From: [redacted]
To: EPD, Customer Services
Subject: Submission MRF Fyshwick
Date: Sunday, 10 June 2018 3:12:24 PM

Submisison on draft EIS
by Capital Recycling Solutions
Application 201700053
FOR the proposed MRF and WtE in Fyshwick
To The Minister for Planning

This is a submission objecting to the above Development based on Inadequate Air Quality and Health Assessment

Dear Minister,

Air Quality Assessment
Siting waste transfer stations near to residential retail and commercial areas have negative impacts on the community because of the degraded health and environmental conditions associated with them. Communities in proximity to WTSs suffer from enhanced traffic flow and increased particulate matter (PM) levels arising from vehicular emissions and dust releases from laden trucks.

Adverse cardio respiratory health is associated with exposure to ambient particualte matter.(PM). The highest PM concentrations occur in proximity to waste transfer station sites that experience high numbers of dust-laden, heavy-duty diesel vehicles transporting commercial and household waste. With this in mind it is difficult to understand why there was no separate comprehensive Air Quality Assessment or Health Impact Assessment submitted with the Draft EIS. No reasonable person would accept that the odour modelling report was an acceptable substitute for a comprehensive Air Quality Assessment.

A credible Air Quality Assessment should include an analysis, based on recent statistics, of the existing ambient air quality of the Fyshwick area, identification of sensitive receptors, PM10, PM 2.5 and PM1 concentrations, meteorological modelling and dust emissions estimates. An emissions modelling report was supplied in the Scoping Application May 2017 by Todoroski Air Sciences. A similar report should have been included in this EIS.

Dust emissions from the demolition and excavations and construction phases is clearly a problem . The EIS advises appendix G p.45 *"that if excessive dust is being generated, areas of earthworks should be sprayed with water to reduce dust levels." "In the event that excessive dust is generated during any operations on-site, the works will cease and modifications to the process will be made before the operation is resumed. There must be no observable dust transport off-site."* Dust generated from stockpiled excavated soils needs particular attention. Training and protective clothing are suggested for on site workers but no consideration is given to workers in neighbouring businesses who may also be subjected to contaminated dust emissions.

An AQA should attempt to quantify the dust as coarse and finer particles and to evaluate the likelihood of Chemicals of Concern being carried on them. Fine particle pollution is of greatest concern because it is associated with mortality and high health costs for the community. While concentrations are higher closer to sources, fine particles can disperse widely due to their very small size.

Fine particle pollution is of greatest concern because it is associated with mortality and high health costs for the community. The relationship between extended air pollutant exposure and increased prevalence of asthma symptoms has been well documented Numerous scientific studies have linked particle exposure to a variety of lung and heart problems, including premature death in people with heart or lung disease; non- fatal heart attacks; irregular heartbeat; aggravated asthma; decreased lung function; and increased respiratory symptoms, such as irritation of the airways, coughing or difficulty breathing. People with heart or lung diseases, children and older adults are the most likely to be affected by particle exposure. In the ACT region, transport is a significant source of ozone precursor emissions (NOx and VOCs), as well as particulates and particulate precursors.

The World Health Organization's International Agency for Research on Cancer has classified diesel exhaust as a human carcinogen. Diesel emissions from the increased traffic in Fyshwick and the potential adverse impact on the health of the Fyshwick population measured by increases in asthma and other respiritory conditions, cardio vascular conditions, hospital admissions and mortality. Diesel exhaust consists mostly of fine particles, contains nitrogen oxides and toxins. They have adverse impacts on health, particularly for the elderly, children and those with existing health conditions.

Although the diesel emissions from transport in this development are not additional to the ACT load they are additional to the Fyshwick precinct, an area heavily polluted by these kinds of emissions. The 460 truck movements a day in one small areas concentrates the burden in an already polluted environment. For that reasons the impacts compounding with those already there should have been measured as if they were a burden to the ambient air.

Diesel exhaust emissions are a major source of fine particle pollution. People can be exposed to diesel emissions on a daily basis, from trucks and other diesel vehicles on the roads and from diesel engines operating in a variety of off-road settings, for example on rail and in buildings using heavy equipment. Indoor air quality in the MRF shed should be studied also. Heavy plant equipment, shredders, mills, grinders and compactors, trucks, dozers and forklifts or whatever is to be used will emit toxic diesel fumes in an enclosed space While Australia has national emissions standards for on-road diesel vehicles, no regulations specifically apply to emissions from non-road diesel sources which consume more diesel than on road vehicles.

There can be occasions where incidents, such as equipment failure or fire, can result in harmful emissions of air toxics to the environment. Failure of the Ventilation system should be addressed as should the characterisation of its plume likely to contain a mixture of copious particulates and non-gaseous organic particles including pathogens. The decaying waste will produce harmful pathogens which cannot be ignored. The AQA and HIA should assess the effectiveness of the Ventilation System to mitigate against the health risks to the workers in the building.

Assessment of the possible benzene vapour intrusions into the site buildings if the protective liner should fail, it probably will sooner or later, should be included.

The composition of the plume from the ventilation shaft must be characterised and assessed and its impact assessed taking into account the velocity with which it will exit the building and its dispersion rates.

Rail emissions should not be omitted. The EPA commissioned and has released the report of a study into reducing locomotive emissions in NSW and Australia (Environ 2013). The report showed that around 81% of existing Australian locomotives do not meet any US emissions standard. In addition, it found that the average age of a diesel locomotive in Australia is 35 years, compared to eight years in the US. In NSW the locomotive fleet is older than the Australian fleet as a whole and also has a higher rate of fuel use. Although only one train per day is proposed at Fyshwick the added burden to the local air shed of locomotive emissions should have been considered in a credible AQA.

Finally a cumulative assessment should have been done for all impacts including the railway, plus the emissions from nearby industrial activities . There are two cement works and a waste metal recycling yard, an old industry unenclosed and known to emit heavy metals and PAHs. The relationship between emissions and the air people breathe is complex. Meteorology, topography and atmospheric reactions drive the dispersion, transportation and transformation of emissions.

Health Impact Assessment and the Health costs of particle emissions

The HIA, Appendix L was neither a quantitative nor qualitative study nor even a valid desk top study. The HIA should have identified the actual risks from the operation, identified sensitive receptors, the exposure pathways, measured the ACTs performance against national standards for air pollutants known to be harmful to human health, the chief focus being on fine particle pollution.

The ACT's compliance with the national standards should have formed a baseline for assessment of the MRF. The HIA should have examined any other HIAs done for this site when used by Shell as a bulk fuel depot. It should have recognised the contamination present on the site, identified its toxicity and identified the risks associated with that and the possible consequences. It should have evaluated the mitigation measure to verify if they would make the site suitable for its intended use. It should have assessed whether the sensitive receptors especially occupants of enclosed site structures have been adequately protected from hydrocarbon vapours.

In 2005 URS were engaged to undertake a Human Health and Environmental Risk Assessment (HERA) for the Site based upon the various environmental investigations and groundwater monitoring events carried out to date. The HERA involved quantification of human health risk of potential exposures to petroleum hydrocarbons that may be derived from operations at the Shell Canberra Depot, identified in soils and groundwater beneath the Site and off Site towards the Canberra Queanbeyan Railway.

Three key receptor groups were identified in the risk assessment: future on site commercial workers, intrusive maintenance workers and off site commercial workers. Receptor pathways evaluated included commercial worker inhalation of volatile chemicals of Concern on-site (from soil and groundwater) and off-Site (from groundwater) and maintenance worker inhalation of volatile chemicals of concern (from groundwater) off-site. In all cases the main exposure route was deemed to be through inhalation of vapour. The assessment concluded that that for future on Site commercial workers, the risks would need to be reassessed in the event of any redevelopment which involved earth works or the construction of new buildings. It was also noted that exposure via inhalation of volatiles arising from contaminated soils was likely to be underestimated due to soils not being sampled from additional significant polluted areas of the site.

The 2011 AECOM Health Risk Assessment also concluded that there were *"potential unacceptable threshold risks to potential future site users occupying buildings constructed over areas of the most significantly contaminated soil from inhalation of benzene vapours derived from soil contamination."* This is a very serious health issue which cannot be overlooked.

Both these reports did not consider off site receptors because they were assessing the site for its present use. Its findings reinforce the argument that a more comprehensive Health Risk Assessment is necessary now that a change of use is proposed.

The EIS recognises the potential health risks. *"The Site supervisor shall monitor all open excavations and remediated soils with a PID to ensure ambient air concentrations are within the acceptable work safe limits. Concentrations of PID monitoring shall be recorded by field staff and submitted for review on a daily basis. If ambient air concentrations of VOCs exceed 15 ppm for over 30 minutes based on short term exposure limit of 15 ppm for benzene (NOHSC, 1995), work should cease until levels drop."* App G p.45

Air quality imposes major costs on NSW communities. There are significant health and economic gains to be made from reducing exposure to particle and diesel pollution. Many overseas studies and recent Australian studies have attempted to quantify the cost to the environment and the economy of increased health impacts from pollution. The important Australian studies are "Air Pollution Economics Health Costs of Air Pollution in the Greater Sydney Metropolitan Region" NSW DEC Nov 2005; *"Clearing the air Why Australia urgently needs effective national air pollution laws"* Environmental Justice Australia May 2014 and *"METHODOLOGY FOR VALUING THE HEALTH IMPACTS OF CHANGES IN PARTICLE EMISSIONS – FINAL REPORT"* NSW Environment Protection Authority February 2013 by paeholmes The information in these reports is designed to assist: the environmental impact assessment of major public infrastructure and industrial proposals

The paeholmes report found that an important factor in any economic appraisal of air pollution is the cost of health impacts. The health costs of air pollution are dominated by its effects on mortality. These in turn are dominated by the effects of airborne particulate matter (PM), and especially particles with a diameter of less than 2.5 μm ($PM_{2.5}$). Based on what is reasonably practical in Australia, a new and flexible methodology has been developed to enable the costs to society associated with changes in PM emissions to be quantified. These are frequently referred to as 'damage costs', stated as a cost per tonne of emissions. It found that In Australia for example, typical average values for State capital cities are around A$250,000-A$300,000 per tonne of PM_{10} at 2010 prices.

More relevantly the Report includes unit damage costs for the Canberra Queanbeyan area taking into account population density, for tonnes of PM2.5. in Australian Dollars, of $230,000 Plus $240 for people not in any significant urban area of the ACT region. The Canberra Queanbeyan area has the highest unit damage costs off fine particles of the PM 10 and 2.5 fraction outside the Sydney region.

The health costs of air pollution therefore are real and substantial, and a reduction in air pollution would deliver long-term benefits from the population's improved health. The financial costs of any polluting industry to the health system must be factored into the assessment process. There is no evidence that this has occurred for this proposal. Air pollution–related economic impacts, especially health impacts, need to be incorporated into all project cost-benefit analyses.

Further a firefighting foam plant has been found at the site, and PFAS, also considered to be a COC, is likely present. Based on the available reports, assessment of PFAS has not been conducted at the site. This is unacceptable. The Draft EIS should have provided a full environmental assessment of all risks and impacts associated with the development. This needs to be rectified and investigation and assessment of the PFAS risks provided,

A toxic atmosphere is any environment that presents a hazard to human respiration, whether it is in the open on a waste facility site, or in the confined space of a shed, vehicle or plant cab. There are varying factors which could result in toxic atmospheres where waste facility staff and operators of plant and waste vehicles are working. The most common factors include:

a) hydrogen sulphide is formed in waste and is both highly flammable and toxic if inhaled;

b) nitrogen oxide can be generated in processes and locations as intermediates or as rejected waste products;

c) carbon dioxide may be produced from, or through, fermentation of waste products;

d) carbon monoxide is produced by burning fossil fuels (as a by-product of oxidization);

e) methane is a by-product of waste decomposition;

f) sulphur dioxide is a by-product of decomposition;

g) dust can be generated through handling or break up of dry waste or masses;

h) asbestos exposure may occur through pickups or deposits at waste sites

i) liquefied Petroleum Gases may be generated through waste pick up or compaction; and

j) volatile Organic Compounds (VOC's) may be released by aerosols, paints, particleboard, plastics and pesticides.

All these are potential health hazards associated with waste transfer stations and should have been identified and assessed in any competent HIA.

That so few of these issues were addressed is sufficient to reject the EIS in its present form and the Minister should do so or else appoint an Inquiry Panel which has the expertise to evaluate the serious concerns I have expressed and which can look at other relevant environmental impacts..

Yours sincerely,