

Metropolitan Local Government
Waste & Resource Recovery Fund



Small Electrical Appliance Recovery Project – 3.28

Funded through the Metropolitan Local Government Waste and Resource Recovery Fund

Final report

Moreland City Council

29/04/2016

Prepared by Mike Rowell



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The Metropolitan Local Government Waste and Resource Recovery Fund

The Metropolitan Local Government Waste and Resource Recovery Fund (Metro Fund) is a Victorian Government initiative aimed at assisting councils in metropolitan Melbourne implement best practice waste collection and management systems in line with the *2009 Metropolitan Waste and Resource Recovery Strategic Plan* (Strategic Plan).

The Metro Fund is administered by the Metropolitan Waste and Resource Recovery Group. For more information please visit www.mwrrg.vic.gov.au.

Moreland City Council

The City of Moreland lies between 4 and 14km north of central Melbourne, covering the inner and mid-northern suburbs of Melbourne. Council's purpose is to care for and meet the changing needs of our community in a sustainable way. Covering 50.9 square kilometres, the City of Moreland is a diverse and vibrant municipality, which retains a high level of cultural and linguistic diversity.

It has a vision that by 2017, a sustainable Moreland will have a more resilient community, more attractive, accessible and safe places, a stronger local economy and services that meet the needs of our growing community. For more information please visit moreland.vic.gov.au.

Executive summary

The Small Electrical Appliance Recovery Project was a pilot collection system that Bright Sparks Australia delivered on behalf of the five local government areas – Moreland, Boroondara, Darebin, Whittlesea and Yarra – for the repair, donate and recycle small electrical appliances.

Electronic waste, known as e-waste, is defined in the Victorian Government's current State-wide Waste and Resource Recovery Infrastructure Plan (SWRRIP) as 'electronic equipment with a plug or battery that requires a current to operate that has reached its end of life'. There is currently no clear pathway for the reuse or recycling of small electrical appliances.

The pilot projects objectives were to:

- Provide an easy and affordable option for consumers to reuse and recycle their small electrical appliances
- Repair, reuse and recycle a significant number of small electrical appliances across five local government areas in Melbourne
- Recover ferrous, non-ferrous and rare metals together with a range of engineering plastics
- Provide appliances to low-income and/or vulnerable households
- The potential for expansion across metropolitan Melbourne, leading to a national program.

From August 2015 to April 2016 the pilot diverted 6,132 electrical appliances from landfill, almost 15 tonnes of e-waste. It achieved 4 of its five objectives, only failing on the final one for an expansion across metropolitan Melbourne. Whilst the pilot demonstrated there is a demand for this type of service; that some people will travel and even pay to use it, there are significant costs associated. The major benefit of the pilot project was to prevent all these items from otherwise going to landfill. It achieved this by:

- encouraging reuse for pre-loved electrical items;
- extending appliance lifecycles through repairs;
- recycling what could not be reused or repaired;
- influencing consumer disposal and purchasing behaviours through education and engagement.

BSA states 'the project was worth doing and allowed us to start operating and test the market'. They also learnt 'just how much work is involved in reuse, repair and the collection of small appliances and why it is not more commonly done'.

From a local government perspective, there are a number of other issues that such a service may need to consider in the future. The cost for the service provided during the pilot is significantly more expensive than current e-waste recycling services. Whilst there were justifiable reasons for the higher costs, in particular staffing requirements and establishing the workshop, the capacity of any future service will need to be clearly outlined so Council's understand what they are paying for.

For a like service like this to be taken up by more local governments, the service cost will need to more adequately reflect the level of service being provided. It will be difficult to control the amount of small electrical appliances donated so flexibility in the service to handle varying flows will be a priority consideration. The type/s of donation bins and the frequency of collection have to be evaluated so the service can better accommodate the need for a variety of potential collection locations.

Gaining greater support and involvement from the electrical appliance manufacturers/importers and the recycling industry is an important factor for any future service. BSA stated the service can't be supported by sales of second-hand appliances and repair fees alone and they acknowledge the cost to operate is more than what local government can be expected to fund. While they aim to secure additional sources of income, there is a strong argument, given the demand for the service BSA offered, to broaden the existing product stewardship scheme. BSA and partner Council's advocate for a model that sees a shared financial responsibility for the recovery of electrical appliances. A broadening of the current product stewardship scheme should also ensure repair capability is considered in the design and manufacturer of electrical appliances.

1. Project details

Electronic waste, known as e-waste, is defined in the Victorian Government's current State-wide Waste and Resource Recovery Infrastructure Plan (SWRRIP) as 'electronic equipment with a plug or battery that requires a current to operate that has reached its end of life'.

It is well known that the amount of e-waste is growing and it will require a range of measures to address the issue of e-waste going to landfill. As the SWRRIP states the 'increased use of electronics, shorter lifespan of products and rapid technological change... could put significant pressure on waste management infrastructure'.

With no clear pathway for the reuse or recycling of small electrical appliances, most consumers are confused about what to do when these items break down, and many charities will now not accept them. More appliances are designed so they can't be opened without special tools, meaning the average consumer is unable to repair them or separate them into their recyclable components.

There is an interest from consumers to have items repaired; however there are few services available and most people do not have the skills to safely repair electrical items. It can also be argued that there is a significant social need for basic appliances to be provided to low-income households, newly-arrived refugees from overseas and/or those who have lost possessions in a disaster.

All of the above indicates there is a need for accessible and cost-efficient services for people to have their electrical items repaired or to donate them for reuse and/or recycling.

The Small Electrical Appliance Recovery Project (SEARP) is a pilot that aims to reduce the amount of electrical items discarded in Melbourne by:

- Repairing, reusing and recycling small electrical items to keep them out of landfill
- Building a market for second-hand electrical items
- Providing consumers with a convenient, affordable alternative to the rubbish bin

Given there is no current organised recovery of small electrical appliances, this pilot accesses local government facilities and channels to provide a coordinated donation collection system.

In May 2015, Moreland City Council secured funding from the Victorian Government's Metropolitan Local Government Waste and Resource Recovery Fund (Metro Fund) for the pilot project to collect small electrical appliances for reuse, repair or recycling.

Moreland, partnering with four local councils - Boroondara, Darebin, Whittlesea and Yarra - applied to the Metro Fund for \$90,000 with a co-contribution of \$46,000. Moreland contracted [Bright Sparks Australia](#) (BSA), newly established not-for-profit social enterprise and registered charity based on a similar enterprise in the United Kingdom. Having investigated the UK version, BSA approached local council's with an idea to pilot a rescue service for small electrical appliances in Melbourne.

The pilot operated from October 2015 to March 2016 with an aim to focus on the reuse and repair of items, before recycling what couldn't be saved. Moreland also provided Bright Sparks Australia with a workshop space next to its own Operations Centre in Hadfield to use as a base for the pilot.

The pilot's objectives, as set out in the Funding Agreement – Schedule Four: Monitoring and Evaluation, were to:

1. provide an easy and affordable option for consumers to reuse and recycle their small electrical appliances,
2. repair, reuse and recycle a significant number of small electrical appliances across five local government areas in Melbourne,
3. recover ferrous, non-ferrous and rare metals together with a range of engineering plastics,
4. provide appliances to low-income and /or vulnerable households,
5. the potential for expansion across metropolitan Melbourne, leading to a national program.

The pilot project has a broad target audience of Melburnians over 20 years old with a sub-group based on the residents location in one of the partner Council's.

The pilot project's implementation program was set out in five milestones, as set out in the Project Plan (see Attachment 1: SEARP Project Plan).

The main action of the project was to establish a collection service for people to donate small electrical appliances. BSA first set up its workshop space in Hadfield and then established a network of 14 locations across the five councils that provided donation bins for people to drop-off their items (see Attachment 2: Donation Bins). People could also donate their items directly to the BSA HQ/workshop in Hadfield during business hours.

The communication objectives are the project, as set out in Funding Agreement – Schedule Five: Communications Plan and Metro Style Guide were:

- Awareness: Let people know there is a new alternative to the rubbish bin for small electrical appliances.
- Education: Provide the reasons why it is important to not throw away small electrical appliances and share the outcomes of the pilot project with stakeholders.
- Influence and engagement: Encourage people to donate unwanted electrical items, bring in items for repair or buy second-hand small electrical appliances.

This schedule also sets out the key messages, which were:

- You can breathe new life into old small electrical appliances
- Clear out the clutter and donate your unwanted small electrical items
- Diverting recoverable materials from landfill saves resources and protects the environment

The budget allocated to communicating the project was minimal and focussed on low-cost channels from Council's and the contractor Bright Sparks Australia. This included email newsletters, media releases, social media activity and news coverage.

The main two communications related costs were:

- Facebook advertising to boost views
- Printed collateral (postcards and posters)

2. Project outcomes and findings

During the pilot period of August 2015 to April 2016 BSA collected a total of 6,132 small electrical appliances, with a total weight of over 15 tonnes. Included in this total are 129 items collected for repair and there were more uncounted items such as cables, batteries, light globes and printer cartridges.

The major benefit of the pilot project was to prevent all these items from otherwise going to landfill. It achieved this by:

- encouraging reuse for pre-loved electrical items;
- extending appliance lifecycles through repairs;
- recycling what could not be reused or repaired;
- influencing consumer disposal and purchasing behaviours through education and engagement.

The items collected during the pilot were managed by a database created by BSA, known as the Item Tracker. The Item Tracker is a custom-built web application that functions as the database for recording information about each of the items collected during the trial. The types of information collected in the Item Tracker included:

- drop-off point
- owner first name
- owner postcode
- item type
- manufacturer
- model
- weight (kg)
- working status (self-reported by donor - working, broken or unknown)
- item location tracking, e.g. test bench, recycled, sold, etc.
- story (free text - e.g. used to describe why item was broken or donated)

Project Objectives

The following sets out the projects objectives, as outlined in the Funding Agreement - Schedule Four: Monitoring and evaluation, and the extent each were met. See Attachment 3: Monitoring and evaluation for more information.

Provide an easy and affordable option for consumers to reuse and recycle their small electrical appliances

ACHIEVED

- Established 15 free drop-off locations including 14 donation bins and one workshop
- 6123 items collected during the pilot - 6003 were donations and 129 for repair

Repair, reuse and recycle a significant number of small electrical appliances across five local government areas in Melbourne.

ACHIEVED

- Pilot achieved the following results for each:

Repaired = 89

- While the pilot received a total of 129 items for repair during August 2015 to February 2016, only 89 of these were repaired. 31 were not fixed (21 recycled and 10 returned to owner), 6 identified as not requiring repair, 2 inspected but owner chose not to pay and 1 was stolen.

Reused = 612

- 398 sold by BSA
- 171 donated
- 19 held onto by BSA at end of pilot
- 24 stolen

Recycled = 5391

- See section below for more information on this result.

Recover ferrous, non-ferrous and rare metals together with a range of engineering plastics

ACHIEVED

- 5391 items recycled and 612 items were reused
- Weight = 14.8 tonnes
- Add 876kg of cables, batteries, light globes, printer cartridges
- Total weight = 15.68 tonnes

Provide appliances to low-income and/or vulnerable households

ACHIEVED

171 items donated

- 47 to The Welcome Group
- 24 to Baptistcare Sanctuary
- 15 to BSA staff member's family in Fiji after Cyclone Wilson
- 65 to student's involved in Whittlesea's Raspberry Pi Computer Project
- 20 to Museum Victoria for a future exhibition

The potential for expansion across metropolitan Melbourne, leading to a national program

NOT ACHIEVED

- By time of this report BSA were still unable to confirm how the service will be provided into the future. At this stage an expansion or national program is unlikely.

Findings

Cost of the service

The total funding provided to Bright Sparks to deliver the pilot project was \$136,000. There was also an additional \$52,922.09 from partner Council's for their in-kind contribution. This brought the total project cost to \$188,922.09.

The project handled a total of 6003 items that were either reused or recycled. These weighed 14.8 tonnes plus there was an additional 876kg of accessory items handled, equating to 15.7 tonnes being either repaired, reused or recycled. There was a further 129 items through BSA's repair service.

It is not possible to determine a thorough cost benefit for the collection, sorting, handling and disposing of all the items, whether repaired, reused or recycled, as the repair items were not weighed and the accessory items not counted.

Based on the information that has been provided by BSA, the funding and in-kind support provided by the Metro Fund and partner Council's gives the following:

- \$31.47 per item (based on total project cost divided by total items counted)
- \$12.75 per kg (based on total project cost divided by total of weighed items)

These costs are significantly higher than those for recovery of electronic waste under the National Television and Computer Recycling Scheme. The pilot costs per item and kg need to be considered in the context that currently no scheme is in place to collect the items it handled. Also much of the pilot's costs are attributed to staffing BSA along with establishing their workshop and designing and manufacturing the donation bins.

There is a strong argument, given the demand for the service BSA offered, to broaden the existing product stewardship scheme. BSA and partner Council's advocate for a model that sees a shared financial responsibility, that includes manufacturers/importers of all electrical appliances. Any broadening of the current product stewardship scheme should also consider the value of ensuring repair capability is considered in the design and manufacturer of electrical appliances.

Donation bins

The development of the donation bins took longer than anticipated. The initial designs proposed as part of the funding application were only created as a prototype by BSA once the pilot was underway. Their manufacture was further delayed when difficulties with the workshop and staff recruitment took longer than planned. When the prototype was provided to partner Council's it was not suitable for the majority of locations and was also significantly more expensive than proposed. This would have limited the number of donation bins provided, reducing the location number and therefore undermining the Council's participation in the pilot project. It was decided to go with a cheaper, more lightweight model that provided single or double units. This meant it was more flexible for the various locations to accommodate and the original number of donation bins could be produced.

It was difficult to control or predict the amount of donations on any given day. At the workshop BSA regularly received carloads of items with one individual donating 67 items in one load and on another day they recorded 6 carloads within 15 minutes. This was despite the workshop being located in a suburb that BSA was not keen on. They have since conceded that having the workshop in Hadfield probably served them better by not being in a high profile location.

The donation locations worked efficiently for most sites; however there were a few management, communication, collection and overflow issues during the pilot. The two transfer station locations had some difficulties with staff on site understanding the pilot and how it was coordinated within their already existing operations. The weekly collection on one specified day each week did not always fit with all collection locations and a subsequent driver was required to accommodate the collections during the pilot. From late December the Northcote Library bins overflowed each week and BSA was receiving calls informing them of the bins being filled almost daily. The bins' being too easily accessible was an issue at a couple of sites, with one requiring a child lock being placed on it due to its proximity to a kindergarten.

Even though there was over 100 hours each month of volunteer time contributed to the pilot, BSA struggled to process all the donations they were receiving. Particularly difficult to enter all the information they wanted to collect into the database. The influx during the December and January was attributed to media and social media promotion that occurred beyond the pilot's control and the people having a 'seasonal clear-out' around the festive season period.

Recycling

It was a struggle throughout the pilot for BSA to manage the recycling component. There was a lack of commitment from recycling partnerships when it came to collecting the items from BSA's workshop and this impacted storage capacity, staff time and uncertainty on the recycling costs.

Despite striving for at least 50% reuse and repair of items, 90% of the items BSA received were recycled. BSA attests that 40% of the items collected were believed to be working; however the majority of these were not on-sold (sale or donation) during the pilot. Their reasons for this include:

- Items were damaged, (e.g. cracked plastic)

- unpopular (e.g. printers, fax machines, landline telephones and set-top boxes)
- BSA didn't have the time or resources required to get items ready for sale or donation, (e.g. 112 coffee machines were received, but BSA had no staff capacity to test them AND rice cookers requiring rice to be tested - if only water is used, they don't function as usual).

Communications

The project successfully utilised the available communication channels. With very little allocated in the budget to communications, the pilot relied heavily on local government channels and BSA's social media. The local media were very supportive of the project, picking up the story on several occasions. An article in The Age in August 2015, to coincide with the opening of the BSA HQ (workshop), provided a high level of interest from the beginning.

That level of interest surprised BSA and throughout the operational phase of the pilot the service struggled to meet the demand from the public. Partner councils had anticipated the level of interest due to the lack of similar services and the demand for more recovery options.

A situation with the Northcote Library donation bin being consistently full was considered to have been a consequence of several different communication channels promoting the service within a short period of time. BSA also equates an influx of items at the Mill Park Library with one post on Whittlesea's Facebook page about the pilot project.

The level of interest from some people was noted by BSA as a significant distraction to the limited staff at the workshop. It took considerable time and took away from the core work of the workshop to sort, process and repair items. The need for a customer service person to specifically handle enquiries and items being dropped off would be beneficial to BSA in the future.

Social research survey

An online survey was made available from the last week in February until the 14th March 2016 to help understand people's experiences of the pilot project. Some of the results are provided below. However, there was insufficient time to do an in-depth analysis and there was insufficient number of responses from individual Council's to provide results for each. Interesting results from the survey are provided below and the social research report is Attachment 4.

1. **Number of respondents:** 151 people completed the survey - 75% female and 25% male
2. **Age group:** majority (38%) of respondents were 36 to 49 years - 25% were 50 to 60 years, 14% were 25 to 35 years and 13% were 61 to 70 years.
3. **Education:** 60% of respondents had a degree as their highest level of education.
4. **Employment:** 36% were employed full-time, 18% part time with retired and self-employed both 12% of respondents.
5. **Council area:** 30% of respondents were from Moreland, 15% from Darebin, 9% from Boroondara, 7% from Yarra and 4% from Whittlesea. However, the majority (36%) were from somewhere outside any of the partner Council's, mostly from surrounding Council's like Banyule, Melbourne, Moonee Valley, Hobsons Bay, Maribyrnong, Nillumbik, Stonnington, Whitehorse and Manningham. There was people from Yarra Ranges, Bass Coast, Bendigo and Mount Alexander Shire.
6. **Communication:** Word of mouth the most common way people learnt about pilot with 40 responses
7. **Donation bins:** 87% said it was easy or very easy to use the donation bins. Other 13% said neutral and there were no negative responses. Neutral answers focussed on not realising there was a door to open so items could be placed in bins and staff at that donation bin were unaware of the pilot when asked questions about it.

77% of respondents were able to fit their item into the donation bin

90% of the 59 respondents who donated at HQ said it was easy or very easy. Those who said difficult or very difficult said Hadfield wasn't close to where they lived.

8. **Repair service:** of the 37 respondents who brought items to HQ for repair:
 - a. 91% said the information about the service was adequate
 - b. 82% had their items repaired, 15% found it couldn't be and 3% discovered the item actually worked when they got there.

- c. 54% said the price for repair was reasonable, while 43% stated the service could have charged more
9. **Future service:** the responses for whether people were willing to pay was equally split between not willing, willing to pay to drop off broken items (both 30%) and willing to pay for dropping off broken and working items (36%). Of the 73 respondents who said 'willing' the amount they nominated varied but the most common was \$5. Of the 32 respondents not willing to pay, 9 said they could use their waste bin or hard waste collection. Five said they believed Bright Sparks got revenue from selling donated items and three said their time and effort was enough. When asked if they were likely to recommend the service, 79% said they already had and a further 18% said they were very likely too

Key Findings

The major result from the delivery of this pilot project was that for a period of time there was an avenue for people to dispose of unwanted, old or broken electrical appliances instead of sending them to landfill.

The following are the key findings from the pilot project:

1. The cost to provide the service in the future will need to be further evaluated.
2. There are people looking for a means to dispose of unwanted, old and broken small electrical appliances so they don't end up in landfill, some people being willing to travel if it means their unwanted, old and broken small electrical appliances will be rescued.
3. Greater involvement from, or a partnership with, the recycling industry will benefit BSA's service in the future.
4. Accessing local government and social media communication channels can be utilised successfully on a minimal budget.
5. Even though the project was specifically targeted to residents within the five partner Councils, over half the items donated were potentially from those who live outside these municipalities.
6. The people engaged in the pilot said they would be willing to pay to use the services offered by BSA.

3. Project highlights

Demand

The pilot project highlights there is a desire in Melbourne for the kind of services that BSA offers. Given the number of people from outside the participating Council's who accessed the pilot it can be assumed the service would be taken up by the metropolitan area, potentially even regionally were services available.

Convenience

BSA wanted to provide a convenient and engaging alternative to the rubbish bin for unwanted, old and broken small electrical appliances. A significant learning of BSA is that it may not always be convenience that influences people, as much as awareness, when it comes to recycling behaviours.

BSA state that many people who visited them were unaware of other repair workshops or other recycling initiatives/resources such as Mobile Muster, Computerbank or the Recycling Near You website. There were some people who drove more than an hour to drop off items, a few drove two hours. There was even someone who posted a box of appliances from Hobart.

BSA reported receiving notes in the donation bins describing an item, what was wrong with it and letting them know what a great job they were doing. People were very engaged and freely told stories about why they didn't want to dispose of an item without trying to have it rescued.

Social Media

Community engagement via media and social media was a huge factor in our success. Our Facebook post launching the donation bins received 439 likes, comments and shares and an article in The Age about our launch was shared at least 2,000 times on Facebook.

Volunteers

BSA set up a volunteer registration function on their website and 39 people fill out their details.

While very few of those registrations showed up in person there were 6 regular volunteers who did more than 100 volunteer hours each month. The project greatly benefitted from the contribution of these volunteers.

4. Conclusion and recommendations

Conclusion

The pilot project was a well received initiative that gained a great momentum in a very short amount of time. Partner Council's are disappointed that the pilot did not enable BSA to establish the service as a sustainable operation that would continue beyond the funding period.

BSA's reported they consider the pilot project was very worthwhile as it allowed an opportunity to test their business model and how their operations would work in the marketplace. BSA also claims the pilot demonstrates a strong demand for this type of service and that people are willing to travel long distances to recycle their small appliances. The most common response to the survey question about what people would be willing to pay for the service was a \$5 fee.

There is however, a considerable cost for the type of service offered by BSA so any future service will need to determine a more equitable fee for local government so their future participation will be possible.

There were a few delays experienced during the pilot, particularly in setting up the workshop space and recruit staff. The development of the donation bins was another delay and impacted on the time the donation service was available.

BSA made good use of the pilot to test their operations and from this they identified a range of activities that required more time than anticipated. Those activities included:

- data entry
- donation handling (sorting and processing for recycling or donation)
- customer service
- recycling (managing the flow of items and partnerships with recyclers)
- repairs
- sale item preparation

The BSA staff (and occasionally volunteers) spent considerable amount of time on customer service – face to face, phone and social media. Donors bringing carloads of appliances also required substantial time, increasing the sorting and repairing of items.

There were minimal resources within BSA to fully service the demand they experienced. Selective opening hours during the week and a half day on the weekend tried to cater for a variety of times that people might need to access the service.

Recommendations

Whilst there is potential for a service like this to be rolled out across metropolitan Melbourne, there are a number of barriers that need to be addressed by enterprises like BSA. These include:

- establishing the true cost to deliver the service
- Investment or funding beyond local government and the limited income available from sales of second-hand appliance and fees for a repair service
- further developing the ability to maintain the service so it adequately meets demand
- putting the systems in place to better manage the number of donated items likely to be received
- Creating partnerships with recycling industry and manufacturers

Should the service be available in the future, there are a number of elements that could be delivered differently:

- If short-term, the service should be heavily promoted as a 'pop-up'. Many customers were unaware of an end date, despite dates being well communicated
- More time spent on testing the various methods of collection, including the vessels, locations and logistics
- Provide a clear concise list of what is acceptable

- From a local government perspective work to ensure as best as possible that the contractor has the necessary industry experience and capability to service the ‘problem’ they are aiming to address. In this case - recovery of small electrical appliances, or e-waste, not currently collected by any other company or recycling program/scheme.
- Strive for a project that has greater involvement of the electrical appliance industry, both in supporting the initiative financially and in-kind.

Supporting documentation

- Attachment 1: SEARP Project Plan
- Attachment 2: Donation bin locations
- Attachment 3: Monitoring and evaluation
- Attachment 4: Social Research Survey Results

Project resources

Photos

- Attachment 5 - BSA HQ
- Attachment 6 - Northcote Library overflow
- Attachment 7 - Whittlesea donation bin
- Attachment 8 - Newlands Community House donation bin
- Attachment 9 - Donations for welcome group
- Attachment 10 - Northcote library overflow
- Attachment 11 - BSA HQ front counter

Collateral

- Attachment 12 - Postcard
- Attachment 13 - Poster
- Attachment 14 - End-of-trial poster 1 for council sites
- Attachment 15 - End-of-trial poster 2 for council sites
- Attachment 16 - End-of-trial sign for Bright Sparks HQ

Media releases

- Attachment 17 - Media release - August 2015
- Attachment 18 - Media release - Donation bins - October 2015

Final report sign off

The sign off of the final report is required from the project manager and department director/manager prior to submission.

Name	Position	Signature	Date
Mike Rowell	Waste Projects Officer		
Grant Thorne	Director City Infrastructure		