] See the Town of Acton Zoning Bylaw at: http://doc.acton-ma.gov/dsweb/Get/Document-9328/Zoning+Bylaws+2005.pdf; especially # 4.3.3.4; # 4.3.3.7 and # 4.3.6.1. In the Groundwater Protection District section of the zoning bylaw, 4.3.6.1 states: "FILL – FILL material shall not contain either HAZARDOUS MATERIAL OR WASTE, or SOLID WASTE. This Section shall also apply in ZONE 4."

[9] See Attachment 1: Acton's Hazardous Materials Control Bylaw, especially #1.3.6; #1.3.8; # 2.1.1; #2.1.2. (Sections highlighted in color in Attachment 1 are recommended changes to the bylaw)

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In addition to the Wilmington bylaw and regulation discussed above, other Towns have bylaws that provide for active steps to address the quality of fill within their Town. For example:

Sudbury's Zoning Bylaw states:

> Adequate documentation shall be provided to the Special Permit Granting Authority to guarantee the chemical quality of the fill. The Special Permit Granting Authority may require testing by a certified laboratory at the applicant's expense.[10]

Plympton's subdivision requirements for roadways state:

> The applicant shall notify the Planning Board Engineer as to his source of gravel for fill as soon as such information is known, so that samples may be taken and analyzed by the Planning Board Engineer. The applicant is advised not to proceed with the filling operation until such time as the Planning Board Engineer notifies the applicant that the gravel proposed for the fill is acceptable.[11]

Cambridge has specifically addressed the issue of asbestos in its community. The Cambridge City Council has enacted a local ordinance to protect residents from potential exposure to asbestos in soils at a WR Grace Site in North Acton, since it did not find DEP's oversight to be sufficiently protective.[12]

One step that Acton may consider taking, is to require a developer to provide the Town with documentation including the source, quantity and quality of fill material, and possibly also those involved with its excavation, transportation, and application at Acton sites. Such a requirement may serve to act as a deterrent to potential violations of Acton's prohibition of the use of hazardous material in fill in Acton.

The timing of the submission of such documentation is problematic. At the time of site approval a developer may not know the source of fill to be used on a site. Given current budgetary constraints, town staff do not have enough time to be physically present onsite every time fill is applied to a site, or prior to fill being covered over. While not ideal for the purposes of oversight, the Town could require the submission of information regarding fill, before an occupancy permit is issued. Paperwork is already changing hands at this time, so it should not be an administrative burden. On the other hand it has the benefit of acting as a deterrent to potential hazardous material violations, given that developers will be informed at the beginning of the process that they will be required to officially file this information with Town officials.

G. Recommendations:

Given the above areas of concern and discussion, the Environmental Standards for Fill Committee developed the following recommendations:

Town Bylaws: suggested revisions

1. a. Revise the existing Hazardous Materials Bylaw as shown in Attachment 1. These revisions include the addition of "Special Wastes", (explicitly including asbestos), to the materials controlled under the bylaw. A few other minor changes are also included to provide consistency in the Bylaw wording.

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[10] This is 4261 Condition f. from the revised bylaw for the Water Resource Protection Overlay District that was adopted at Sudbury's Annual Town Meeting on 4/13/05. See the link to Article 40 at: http://town.sudbury.ma.us/services/department_documents.asp?dept=Planning For the full text, see: http://town.sudbury.ma.us/documents/dl/1927/ARTICLE40.doc

[11] See Plympton Rules and Regulations Governing the Subdivision of Land; Section 6 Administration C.4.c.3 at: http://town.plympton.ma.us/land/subdiv6.html

[12] See: http://www.alewife.org/asbestos/proposedordinance_background.html

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b. Revise Acton's Zoning Bylaw as shown in Attachment 2. These revisions are to include the addition of a definition of "Special Wastes" (which include asbestos) in Section 4.3, and to specifically prohibit their use in fill in Acton in 4.3.6.1. These minor changes would provide consistency between the amended Hazardous Materials Control Bylaw and the Zoning Bylaw.

Landfill Reuse---cap intact

2. Testing: The existing stockpiles of big dig material at the landfill should be tested for potential contaminants, especially for arsenic, asbestos, cadmium, chromium, lead, mercury, PAHs, PCBs, SVOCs, total petroleum hydrocarbons, and VOCs.

3. Appropriate standards: If regrading, and recreational or other uses are to occur on top of the cap, outside of the paved recycling area, appropriate actions should be taken based on the results of the sampling for contaminants, to ensure the safety of the public and the environment, and to maximize protectiveness, given any such reuse.

Landfill Redevelopment----recapping required

4. Clean Fill: If redevelopment of the landfill that would require recapping is planned in the future, either by the Town, or by any other party, then using whatever means appropriate (deed restriction, Town Bylaw, legal agreement [lease condition, purchase and sale condition], etc.), the Town should require that any and all material proposed for use as fill, grading, temporary cover, etc. in redevelopment and recapping of the landfill site be clean fill. Contaminated soils/materials from 21E sites or elsewhere, that contain oil or hazardous materials as a result of a release to the environment, should be completely prohibited from use at the site. Appropriate testing and documentation should be required before material is allowed onsite.

Other areas in Town

5. Two possible recommendations for fill in other areas in Town were considered by the Advisory Group. Both are offered below for Board of Health consideration, since the Advisory group was split on which they preferred.

a. Provisions could/should be made, (amend Zoning Bylaw or another appropriate document?), that require that any developer who uses fill at a site in Acton to file the following information with the Town before an occupancy permit can be issued:

- Source of fill used
- Quantity of fill
- Any available sampling data
- Names, companies, addresses of all individuals handling fill

During the initial filings a developer should be made aware that there is a requirement to provide this information prior to obtaining a certificate of occupancy. Knowing that this specific information will be collected by Town officials (at a time when other paperwork will also be exchanged), may act as a deterrent to using unacceptable material as fill at a site.

OR

b. Provisions could/should be made, (amend Zoning Bylaw or another appropriate document?) that require that:

- at the initial filing step a developer sign a statement that says that they certify that they have read, understand, and agree to abide by all of Acton's bylaws/regulations that apply to the use of fill in Acton, [include specific references?], and

- that they are aware that at the end of the development process they will be required to sign a statement that says they certify that they have met all the requirements re: the use of fill in Acton, as specified by all applicable Acton bylaws [cite specific portions of bylaws?], as a condition of/prior to the Town issuing a certificate of occupancy.

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Requiring a developer to sign a statement certifying their compliance with Acton's bylaws re: the use of fill (no hazardous material content), may act as a deterrent to using unacceptable material as fill at a site.

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