Water, water, everywhere

Using silent accounting to examine accountability for a desalination project

Lachlan McDonald-Kerr
Department of Accounting La Trobe University, Victoria, Australia

Abstract

Purpose – This paper aims to examine how social and environmental issues were accounted for and traded off within decision-making for Australia's largest seawater desalination plant. This is done through an investigation of disclosures contained within key publicly available documents pertaining to the project.

Design/methodology/approach – The study deploys content analysis to initially identify relevant disclosures. Themes and subthemes are based on definitions of social and environmental accounting adapted from prior research. Relevant information was used to develop "silent accounts" to identify and analyse accountability issues in the case.

Findings – It was found that a number of claims made throughout reporting were unsupported or insufficiently explained. At the same time, it is found that various forms of basic measurements used to describe social and environmental issues conveyed the rationale of decision makers. It is concluded that many of the claims were asserted rather than evidenced; yet, the manner and context of their presentation gave them the appearance of being incontestable truths. Further, it is argued that the portrayal of social and environmental issues through measurable means is emblematic of values associated with contemporary neoliberal and public sector reforms.

Research limitations/implications – The findings and conclusions of this study are contextually bound and therefore limited to this case.

Practical implications – This paper illustrates problems with the reporting of non-financial information and strengthens our understanding of the use of "silent accounting". It illustrates the value of this approach to research examining accounting and accountability issues.

Originality/value – The findings contribute to the literature on social and environmental accounting by providing unique empirical analysis of non-financial disclosures within publicly available reporting.

Keywords Neoliberalism, New public management, Public sector, Desalination plant, Silent accounting, Social and environmental accounting and accountability

Paper type Research paper

1. Introduction

Neoliberal reforms in the latter decades of the twentieth century have brought about major reconfigurations of the public sector in many countries (Harvey, 2007; Steger and Roy, 2010). New public management (hereafter "NPM") doctrines represent one manifestation of the neoliberal ideology (Funnell *et al.*, 2012). NPM reforms embody a "mode of governance" for implementing the neoliberal ideology[1] within the public sector and have "redefined citizens as 'customers' or 'clients'" (Steger and Roy, 2010, p. 13). Further, the implementation of NPM reforms has helped reshape conventional notions of public sector accountability and has led to an increased reliance on private sector management practices (Hood, 1991, 1995). In short, NPM reforms have sought to place "emphasis on products rather than processes, quantifiable measures, and 'hard' technologies" within the public sector (Pallott, 1999, p. 419). Other terms used to describe this mode of public sector reform (or aspects of it) include "new public financial management" and "managerialism" (Guthrie *et al.*, 2003).

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At the same time, there has been increasing pressure placed on public (and private) sector organisations to "account for" their impact on society and the natural environment. In this context, there is significant public debate around a range of issues related to the impacts of climate change and rapid population growth. Governments are increasingly required to recognise the importance of responsible natural resource management including the management and supply of potable water. Water is a natural resource that is fundamental to human survival. According to Christ (2014, p. 380), "Access to water and water management issues are among the most important social, economic and environmental concerns currently facing the human race".

In Australia, many areas of the country have experienced extensive water shortages within recent decades, with governments and populations becoming progressively more aware of problems associated with water scarcity (Christ, 2014; Hurlimann, 2011; Quiggin, 2006). The city of Melbourne, the capital of the state of Victoria, has traditionally relied exclusively on rainfall for fresh water supplies; however, the city was subject to particularly harsh drought conditions in the early part of the twenty-first century (2001-2004) and the State Government enacted restrictions on water use. The Government also developed policy papers setting out longer-term options for stability of water supply (Quiggin, 2006). This process ultimately lead to an announcement in mid-2007 that the State Government planned to establish a seawater desalination plant located at a semi-rural area of Wonthaggi in eastern Victoria (hereafter referred to as "the Desalination Project") (Department of Sustainability and Environment and Department of Treasury and Finance, 2009, p. 1).

The key stated aim of the Desalination Project was to "provide water security for Victoria's growing population and economy in the face of drought and the challenge of climate change" (Department of Sustainability and Environment, 2008, pp. 3-4). The planned capacity of the plant was 150 gigalitres (GL) per year (upgradable to 200 GL per year). This capacity could potentially provide around 33 per cent of the State's usage (at November 2009) which was otherwise entirely rainfall dependent, and thus help to address problems such as changing weather patterns (including rainfall) resulting from climate change (Department of Sustainability and Environment and Department of Treasury and Finance, 2009, p. 2). In terms of infrastructure, the Desalination Project consisted of the desalination plant itself, a transfer pipeline (responsible for the transfer of water from the desalination plant into the Victorian water network), marine intake and outtake tunnels (providing the flow of water to and from the ocean) and underground transmission lines (exclusively for the operation of the desalination plant) (Department of Sustainability and Environment and Department of Treasury and Finance, 2009, p. 2).

The Desalination Project was delivered via a public-private partnership (PPP), and it represented a particularly significant venture in various ways:

- it was Australia's largest desalination plant in terms of capacity;
- it signified "the largest public sector investment in water infrastructure in Australia's history", being worth approximately US$3.5bn; and
- it was the world's largest PPP transaction in terms of financial value for the period November 2008-2009 (Department of Sustainability and Environment and Department of Treasury and Finance, 2009, p. 1-2).

It was recognised that the Desalination Project also entailed a variety of *non-financial* considerations, including social impacts and environmental effects pertaining to culturally significant locations; visual impediments; noise production; acquisition of surrounding land; local flora and fauna; and greenhouse gas emissions (Department of Sustainability and Environment, 2008, pp. 17-40). Clearly, this gave rise to a need to balance a complex range of

factors in decision-making around the project – and, consequently, in accountability for decisions made.

As has been observed by a number of commentators, to date, social and environmental accounting (SEA) research has largely focused on reporting by private sector organisations, and there is relatively minimal research focused on public sector reporting practices (Adams *et al.*, 2014; Ball and Grubnic, 2007; Dumay *et al.*, 2010; Farneti and Guthrie, 2009; Guthrie *et al.*, 2010; Guthrie and Farneti, 2008; Owen, 2008; Williams *et al.*, 2011). Ball and Grubnic (2007, p. 243) suggest that this is a particularly significant lacuna in the research literature, given that public sector organisations contribute a significant portion of economic activity globally (approximately 40 per cent), and they "have a social value base and purpose".

The public sector provides an ideal site within which to investigate the relationship between traditional and non-traditional accounting disclosures, and concomitant processes of accountability. Relatively high levels and varieties of accounting disclosures within the public arena, coupled with the significance of key issues of public sector accountability, create an ideal setting for SEA research.

Although this remains a relatively under-researched arena, relevant prior research into the Australian public sector has examined a range of issues including:

- SEA performance measures (Adams *et al.*, 2014);
- quantity of SEA disclosures within reporting (Burritt and Welch, 1997; Frost and Seamer, 2002); and
- use of Global Reporting Initiative ("GRI") guidelines in SEA reporting (Farneti and Guthrie, 2009; Guthrie and Farneti, 2008; Lodhia and Jacobs, 2013; Lodhia *et al.*, 2012; Lynch, 2010).

These studies provide valuable insights into SEA within the public sector, but there is little prior work that has examined SEA information in relation to *public infrastructure projects*. This presents a key motivation for the present study of accountability issues in relation to the development of key public infrastructure (the Desalination Project). Specifically, the objective of this paper is to examine how SEA information was reported, how social and environmental issues were traded-off and how SEA reports were used throughout decision-making processes pertaining to the Desalination Project. To achieve this objective, the paper investigates how some of the potential or expected social and environmental impacts associated with the Desalination Project were reported on within a number of key documents produced in relation to this project. The specific issues examined are the acquisition of private property, potential destruction of Aboriginal[2] heritage, production of noise and visual impediments, degradation of flora and fauna and generation of greenhouse gas emissions.

This study deploys the emergent approach to SEA research known as "silent accounting", initially proposed by Gray (1997). This research approach involves the examination of various organisational reporting "channels" so as to allow the reconstruction of accountability information into holistic accounts (Dey, 2003, p. 6). Silent accounting allows for the re-presentation of data that is already publicly available and disseminated through various disclosure mechanisms. The key objective of the silent accounting approach is to develop a more comprehensive representation of an entity's *own* accountability narrative. Silent accounts may therefore be seen to (seek to) reflect the "voice" of the accounting entity on accountability matters (Gray *et al.*, 2014a, p. 247; O'Dwyer, 2005, p. 34). The provision of insights in relation to this particular voice may add "visibility" to reporting on accountability matters by bringing to light

absences, inconsistencies, ambiguities or conflicts within an entity's own reporting that are otherwise not evident. It may, in turn, be used to examine issues of accuracy, completeness and associated accountability (Boyce, 2014, p. 131).

Silent accounting broadly aligns with associated concepts such as "shadow accounting" and "counter-accounting" (Boyce, 2014; Dey, 2003; Gallhofer *et al.*, 2006) in that it seeks to "create new visibilities, new representations and new knowledge of existing situations in order to problematise and act as a catalyst for change" (Solomon and Thomson, 2009, p. 77). *Silent* accounting may be distinguished these other approaches in two key ways. First, it draws exclusively on information which is disclosed by the relevant entity itself (Dey, 2003). Second, silent accounting seeks to offer "an alternative presentation of data that permits a different reading" and does not explicitly seek to "de-legitimate" or "confront" an entity's accountability reporting in the way that shadow accounting or counter accounting do (Boyce, 2014, p. 131). Put simply, silent accounts represent the "voice" of the accounting entity, shadow accounting represents "voice" of those outside the accounting entity and counter accounting represents the "voice" of those explicitly opposing the accounting entity's narrative.

Silent accounts are therefore an "alternative" form of accounting in the sense that they re-present comparable SEA disclosures emanating from the reporting entity into accounts which may differ from that which was evident in original disclosures. The "alternative" basis of *shadow* accounting and *counter* accounting lies in the manner in which they present a perspective that is not that of the original reporter. Many researchers have encouraged the use of each of these types of "accounts" due to their potential to improve and reshape accountability beyond that which has been obtained in traditional SEA research (Boyce, 2000, 2014; Collison *et al.*, 2010; Dey, 2003, 2007b; Gray, 2001; Gray *et al.*, 2014a; 1997; Solomon and Thomson, 2009; Tregidga *et al.*, 2012). Silent accounting does this by clarifying the perspective that is presented by the original reporter, and giving visibilities to "the social dimensions of organisations and activities" (Boyce, 2014, p. 131).

This paper aims to analyse the possibilities for silent accounting in creating new visibilities, thereby contributing to the literature on both public sector accounting and SEA. This is done via a case study of SEA disclosures contained within three key documents that constituted the central elements in the Victorian Government's official published case supporting the decision to proceed with the Desalination Project. By using silent accounting to bring together information obtained from these different reports emanating from the same entity, it is possible to facilitate a holistic representation of SEA disclosures, producing an overall account that clarifies a range of issues and is richer in detail. This facilitates analysis that leads to a more comprehensive understanding of how particular kinds of information were included in official decision-making.

To achieve these objectives, the remainder of the paper is structured as follows. The next section frames this study and considers literature pertinent to the research. Following this, the research approach and method adopted are outlined. The paper subsequently presents a *social* "silent account", and then it details an *environmental* "silent account". Finally, the paper concludes by deriving and reflecting upon research findings and implications.

2. Background and prior literature

This section starts by describing the impact of neoliberal and NPM reforms of public sector accountabilities. It then briefly considers literature related to the particular research domain under examination.

According to Harvey (2007, p. 2), neoliberalism may broadly be thought of as:

> […] a theory of political economic practices that proposes that human well-being can best be advanced by liberating individual entrepreneurial freedoms and skills within an institutional framework characterized by strong private property rights, free markets, and free trade.

It is difficult to offer a precise definition which fully captures all aspects of the meaning of the economic and political ideology that underpins neoliberalism, as its practice and philosophy varies in specific contexts of application around the world. However, Davies (2014, p. 3) contends that despite contextual differences, one "common thread" in neoliberalism around the globe is "an attempt to replace political judgement with economic evaluation". Harvey (2007, p. 3) claims that neoliberalism "seeks to bring all human actions into the domain of the market". It applies a "single economic concept of value" as a metric for assessing all realms of society and in turn has resulted in the "economization" (Davies, 2014, p. 21) or "financialization" (Harvey, 2007, p. 33) of the physical world and society at large. Governments championing the neoliberal agenda have sought to address apparent inefficiencies within the public sector by pursuing an agenda of "cultural change" concerning the bureaucracy of these institutions (Dingwall and Strangleman, 2005, p. 479). This transformation is commonly referred to under the umbrella of NPM (Hood, 1991, 1995).

NPM reforms represent one means through which neoliberal ideology has been embedded within public sector philosophies and practices. The closeness in these concepts may be illustrated on a number of fronts, including that NPM reforms:

- embody "a philosophy of individualism and self-interest as its *raison d'être*" (Parker and Gould, 1999, p. 112);
- may be seen to originate from a desire to reduce public expenditure by the state (Guthrie *et al.*, 2003);
- may serve as a "rationalisation" mechanism for introducing private sector participation within the public sector domain (Jupe and Funnell, 2015, p. 69); and
- may be seen to represent "a very visible example of the state being refashioned as a private actor" (Davies, 2014, p. 116).

NPM describes both the transition and the current state in which the public sector is managed, delivered and governed. According to Hood (1995, p. 94), the central tenets of NPM are the "lessening or removing differences between the public and the private sector and shifting the emphasis from process accountability towards a greater element of accountability in terms of results". These reforms have introduced new "logics" into the public sector (Bovens, 2005, p. 198). Financial accounting has played a key role in these new logics by facilitating a reshaped emphasis on measures of outputs, performance and outcomes (Lapsley, 1999, 2008; Pallott, 1999). As a result, many aspects of NPM reforms may be encapsulated broadly through the introduction of "accounting logic" into the public sector (Broadbent, 1998; Broadbent and Laughlin, 1998). The transition towards the public sector going "down grid" (that is, increasing focus on measurements and outputs) (Dunleavy and Hood, 1994, p. 9) has thus resulted in the restructuring of accountabilities on technical, calculative grounds.

As the public sector is situated within the political sphere of society (Bovens, 2005; Dillard and Murray, 2012), it is perhaps somewhat unsurprising, then that calculative tools and languages have become central to steering political discourses. The increasing use of numerically based technologies within the political domain is often based on the perception that they (re)present "objective", "value free" and "independent" perspectives and thus can help to convey a level of legitimacy regarding decision-making (Rose, 1991; Rose and Miller, 1992). As Bebbington *et al.*

(2007, p. 227) explain, "Numbers, because they appear scientific and apolitical, wield substantial power and authority in Western societies and institutions (both separately, but crucially in combination)".

Technical measurement techniques and vocabularies may be seen as particularly valuable within the sphere of public decision-making, as there is an intrinsic need to balance diverse and often dissimilar viewpoints. On the other hand, while measurement techniques and vocabularies may be deployed in an endeavour to "resolve" political discourse within democratic societies, it is commonly recognised within the literature that financial accounting does not produce objective "truths", but rather outputs which are socially constructed and contestable (Arrington and Francis, 1989; Cooper and Sherer, 1984; Everett, 2004; Hines, 1988, 1991; Hopwood, 1983, 1985). Broader public awareness regarding this matter, however, is limited (O'Leary, 1985), and accounting techniques, which are inherently contestable, may be actually be presented and accepted as *in*contestable.

Emerging from the above is the view that NPM reforms have reshaped conventional notions of public sector accountability upon measurable grounds, just as calculative rationalities have become increasingly commonplace tools used in contemporary neoliberal political decision making. This technically driven approach to the framing of accountabilities, however, may be particularly problematic when seeking to account for non-financial matters for which accountabilities are also owed (Boyce, 2000).

Neoliberalism has seen the expansion of market-based financial and economic evaluation techniques into realms previously unexposed to such approaches (Gómez-Baggethun and Ruiz-Pérez, 2011; Harvey, 2007; Walsh, 2011). Yet, it is commonly recognised that the application of calculative rationalities in the realm of SEA may be wholly inappropriate because key social and environmental factors may be incapable of being expressed through technical (financial/economic) metrics (Bebbington *et al.*, 2007; Boyce, 2000, 2014), and any "outputs" (or "accounts") are (or should be) open to debate (Brown, 2009; Brown and Dillard, 2013a, 2015). Bringing together accounting for financial, social and environmental matters may be a difficult task, as the basis for measuring, assessing and reporting on these factors differs and may draw on a range of competing and/or conflicting aims and objectives. Boyce (2000, p. 29) notes that even though financial, social and environmental matters are often discussed within various forms of public sector reporting, it remains unclear whether this genuinely influences decision-making or represents "a legitimating device to create an appearance of broader accounting and thereby facilitate the *de facto* dominance of financial and economic factors".

NPM has arguably led to an increased tension within the public sector's role, as decision makers must both work within the confines of fiscal constraints, while at the same time providing accountabilities for various social and environmental matters (Ball *et al.*, 2014, p. 184). NPM reforms are often *claimed* to have enhanced accountability and transparency within the public sector; however, this tends to refer to improvements within the financial workings of public sector organisations by way of output and performance-based measurement techniques (Lapsley, 2008; Pallott, 1999). Funnell *et al.* (2012, p. 67) note that NPM reforms have given rise to concerns that public sector decision makers "will favour financial criteria, against which they believe their behaviours can be unambiguously evaluated, in preference to more nebulous ethical and equity criteria".

Thus, the present paper represents an attempt to understand how the tension between the technical rationality embraced within neoliberal and NPM reforms may be balanced with the retention of social and environmental accountabilities by the public sector. It considers how social and environmental issues were reported on and accounted for within decision-making processes for a major infrastructure project outlined within key reports. Before proceeding to

explain how this study was undertaken, it is appropriate to briefly consider how similar issues have been approach in relevant prior literature.

As noted earlier, prior SEA literature tends to reflect a general focus on private sector issues and organisations. There however are a number of important papers that investigate SEA practices within the public sector domain in Australia. A substantial endeavour of this literature has been to examine the use of GRI guidelines on the SEA reporting practices of public sector organisations. Guthrie and Farneti (2008, p. 363) used the GRI framework to examine SEA disclosures in annual and sustainability reporting by Australian public sector organisations, finding that GRI indicators of public sector performance for SEA matters were "fragmentary" and involved "cherry-picking". Examining the motivations of Australian public sector organisations for producing SEA disclosures in accordance with the GRI, Farneti and Guthrie (2009) contend that this kind of information was likely designed to satisfy internal rather than external stakeholders. Lynch (2010) examined the SEA disclosures in annual reports of Australian State Government departments and compared these with an index largely based on GRI guidelines. It was found that SEA reporting by public sector organisations varied over time and was inconsistent within and across departments.

Lodhia *et al.* (2012) examined SEA disclosures in the annual and sustainability reports of Australian Commonwealth Government departments with reference to the GRI guidelines. They found that GRI adoption by public sector organisations was minimal and suggested that the practice of SEA reporting is predominantly driven by "internal coercive requirements", such as legislation other compliance matters, rather than for purposes of generating legitimacy for external stakeholders (Lodhia *et al.*, 2012, p. 643). These findings were supported by Lodhia and Jacobs (2013), who conducted interviews and undertook documentary analysis to investigate the SEA reporting practices of Australian Commonwealth Government departments. They contended that SEA reporting appeared to be primarily driven by internal organisational forces rather than those which are external (Lodhia and Jacobs, 2013).

The above research suggests that even though SEA reporting practices of Australian public sector organisations may be increasing, it is primarily driven by a desire to appease internal stakeholders and address in-house organisational requirements. Overall, research in this domain has tended to either wholly or partly draw on publicly available reporting/documents of varying types (primarily, annual/sustainability reports). As SEA matters may be viewed as being issues of public accountability (Boyce, 2014), this approach seems reasonable.

The development of this literature also appears to show a preference for a qualitative approach to research of SEA disclosures within the public sector. Limitations acknowledged within earlier research that adopted exclusively quantitative approaches, such as the inability to examine the quality of disclosures (Burritt and Welch, 1997; Frost and Seamer, 2002), seem to indicate that a qualitative research approach is justifiable. Further, the aforementioned research also raises questions as to the quality and motivations of SEA reporting by Australian public sector organisations. Although silent accounting does not appear to have been a research approach used in the prior literature in this specific area, this approach is particularly well suited to this study's research domain, as it seeks to examine the quality of SEA reporting by obtaining disclosures from multiple, freely available sources (Dey, 2003).

2.1 Silent accounting

Accounting literature has encouraged the use of silent accounting as a research approach to better understand how organisations seek to discharge accountabilities for social and environmental issues (Boyce, 2014; Collison *et al.*, 2010; Dey, 2003, 2007a; Georgakopoulos and Thomson, 2008; Gray, 2001, 2006; Owen, 2008; Tregidga *et al.*, 2013, 2012). Gray (2001,

p. 10) contends that silent accounting has the potential to "socially reconstruct the organisation as more than simply an economic entity" and hence may be used to highlight problematic aspects of capitalist practices. Dey (2003, p. 6) suggests that silent accounting offers a "simple, practical and effective vehicle to create new forms of [corporate social responsibility]" which may be more easily accessible than other "critically motivated methodologies". Gray (2006, p. 810) proposes that silent accounting has the potential to at least somewhat address the lack of "engagement" in the SEA literature, as it allows researchers "challenge the utterances of organisations and representative bodies". Tregidga *et al.* (2013, p. 491) argue that silent accounting can be used to test "positions of trust and transparency", as it allows for those outside of organisations to assess the accuracy of claims within SEA reporting and discourse.

Silent accounting has been used to research private sector organisations across a range of industries in the private sector including pharmaceutical (Gray, 1997), retail (Gibson *et al.*, 2001b), financial services (Gibson *et al.*, 2001a), aviation (Hamling *et al.*, 2006) and energy (Ruffing, 2007). The findings of these studies have resulted in a questioning of corporate accountability on the basis of reconstructed and developed accounts that bring together SEA reporting to assess its accuracy and completeness, often relative to other available information. These studies have helped to demonstrate the conceptual and practical value of silent accounting.

A review of the literature pertaining to SEA reporting by Australian public sector organisations revealed only one study that used silent accounting (Boyce, 2000). This paper investigated the decision-making processes surrounding a proposal by the Victorian State Government to move a chemical storage facility. It examined economic, social and environmental disclosures contained within publicly available reports. Many claims made throughout reporting were found to be *asserted* rather than sufficiently *evidenced*. It was shown that economic considerations appeared to dominate decision-making procedures and that this resulted in the marginalisation of social and environmental factors.

The above review highlights that a number of prominent scholars within the SEA research field view silent accounting as a valuable tool within the study of organisational accountabilities for social and environmental issues. The literature demonstrates the possibility for conducting SEA research via the silent accounting approach. Together, these points provide a case which supports the adoption of the silent accounting approach in this study.

3. Research approach

There is no prescribed approach for conducting silent accounting research (Coulson and Thomson, 2006; Dey, 2003). Accounting studies of SEA disclosures have used various research methods; yet, one of the most prevalent techniques in this area is content analysis (Gray *et al.*, 1995; Milne and Adler, 1999; Parker, 2011; Thomson, 2007). Content analysis is a suitable approach for the present study because, although there may be limited amounts of silent accounting research to date, these kinds of studies have a propensity to draw exclusively on textual data (Boyce, 2000; Gibson *et al.*, 2001a, 2001b; Gray, 1997; Hamling *et al.*, 2006; Ruffing, 2007). Content analysis also provides an appropriate method for devising the silent accounts themes and subthemes, as well as offering a means for attaining an overall familiarity with documentary materials and disclosures pertaining to decision-making processes.

Although content analysis is a favoured method for SEA researchers, there is considerable diversity in how it is applied (Milne and Adler, 1999; Unerman, 2000). To successfully undertake content analysis, it is necessary to identify the source of data, the unit

of analysis and the unit terms (Krippendorff, 2012). Each of these elements is considered in the remainder of this section.

Voluminous amounts of publicly available reporting and documentation were produced in relation to the Desalination Project. These are freely obtainable through Victorian State Government websites. After reviewing the available materials, three documents were seen to provide the most appropriate source for conveying the "voice" of decision makers, as they described their rationale and justification and sense of accountability regarding numerous SEA issues pertaining to the Desalination Project. These three primary documents therefore formed the basis of the empirical examination in this study:

(1) GHD Pty Ltd and Melbourne Water Corporation (2007), *Melbourne Augmentation Program – Seawater Desalination Feasibility Study*, June, p. 128 (referred to in the remainder of this paper as the *Feasibility Study*).

(2) Department of Sustainability and Environment (2008), *Victorian Desalination Project Environment Effects Statement – Summary Brochure*, August, p. 50 (*EES*).

(3) Department of Sustainability and Environment and Department of Treasury and Finance (2009), *Partnerships Victoria Project Summary – Victorian Desalination Project*, November, p. 37 (referred to in the remainder of this paper as the *Project Summary*).

These documents provide the primary disclosures of social and environmental information concerning the Desalination Project throughout the three key stages of its development: planning, post-site selection and post-contract execution[3].

Units of analysis that may be considered when undertaking content analysis include words, sentences, paragraphs or pages (Krippendorff, 2012). Each of these units has been used in prior SEA research (Milne and Adler, 1999; Unerman, 2000), and there has been significant debate over the most appropriate unit of analysis (Gray *et al.*, 1995). Selecting any unit of analysis is problematic as each entails strengths and weaknesses (Steenkamp and Northcott, 2007). Nevertheless, *sentences* appear to be the most common approach used within SEA research (Milne and Adler, 1999); therefore, this study adopts sentences as the unit of analysis so as to provide consistency with the relevant prior literature.

Coding themes (or "unit terms") were based on those initially proposed by Gray *et al.* (1996) and adapted in Boyce (2000). Content analysis was used to identify and classify disclosures into the above unit terms. On the basis of this analysis, the initial themes were modified to reflect case particulars and organised into two broad themes, which were each divided into subthemes as follows.

A broad "social accounting" theme was classified into three subthemes:

(1) social and cultural costs (Aboriginal sites);

(2) social liabilities (visual and noise impacts); and

(3) impacts on local community (acquisition of land).

A broad "environmental accounting" theme was classified into two subthemes:

(1) environmental costs (flora and fauna); and

(2) environmental liabilities (energy usage).

After disclosures from multiple documents were classified into themes and subthemes, they were re-presented in "silent accounts". This was undertaken to create a holistic representation of like disclosures so as to assist in the identification of accountability issues

and allow for further qualitative analysis. The "silent accounts" were used to assess the quality of information provided to support and justify decision-making processes throughout various stages of the Desalination Project in a manner consistent with that adopted by Boyce (2000).

The following two sections present the silent accounts. These are crafted (as much as possible) to bring together the various elements reflect in the documents examined to represent and clarify the perspective of the decision makers as presented in these documents. Section 4 presents the silent account for the social accounting subthemes, and Section 5 presents the silent account for environmental accounting subthemes. For each of these two sections of the paper, a critical analysis of the content of disclosures pertaining to each subtheme is offered directly after the "silent accounting" presentation of the relevant subtheme.

4. The social silent account

This section presents a "silent account" of the key social accounting issues identified. It reflects a *reconstruction* of social accounting disclosures, outlining the *components* and *nature* of the social accountings for the Desalination Project together with a statement of the related *evidence* provided within reporting.

Sections 4.1, 4.2 and 4.3 present disclosures and analysis relating to the three social accounting subthemes (Aboriginal sites, potential visual and noise impacts and acquisition of land). Within each of these sections, a silent account first presents the perspective of the decision makes, based on the reconstruction of the accounts' provided in the reports examined (Sections 4.1.1, 4.2.1 and 4.3.1). These accounts are descriptive in nature, as they aim to present the voice of decision makers. The content of disclosures pertaining to each social accounting subtheme is the critically analysed immediately *after* their respective presentation (Sections 4.1.2, 4.2.2 and 4.3.2). The organisation of the analysis in this manner clearly distinguishes between the "voice" of decision makers and the study's analysis (the "voice" of the researcher).

A summary of the social silent account is provided in Section 4.4.

4.1 Social and cultural costs (Aboriginal sites)

4.1.1 Silent account: social and cultural costs (Aboriginal sites). The Feasibility Study stated that a "Geographical Information System model" ("GISM") was used to create an initial list (or longlist) of potential locations for the Desalination Project based on evaluation criteria which included "Aboriginal Cultural Heritage Places" (Feasibility Study, pp. 41-46). It is noted that some potential sites identified by the GISM were eliminated based on "technical investigations, assessment of risks and opportunities, environmental and social assessments" (Feasibility Study, p. 41). None of the reports examined provide detailed explanation surrounding these procedures.

The remaining sites were then shortlisted by "stakeholder workshop groups" (Feasibility Study, p. 49) which made recommendations that "were reviewed and tested against the project's strategic objectives" (Feasibility Study, p. 50). Particulars surrounding the participants and composition of this group remain elusive; however, the "wider strategic objectives" used to compare sites included whether plant capacity could be "economically expanded"; its ability to be "efficiently and economically" integrated into water supplies; and any risks to timely delivery (Feasibility Study, pp. 86-87).

Four shortlisted sites were then compared via an "a multi-criteria assessment" which allocated "scores" to various criteria including "Cultural Heritage" (Feasibility Study, p. 83)[4]. It was explained that:

> The scores assigned to the four short listed locations were developed in a workshop that included engineering, environmental and social specialists, and included staff from Melbourne Water. The adopted weightings had the following total percentages: Financial 40 per cent, Environmental 30 per cent and Social 30 per cent. (Feasibility Study, p. 83)

The subsequent procedures which led to the selection of a single preferred site, the Bass Coast (Wonthaggi), are explained further in Section 4.2.1.

The Feasibility Study recognised that locating the Desalination Project at Wonthaggi would likely mean that approval for either "a cultural heritage permit or approved cultural heritage management plan" would be required, as this locale had the potential to damage aspects of Aboriginal heritage (Feasibility Study, p. 37). The EES explained that a number of Aboriginal sites and artefacts were known or had recently been discovered on or around land proposed for the Desalination Project. It was recognised that construction of three aspects of the Desalination Project would potentially impact on Aboriginal cultural sites: the plant site, the transfer pipeline and the power supply corridors.

The desalination plant site was found to contain 15 Aboriginal cultural heritage sites, and it was acknowledged that more sites or artefacts could be discovered throughout construction phases (EES, p. 28). The transfer pipeline corridor had an estimated 27 Aboriginal cultural heritage sites (EES, p. 32). Of these, three had only recently been identified, and they were in close proximity to the transfer pipeline corridor. It was acknowledged that additional Aboriginal cultural heritage sites were likely located in or around this area (EES, p. 21).

The power supply corridor contained an unspecified number of "Aboriginal and historical cultural heritage sites" (EES, p. 34). It was further noted that additional sites were likely to be located on or nearby the power supply corridor land (EES, p. 22). Reporting indicated that Aboriginal representatives would be consulted to help identify and manage cultural heritage sites/artefacts and that each component of the Desalination Project that was identified as having the potential to impact on these matters would be subjected to a Cultural Heritage Management Plan (EES, pp. 28-34). The Project Summary noted that the State (not the private sector provider) would bear the risk for any costs/delays arising from native title claims or the discovery of artefacts on land being utilised for the Desalination Project (Project Summary, p. 14).

4.1.2 Analysis: social and cultural costs (Aboriginal sites). The Feasibility Study noted "Cultural Heritage" features of sites were taken into consideration when recommending a location for the Desalination Project (Feasibility Study, p. 83). Although the term "Cultural Heritage" was not defined within the report, it can be assumed that it encompasses Aboriginal cultural heritage sites and artefacts. It is nevertheless unclear what "scores" were assigned to "Cultural Heritage", as they were not detailed in any of the reports examined (see Feasibility Study, p. 83). It is therefore unclear exactly how this particular variable actually impacted on overall decision-making for site selection. The absence of explanation surrounding this matter may be characterised as being a public accountability issue because, by implication, the reader was simply supposed to accept the assurance (on the one hand), but was not given enough information to challenge the outcome.

The observation that non-financial issues associated with various sites were accounted for via the allocation of "scores" and weightings within this case (Feasibility Study, p. 83) appears to align with the approach observed by Walsh (2011, p. 861), who noted how a "points system" was used to provide quantifiable metrics for the evaluation of immigration applications within Australia. In that case, Walsh (2011, p. 864) claims that the justification for usage of the "points system" was to assist with politically sensitive decision-making as its "purportedly objective, numerical form […] [was seen] as creating an impartial,

non-discriminatory and transparent space of fairness". The explanation offered by Walsh (2011) could be seen to reasonably explain the approach to accounting for these matters within this case, as cultural heritage matters are innately politically sensitive issue within Australia, in particular those associated with Aboriginal matters. Walsh (2011), however, was able to identify both the potential value of the points (or scores) and their weightings, whereas in this study, it was only possible to observe the weightings and not the scores. As the assignment of such scores is an inherently subjective process, one might expect a particularly high level of transparency and openness regarding this decision-making matter. This does not appear to be the case.

The propensity to apply numerical evaluation techniques may be seen as an embodiment of neoliberal values, as it seeks to apply calculative measures in political decision-making (Davies, 2014; Walsh, 2011). As a result, it may be possible to characterise the approach to accounting for cultural issues observed within this study as itself being an exemplar of the application of neoliberal values within decision-making for non-financial issues. Similarly, it would also appear to align with an "economic rationalist approach to decision-making" which has become common under NPM reforms within Australia (Funnell *et al.*, 2012, p. 111).

The proposition that decision-making concerning the non-financial aspects of different sites was rooted within neoliberal and NPM values appears to be further supported by the weightings allocated within the "multi-criteria assessment", which showed a categorical preference towards financial factors (as illustrated through the higher percentage allocation) over social or environmental issues (Feasibility Study, p. 83). No justification for allocating a higher weighting to financial factors than social or environmental factors is provided in reporting. Economic and financial matters are viewed as the foremost considerations within the neoliberal agenda (Davies, 2014; Harvey, 2007). Allocating economic factors the highest weighting appears to suggest that these issues as superior, relative to social or environmental matters, and thus could be interpreted as reflecting on the neoliberal values permeating into decision-making processes. Moreover, this approach also assumes that economic, social and environmental factors can be expressed in comparable, numerical terms. Aside from problems associated with the expression of social and environmental factors in quantifiable terms (Boyce, 2000), this approach appears to embody NPM's preference towards measurement (Lapsley, 1999).

In addition to the general issues of numerical evaluation, three other sets of issues are evident including: stakeholder participation processes, techniques used to describe impacts and accountability under the NPM paradigm.

4.1.2.1 Stakeholder participation process. Stakeholder participation represents one approach to democratising decision-making processes (Brown, 2009; Brown and Dillard, 2013a, 2013b). For these engagements to retain "democratic features", however, one should consider both their "representativeness" and "influence" (O'Dwyer, 2005, p. 30). In this case, there is a lack of clarity surrounding the actual participants and the approach to their selection. Assuming, however, that the "stakeholder workshop groups" used to shortlist potential sites (Feasibility Study, p. 49) were the same as the "workshop" members whom assigned scores to the shortlisting criteria, it would appear that these consisted exclusively of experts and bureaucrats (Feasibility Study, p. 83)[5]. Stakeholder engagement processes should include a diverse range of participants who represent a wide range of different viewpoints that are "equally valued" (O'Dwyer, 2005, p. 30). If the participants in these two sets of workshops were the same, the engagement of experts and bureaucrats alone may be seen to lack the views of a broader group of stakeholders (that is, individuals with interests in the environmental and social realm, including representatives of Aboriginal community), and hence lack balance in their overall representativeness.

Further, stakeholder participation in the shortlisting of sites for the Desalination Project also appears to have been somewhat restricted, as it is stated that sites "were reviewed and tested against the project's strategic objectives" (Feasibility Study, p. 50). This suggests that stakeholder views were considered, but they were ultimately subservient to the Desalination Project's goals.

It would therefore appear that stakeholder participation within decision-making was limited, and therefore its influence was constrained as the initial site selection precluded various stakeholder concerns.

4.1.2.2 Technique. When discussing the 15 known Aboriginal cultural heritage sites present at the Wonthaggi site, it was explained that 11 of these were regarded as being of "low significance" and four were of "moderate significance" (EES, p. 28). The basis for determining the significance of these sites however was not provided. There was additional detail relating to the *discovery* of Aboriginal sites in the vicinity of the transfer pipeline that were above and beyond those previously thought to be in existence (EES, p. 21).

The above fact alone suggests that initial measurement methods for identifying sites may have been inappropriate or that the sites themselves are difficult to identify, highlighting the risks of damage or loss to sites of Aboriginal cultural heritage. This difficulty raises questions as to the certainty of identification and measurement techniques carried out in relation to this aspect of the Desalination Project. For example, several key questions remained unanswered throughout the reports, such as follows:

Q1. What is a significant site?

Q2. What is a moderate site?

Q3. How can one be certain that no more Aboriginal sites are going to be discovered?

Q4. How do current measurement methods differ from those previously used?

Any form of accounting, whether calculative or non-calculative, cannot produce objective "truths" but rather outputs which are (or should be) open to debate and contestability (Boyce, 2000; Brown, 2009; Brown and Dillard, 2013a). The identification of additional Aboriginal cultural heritage sites observed within this case (and the acknowledgment that there may be more unidentified sites) shows that accounting for these matters is not an "exact science", but rather a process which involves greater or lesser degrees of subjectivity. Determining "significance" of a site (EES, p. 28) requires some subjective judgements which arguably necessitate a high level of transparency regarding decision-making so that those outside of the relevant processes may judge its merit (or lack thereof). Despite this however, this term (and others) remained unspecified (or cross-referenced) throughout the reports examined.

4.1.2.3 Accountability. NPM reforms have led to a shift in the accountability paradigm towards an increased focus on quantifiable measures (Dunleavy and Hood, 1994; Hood, 1991, 1995). The approach to accounting for cultural heritage sites observed in this case may be seen as a means for providing accountability under the NPM paradigm as the assignment of terms such as "low" and "moderate significance" allows for some (crude) form of "measurement". As noted above, however, the subjectivity involved within any measurement of social issues arguably demands a level of transparency which was not evident in the reports examined.

For these reasons, it may be concluded that the examined disclosures were *assertive* in nature, while lacking the necessary *detail* to embody transparent decision making or to facilitate critical analysis in relation to the potential risks to sites of Aboriginal cultural heritage. The reporting seemed to adopt the assumption that the *mitigation* of damage to Aboriginal sites was permissible rather than their unqualified *protection*. This gives the

appearance that advisory or presentational consideration was given to these matters rather than anything substantive in terms of a capacity to have a significant bearing on the plant siting and construction decisions under contemplation.

4.2 Social liabilities (visual and noise impact)

4.2.1 Silent account": visual and noise impact). The Feasibility Study acknowledged that the construction and operation of the Desalination Project would have the potential to create visual and noise impacts (Feasibility Study, pp. 33-34). However, these factors do not appear to have been explicitly considered as part of the initial listing of potential sites via the GISM (Feasibility Study, p. 46). Nevertheless, one stated criterion for the shortlisting of potential sites was "Landscape and Visual Amenity" (Feasibility Study, p. 83). Assignment of "scores" for this factor was identical to procedures outlined in Section 4.1.1.

A diagram compared possible sites, illustrating that the environmental impacts for all sites under consideration was likely to be negative; however, it was suggested that the social and financial outcomes for all possible sites (apart from the "base case"[6]) would likely be positive (Feasibility Study, pp. 83-84). Financial, social and environmental impacts appeared to be defined as the total net score relating to each of these issues (based on the cumulative total of values allocated to the various criteria underpinning each factor). The analysis concluded by noting that:

> The differences in cost, environmental impact and social impact between the locations do not appear to […] firmly favoured [one] over another. Therefore it is necessary to consider possible wider strategic objectives that may be of importance in selecting a [*sic*] possible locations. (Feasibility Study, p. 84)

The four "wider strategic objectives" (Feasibility Study, pp. 86-87) have previously been identified in Section 4.1.1. The outcome of this process was that Wonthaggi was ultimately recommended for the Desalination Project due to its seemingly superior capability regarding characteristics of flexibility of capacity and timely delivery (Feasibility Study, p. 105).

The EES explained that a "risk assessment process" was used to examine potential noise impacts associated with various components of the Desalination Project, and that "a location specific sensitivity analysis" was adopted to consider visual impacts (EES, p. 16). Seven components of the Desalination Project were identified as potentially having visual and/or noise impacts (EES, pp. 23-37). These are discussed below.

The EES explained that there was public anxiety regarding the visual impediments that could arise from construction of the marine structures (on water and over land elements) and the effect that this may have on tourism (EES, p. 24). This issue was addressed by claiming that:

> However, most tourism in the area occurs in and around Philip Island and well away from the Project area. Therefore, visitation and eco-tourism are not expected to be affected in the long-term from the construction activities at the Project area (EES, p. 24).

It was acknowledged that construction of marine structures was expected to have noise/vibration effects, but it was claimed that "it is unlikely that construction activities would detrimentally affect marine biota at the population or community level" (EES, p. 25).

The EES also acknowledged that *construction* of the desalination plant may give rise to noise/vibration impacts, but these were expected to be within "noise goals", and it was stated that performance requirements would be used to manage these (EES, pp. 27-28). This report recognised that visual and sound impacts may also eventuate from the *operation* of the plant (EES, pp. 29-30). It was suggested that the visual impacts would be managed via performance requirements and could also be mitigated via the planting of vegetation. It was

also noted that modelling indicated that noise/vibration would comply with Environmental Project Agency (EPA) guidelines (EES, p. 30).

The EES explained that noise/vibration from the construction of the transfer pipeline was probable, and these could impact on "nearby residents", but it regarded these as being "relatively short-lived" (EES, p. 33). Any visual and/or noise impacts associated with the operation of the transfer pipeline were viewed as being "negligible beyond the immediate area" (EES, p. 33).

The EES also noted that construction of the power supply could produce some noise/vibration impacts, but these were perceived as being "temporary and restricted to the construction area" (EES, p. 34). This report further noted that visual effects would arise from the operation of the power supply and that properties surrounding one aspect of this "would experience a moderate to high impact on visual amenity" (EES, p. 36). As with the construction of the Plant itself, it was explained that these would be somewhat lessened via particular performance requirements and that flora could also be used to mitigate visual impacts (EES, p. 36). Furthermore, the EES noted that operation of the power supply would likely produce some noise/vibration, but claimed that modelling indicates that these will be within EPA guidelines (EES, p. 37).

The Project Summary explained that *reducing* the visual and noise impacts associated with the Desalination Project represented one of the environmental *objectives* for the project (Project Summary, p. 3). It noted that the selected construction consortium's design included plans to reduce the visual impacts of the Desalination Project via tree planting and specific plant design features (Project Summary, p. 4). Visual amenity of the power supply would also be improved by using underground transmission lines (Project Summary, p. 10). Finally, it was noted that noise emissions greater than those outlined in the contract may give rise to the abatement of service payments (Project Summary, p. 18).

4.2.2 Analysis: social liabilities (visual and noise impact). Although disclosures noted that "Landscape and Visual Amenity" was one of the criteria influencing site selection, there was a lack of detail surrounding how analysis of this element this was actually undertaken (Feasibility Study, p. 83). This criterion does appear to be defined, and it is unclear what "score" it was assigned in the overall assessment process. This concern mirrors issues raised in Section 4.1.2.

The particulars in Section 4.2.1 suggests that while various possible or likely noise/vibration impacts were *recognised*, they were all expressed in such a way as to frame them as not presenting an impediment to the project. This implies that an effect of this was to minimise the effect of noise/vibration impacts as a consequential input to the decision-making process. Indeed, these statements reported above provide an indication that, in essence, noise/vibration impacts were only meaningfully considered *after* the site was selected, in the first instance.

Thus, site selection disclosures indicated that social and environmental factors did not play a central role in decision-making. This was due to a perceived lack of differences of these between sites factors which ultimately led to focus on other technical and economic as drivers for site selection (Feasibility Study, p. 84). This matter is further to concerns raised in Section 4.1.2, in which stakeholder recommendations' regarding the shortlisting of sites (not the selection of a single preferred site as discussed in Section 4.2.1) "were reviewed and tested against the project's strategic objectives" (Feasibility Study, p. 50). It therefore appears that the procedures for shortlisting sites (see Section 4.1.1) and identifying a single preferred site (see Section 4.2.1) were essentially reduced to technical and economic objectives.

This leads to a conclusion that social and environmental issues were somewhat marginalised throughout decision-making processes, and may be taken to reflect on the

"*de facto* dominance of financial and economic factors" (Boyce, 2000, p. 29). As previously noted, neoliberalism imposes the view that financial and economic issues are the key considerations and that other non-financial matters are supplementary or subsidiary to these concerns (Davies, 2014; Harvey, 2007). The reversion to economic drivers for site selection processes observed within this case could thus be interpreted as being a reflection on neoliberal values within decision-making for the Desalination Project.

In addition to the site selection issues outlined above, another issue which was evident in reporting concerns the terminology used to describe the potential visual and noise impacts arising from the Desalination Project.

4.2.2.1 Terminology. Table I provides a summary of the various components of the Desalination Project which were described as having the potential to produce visual and/or noise impacts (items numbers in the table are referred to throughout the discussion below).

All of the components in Table I were identified as being "potentially significant environmental risks", apart from items 4 and 5 (EES, pp. 23-35). Although Items 4 and 5 both had potential noise and/or visual impacts, it is unclear how these differed from all other items as the term "significant" was not defined. The report does not detail the meanings associated with key words used to describe the impacts associated with various items.

The meaning of terms such as "not expected", "long-term" or "unlikely" used to describe the visual and noise impacts pertaining to Item 1 was not defined (EES, pp. 24-25). Disclosures described the noise/vibration impacts associated with Item 4 as being on "nearby residents" and "relatively short-lived", but did not explain the basis for measuring these (EES, p. 33). Noise/vibration effects of Item 6 were denoted as being "temporary and restricted to the construction area", but it was unclear what this meant (EES, p. 34). Similarly, the basis for determining that Item 7 would likely produce "a moderate to high impact on visual amenity" was not specified (EES, p. 36).

Overall, the various assertions concerning the measurement of likely social impacts arising from the Desalination Project appear to be founded on claims of expertise entrenched within the reporting narrative. Invoking expertise-based claims may be taken to represent neoliberal values within decision-making because, as Harvey (2007, p. 66) explains, proponents of this ideology "tend to favour governance by experts and elites" rather than by democratic means. Expertise can help to convey a level of authority within decision-making and can thus serve as a means for establishing legitimacy (Chua, 1995). While drawing upon expertise for supporting decision-making processes is itself not problematic, it may become an issue when it is used to impose "an answer" in the realm of SEAs (Boyce, 2000, p. 55). In such cases, the influence of experts may be (mis)used to silence debate and dialogue as "non-experts" (or stakeholders) are left with

Table I.
Potential visual and noise impacts in components of desalination project

No.	Component	Visual	Noise
1	Marine structures (Construction)	✓	✓
2	Desalination plant (Construction)		✓
3	Desalination plant (Operation)	✓	✓
4	Transfer pipeline (Construction)		✓
5	Transfer pipeline (Operation)	✓	✓
6	Power supply (Construction)		✓
7	Power supply (Operation)	✓	✓

little choice but to accept the accuracy and authority of the information which they are given access to (Brown, 2009, p. 325).

The approach to disclosing the measurement of the likely social impacts arising from the Desalination Project observed within this case is significant, as the assessment process itself, as well as the terms which eventuated from it, involved inherently subjective elements that, *ipso facto*, demand particularly high levels of transparency. As insufficient information was provided to allow for the various claims to be assessed by any party external to the decision-making processes, the reader (ostensibly, the public) was left no choice but to accept or assume that conclusions reached within reporting are truthful and correct.

Overall, the lack of specification and explanation surrounding the meaning of key terms meant that it is difficult to analyse exactly how conclusions about site selection and assessment were reached. The basis for applying these terms was unexplained and insufficiently supported throughout the documents analysed. Thus, there is a lack of evidence presented to support the particular assertions made. This is a particularly significant issue when terms, such as those discussed above, are subjective and can have different meanings in a variety of contexts. It would be expected that these terms and the manner of their application would be clearly defined. Hence, it is concluded that disclosures pertaining to the avoidance of social liabilities were insufficient in detail and that claims were *asserted* rather than *supported*.

4.3 Impacts on local community (acquisition of land)

4.3.1 Silent account: impacts on local community (acquisition of land). Land acquisition issues appear to have been taken into consideration when constructing a longlist of potential sites for the Desalination Project, but it is unclear exactly how this was accounted for within the GISM (Feasibility Study, p. 46). They nevertheless appear to have formed some part of the analysis, as this matter was indirectly referred to when discussing the inclusion/exclusion of sites from shortlisting (Feasibility Study, pp. 49-50). It also appears to have formed part of the selection process when initially attempting to decide upon a *preferred* site from the shortlist (Feasibility Study, p. 52). However, its overall impact remains unclear.

When it was determined that site selection should be driven by the project's "wider strategic objectives" (Feasibility Study, p. 84), two (of the four) objectives and two (of the four) shortlisted sites (including Wonthaggi) were noted as requiring land acquisition (Feasibility Study, pp. 86-87). These were the only objectives which were stated as solely[7] favouring the Wonthaggi location and were based on the view that this site: allowed for potential capacity expansion "provided sufficient land is acquired" (Feasibility Study, p. 86) and represented the least risky location (relative to alternatives), but land acquisition still posed a risk (Feasibility Study, pp. 86-87). The location that was ultimately recommended, Wonthaggi, entailed the acquisition of private property (Feasibility Study, p. 17). Disclosures outlined relevant laws for land acquisitions and noted exemptions to legislated "public purpose" provisions (Feasibility Study, p. 38).

Reporting later detailed that approximately 264 hectares of farmland had been acquired by the state for the Desalination Project (EES, p. 9). It noted that further land would need to be acquired to create a power easement for operating the transfer pipeline (EES, p. 33). The power easement infrastructure[8] which would require the acquisition of land was identified, and the applicable State legislation concerning payments for land and disruptions was noted (EES, p. 36).

The Project Summary explained that land had been acquired with respect to the transfer pipeline and power easement (Project Summary, p. 12). It noted that property and licenses

had been granted to the private consortium in respect of various aspects of the Desalination Project and that these reflect part of the State's overall contribution to the PPP arrangement (Project Summary, p. 17).

4.3.2 Analysis: impacts on local community (acquisition of land). Land acquisition was acknowledged throughout the reports examined; yet, specifics surrounding the attainment of property were elusive. While land acquisition appeared to be a consideration within the site selection for the Desalination Project, it remained unclear how this actually impacted on decision-making for the longlisting (Feasibility Study, pp. 46-52) or shortlisting (Feasibility Study, pp. 86-87) of locations. While some reference was made regarding the quantity of land required for the Desalination Project (EES, p. 9), there were no further details regarding the additional amount of land required for the transfer pipeline. Disclosures did not provide details surrounding other relevant land acquisition matters, such as the amount of compensation paid or the number of individuals likely to be affected. These details may be considered as being significant, as taxpayers would likely incur the costs associated with any compensation. For these reasons, disclosures pertaining to the avoidance of negative impacts on the local community may be considered as being incomplete and lacking transparency. Omissions in key details relating to land acquisition may be seen to erode public accountability, as the Desalination Project would undoubtedly have a significant impact on the local community and surrounding areas, as well as State taxpayers more generally.

Furthermore, ongoing references to relevant legislative frameworks for which matters such as compensation would be dealt with may be regarded as providing an appearance of fairness. However, the matters canvassed related only to compensation payable for land acquisition/disruptions (EES, p. 36) or exemptions in legislation particulars (Feasibility Study, p. 38), with no reference to any possible *alternative* measures should an individual wish to retain their property. This information would presumably be relevant, as some individuals may not wish to relinquish property ownership for monetary compensation.

The implicit assumption that monetary compensation alone represents sufficient reparations for the compulsory acquisition of private property may be seen to reflect neoliberalism's tendency to frame all aspects of society through economic and financial metrics (Davies, 2014). While private property rights and individual freedoms are considered to be fundamental tenets of the neoliberal philosophy (Harvey, 2007), it is somewhat paradoxical to note that the treatment of property acquisition for the Desalination Project does not appear to acknowledge these principles for local landholders. Differences between the values and practices of neoliberalism observed in this case could be partly explained due to differences between the power dynamics of property owners and the State. The failure to recognise any substitute procedures for land acquisitions may be seen to reflect on this power dynamic and indicate a lack of pluralism in decision making as the State's preferences were arguably privileged over those of land holders.

4.4 Summary – the social account

This section has revealed that the Desalination Project had the potential to disturb cultural heritage sites, produce visual and/or noise impacts and require the acquisition of private property. Even though these issues were acknowledged in site selection procedures, it appeared that decision-making processes were primarily driven by technical and economic factors. Further, the terminology describing the extent of these impacts was not explicitly defined in the reports examined, despite the process clearly involving degrees of subjectivity, and key words used to denote these impacts created a crude form of measurement. It was also

found that many claims pertaining to the potential social impacts associated with the Desalination Project were *asserted* and unaccompanied by sufficient explanation or detail.

5. The environmental silent account

This section presents a "silent account" for a number of significant environmental accounting matters, based on environmental disclosures identified the documents examined. The analysis considers the aspects and features of environmental accountings for the Desalination Project and the evidence provided to support assertions, in relation to two kinds of environmental accounting issues: environmental costs (flora and fauna) and environmental liabilities (energy usage). The format of this section mirrors Section 4.

The analysis in this section of the paper is also organised in a similar manner to Section 4. Sections 5.1 and 5.2 present disclosures relating to the two environmental accounting subthemes (flora and fauna and energy usage). Within each of sections, a silent account first descriptively presents the perspective of the decision makers, based on the reconstruction of the accounts' provided in the reports examined (Sections 5.1.1 and 5.2.1), then the content of disclosures is critically analysed immediately *after* their respective presentation (Sections 5.1.2 and 5.2.2).

A summary of the environmental silent account is provided in Section 5.3.

5.1 Environmental costs (Flora and fauna)

5.1.1 Silent account: environmental costs (flora and fauna). The Feasibility Study explained that construction of a desalination plant at any location would have the potential to impact on the surrounding flora and fauna (p. 33). It noted two pieces of legislation which could require approvals or compliance regarding the impact of the Desalination Project on flora and fauna (Feasibility Study, pp. 36-39). The following specific assertions were made concerning the characteristics of site selection and their impact on flora and fauna:

> Sites where construction can occur with minimal impact on valued flora and fauna will have less overall impact.
>
> Sites with "clear runs" of suitable terrain and ecology to provide pipe corridors can allow the construction of the connecting pipeline to reduce impacts on flora and fauna, as well as minimising social impacts (Feasibility Study, p. 40).

It was noted that "Threatened flora" and "Threatened fauna" represented two of the criteria examined within the GISM for the initial (or longlist) identification of potential sites for the Desalination Project (Feasibility Study, p. 46). It was subsequently noted that two of the three environmental factors measured within the comparison of shortlisted sites included "Entrainment and Impingement" and "Terrestrial Environment", although the precise meaning of these terms was not detailed (Feasibility Study, p. 83). A diagram then compared possible sites, illustrating that the environmental impacts for all sites would likely be negative (Feasibility Study, p. 84). As previously discussed however (Sections 4.2.1 and 4.3.1), due to perceived similarities in between financial, social and environmental impacts of potential shortlisted sites, selection was ultimately driven by "wider strategic objectives" (Feasibility Study, p. 84-87).

A summary of the findings of the Feasibility Study provided a qualified recommendation for the preferred location to be the Wonthaggi area, subject to further environmental and technical studies (Feasibility Study, p. iv). One of the reasons cited in support of this endorsement was that Wonthaggi had "the least environmental and planning concerns […] [and therefore it] has the most certainty in terms of delivery time" (Feasibility Study, p. vi). The Feasibility Study went on to detail major environmental implications for the

Desalination Project including seawater concentrate and the potential destruction of high value environments, stating that:

> Construction of the plant, tunnels and connecting pipelines are engineering works similar to other projects in both the water industry and in wider industry. Provided the sites and pipeline routes are chosen to avoid damage to unique high value environments, these construction-related impacts appear to be manageable. On this basis […] it appears that seawater desalination can provide a relatively small environmental footprint. (Feasibility Study, p. 14)

When assessing the potential environmental impacts of the Desalination Project, the EES identified various marine- and land-based flora and fauna present in or around the project site. These included 118 native and 64 introduced plant species, 114 vertebrates and six protected species (EES, p. 19). The six identified protected species were the Orange-bellied Parrot, the Growling Grass Frog, Dwarf Galaxias, the Southern Brown Bandicoot, the Little Egret and the White-bellied Sea-eagle; however, the EES did not consider any of these species to be *exclusively dependent* on the plant site (EES, p. 20).

The EES noted that "a risk-based approach" was used to determine the potential environmental impacts and discussed outcomes in accordance with construction and operation phases of four aspects of the Desalination Project (EES, p. 22). The number of "potentially significant environmental risks" identified for each of these components of the Desalination Project is summarised in Table II (EES, pp. 23-37).

A description of the procedures involved in each of the four components listed in Table II was provided, together with an explanation of how these may give rise to environmental impacts. There was some indication of how the environmental impacts were measured, including risk assessment procedures, modelling, testing and a literature review. A number of processes were identified as mitigating environmental impacts, such as private party performance requirements, compliance with environmental legislation and enforcement by regulatory bodies (EES, pp. 23-37).

The outcome of the assessment procedures was a clear view that environmental impacts associated with the Desalination Project would essentially be "negligible", "unlikely" or could be "managed" (EES, pp. 23-37). The EES concluded that:

> Most components of the Desalination Project – water transmission pipelines, electricity power lines, booster and sub-stations, manufacturing/treatment plant are familiar in the Victorian landscape and have relatively predictable environmental impacts […] The less familiar elements of the Project are the desalination process, and its impacts on the marine environment. (EES, p. 43)

> No long-term or irreversible damage to the environment from the Project has been identified […] Given the social and economic benefits of a [*sic*] securing Melbourne's future water supply, the Project can properly be regarded as delivering a strong community benefit. (EES, p. 44)

5.1.2 Analysis: environmental costs (flora and fauna). The Feasibility Study suggested that by locating the Desalination Project in the Wonthaggi area, the venture would likely have a minimal impact on the surrounding environment. This claim, however, appears to be largely grounded in a "relative" analysis that simply compared the Wonthaggi site to other potential

Table II.
Quantity of potential environmental impacts for project components

Component	Construction phase	Operation
Marine structures	7	2
Desalination plant	4	2
Transfer pipeline corridor	4	0
Power supply corridor	5	3

sites. The relative basis represents *one* of the prevailing approaches to conceptualising and evaluating the impacts of economic, social and environmental decisions, with the alternative being the *absolute* basis approach that considers each alternative on its own merits (Dyllick and Hockerts, 2002).

GRI guidelines recommend that environmental performance measures be expressed in *both* absolute and relative terms (Lamberton, 2005). Using relative terms alone may be limited in that they may serve to obscure information on the "effectiveness" (or actual cost) of decision-making, and it requires that all issues being compared (economic, social and/or environmental) may be expressed in the same terms (Figge and Hahn, 2004, p. 176). It has been previously explained however (Section 4.1.2) that it is problematic to articulate economic, social and environmental factors in equivalent terms (Boyce, 2000).

NPM reforms have shifted accountability towards an increased focus on measurable metrics (Dunleavy and Hood, 1994; Hood, 1991, 1995). As the relative basis approach to assessing the environmental impacts of different sites allows for the, albeit rudimentary, "measurement" of the same factors between sites, this approach may be interpreted as displaying NPM-styled accountability. The presentation of environmental impacts associated with potential locations for the Desalination Project on the *relative* basis however may be considered somewhat misleading as assessment of the merit of the *selected* site is wholly dependent on the extent of likely or potential degradation in each of the *alternatives*. Other sites may entail significant environmental impacts and thereby giving the selected site a favourable appearance overall. Moreover, it assumes some form of equivalency regarding the ability to compare the environmental impacts between sites. This assumption may be considered problematic, as it is unlikely that environmental effects could be standardised across dissimilar geographical locations.

The effect of using a relative-based approach is that the environmental impacts of a particular site may be veiled because it can fail to recognise the *absolute* cost that the Desalination Project would have in relation to any specific location. Thus, this approach implies that environmental impact is accepted as a *given*, and does not compare outcomes to a "no Desalination Project" baseline. Putting this another way: even if the Desalination Project would have lower environmental effects at the Wonthaggi location compared to other sites considered, this would still be an impact. This level of impact was obscured by the approach adopted. Decision-making framed through relative terms does not indicate whether an action is "sustainable", but rather which action is the "least-bad" relative to alternatives.

Further to the above, reporting suggested that the underlying rationale for the conclusion that the Desalination Project would likely have minimal environmental impacts was partly due to it being "similar to other projects in both the water industry and in wider industry" (Feasibility Study, p. xiv). However, when the details of initial/upgradable capacities of alternative projects are compared with the particulars of the Desalination Project, it is apparent that projects of this size have not been readily pursued in Australia, and thus there is no real basis for comparison.

The Project Summary explained that that the Desalination Project would have an initial capacity of 150 GL/year and be upgradable to a capacity of 200 GL/year (Project Summary, p. 2). The Feasibility Study provided particulars relating to the initial/upgradable capacities of various desalination plants throughout Australia. These included (Feasibility Study, p. 12):

- Perth (1st): initial 45 GL/year; upgradable not specified;
- Perth (2nd): initial 50 GL/year; upgradable 100 GL/year;

- Gold Coast: initial 45 GL/year; upgradable not specified; and
- Sydney: initial 45 GL/year; upgradable 180 GL/year.

The information outlined above shows that the Desalination Project would be three times larger than any other desalination plant in Australia in terms of initial capacity. The unprecedented size of the planned Desalination Project therefore raises serious concerns as to whether comparison with other projects provided a reasonable basis for claims as to the environmental impacts of this particular project. As the *relative* basis adopted for decision-making requires equivalences in the terms (items) being compared (Figge and Hahn, 2004), dissimilarities between the size of Australian projects and the Desalination Project may be seen to also raise serious doubts as to the appropriateness of using the assessment of environmental impacts on such a relative basis. At the very least, it appears to be a questionable means for assessing environmental impacts.

Another issue to emerge from disclosures regarding the elimination of environmental costs centres on the use of certain terminology within the EES. The EES stated that the Desalination project would not cause "long-term or irreversible damage to the environment" (EES, p. 44). It was unclear, however, what "long-term" or "irreversible" damage was intended to mean in this context, as the reports did not clearly reference the measurement technique for these terms. This assertion also implied that there would (or could) be some short-term or reversible damage associated with the Desalination Project, but this was not specified.

Furthermore, when the EES identified "potentially significant environmental risks" for each of these components of the Desalination Project, it was uncertain what the term "significant" was intended to mean (EES, pp. 23-37). One could reasonably view *any* environmental risks as being "significant"; however, this does not appear to be the official view adopted. Instead, the impression was given that there were some criteria for determining "significance" within assessment procedures, but details of the criteria were not provided.

The absence of explanation relating to the use of terms such as "long-term", "irreversible" and "significant" meant that many of the claims relating to the elimination of environmental costs were *asserted* rather than *explained* in detail. As many statements throughout the EES used loaded words such as these, there is a significant potential that this form of language may have, at least in part, influenced the EES. Even if this were not the case, it remains that these disclosures may be criticised for an absence of transparency. This concern mirrors issues regarding the use of subjective terms raised in Sections 4.1.2, 4.2.2 and 4.3.2.

5.2 Environmental liabilities (energy usage)

5.2.1 Silent account: environmental liabilities (Energy usage). The Feasibility Study explained that any desalination plant would entail significant energy requirements, but this varied according to its capacity and location (Feasibility Study, p. ix). It was noted that greenhouse gas emissions from a 150 GL desalination plant at Wonthaggi "would amount to around 1 million tonnes per year", but that "energy use can be greenhouse neutral and thus avoid these impacts […] [via] the purchase of renewable energy" (Feasibility Study, p. xiv). The reporting further explained how this would be achieved by noting that:

> In practice, the plant will be connected to the existing electricity network, which means the renewable energy plants can be located almost anywhere in Victoria (Feasibility Study, p. 14).

This report concluded that "provided greenhouse effects are minimised, it appears that seawater desalination can provide a relatively small environmental footprint" (Feasibility Study, p. 14).

The EES suggested that there was a "strong preference" to source renewable energy directly to the desalination plant; however, there were a number of problems which limited the implementation of this (EES, p. 12). One of these limitations identified was:

> The nature of the integrated energy supply market makes it difficult to distinguish between energy sources contributing to the grid such that renewable energy can only really be "sourced" directly […] or from the grid through renewable energy offsets (EES, p. 12).

The EES concluded that it was "considered impractical for the supply of energy […] to be directly and wholly from renewable sources" (EES, p. 13). An alternative approach put forward in this report indicated the project could use conventionally sourced power and purchase offsets elsewhere anywhere throughout Australia (EES, p. 13).

The EES noted that:

> […] the State has made a commitment that 100 per cent of the electricity used in operating both the Desalination Plant and the Transfer Pipeline is to be offset by the purchase of renewable energy creditsand asserted that this decision was a significant commitment by the Victorian Government to fully offset greenhouse gas emissions from electricity usage (EES, p. 13).

In summary, this can be taken to mean that the desalination plant and transfer pipeline would only *indirectly* source renewable energy for operations.

Although the EES reflected the use of risk assessment procedures to determine almost all of the social and environmental impacts of a proposal, the calculation of greenhouse gas emissions was an exception to this. In this domain, "a structured accounting methodology" was used (EES, p. 16). The EES distinguished between greenhouse gas emissions arising from *construction* and *operations* and provided quantification for total emissions for each aspect along with a qualitative description of the various components for which estimates were composed (EES, p. 38). Furthermore, the EES explained that the State's 100 per cent offset covers 1,047,700 tCO_2^{-e} of the estimated annual operating of the desalination plant at a 150 GL capacity, meaning that the net greenhouse gas emissions would be 70,250 tCO_2^{-e} per annum (EES, p. 39). The EES also listed a number of "potential measures" for reducing energy usage and greenhouse gas emissions from the Desalination Project (EES, pp. 40-41).

5.2.2 Analysis: environmental liabilities (energy usage). The EES noted that "100 per cent of the electricity used in operating both the Desalination Plant and the Transfer Pipeline is to be offset by the purchase of renewable energy credits" (EES, p. 13). However, the EES later noted that the net annual greenhouse gas emissions from the operation of the plant would be 70,250 tCO_2^{-e} (EES, p. 39). This information could be used to estimate the total greenhouse gas emissions for operating the desalination plant over a 27-year operating life and based on a 150 GL capacity. Table III presents a conservative estimation of total greenhouse gas emissions and does not include changes in operating capacity or a useful life beyond 27 years.

Table III illustrates that estimated greenhouse gas emissions for the construction and operation of the desalination plant were approximately 3,299,890 tCO_2^{-e}. Although the EES noted that the State's commitment to offset greenhouse gas emissions did not cover all aspects of operating and constructing the Desalination Project, the use of terms such as "100 per cent" and "fully offset" may be reasonably interpreted as giving the appearance that all emissions would be dealt with in this manner (EES, p. 13). The utilisation of language such as this may be seen to be somewhat misleading, as it had the effect of distorting the depiction of the underlying intention.

Even if that State purchased renewable energy credits to offset some emissions from the Desalination Project, greenhouse gases would still be emitted into the atmosphere. With this in mind, it is important to note that the desalination plant would still use energy, and its greenhouse gases would contribute to the State's emissions total. The purchase of renewable offsets would not actually reduce *overall* emissions; they only intended to reduce the total emissions that would have been omitted if the energy sources used had not been renewable. This preference may be meaningless when considered from a holistic perspective (of total emissions).

Claims surrounding the *carbon neutrality* of aspects of the Desalination Project are even more difficult when one takes into account the fact that the state of Victoria currently predominately sources its energy from brown coal – a particularly greenhouse gas intensive energy source (Australian Bureau of Statistics, 2012). The inability of the current energy network to produce sufficient renewable energy to power the Desalination Project means that it would therefore be likely to be powered, at least in part, by brown coal, thus contributing to overall greenhouse gas emissions.

As noted earlier, it was stated that "a structured accounting methodology" was used for estimating the greenhouse gas emissions arising from the construction and operation of the Desalination Project (EES, p. 16). The reports examined, however, do not explain what a "structured accounting methodology" was or how it was undertaken. Nevertheless, the application of financial accounting or calculative techniques into the realm of environmental matters may be reasonable when seeking to quantify things like greenhouse gas emissions (Hopwood, 2009; Lohmann, 2009). If this endeavour was pursued, however, one could reasonably expect that any calculations would be supported by sufficient evidence and explanation. In the case of the Desalination Project, there was little detail surrounding the quantification of greenhouse gas emissions, and reporting only provided a quantification of the totals and qualitative descriptions of the components upon which figures were based. There was no detail provided concerning the quantitative aspects of each of the components, and there was no sufficient explanation regarding the methodology used to construct the calculation.

This may be seen to be a particularly significant omission, as the natural sciences literature acknowledges that it is a particularly challenging task to offer accurate estimates of future greenhouse gas emissions and that any figures eventuating from evaluations tend to vary according to the choices in the methodology and assumptions used within calculations (Ramankutty *et al.*, 2007). Given that such calculations are innately contestable, and there are no standardised approaches to quantifications, it would therefore be reasonable to expect that there would be a particularly high level of transparency and disclosure regarding the basis for estimations. Simply stating that "a structured accounting methodology" was used in estimations of these greenhouse gas emissions and listing the total amounts, as observed within this case, does not appear to address the contestability of

Source of emissions	$tCO_2{}^{-e}$ emissions
Operating phase	1,117,950
Less: state commitment to offsetting	1,047,700
Net annual greenhouse gas emissions	70,250
Multiply: No. of years of operations	27
Net annual greenhouse gas emissions from operations	1,896,750
Add: construction	1,403,140
Estimated greenhouse gas emissions	3,299,890

Table III.
Further analysis of desalination plant emissions

these calculations (EES, p. 16). The basis for calculating greenhouse gas emissions was therefore not made clear within reporting, possibly having the effect of making them an "infallible truth" (Boyce, 2000, p. 53). Accordingly, the quantification of greenhouse gas emissions may be seen to be limited and severely constrained on the basis that it did not provide sufficient detail on calculative particulars. Furthermore, the enrolment of the term "structured accounting methodology" could be taken to signal the deployment of expertise in a way that was designed to preclude questioning of this aspect of the decision-making process.

5.3 Summary – the environmental account

This section has shown how decision makers sought to account for environmental issues pertaining to the Desalination Project's potential impacts on flora and fauna, as well as its greenhouse emissions. Claims that the Desalination Project would have a minimal impact on the surrounding environment were shown to be based on *relative analysis*. Critical analysis suggested that this approach *obscured* the absolute environmental costs of the project. The appropriateness of this approach was also challenged on the grounds that the items used as the basis for comparing the environmental impacts of the Desalination Project seemed to lack equivalency. Additionally, transparency issues related to the terms used to describe environmental impacts of the Desalination Project were also highlighted. Moreover, this section showed that claims pertaining to the greenhouse gas emissions were arguably misleading, and the methods used to calculate these were undisclosed.

6. Discussion and conclusions

The silent accounts presented in this study seek to add "visibility" to SEAs for the Desalination Project. By examining several reports and collating similar disclosures from different reports into silent accounts, this analysis has strived to enhance "visibility" for the overall approaches to SEAs throughout various stages of the Desalination Project's development. Specifically, the visibility added, here, provides some insight into the decision-making process and evidential basis for decisions, as put forward by the decision makers themselves (in key official documents).

For example, the presentation of disclosures concerning cultural heritage, land acquisition and visual and noise impacts in a silent account allowed for a holistic representation of how decision makers accounted for these issues within the initial planning stages, post-site selection and post-contract execution. This allowed for a representation of the treatment of social and environmental issues throughout numerous stages of project development, rather than isolating the analysis to discrete stages. The silent accounts helped to clarify the "voice" (Gray *et al.*, 2014a, p. 247) of decision makers and thus gave visibility to their overall approaches to accounting for social and environmental issues throughout the Desalination Project.

Taken as a whole, the critical analysis of the content of the silent accounts revealed a number of interesting matters concerning the SEAs for the Desalination Project and their apparent infusion with values of neoliberalism and NPM. First, while *non-financial* aspects of the Desalination Project were rhetorically prominent throughout decision-making processes (as reflected in the reports examined), information relating to these tended to be vague or incomplete. Terms such as "low significance" were frequently used to describe Aboriginal sites. Noise and vibration impacts were often described as being "unlikely" or "relatively short", and many environmental risks were labelled as being "potentially significant". The basis for determining the impacts associated with these factors, however, was not clearly defined, and these terms were not cross-referenced to other sources.

Assertions describing the measurement of various impacts gave the *appearance* of an expertise-based narrative which was also argued to be indicative of neoliberalism's partiality to expert centric governance (Harvey, 2007). It was also argued these assertions created a crude form of quantification which may be seen to indicate shift towards measurable outputs as a means for discharging accountability under the NPM paradigm (Lapsley, 1999).

Second, shortlisting potential locations were informed by inputs from "stakeholder workshop by a lack of diversity of participants, and a process that "reviewed and tested [stakeholder views] against the project's strategic objectives" (Feasibility Study, p. 50). These objectives were technical and economic in nature (Feasibility Study, p. 84). Thus, it seems likely that views that contradicted the technical and economic strategic objectives were marginalised.

As a result, stakeholder participation within the site selection processes adopted may be seen to lack "representativeness" and "influence", and thus it did not appear to manifest important "democratic features" (O'Dwyer, 2005, p. 30). This observation aligns with the findings of Archel *et al.* (2011) in that stakeholder engagement appears to be subservient to organisational objectives, and thus it may be (mis)used as a veil in legitimising discourses. Such approaches to stakeholder engagement may serve to limit the democratic rights of citizens and clandestinely further entrench neoliberal values (Brown and Dillard, 2013a).

Third, the selection between shortlisted sites sought to take into account various social and environmental factors via "a multi-criteria assessment" that necessitated the allocation of "scores" and weightings (Feasibility Study, p. 83). Despite the inherent subjectivity in this process, the "scores" themselves, and the methods adopted for determining them, were not disclosed; hence, it was not possible to assess or challenge this evaluation technique. This approach also assumed that economic, social and environmental factors may be expressed in equivalent or commensurable terms, even though this endeavour may be considered problematic, if not impossible (Boyce, 2000). Accounting for the social and environmental issues associated with various sites via this numerical evaluation technique represents an illustration of neoliberal values, as it seeks to impose calculative methods for resolving political decision-making (Walsh, 2011). Equally, it may be characterised as an "economic rationalist approach to decision-making" which has become commonplace under NPM reforms within Australia (Funnell *et al.*, 2012, p. 111). Allocating weightings for economic factors which were higher than social or environmental elements and ultimately reverting to technical and economic drivers for site selection also seem to support the contention that this approach was emblematic of the adoption of neoliberal and NPM philosophies.

This study also showed that certain environmental impacts associated with the Wonthaggi site were expressed on a *relative* basis. This approach however may *conceal* the absolute cost of a proposed action and requires equivalency in the terms of comparison (Figge and Hahn, 2004). No matter where the Desalination Project was located, it would create some form of social and environmental costs. Social and environmental costs might not be possible to quantify, but they must be visible and transparent to support decision-making processes (Boyce, 2000). Presentation of social and environmental costs on a relative basis arguably distorted the likely effects that the Desalination Project would have on the Wonthaggi site because assessment under this category was wholly dependent on the extent of impact within alternatives. The comparative basis for site selection, coupled with the dominance of "wider strategic objectives" (Feasibility Study, p. 86-87) as drivers, arguably resulted in the relegation of social and environmental concerns within decision-making *and* made them invisible. Moreover, disclosures concerning greenhouse gas emissions did not provide sufficient evidence or detail on calculative particulars, even though it was based on "a structured accounting methodology" (EES, p. 16).

Taken altogether, the findings of this study highlight some key issues that associated the neoliberal and NPM philosophies permeating the arena of SEA decision-making. Primarily, these issues related to the extension of measurement and technically based rationalities into SEA issues, either through explicit (numerical) or implicit (narrative) means. These factors give the appearance of expertise within the discourse of reporting which in turn helps to construct an aura of legitimacy surrounding SEA assertions. These factors could signify and explain a lack of transparency and detailed explanation surrounding key issues. The findings therefore suggest that the infusion of values of neoliberalism and NPM into SEA decision-making realms may serve to limit the democratic rights of citizens to transparent information, and the measurement-centric accountabilities that these philosophies seek to propagate create a form of "blurring" which is incompatible with philosophy of SEA generally.

The visibilities that silent accounts, and more broadly SEA, may create however may be used to challenge the *modus operandi* of these philosophies and their associated values (Collison *et al.*, 2010). Any kind of accounting, including SEA, should not be regarded as generating definitive "facts" but rather contestable outputs which can be questioned and challenged (Boyce, 2000; Brown, 2009; Brown and Dillard, 2013a). Examination of the detail of SEA disclosures in this paper has revealed that information that would allow a comprehensive examination of the assertions made was frequently lacking or absent. Therefore, a concern that arises from this study is the lack of transparency and explanation within particular kinds of SEA reporting. It is often apparent that disclosures are intended to be taken as truthful, despite entailing large degrees of subjectivity. By presenting information without sufficient supporting explanation, SEA reporting can therefore have the effect of restricting the democratic rights of citizens through limiting the capacity of reports to provide insights into actual decision-making processes or the reasons underlying decisions.

SEA reporting ought to promote information exchange and debate rather than being monological in nature (Brown, 2009; Dillard and Brown, 2012, 2014; O'Dwyer, 2005; Unerman, 2007). The Desalination Project drew upon public funding via taxation, necessitating the acquisition of private property, and had many broad social and environmental impacts. Given these wide ranging effects, it is vital that characteristics of openness and transparency should be present within reports that seek to provide accounts of on decision-making. Evidence presented within this study, however, supports the contentions of Dillard and Brown (2012, 2014) that pluralism within certain forms of SEA reporting represents an ideal which is yet to be realised.

Uncertainty regarding the impact of non-financial information on decision making processes, in turn, raises questions as to the potential motivations for this genre of reporting. Rhetorical emphasis on satisfying government legislation and regulation within SEA reporting may provide an indication that internal forces/requirements drove reporting (Lodhia and Jacobs, 2013; Lodhia *et al.*, 2012). The various reports examined in this paper consistently made reference legislative requirements when describing issues such as the acquisition of land and flora and fauna. Site selection appears to have been ultimately driven by "wider strategic objectives" (Feasibility Study, p. 86-87) which were technical and economic factors rather than social and environmental. These points suggest that SEA reporting on the Desalination Project may have been at least partly driven by a need to satisfy *internal* stakeholders, forces or requirements (Farneti and Guthrie, 2009; Lodhia and Jacobs, 2013; Lodhia *et al.*, 2012; Lynch, 2010), rather than to enhance *public or stakeholder accountability*.

This inference could be countered by the *extent* of public SEA reporting surrounding the Desalination Project and the public availability of reports. Therefore, it is also possible to conclude that SEA reporting was undertaken, at least in part, for purposes of obtaining external legitimacy. In this case, however, it seemed that internal factors played a more substantial role than external factors in explaining the motivations for SEA reporting on the Desalination Project. This conclusion is consistent with the literature (Farneti and Guthrie, 2009; Lodhia and Jacobs, 2013; Lodhia *et al.*, 2012; Lynch, 2010).

Accounting literature has long advocated alternative approaches to SEA research including the development of different types of "accounts" (Brown, 2009; Gray *et al.* 2006, 1997, 2014a; Gray and Laughlin, 2012; Tregidga *et al.*, 2013). This study has sought to illustrate the possibility for such an undertaking. The reconstruction of SEA disclosures from different reports into silent accounts allowed for a holistic representation and examination of disclosures, which in turn facilitated assessment of accountability and transparency issues within reporting as outlined within this paper.

Even though non-financial accounting continues to be practiced globally, there remain unresolved issues at the core of this discipline (Gray and Laughlin, 2012). By demonstrating the possibilities for this kind of research to be undertaken, it is hoped that this paper provides some provocation as to the prospects for conducting this kind of accounting research to better understand processes of public decision-making and accountability. Future research could focus on the development of silent and/or shadow accounts for PPPs, as they represent one possibility for conceptualising an accounting entity and the SEA issues pertaining to these institutional arrangements otherwise appear absence in the literature to date. Future research could also examine the usage of counter accounts within PPPs, in particular, where there is opposition to controversial projects to further contribute to the debate as to whether these types of accounts represent a means for empowerment within democratic societies.

The policy implications arising from this study primarily relate to the democratic rights of citizens. Democratic societies should be characterised by open and free flows of information which allow stakeholders to hold to account those whom make decisions (Brown, 2009; O'Dwyer, 2005). One of the key findings from this study is that crucial SEA information was repeatedly undisclosed (or "invisible"), and that citizens reading the reports examined would therefore have little choice but to accept the official narrative as truthful. Such an approach not only limits the rights of the public to access relevant information but also overlooks the inherent contestability of SEA information (Boyce, 2000). A preferable approach into the future would be for the provision of SEA accounts via a dialogical process involving sufficient information and exchange and active engagement between internal and external stakeholders (Brown, 2009; Dillard and Brown, 2012, 2014; O'Dwyer, 2005; Unerman, 2007).

Looking forward, some have suggested that GISM's could be used as mechanism for democratising decision-making processes, as they could be made available on the internet and may therefore be used to allow for public access and input, instead of solely relying on the views of experts (technocrats) (Kingston *et al.*, 2000). One particular benefit of this practice could be that it may leave an "audit trail" of public input and thus may be used to determine the extent to which communal views did (or did not) genuinely influence decision-making. Such an approach could serve as a mechanism which embeds values of pluralism within decision-making and promotes dialogue between stakeholders and entities. As such, it may therefore go some way to address problems within the contemporary "monologic discourse and politics" surrounding SEA (Brown and Dillard, 2013a, p. 8).

Notes

1. Steger and Roy (2010, p. 12) suggest that neoliberalism represents a "economistic ideology […] [because it] puts the production and exchange of material goods at the heart of the human experience".
2. The term Aboriginal is used to refer to the indigenous peoples of Australia. This term is used throughout reporting and hence it was adopted in this paper.
3. Other publicly available documents detail a range of other matters relating to legal and technical matters. These include licenses, deeds, agreements, contracts, official notices, supplementary technical environmental volumes/appendices and more. This additional material was substantially legal and technical in content, often containing overlap with the selected documents and/or redactions of key details and was perceived as being unlikely to be of significant relevance to the general public. Accordingly, these additional documents were not included in the analysis, as they did not relate to the research objectives.
4. Nine financial, three environmental and seven social criteria pertaining to the "multi-criteria assessment" were identified (Feasibility Study, p. 83).
5. It is unclear whether the "stakeholder workshop groups" (Feasibility Study, p. 49) used to shortlist potential sites were the same as the "workshop" members whom assigned scores to the shortlisting criteria (Feasibility Study, p. 83).
6. One of the four shortlisted sites was allocated "zero scores" for all financial, social and environmental factors so that it could serve as a comparative basis for comparing the other three sites (Feasibility Study, p. 83).
7. That is to say that the other two "wide strategic objectives" did not exclusively favour Wonthaggi.
8. The transmission line, sub-transmission cables and terminal stations (EES, p. 36).

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Corresponding author

Lachlan McDonald-Kerr can be contacted at: l.mcdonald-kerr@latrobe.edu.au