Auckland’s Waste Assessment 2017

Appendix J: Medical Officer of Health Review
27 September 2017

Michael Backhurst
Waste Planning Advisor
Waste Planning Solid Waste Unit
Infrastructure & Environmental Services
Auckland Council
Private Bag 92300
Victoria Street West
Auckland 1142

Re Review of Auckland’s Waste Assessment 2017

Dear Mr Backhurst,

1. Thank you for requesting Auckland Regional Public Health (ARPHS) review of Auckland Council’s Waste Assessment 2017, which has been prepared to meet the requirements of the 2008 Waste Minimisation Act (WMA), and to inform the development of the next Waste Management and Minimisation Plan (WMMP).

2. The document supplied has been reviewed by technical staff within ARPHS.

3. The document is well written and contains an impressive amount of detail. Our original submission and correspondence is still relevant, in principle, to on-going aspects of this topic and can usefully be reconsidered; and is attached as Appendix 1 and 2.

4. We agree that Auckland Council has limited ability to influence Auckland waste industry practice due to historical decisions that affect the extent to which Council is now directly involved with the industry.

5. The ‘Zero Waste to Landfill by 2040’ call was always more aspirational than realistic. We wonder if Council should consider a more meaningful target e.g. ‘reduction of landfilled waste to XX% of 2011 volumes by 2040’? A target is likely to be better respected if it is more realistic.
6. There is said to be limited final use options for fly ash and bottom ash from waste to energy operations (see Table 27: Option 3: Investment in residual thermal treatment facilities, p151). We think that there may be situations where inert material of this nature could be used as a base course for e.g. farm tracks. It may not be readily saleable but that does not mean that it cannot be beneficially re-used in preference to disposal by landfilling. We note that James Hannan of Thermo Fisher Scientific wrote an article ‘Chemical Makeup of Fly and Bottom Ash Varies Significantly; Must Be Analyzed Before Recycled’ (6 February 2015) about Fly Ash and Bottom Ash Benefits (see appendix 3) and stated that bottom ash makes a useful construction material. Golden Bay Cement provide a solution of handling fly ash for Genesis Energy from their Huntly power station (see appendix 4). EverPlus Class C Fly Ash can be used to enhance a number of concrete properties and is used to develop concretes that provide efficient solutions to complex design and constructional requirements.

7. There is still no mention of Expanded Polystyrene (EPS) collection for recycling. As a flammable material, the very least that it could be used for is in waste to energy conversion with appropriate emissions control. EPS recycled does not waste the energy and hydrocarbons that went into its manufacture. As a product that has a high volume to weight ratio, EPS must take up a large volume of the landfill space that is in increasingly short supply. ARPHS mentioned EPS in our letter of 1 April 2011, paragraphs 13 and 14 (see appendix 1). We note industry body Plastics New Zealand want better handling practices for EPS to reduce the amount of construction EPS waste; and provision of a recycling service. Miltek offer a recycling option that manages the volume and the cost of EPS waste disposal (see appendix 6).

8. ARPHS supports recognition of the synergies between waste and carbon; and the implications for regional waste disposal capacity in the event of a large scale disaster.

9. ARPHS is unconvinced about the proposal of user pays for domestic solid waste disposal. There is already a practical volume cap per household via the capacity of a 120L bin. User pays is potentially cumbersome and liable to be resented. There will be an incentive to seek ways to circumvent the system. The toll system on SH1 north of Orewa is understood to take more than 50% of the proceeds in administration costs and illustrates the inefficiency of individual charging regimes. It is stated on page 10 that domestic waste to landfill is
“declining per capita” so there is already movement of domestic waste volumes in the right direction (see appendix 1 paragraph 11).

10. ARPHS sees the greatest potential for reduction as being in the context of demolition and construction waste to landfill. Building de-construction has merit both for the beneficial impact upon materials salvage and the reduction of risk from presence of hazardous materials like asbestos. Many DIY enthusiasts would value the opportunity to salvage unused or under-used construction material but there needs to be sensible pricing and accessible venues to facilitate this (see appendix 1 paragraph 17).

11. ARPHS supports the proposal to implement Option 2 as outlined at the bottom of page 10.

12. A weekly food waste collection sounds feasible given that waste is already in home storage for that time. We have doubts about a fortnightly cycle as that will considerably impact upon the smell of putrescible waste and consequent pet and pest species attraction. Hermetically sealable plastic bins with lids are a minimum, here.

13. Managed fill and clean fill sites are discussed at 4.3.3 with concern expressed about their impact upon the economics of landfills. We agree that stricter regulation of these sites is desirable since inappropriate materials deposited could adversely affect groundwater in an insidious manner (see appendix 1, paragraph 16).

14. The collection of glass for recycling is a topic that is probably well supported by the public and easy to organise in the average household. Glass comes in different formulations, not all of which will be suitable for recycling and from the demolition and property refurbishment industries in unwieldy sizes. Stories have been heard about minor failed colour segregation sometimes making a consignment unusable for re-use with consequent disposal to landfill. ARPHS considers that any glass not suitable for conventional recycling should be pulverised (e.g. in a rod or ball mill) for use in concrete manufacture or similar enterprises where sand is routinely used. Pulverised glass is a smaller form of the aggregate that is already recycled via the crushing of demolition concrete.

15. The penultimate paragraph on page 55 refers to the compost market being static. We are reminded of our earlier submission when we queried where was the market for further bulk supplies of compost via salvage of organics from the present domestic waste stream.
16. The final paragraph on page 55 refers to processing of animal wastes for products including animal feed. We would like to be assured that any such process will include a sterilisation step to guard against the possibility of bovine spongiform encephalopathy (BSE) transmission.

17. ARPHS supports the proposal to produce biofuel from materials that would otherwise be waste products.

18. Table 11 on page 56 includes a reference under the “Other” row to “... nutrient recycling from steel” which we are not familiar with and deserves further explanation.

19. On page 57 the paragraph following Table 12 contains data that could be presented better to emphasise the quantity of hazardous waste generated in Auckland, where it goes to and how deficiencies in responsible disposal will be remedied. The penultimate sentence does not make sense as it is incomplete.

20. In point 11 above, we commented about the proposed collection of domestic food waste for beneficial re-use. Two paragraphs on page 75 discuss re-use of food waste. We have concerns about the nuisance creation potential from accumulation, collection, storage and processing of waste food; and the potential for generation of legionella bacteria from poor handling, storage or transportation of processed materials. Consequently, location of processing facilities is an important consideration.

21. On page 84 the last paragraph under 5.7.3 refers to the possibility of co-utilising sewage treatment biosolids with disposal of organic wastes. We agree this is desirable but suggest that continued discharge of trade wastes to the sanitary sewer system is the main limiter (see Appendix 1, Paragraph 20).

22. On page 87 the last paragraph under 5.8 is a concern where it states that there is landfill capacity “... for perhaps the next decade”. Given the time to identify and purchase potential sites, obtain resource consent, conduct groundworks and roading access, and install infrastructure we have concern that the process of seeking new landfill capacity needs to commence with some urgency as an insurance policy against the possibility that waste volumes will not reduce in the Auckland region according to expectations.

23. “5.9 Hazardous waste collection and processing” is a concern to ARPHS. We wonder at the volume of hazardous waste that is disposed of via a controlled and auditable process vs the volume that is not. Disposal to sewer has the undesirable effects of transferring trade waste
to residual bio solids (compromising beneficial reuse) or allowing waste to be discharged to sea in dilute form. ARPHS questions whether it is now time to change the ‘flush and forget’ approach to trade waste disposal via sewer in favour of a more controllable and auditable process.

24. On page 106 in the last paragraph of 6.7 is reference to market fluctuation in the appetite for “...various grades of plastic and glass”. We have already commented upon the ‘aggregate’ option for otherwise worthless cullet. In our previous submission, we commented that low grade plastic could usefully be incorporated in underground infrastructure like manholes and culverts previously made exclusively from reinforced concrete. Concrete is porous so the steel reinforcement will eventually rust, expand and degrade the concrete. Reinforced plastic would be impermeable giving greater structural longevity. A concerted procurement drive could create new business opportunities, local employment and reuse of an intractable waste product.

25. On page 109 (7.2) the reference to a pilot waste to energy plant could incorporate the otherwise ignored polystyrene waste stream.

26. 8.4 includes three suggested “game changers”. We suggest that an increased landfill levy will drastically affect the economics of landfill operation; the proposed site waste management plans will be seen as another bureaucratic imposition; but the organic waste landfill ban makes sense if there is instead rates-funded collection (i.e. with no cumbersome user pays process).

27. ARPHS supports the concept in 9.4.3 linking presence of food waste in landfills to the most potent source of greenhouse gas emissions as the best justification for removal of the organic waste component from the domestic waste stream (see appendix 1, paragraph 18).

28. The section “9.4.7 Textiles” is interesting. Apart from reuse of unwanted textiles via second-hand emporia, used cotton products could have a new life as industrial rags e.g. for the automotive servicing industry and many other textiles will be combustible for waste to energy consideration.

29. We would like to see added to the paragraph beginning “C&D waste diversion” under 9.4.8 on page 127 the sentence “With increasing redevelopment in Auckland and the reality that asbestos was used in NZ building materials until the 1980s, provision needs to be made for
recognition and control of asbestos residues in all demolition wastes – not just concrete aggregate."

30. The re-use of tyres as ‘crumbed rubber’ or similar products as playing surfaces sounds good in principle but can have unforeseen consequences e.g. off-gassing of odour in certain weather conditions. See 9.4.10, page 128.

31. 9.4.11 discusses continence and sanitary products. If there were to be legislative change to require such single use products to be made exclusively of cotton and/or paper then a compostable option could be considered in preference to landfill disposal.

Yours sincerely,

John Whitmore
Environmental Health Advisor and Health Protection Officer,
Environmental Health Team
1st April 2011

Parul Sood
Strategic Projects Senior Advisor
Infrastructure and Environmental Services
Solid Waste Business Unit
Auckland Council
Private Bag 10383
Auckland 1142

Re: Review of Auckland Council Waste Assessment

Dear Ms. Sood,

1. Thank you for consulting the Medical Officer of Health on Auckland Council's Waste Assessment, as part of the process by which Auckland Council will implement the requirements of the Waste Minimisation Act 2008.

2. The documentation you supplied has been reviewed by a number of technical staff within Auckland Regional Public Health Service (ARPHS) who have provided me with comments. As the Medical Officer of Health, with the portfolio responsibility for solid waste issues, I am pleased to be able to respond to your consultation.

3. Council’s waste assessment appears to have been thoroughly researched. It is well written, has a logical layout, contains an impressive amount of information and is easy to comprehend. I am also happy to see that Council has acknowledged the ability of the appropriate Minister to give a ministerial direction if Council does not make satisfactory progress in achieving the goals of its new Waste Management and Minimisation Plan (WMMP), or in meeting Health Act requirements.

4. I welcome seeing “ensure public health and safety” on page 2 of the Overview Section is presented as one of the drivers of the assessment. I look forward to seeing a continuing emphasis on public health in Council’s solid waste plans and activities.
5. Sanitary collection and disposal of solid waste is essential for health;  
   - Human disease control (e.g., pathogenic wastes, and reducing attraction to and 
     harbourage of human disease vectors including rats and their fleas) and 
     mosquitos).  
   - Control of nuisance from dust, odour, and pests species (e.g., ants, fleas, 
     cockroaches).  
   - Public safety - in the sense of uncluttered thoroughfares.  
   - Direct health risks from hazardous wastes - like zoonotic.

6. The remainder of this letter broadly follows the layout of Council’s waste assessment.

Chapter 2: Legislative and Strategic Context

7. I note the comments made about the Climate Change Response (Emissions-TRading) 
   Amendment Act 2008 and its potential impacts for greenhouse gases emanating from 
   landfill. ARPHS is aware that the issue of incineration was considered back in the 1970's, 
   with a proposal to use the old Mere marine power station. This proposal did not proceed for a 
   variety of reasons. ARPHS believes that any waste assessment, that is used to inform a 
   waste minimisation plan with a long term time horizon, should give consideration to the 
   issue of waste incineration. Given the current state of incineration technology, emission 
   control issues and foreseeable costs (capital, operational and ETS liabilities) it may never 
   be a viable option, however the option does need to periodically be reviewed and 
   considered as a possible alternative to landfill, especially since waste to energy schemes 
   are attracting new attention as a means of dealing with invariable wastes.

8. The final costs to the region of its waste production will be a combination of: 
   - Volume able to be diverted / recycled.  
   - Monetary value able to be extracted from the materials diverted / recycled.  
   - Final volume to landfill.  
   - Costs associated with such landfill, e.g. tipping fees, the cost of transporting 
     household, commercial and industrial waste.

From the public health perspective these are likely to be more difficult to achieve. It is only when all possible options have been explored that a decision to implement 
additional or range of strategies (including developing public health) can be undertaken to 
mitigate the final waste minimisation plan.
9. ARPHE supports the principles of reduction and recycling as a way of minimising the "Legacy" effect of landfill.

10. If Council is to meet its obligations under the Waste Minimisation Act 2008 it needs to reduce the proportion of waste being landfilled. The waste assessment covers both the composition of the waste stream and also outlines some of the potential uses for diverted materials. Separating and diverting waste is, to a certain extent, a pointless exercise unless there is strong demand for diverted and recycled materials. ARPHE believes that further work should be undertaken in the assessment to better understand issues such as:
   - What market there is for recycled / reclaimed or new products resulting from waste?
     For example is there a market for 80,000 tonnes of compost?
   - What can Auckland Council do to support markets in recycled or reclaimed products? For example could Council’s procurement policies be used to stimulate demand for products made from recycled materials? For example, could Council’s underground utility infrastructure be manufactured from recycled plastics?

11. ARPHE also believes that a whole of life and systems perspective needs to be taken to the issue of waste minimisation. At one level it is desirable to have a polluter pays approach and to charge both industry and the private citizen the full cost of waste disposal as a way of creating an incentive to minimise the amount of material that goes to landfill. This approach also brings with it the risk of increased fly tipping and dumping. Such illegal dumping imposes a direct cost on Council to collect and investigate it; such cost may be relatively easy to estimate. Such illegal dumping may also bring with it risks to human health from either disease or hazardous materials such as asbestos. These risks are more difficult to quantify, aren’t faced directly by Council, but do impose costs on the wider community.

12. In ARPHE experience there are a number of issues with current practices from the public health perspective.
   - Recycling - processing facilities. Many facilities have, in the past, tended to be set up in temporary accommodation. This has meant that they are often not purpose-designed and have design failings that increase the risk of nuisance conditions developing.
   - Haz-mobile – ARPHE welcomes the current haz-mobile service provision. It is, however, an intermittent service and it may be that making the service more readily available would decrease the amount of hazardous material unlawfully disposed of elsewhere.
13. ARPHS notes that the waste assessment makes no reference to polystyrene. Polystyrene is used as a packing material to protect other goods. It is a high volume waste for its weight and depending on how Council chooses to charge for waste disposal there is a risk that it won’t be disposed of appropriately.

14. Should ‘waste owners’ decide to burn polystyrene it produces polycyclic aromatic hydrocarbons that are carcinogenic. It also produces flaming slurry drops that can stick to many surfaces and may present a risk of personal injury or fire spread. ARPHS believes that polystyrene is recyclable and should be given specific consideration within the waste assessment.

Chapter 4 Existing Services and Facilities

15. ARPHS supports the proposed region-wide waste operator licensing scheme. This will provide better and more reliable information from which to make policy choices.

16. ARPHS supports the proposal to have tighter Resource Management planning controls for cleanfill sites. Contaminants in soils erroneously dumped at cleanfills can have adverse implications for potable water - via aquifers - and for natural watercourses. The contamination of water in aquifers and natural watercourses brings with it a potential risk to human health.

17. ARPHS believes the waste assessment needs to give more scrutiny to the issue of construction and demolition recycling. Much demolished older property contains hazardous materials such as asbestos. There is also a risk from properties used as P-halls and possibly detrimental materials such as mouldy materials from leaky buildings. The impact on workers involved in these issues is the responsibility of the Department of Labour. The impact on the public from depot emissions and the transportation of unenclosed loads from the community needs further thought.

18. ARPHS supports the elimination of organic material from landfills, as it will help reduce greenhouse gas methane emissions. Should Council bring in a scheme to separate organic material, there are a range of nuisance principles that will need careful consideration. ARPHS would welcome being consulted at an early stage around issues such as container design, frequency of emptying, plans to keep containers clean and resistant to domestic pests, wild animals, vermin and pest insects.

19. ARPHS believes that it may be unwise to rely upon the principle that reducing the volume of council collected residential waste will result in cost savings at the landfill. Commercial operations built pricing structures based on a number of issues such as capital invested.

*Excludes notes from page 17 of full text Assessment Report*
20. ARPHS notes the reference to incorporating sewage biosolids into compost products. Before any such incorporation can occur, a reliable and effective method of removing trade waste residues, particularly heavy metals, needs to be in place to ensure that any such compost products do not present a danger to human health or the environment.

21. The commentary around management of closed landfills is noted. ARPHS believes that most closed landfills would benefit from better management and monitoring. ARPHS has been consulted in the past in situations where material from landfill has been dug up in gardens or during construction work. Anything that Council can do to encourage better record keeping around landfills would be supported.

22. ARPHS notes the comments around transport inefficiencies and the potential for their reduction to bring health gains in the areas of air quality and public safety, with some associated economic gains through reduced congestion. ARPHS believes further work would be worthwhile to quantify the extent of the gains for public health from increasing transport efficiencies and to better understand the increased risks (if any) from greater use of local transfer stations and the potential ‘double handling’ of waste. From the public health perspective it will be important to ensure that any waste being transported across the region is contained so that there is no risk to the public from insecure loads, dusty loads, mouldy demolition materials, hazardous materials, spillage or catastrophic accident.

23. ARPHS notes the comments around Hampden Downs and the possibility that rail could be used to transport waste. ARPHS hopes that this issue will be further explored as part of the development of the waste minimisation plan.

Chapter 5 Future Demands

24. The popularity of inorganic collections confirms that many residents wish to dispose of their rubbish responsibly, but balk at the cost of a trip to a transfer station. ARPHS believes that pre-existing inorganic collections can be seen as a public good issue as they remove much of the incentive to dump waste for those unable or unwilling to pay tip fees. Although scavenging causes unsightliness, it also provides the opportunity for a substantial proportion of such waste to be reclaimed and recycled. A ‘collection on demand’ service could reduce unsightliness issues associated with current inorganic collections, but unless facilities and procedures at transfer stations are geared up for reclaiming and recycling material being dumped they will do little to reduce the amount of material going to landfill.
25. The comments on 'projected diversion materials' mirror ARPHS own views about the need for an identified end use and market for material diverted from the waste stream. As noted previously ARPHS believes that Council and its Council Controlled Organisations procurement policies need to consider what role Council can have in stimulating or creating a market for recycled or reused material. This may need to extend to seed investments to stimulate demand and innovation.

Chapter 6 Future Planning Framework

26. Council has identified priority waste streams as:
   ➢ Organic waste.
   ➢ Construction and demolition waste.
   ➢ Recyclables and packaging.
   ➢ Hazardous waste.
   ➢ Inorganic / special wastes.
   ➢ Illegal dumping and litter.

ARPHS supports this list, but from the public health perspective the order should be:
   ➢ Hazardous.
   ➢ Organic.
   ➢ Construction and demolition.
   ➢ Illegal dumping and litter.
   ➢ Recyclables and packaging.
   ➢ Inorganic/special wastes.

27. ARPHS supports the proposal to move towards the collection of hazardous waste at drop-off facilities in transfer stations, provided that there are sufficient transfer stations to provide good regional coverage. The ability to drop off hazardous wastes at transfer stations should be more attractive than the Haz-mobile facility - due to the greater convenience and extended opening hours that transfer stations will provide. From the public health perspective ARPHS believes that it is important that the domestic hazardous waste service remains 'free' as this is likely to maximise the proportion of hazardous waste that is removed from community circulation and is a 'public good' issue.

28. ARPHS notes the bag vs. bin discussion for Council refuse collection. The clear宁愿: health preference is for bins due to the much better:
   ➢ Isolation of refuse from interference by domestic and wild animals.
   ➢ Control of odour and dust.
   ➢ Isolation of refuse from insect pests species e.g. flies and wasps.
ARPHS accepts that the use of bins can lead to increased waste volumes, but believes that this can be mitigated through careful selection of bin size and the charging mechanism for additional waste quantities.

29. ARPHS does not support any moves to a fortnightly collection of refuse that includes putrescibles, due to the extent to which such waste deteriorate over time and the consequential increased health risk.

30. ARPHS is disappointed at the level of explicit discussion around any possible zero waste approach contained in the waste assessment. The waste assessment notes that all of the previous councils waste minimisation plans had "...taken note of moving 'towards zero waste'..." but there is little discussion in the document as to the possible benefits and challenges from attempting to advance zero waste objectives. Becoming a zero waste region may be an aspirational goal, but ARPHS believes that zero waste objectives should have a key place in the region's waste minimisation and management plan. For some components of the waste stream a zero waste approach is likely to have the potential for considerable impact.

Chapter 7 Options Assessment

31. As the only option that is within sight of compliance with legislative goals, ARPHS supports Direct Strategic Option 3, provided that there is no consequent detrimental effect on public health. It would be a perverse outcome if, for example, increased production and use of compost led to increased risk to manufacturing staff, people in the vicinity and end users due to the risk of its contamination with legionella bacteria.

32. It is unclear from the comments on Community Based Social Marketing (CBSM) as to what future role such programmes will have in Council's WMMP. The last paragraph of the section on CBSM programmes suggests that national coordination is desirable and that Council should not undertake any activity in this area in its own right. ARPHS does not agree with this sentiment. Council is sufficiently large to develop and run appropriate CBSM tied to its own WMMP. Any such CBSM has a similar role to a health promotion programme addressing a particular health issue. It will not be the whole solution, but can play an important part in addressing an issue. For Council's WMMP any CBSM will support Council's objectives, but can only succeed if Council is able to find realistic and sustainable markets for diverted waste materials.

33. ARPHS notes the discussion around regulatory approaches. Any regulatory approach will need both an effective enforcement mechanism and the political will to support effective enforcement.
34. A regulatory approach also needs public support. Bylaws banning green waste from refuse bins are likely to be unpopular and potentially unenforceable. They may only be viable and publicly supported if a free green waste collection is also provided. Any bylaw that is unpopular is likely to result in an increase in fly-lipping, concealment and dumping in skips and street bins - to get around any restrictions. In deciding what regulatory approach to take, Council needs to ensure that regulation will be successful in addressing problems and not just displace activity elsewhere.

35. In addition to regulation, Council should also consider what policy levers it has available to it to incentivise the desired behaviours around waste management for the community, business and the waste management industry.

36. ARPWS does not support the use of the term "waste value chain" as used in the discussion of options. The term waste value chain implies that there is value throughout the waste stream. This is correct for elements of the chain, but is not the case throughout the vertical chain from production to eventual reuse or landfill. ARPWS believes that the term waste stream is a more neutral and readily understood descriptor.

Chapter 8 Preferred Options to Meet Waste Minimisation Targets

37. From the public health perspective, any decisions around waste should be governed by the overarching principle that control of refuse is essentially a public health measure to address human disease and nuisance risks around vector control, odour, dust, hazardous waste and vermin. ARPWS believes that the current key objectives in figure 8.1.1 should be expanded to ensure that the reduction of harm from waste becomes an overarching 'super' objective that shapes and informs decision making for all other aspects of Council's waste management activities.

Chapter 9 Statement of Proposal

38. ARPWS questions the appropriateness of the timeframes in the statement of proposal. While there may be merit in aligning the review of the strategy to the same timeframe as the long-term council plan, ARPWS believes that the 10 year planning horizon is too short and should be extended to 20 or 30 years. While the longer timeframe suggested is too long for any meaningful financial modelling, it would align better with other timeframes for long-term planning - such as the spatial plan or regional land transport strategy.
Other Issues:

39. The waste assessment contains little in the way of discussion around the role of local boards. The only time local boards are mentioned is in connection with possible licensing and tenders for services. The Draft Annual Plan document – in its section outlining the differing roles of the governing body and local boards on environmental management, protection and enhancement – describes local boards as having the following decision-making and oversight responsibilities:
   - Input into regional education programmes to improve, minimise waste, and tailoring regional programmes to local circumstances.
   - Local waste management plans and projects within regional parameters.
   - Variations to region-wide service levels for the local area such as refuse and recycling services.

40. ARPHS believes that the waste assessment needs to give further consideration of the role of the local boards and their role in the final WMMP.

41. In a similar manner the waste assessment is silent on the role of council controlled organisations (CCOs) in supporting the final WMMP. How the CCOs are allowed to operate has the potential to either support or hinder Council’s WMMP through their roles as generators of waste and potential customers for recycled products. This issue should be further considered as part of the waste assessment, the final WMMP and in the statements of intent that Council will use to control the CCOs.

42. The former Auckland councils operated a regional Waste Officers’ Forum. Should such a body be contemplated to involve stakeholders with an interest in waste management issues, ARPHS would like to be included in such an initiative.

Conclusion:

43. As noted previously, Council’s waste assessment appears to have been thoroughly researched. It is well written, has a logical layout, contains an impressive amount of information and is easy to comprehend. I hope my comments will add to the utility of the waste assessment and be helpful in formulating a waste management and minimisation plan that will enable Council to deliver on the objectives that the Act requires of it and at the same time will ensure that public health is protected.

Yours sincerely,

Dr Simon Baker
Medical Officer of Health
Auckland Regional Public Health Service
2nd May 2011

Parul Sood
Strategic Projects Senior Advisor
Infrastructure and Environmental Services
Solid Waste Business Unit
Auckland Council
Private Bag 92300
Auckland 1142

Re: Review of Auckland Council Waste Assessment

Dear Ms. Sood

Thank you for considering the Medical Officer of Health comments on Auckland Council’s Waste Assessment.

This is further to our meeting on 15th April 2011 and letter dated 20th April 2011 regarding your request to make comments on some of the points raised in our feedback.

Chapter 3, Point 11

- ARPHS believes this is a political decision for the Auckland Council to make. Whether or not past experience of illegal dumping in two of the amalgamated former councils matches future trends remains to be seen. We simply flag the possibility that compliance with a new regime may not match prior expectations.

Chapter 3, Point 12

- ARPHS has already agreed that hazardous waste disposal at transfer stations is preferable to the Hazardous service. Our main point is that free removal of hazardous materials from the community is a public good issue to be commended.
Chapter 3, Point 13

- Auckland Council does control the collection and disposal of polystyrene waste originating from residential properties. We see the recycling of that percentage of the polystyrene waste stream as setting a useful precedent for handling of the commercial quantities arising via private collection. Establishment of a polystyrene recycling facility would be a good initiative for Auckland Council to consider.

Chapter 3, Point 19

- ARPHS does not disagree about the position of central government as described.

Chapter 3, Point 24

- We remain of the opinion that patronage of inorganic collections repeatedly shows that there is a demand for effective removal of unwanted, bulky materials from the community. That amalgamating councils chose to conduct such collections for many years, endorses this view. We appreciate that kerbside collection has been shown to have elements but these could easily be overridden by a free or reasonably-priced on-demand collection service, as discussed.

Composting and Legionella risks

- In principle, ARPHS favours in-vessel composting due to several reasons that includes:
  - speed of process,
  - control of odour and dust,
  - the ability to inject compressed air to maintain aerobic conditions,
  - the ability to inject steam as a tertiary sterilisation technique,
  - accurate temperature monitoring to ensure that pasteurisation temperature and time combinations have been achieved,
  - the more efficient use of land, and
  - less planning concerns that enable setting of plant closer to locations where raw materials are generated and therefore reduction in road haulage costs and emissions.

- Regarding the risks of Legionella from different feedstock sources, we suggest that is not the important issue. Provided that the composting process is properly controlled to ensure effective pasteurisation, the nature of source material is academic. A combination of greenwaste and foodwaste has potentially greater downstream nutritional value for plants than greenwaste alone.
Health and safety aspects of collection

ARPES has a previously-stated, clear position (point 28 of our submission) that bin collection is preferable to bag collection on public health grounds. Comment upon the health and safety aspects of different collection methods needs to be sourced from the Department of Labour, as the only regulatory agency for workplace safety issues.

Yours sincerely

[Signature]

Dr Simon Baker
Medical Officer of Health
Auckland Regional Public Health Service
Appendix 3- Direct extract from

Chemical Makeup of Fly and Bottom Ash Varies Significantly; Must Be Analyzed Before Recycled


Fly Ash and Bottom Ash Benefits Fly ash can easily combine with calcium hydroxide to form needed compounds in the cement process, providing a lower-cost substitute for clay, sand, limestone and gravel. Fly ash produces a strong, durable concrete that is resistant to harsh chemicals. According to the American Coal Ash Association, fly ash offers these environmental advantages:

- The use of fly ash eliminates the need to mine virgin materials and conserves limited land and material resources.

- Fly ash doesn’t require kilning and therefore doesn’t release carbon dioxide; for every ton of fly ash used to replace traditional cement, one less ton of carbon dioxide enters the Earth’s atmosphere.

- Fly ash uses very little water compared with traditional cement.

Bottom ash also makes a useful construction material. The European Coal Combustion Products Association estimates the use of bottom ash in the construction industry at 46% and the use of fly ash at 43%. Bottom ash applications include filler material for structural applications and embankments, aggregate in road bases, sub-bases, pavement, and lightweight concrete products, as feedstock in the production of cement. The chemical makeup of fly and bottom ash varies significantly and is dependent on the source and composition of the coal being burned. This can include a wide variety of toxic substances from trace amounts to percent levels. In order to protect the environment or the quality and safety of any products it is added to, the composition of the ash product needs to be accurately analysed before it can be recycled or disposed of. Elemental analysis of coal and coal ash samples can be accomplished using inductively coupled plasma optical emission spectrometry (ICP-OES) following microwave acid digestion.
Appendix 4- Golden Bay Cement

http://www.goldenbay.co.nz/products/everplus/

Fly ash is defined as solid material extracted from the flue gases of a boiler fired with pulverised coal. Golden Bay Cement provides the solution of handling Fly Ash for Genesis Energy from their Huntly power station.

EverPlus Class C Fly Ash is produced from the burning of sub-bituminous coal. Materials with pozzolanic properties such as EverPlus contain reactive silica and alumina that will, in the presence of water and free lime, react to produce additional cementitious compounds. In addition to having pozzolanic properties, EverPlus also has some ability to harden and gain strength in the presence of water alone. EverPlus therefore meets the chemical composition outlined in ASTM C618 and is referred to as a Class C fly ash.

EverPlus Class C Fly Ash meets the requirements detailed in AS3582.1. EverPlus can be used to enhance a number of concrete properties and is used to develop concretes that provide efficient solutions to complex design and constructional requirements.

The benefits include:

Plastic concrete
- Workability enhancement
- Placement and finishing efficiency
- Pumping efficiency
- Reduced concrete water demand

Hardened concrete
- Engineering design efficiency
- Reduced drying shrinkage where lower water demands are achieved
- Increased long-term compressive strength development

Durability and other properties
- Increased sulphate resistance
- Increased chloride resistance
- Reduced heat of hydration
- Achieving greater sustainability with supplied materials

EverPlus Class C Fly Ash can also be used in cement stabilisation to achieve specific requirements such as increasing placement times, improving long term bearing capacity and to assist with compaction.
Appendix 5- Plastics New Zealand the Industry Association representing plastics companies across the county


Industry body Plastics New Zealand wants to encourage better handling practices of EPS on building sites to reduce the amount of construction EPS waste reaching New Zealand landfills. Member Companies offer a recycling service for clean offcuts at building sites and a regular collection.

Commercial/Business EPS Recycling (Disposal Charges may apply)

For Commercial quantities please contact the following companies to discuss your recycling requirements:

**Hope Moulded Polystyrene**

41 Aniseed Valley Road  
Hope  
Richmond, Nelson  
03 544 5090  
info@hmp.co.nz  
Pickup of ‘bulk bags’ (which we supply) at a cost of $25.00 each  
Free ‘drop off’ to our factory of ‘clean’ polystyrene

**Waste Management - Auckland Recycling**

Maurice Road,  
Penrose,  
Auckland.  
Tel 09 636 7599  
Drop off/Collection – Both services are available. Drop off by appointment only. Pay for materials/Charge for materials – Customers have to pay for disposal. Prices are available by application.

**Waste Management - Other regions**

Tel 0800 888 278  
enquiries@wastemanagement.co.nz

**Wastebusters Canterbury**

Phone (03) 3089998  
Fax 3089989  
PO Box 323  
7 McNally Street (in the Ashburton Industrial Park) Ashburton
EPS (6) is not acceptable in your normal kerbside recycling.

It is advised by many of the NZ Councils to return your EPS packaging to your place of purchase as many of these business operator commercial EPS Recycling schemes.

For larger quantities please contact the following companies to discuss your recycling requirements:

- **Hope Moulded Polystyrene** 41 Aniseed Valley Road Hope Richmond, Nelson 03 544 5090 info@hmp.co.nz

  Free ‘drop off’ to our factory of ‘clean’ polystyrene

- **Waste Management - Auckland Recycling** Maurice Road, Penrose, Auckland. Tel 09 636 7599

  Drop off/Collection – Both services are available. Drop off by appointment only. Pay for materials/Charge for materials – Customers have to pay for disposal. Prices are available by application

- **Wastebusters Canterbury** Phone (03) 3089998 Fax 3089989 PO Box 323 7 McNally Street (in the Ashburton Industrial Park) Ashburton
Appendix 6 — Mil-tek Polystyrene Recycling Compactor Machines

http://www.miltek.co.nz/materials/expandable-polystyrene-solutions

Better Waste Handling

Better waste handling isn't about handling packaging waste more efficiently. It's about managing the volume and the cost of waste disposal, reducing both where possible and trying to generate revenue by recycling.

A Mil-tek polystyrene compactor machine works in two stages.

First, the polystyrene is shredded to remove both the shape and the air inside.

This is then heated, compacted and reformed into dense, manageable briquettes.

Briquette of EPS6 can be sold for reuse elsewhere. Recycled EPS6 can be used to make mobile phone covers, DVD cases and many other cheap consumer goods.

ISBN:
978-1-98-855540-9 (Print)
978-1-98-855541-6 (PDF)