LESSONS FROM PROJECT LEVEL COMMUNITY ENGAGEMENT

Project No: 7-0414-0227

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Prepared for: ANLEC R&D

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I would also like to acknowledge all those who made themselves available for an interview as without this it would be difficult to confirm the findings made.

I would also like to thank both Sarah Wade and Anna Littleboy for the time they spent reviewing this document and their valuable suggestions.

Privacy

The author would also like to acknowledge the Department of Mines and Petroleum project team for allowing full access to contact notes and other project material. For privacy purposes the material provided to the author did not contain information that could identify individual stakeholders (names, properties and so forth). For consistency, landholders and interviewees were numerically coded by me as either R### or LH##.

Comments utilized in this report are unedited except in some case to remove material that could identify the landholder.

The only individuals mentioned in this report are project team members:

Department of Mines and Petroleum

Dominique Van Gent	- Project Leader
Martin Burke	- Project Manager
John Ridgway	- Project Manager

KD1 Pty Ltd

Alex Aitken	- Lands, Stakeholder and GIS Manager
Barry Ireland	- Land Access

Executive Summary

New and emerging technologies often come with an inherent social risk that if not well managed, can heavily impact their deployment. Carbon Capture and Storage (CCS) to mitigate carbon dioxide from coal-fired power plants and other industrial uses is one such technology. Often described as unproven and risky, earlier industrial projects in some countries have experienced so much opposition that governments have chosen to walk away from planned projects and even ban the technology for on shore storage completely for some time.

In the Harvey and Waroona Shires of Western Australia, the South West Hub project is a (CCS) project investigating the feasibility of storing carbon dioxide (CO_2) deep underground. Noting the challenges associated with public acceptance, community engagement has been a strong focus of the project since its inception in 2008. This research reports on the lead up to and implementation of a 3D seismic study and the associated land access agreements that were undertaken with landholders in the area.

Using a case study approach, this research aims to assess how individual values and motivations impact the decision making of local stakeholders affected by the South West Hub project both at the community and individual level. It also identifies the role of the head-contracting agency, the Department of Mines and Petroleum (DMP) in transferring their commitment to engagement and respect of their local community to their sub-contractors.

Specific objectives for this research include to:

- develop a better understanding of which elements of CCS projects pose the greatest concern to local citizens
- investigate the components of one-on-one engagement as part of negotiating land access agreements
- examine how communities wish to engage with projects
- examine the role trust in key actors (developers, government and regulators, NGOs, media and academics) plays in perception of engagement
- identify the effects of local context including past experiences with planning and major infrastructure projects (legacy issues)
- understand the contrasting views of those directly affected by activities (landholders) and those indirectly affected (surrounding community)
- compare the local engagement against broader communication to assist in the identification of the most effective form of engagement at the local level; and
- examine the specific engagement activities utilised for sub-groups within affected area.

In total there were 125 landholders of which 75 granted access for the 3D seismic test. Of the 125 customer file notes, every alternate file note was scrutinized in detail. This resulted in 63 records being analysed for this research. Of those, 37 allowed access for the 3D seismic testing while 26 did not. The analysis was then triangulated with secondary data from media articles and websites and 18 telephone interviews conducted with a cross section of impacted landholders, project proponents, contractors and representatives from the local consultative committee.

Key themes that arose from the analysis of those who denied or granted access are listed in the table below. It is interesting to note that several of these themes are common in both those who granted and denied access (see Table **1**), which suggests such themes are not just project related. Examples of how DMP and contractors helped to overcome these are expanded on in the report.

Table 1 List of landholder concerns for granting or denying access

Concerns and denied access	Concerns but granted access
Historical context, legacy issues	
Lack of community consultation and a need for information	Lack of community consultation, need for more information
Concerns about safety and the impact on future generations	Concerns about safety and the impact on future generations (Concern about toxicity of CO_2)
Devaluation of property and the local area	Devaluation of property and the local area
Issues with process, i.e. suggested forced access	
Environmental values and management	Environmental values and management
Privacy issues and threats to lifestyle	Privacy issues and threats to lifestyle
External advice from others	External advice from others
	Social norms, talk amongst the community
	Opportunities for compensation, new gates installed
Media articles	

A number of theoretical frameworks and literature from the social sciences was applied to help understand the factors that may have influenced landholder decisions to grant access or not. Understanding the dynamics of the social factors that influence a project's acceptance can provide beneficial insights to other low emission energy projects. In particular, we used the technology assessment framework put forward by Huijts and

colleagues (2012), which had relevance to the South West Hub project. There were a number of components including personal norms, both positive and negative, procedural and distributive fairness, as well as social norms, social identity and trust arose as critical factors that influenced individual attitudes towards supporting the 3D seismic survey or not. Through the analysis it became clear that some of those opposed to the CCS project saw that preventing the 3D seismic plan could be a successful strategy for thwarting the project. This also manifested itself through group pressure from neighbours and other key influential citizens for landholders not to participate in the seismic..

However, the use of a third party contractor, KD1, for the land access negotiations seemed to benefit the project as the contractors were seen as independent. Being experienced farmers prior to working for the land access company, the KD1 representatives related well to landholders and were seen as someone they could trust to do the right thing. This trust was not always afforded to the DMP because of the legacy issues that had existed between some landholders and government departments more broadly. However, it was apparent that trust and a positive relationship did build across the community with the project team because of their open and responsive approach to the community.

Although there we no direct compensation paid to landholders, because DMP took the view that all landholders should be 'no worse off' there were a number of ways that landholders did receive some nominal compensation for participating. For example, having new gates and fences installed, replacement feedlot and even some individuals gaining employment for a short while helped to gain support. As well, many farmers were offered a copy of the results arising from the 3D seismic survey which helped to bring some families along.

Despite the positive outcome for the land access negotiations for the 3D seismic survey many landholders were keen to ensure that everyone was aware that their granting access for the survey would not necessarily translate into support for the CCS project. Therefore, continuing to build a trusting and positive relationship will be essential if the project is to progress through its planned stages. A number of recommendations arose from this work for consideration by the project proponents and also have relevance for other CCS projects. These are listed below in no order of priority.

1. Continue the reflexive approach to communication and engagement – a key strength of the DMP has been their reflexive approach to evaluate all activities and make changes and respond to needs being expressed by the community. Continuing with such an approach will help to build the quality of the relationship between the local community and the project team.
2. Continue to engage in an open and transparent manner throughout the project – continuing with the planned communication activities is a strategic investment for the project. Experience suggests that if things go too quiet between phases of a project, trust can erode as people start to question what is happening behind the scenes. This would include the promised communication of seismic survey results and updates on project progress.
3. Ensure the project team remains accessible to the community – the project manager and team have made themselves accessible to the community a high priority and this

will be important to continue as the project moves forward.

4. Build the outreach of the Local Community Consultative Committee (LCCC) – several of those interviewed from the LCCC indicated that they have not engaged too much with the wider community about the project. As one of the roles of the LCCC is a form of advocacy for the community and providing a conduit for information – finding ways for the LCCC to engage more broadly with the community may increase opportunities for locals to ask questions with people who they trust and are not the project proponents.
5. Engage local leaders within the community – leadership can manifest itself through both formal and informal roles. From the analysis it seems that to date, there has not been huge engagement of potential informal leaders of the community – although these are likely to exist. Shire Presidents, CEO's and local politicians have been engaged however other stakeholders, with potential influence, may become helpful advocates for the project. Time must be spent in identifying and engaging these individuals to develop relationships with them.
6. Determine and communicate potential local benefits for the project – the real challenge for the South West Hub in relation to community is overcoming the fear that a storage project, operating in the region, will not have an impact on land values. Consideration needs to be given on how best to overcome this concern.
7. Understand the role compensation might play in this project – many of the contact notes and interviews raised the issue of compensation which is relates to the local benefit issue. Although, DMP were unable to offer direct compensation, other contractors suggested that this has been helpful in overcoming objections for land access within other projects. It would be possible to explore potential compensation models in more detail through focus groups with a cross section of the community.
8. Ensure the opportunity for choice – it was very apparent that the inclusion of the Section 115 clause, the legal instrument to allow access, created a belief that forced access would take place if permission was not granted. Although not the intention of the DMP, the inclusion of such negatively impacted on local landholders. Consideration must be given as to how this might evolve for other CCS projects. Obviously this will be influenced by the various regulatory regimes that exist in different jurisdictions and how important individual plots are but a key message from this work has been that enforced access is unlikely to be welcomed by landholders.
9. Consider a broader survey to quantify influencing factors - It seems that many of the factors suggested by the Huijts et al's (2012) framework do influence an individual's intention to accept the CCS project or in this case the 3D seismic survey. What is difficult to ascertain from this qualitative approach is the interplay between some of the factors. This would be possible to explore in more detail through survey measures across a representative sample of the community. Conducting such a survey could also provide an opportunity to understand current perception to the ongoing CCS project from a broader cross section of the community and help to inform ongoing communication activities for the project.

Figure 1 Brunswick show display

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1. Introduction

The South West Hub project is a Carbon Capture and Storage (CCS) project investigating the feasibility of storing carbon dioxide (CO_2) deep underground in the Harvey and Waroona area. Community engagement has been a strong focus of the project since its inception in 2008. The focus of this research is the lead up to and implementation of a 3D seismic study and the associated land access agreements that were undertaken with landholders in the area. From a land access negotiation point of view, the project was considered very complex. This is illustrated by the quote below from one of the project stakeholders interviewed during this research:

This is an exceptionally complex project. And some of the things that made it complex were a) its location b) the political climate, c) the fact that you've got a swag of absentee landholders – some of them in the east, d) you've got nature type reserves, you've got wetlands and if you look at that, all those coloured bits they're ESAs; they're environmentally sensitive areas. So the majority of the project is smack in the middle of ESAs. So that added to the difficulties of getting people to let you have access R003.

Using a case study approach, this research aims to assess how individual values and motivations impact the decision making of local stakeholders affected by the South West Hub project both at the community and individual level. It also identifies the role of the head-contracting agency, the Department of Mines and Petroleum (DMP) in transferring their commitment to engagement and respect of their local community to their sub-contractors. Sub-contractors that were engaged by DMP for the project included:

- KD1 – responsible for all land access negotiations
- Umwelt – responsible for environmental survey
- Geokinetics – international seismic firm based in Queensland responsible for 3D Seismic
    - Wagerup Civil – responsible for gate and fence installation, clearing (subcontracted to Geokinetics)
- GHD – responsible for quality control to ensure contractors were meeting project requirements sometimes referred to as 'the birddog'.

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- examine the specific engagement activities utilised for sub-groups within affected area.

2. Methodology

This research examined the community engagement efforts of the South West Hub project in three ways:

1. First, the researcher undertook an analysis of the documented contact notes that were compiled by the land access project team (KD1) about their direct engagement. In total there were 125 landholders of which 75 granted access for the 3D seismic test. Of the 125 customer file notes, every alternate file note was scrutinized in detail. This resulted in 63 records being analysed for this research. Of those, 37 allowed access for the 3D seismic testing while 26 did not.
2. The researcher then examined related secondary data that is available about the project (e.g. DMP website, communications plans, project reports, and consultative committee minutes) and related media activities.
3. Third, 18 semi-structured interviews (telephone and face-to-face) were conducted with key stakeholders including land holders, local government representatives, members of the Lesueur Community Consultative Committee, the project team, land access team and subcontractors (For a list of interview questions please refer to Appendix A).

All interviews were audio recorded and subsequently transcribed. Data from the interviews and media analysis were analysed in two ways. First, content analyses identified the key concepts and their correlates. Secondly, thematic analyses, identified the scope and range of ideas, attitudes, and beliefs in the transcripts using the language of the participants.

A more in-depth textual data-mining tool, Leximancer, was used to map the most salient network relationships in the data. Thematic analysis helps the researcher to identify the range and scope of themes and to group comparable themes. Leximancer facilitates the researcher to determine the most important concepts, as measured by their networks in the text. All data sets were then triangulated to identify common themes arising from the data. These themes were then compared to relevant literature and theoretical frameworks that may impact technology acceptance.

Figure 2 The extent of customer file notes of the land access negotiations

3. The project area

The following overview of the area was provided by Martin Burke of DMP with all demographic statistics obtained from the ABS 2011 Census data.

"The Shire of Harvey has a population of 23, 235 usual residents and a majority of the Shire (68.7%) live and work in the same location. Key employment sectors in the Harvey Shire are manufacturing, construction, retail trade, health care, education and training, agriculture forestry, fishing and mining. However, over half of the population in the Harvey Shire resides in Australind, which is approximately 25km south of the study area and closer to the regional centre of Bunbury. As such, examining Harvey town site and the surrounding areas of Uduc, Cookernup and Yarloop, which are partially within the study location gain a more accurate reflection of the affected community.

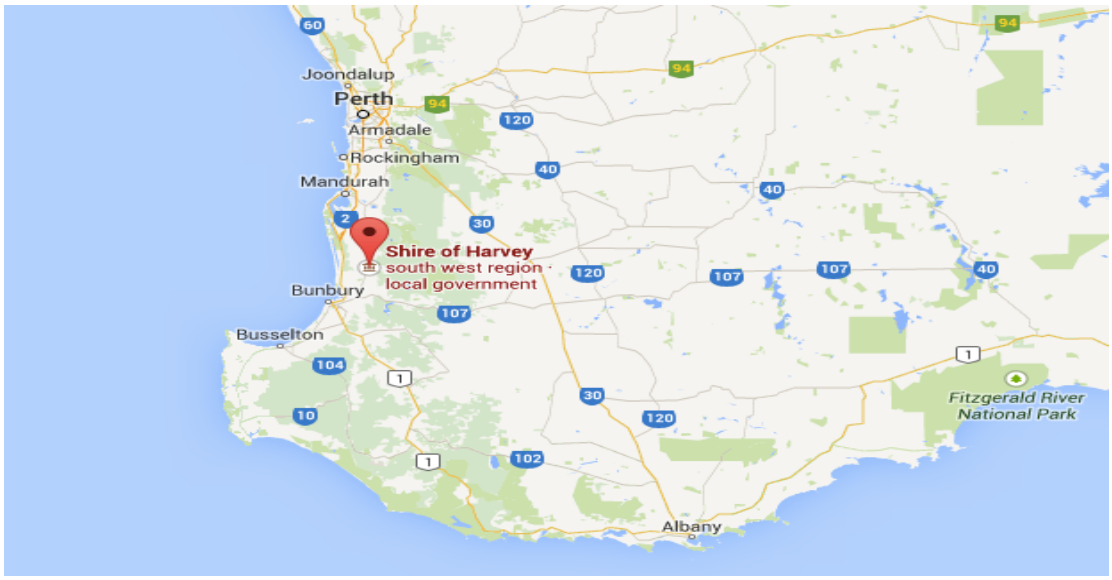

Figure 3 Locational map of the Shire of Harvey

The Shire of Waroona has a population of 4,100. Local industries include dairies, tourism, forestry, beef, sheep, engineering, earthmoving, mining (including mineral sands) and the Wagerup Alumina refinery. Only a small part of the southern boundary of the study area is within the Waroona Shire. As such, a majority of direct engagement activity has been focused within the Harvey Shire.

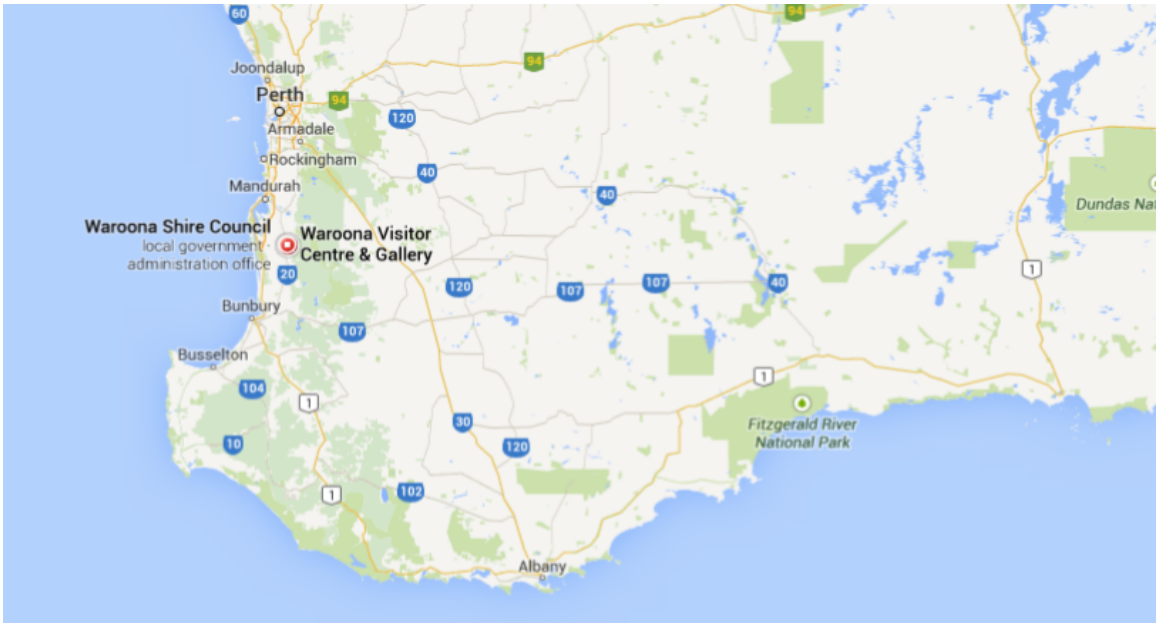

Figure 4 Locational map of the Shire of Waroona

Table 2 Population statistics of the project area (ABS 2011 Census)

	Population	Average age	Average weekly personal income	Average household income
Harvey Shire (LGA)	23,237	37	603	1,464
Waroona Shire (LGA)	3,582	42	498	1,107
Harvey Town Centre	2,667	40	418	898
Uduc	255	41	647	1,523
Cookernup	772	41	506	1,367
Yarloop	482	36	350	640

Post World War II migration saw an influx of Italian migrants settle in the region. This is reflected in the 2011 Census data where significant numbers identify Italian heritage through parents born overseas, other than England (Harvey 446, Cookernup 102 and Uduc 36). The other significant heritage is from England (Harvey 1028, Cookernup 307, Uduc 106 and Yarloop 188).

Table 3 Education levels of population

Locality	Year 12 or equivalent	Year 10 or equivalent	Persons >15 no longer attending school
Harvey Town Centre	560	673	2,054
Uduc	87	54	199
Cookernup	186	205	592
Yarloop	65	125	352

4. Land access statistics

The statistics in this section were provided from KD1, the land access company's database. Although comprehensive, it is worth noting that they do not include ad-hoc visits and phone calls which would not have been recorded in the system. This is mainly due to there being some times where calls were recorded as "multiple phone calls to landholders re access" and when there were visits to the site with Geokinetics (the seismic survey team) during the survey, where some of these would be recorded as "Work with GK and Contractors" in the comments on timesheets and Customer File Notes (CFN).

In total there were 125 landholders of which 75, granted access for the 3D seismic test. Over the engagement period, the total number of contacts with all landholders was 2,305 contacts. This was comprised of up of 328 emails to landholders; 21 letters; 961 face-to-face meetings and 993 phone calls, with the average number of contacts per landholder being 18. One day had 231 recorded calls to and from two mobile phones operated by the land access team – which illustrates why not all individual calls were recorded from time to time. Apart from the above numbers, DMP sent a number of formal letters, newsletters and invitations to landowners and the broader community.

Table 4 Related land access statistics for landholders

	Yes	No
Total Number of Landholders	75	51
Average No. Visits	11*	3
Min No. Visits	2	0
Max No. Visits	29	9
Average No. Phone Contacts	10	5
Min Phone Contacts	2	1
Max Phone Contacts	34	29

* 2 landholders were based in the east and never seen face to face

A rough breakdown of the types of farming was also provided by KD1. These included:

- Grass pasture land (cattle) – 75%
- Horticultural (grapes, vegetables, essential oils etc.) – 8%
- Dairy and laser leveled – 7%
- Tree cultivation – 5%
- Lifestyle – 5%

From the interviews it appears that the area within the project, and its surrounding community, has experienced some change in the demographics over the past few years. In addition to changes in types of farms in the area, the ageing population of the farmers, with many of their children having grown up and left the farm to find alternative employment has also impacted on the demographics of the region.

5. Literature

Community engagement on technological projects in public policy is complex. Particularly where the need for a resource is balanced against an environmental impact. Contemporary theory from the social sciences advances a number of ideas about how the social system may react to a project proposal and can be helpful for understanding landholder responses in this project. Some of these theories are summarised below.

5.1. Technology acceptance framework

In their paper Huijts, Molin and Steg (2012) propose a comprehensive framework for energy technology acceptance that is relevant to the South West Hub's proposed CCS project. The authors suggest that when it comes to various technologies, individuals base their acceptance on "(1) the overall evaluation of costs, risks and benefits, (2) moral evaluations, depending on the extent to which the technology has a more positive or negative effect on the environment or society and (3) on positive or negative feelings related to the technology, such as feelings of satisfaction, joy, fear or anger" (p526). Drawing from this, the framework they propose (see Figure 5) shows that the intention to support or oppose a new energy technology will be influenced by:

a) individual attitudes – whether the individual has a positive or negative evaluation of the behavior based on both the likelihood of a particular outcome and perceived importance of the outcome;
b) social norms – the perceived social pressure to support the technology or not;
c) perceived behavioural control - the relative ease or difficulty to perform the behaviour; and
d) personal norms - the positive (happiness, pride, satisfaction) and negative (fear, worry, anger) affect/emotions invoked by the technology (Cropanzano, Weiss, Hale, & Reb J, 2003).

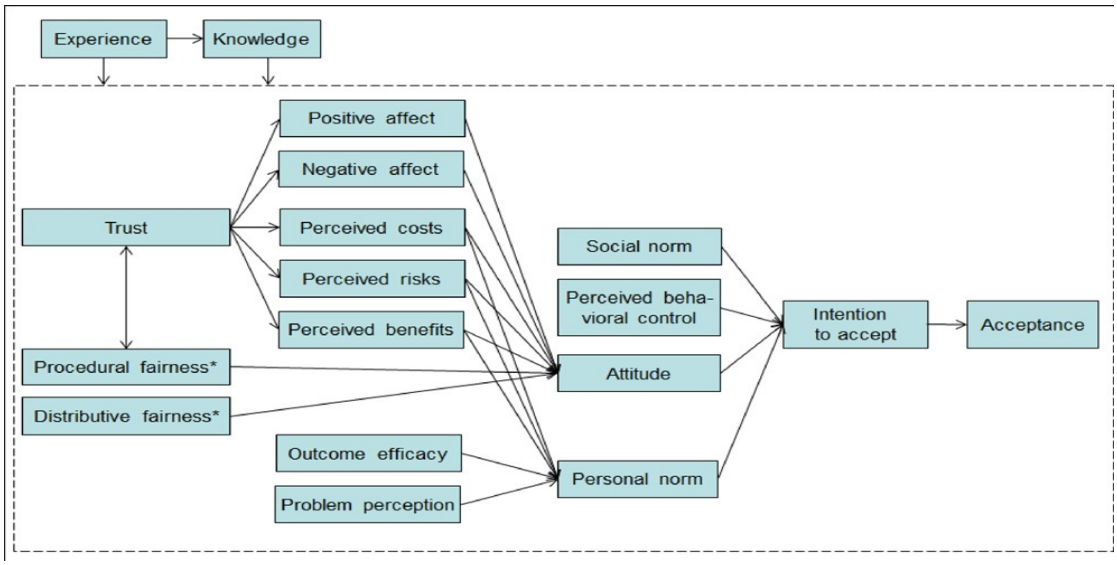

Figure 5 A schematic representation of the technology acceptance framework by Huijts, Molin and Steg (License 3496461312773)

In addition to the positive and negative affect, Huijts et al (2012) suggest attitudes and personal norms will be directly influenced by the perceived costs. This includes both non-monetary costs such as the effort required to understand or use the technology and financial costs. They also discuss that the perceived risks such as safety, and any uncertainty associated with the technology will impact positive norms. On the other hand, they suggest perceived benefits refer to the collective benefits the technology is likely to bring including reduced greenhouse gas emissions, energy security and other personal benefits such as access to the technology and improved environmental conditions.

Critically important to the above is the perceived fairness of the distribution of the costs, risks and benefits (Wolsink, 2005) as well as the perceived fairness of the decision process that led to the technology being implemented. With CCS, the concept of distributive fairness is often challenged because it is the locals who carry the burden of the technology, while most of the benefits are predominantly global, i.e. greenhouse gas mitigation. Over time research has shown that processes that include community and interest groups in the decision-making, and allow them a voice that is listened to and acknowledged are considered fairer and are more likely to increase potential acceptance (Terwel, Harinck, Ellemers, & Daamen, 2010).

The framework suggests that all of the above are mediated by trust. Either in those responsible for the project, which if trusted will likely enhance acceptance, or in those that oppose the technology, which if trusted will likely decrease acceptance (Siegrist and Cvetkovich, 2000). At the same time, Huijts et al. (2012, p.529) suggest that based on work by Earle and Siegrest (2008) that trust and procedural fairness influence one another to some degree and the two-way arrow in the framework demonstrates this. Trust in various individuals and how one identifies with them can also help to explain individual behaviours and intentions toward accepting or opposing a technology.

5.2. Social Identity theory

The concept of social identity theory (SIT) is an individual's knowledge that they belong to certain social groups, together with the emotional and value significance they place on their group memberships (Tajfel and Turner, 1986). SIT focuses on explaining how individual behavior is influenced by the group. When people identify strongly with a particular group their individual differences are minimized and the in-group norms become more salient (Hogg and Terry, 2001).

Research has found that people, especially those with weak attitudes (no strong opinion), will act in a manner that is inconsistent with their attitude, depending on aspects of the context or situation, especially situations with an implicit social norm (Terry, Hogg, Duck, 1999). In other words, under certain circumstances people will change their behavior, in spite of the attitudes they hold, if they were not previously strongly held beliefs. As such, if individuals strongly identify with certain members of the community they may change their behaviour (i.e. support or opposition for a technology) to mirror that person's choice.

The concept of SIT is relevant to the South West Hub project as there are likely to be several individuals who have no fixed opinion about CCS. Instead they may look to those around them who they trust, often friends and family or leaders within their community, to inform their decision of whether to participate in the 3D seismic testing and allow project proponents access to their property.

5.3. Place attachment and identity

Another form of identity that has been found to have a strong influence on individual choices is place identity, which focuses on the strength of identity a person has with their geographic location, otherwise referred to as place attachment. Devine-Wright (2009) proposed a new framework that explains local opposition to new infrastructure drawing from such social and environmental psychological theory on place. As an alternate to NIMBYism (Not in my backyard) Devine-Wright proposed "local opposition is conceived as a form of place-protective action, which arises when new developments disrupt pre-existing emotional attachments and threaten place-related identity processes" (p 426).

Place attachment has been described both as the process of an individual attaching themselves to a place and a product of the process (Giuliani, 2002). It is a positive connection with a well-known location, which is often correlated to the time spent in that location as well as other social and physical dimensions deemed important to the individual. Place attachment is not always limited to the individual but also exists across scale at the community and/or regional level, which means, depending on the strength of attachment, whole communities may also oppose developments as opposed to individuals (Manzo and Perkins, 2006).

The research has shown that perceived threats to place attachment and place identity often result in negative emotions and opposition. Although, it has also been noted that if the development is seen to enhance the location then the opposite is true and place attachment will positively correlate with project support (Vorkinn and Riese, 2001). Place attachment and identity is relevant to the South West Hub project because several families in the community have been farming there for several generations and identify strongly with their community. Therefore, depending how such locals perceive the project and its impact on their sense of place, it is likely to influence their willingness to participate in the 3D seismic study.

Figure 6 A typical farm within the South West Hub area

5.4. The role of social factors influencing acceptance

In the early days of the U.S. Department of Energy's (DOE's) Regional Carbon Sequestration Partnerships, three of the partnerships conducted a number of focus groups and interviews across five communities to understand their perspectives on CCS. Bradbury, Ray, Petersen et al. (2009) also found the importance of trust and procedural fairness were significant factors in whether communities would respond more positively toward the technology. The procedural justice has been defined as the "extent to which the dynamics of the decision process are judged to be fair" (Lind and Tyler, 1988). If processes are deemed to operate without bias then communities are more likely to respond more positively toward them.

Bradbury et al. (2009) found the "most striking finding in all three regional focus groups was the predominance of social concerns. Although all of the groups expressed safety concerns, in all cases, trust in authority and concerns about fairness of CCS implementation procedures were the most strongly expressed concerns." Across all communities it was clear that factors such as past experiences with government and industry, existing low socioeconomic status, desire for compensation and or perceived benefit to the community were of greater concern than the risks of the technology itself.

The researchers suggested that management of the safety issues such as potential leakage, seismicity, and long term storage will continue to be essential to CCS deployment. In addition, Bradbury et al. (2009, p.4671), pointed to a number of key questions that seemed critical for communities which included:

- "How can we have a say in what happens? Who is in charge? Will the process be fair and will anyone listen to us?
- What will happen if something goes wrong? Can we trust the project developers and government to take care of any problems – what have our previous relationships with these entities shown us?
- What is the benefit to the community? How does the proposed project fit into or improve our way of life?"

These issues of fairness, past experiences, compensation and perceived benefit are valid to this research when evaluating the various responses made by landholders through the land access negotiations for the 3D seismic. They also provide insights for the overall project as it aims to move into the next phase of the project.

5.5. Social licence to operate

A 'social licence to operate (SLO)' is also relevant to this research. SLO has been described as the ongoing acceptance and approval from a community of an industry or operation or other stakeholders that can affect its profitability (Thomson and Boutilier, 2011). The fundamental proposition underpinning this idea of a social licence is that it is no longer enough for project proponents to adhere to the terms of their formal licence conditions as granted by government regulators; rather, communities are looking for something more (Moffat and Zhang, 2014). In addition to these expectations it has become clear that although a SLO can be difficult to obtain, it can be very easily lost by various actions of project proponents. Gaining a SLO for the South West Hub will be critical for the longer term CCS project and therefore how negotiations are conducted at the 3D seismic stage will ultimately influence how the community perceives and responds to the project.

5.6. Conclusion

All these theories apply to the situation being analysed in this research. However, because the technology acceptance framework specifically focuses on the relationships between people and novel technologies about which there is some uncertainty, this construct has been selected as a framework against which to test the data from this research. Additionally, all these theoretical constructs share the notion that individuals and/or communities are affected by the level of control they perceive over things "being done" to their place. Communication and engagement is one means by which some sense of control can be sustained, but only if it is done with true intent to take community values into account and act accordingly. This is discussed extensively in the communication and engagement literature and has been an important factor in the design and implementation of the South West Hub's activities to date.

6. Communication and engagement

A key focus for the DMP was to ensure there was a well-developed communication and engagement plan that was implemented alongside the project. During the early years of the project, presentations were made to many individuals through organisations including the

Bunbury Wellington Economic Alliance, Bunbury Chamber of Commerce and Industries, Chamber of Minerals and Energy and Harvey Water. As well, presentations were made to various community groups including meetings of the Collie, Harvey, South Bunbury and Bunbury Leschenault Rotary clubs and government organisations including the Department of Water, Department of Parks and Wildlife (formerly CALM) and the South West Development Commission. From as early as 2008, rounds of briefings were also made to local government Councils including Harvey, Waroona, Murray and Collie. Also in 2008, a delegation of councilors and industry representatives travelled to see the Otway Basin project in Victoria. Table 5 highlights the key communication and engagement activities/events that were employed leading up to the 3D seismic work and immediately after. In addition to these, there were a number of associated press releases and media coverage an analysis of which is detailed in Section 7.

6.1. Key features of the communication strategy

There were a number of key features of the communication strategy that seemed to contribute to the project's success and the major ones are expanded on below.

6.1.1. Overall project communication strategy: The communication strategy for the project was a strong focus for the DMP from the start. As such the core internal team responsible for communication was identified at the beginning and very much part of the project plan at all stages. This also meant that stakeholders were identified, key messages were defined, and various activities were planned to ensure the necessary information about the project was available in a variety of locations across all levels of the community.

6.1.2. A focus on education: As part of the stakeholder identification process schools and education were seen as a critical component for the project. The project team was keen to ensure local schools were also engaged with the project and could get to learn as much as possible about CCS. This resulted in supporting the Carbon Kids (CSIRO/GCCSI) program to be run in the local schools. The Carbon Kids program was well received and the results of many of the children's activities would subsequently feature in various media articles.

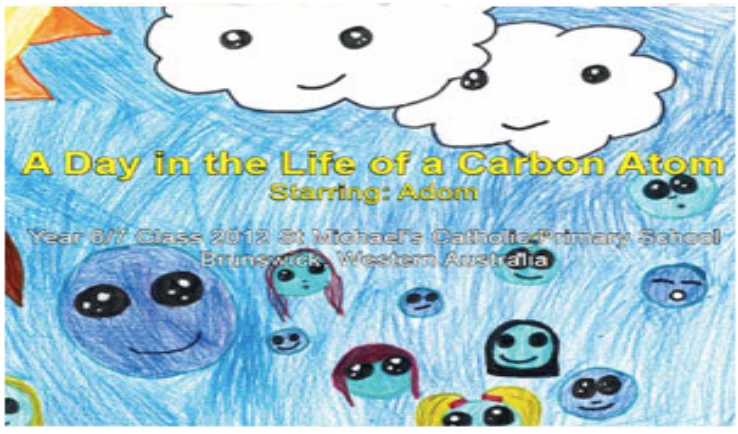

Figure 7 Front cover of children's book produced as part of Carbon Kids

Table 5 Key communication activities and events

2011	2012	2013	2014
2D Seismic	Harvey One Well	Consultation and Planning	3D Seismic
February - CSIRO Community views workshop	February - Harvey 1 well drilled	January - Information session Harvey	January - local office presence (Harvey Community Resource Centre) by DMP project manager
March - 2D seismic survey conducted		February - series of one on one meetings with landholders	February - 3D seismic commenced
August –Lesueur Community Consultative Committee established		April - information stand Harvey Agricultural Show.	March - presentation and viewing of 3D seismic April - information stand Harvey Agricultural Show.
		July - Local council and community group briefings	April - 3D seismic survey concluded
		August - 4 information sessions with Otway project Program Manager and landholder	April - close out function for local community and contractors
		October - Brunswick Show Exhibition of 3D seismic truck	
		December –Curtin University research 2D seismic survey along Riverdale Road – open day	

6.1.3. Internal communication activities: Attention was also given to internal communications. As a high priority, the team would meet every week to review the current state of play, and plan on going communication needs. The Project Leader would then communicate upwards to key internal project stakeholders in Perth while the Project Manager would take responsibility for any communication to sub-contractors and others. It was also noted that when the project was underway there would be daily meetings between the Project Leader and Project Manager.

6.1.4. Mini communications activities: In addition to the overall project communication strategy, for each significant event, be it a local show, information session, or tour of the Harvey 1 well, the project team would develop a mini-communication strategy for each event. This would include all details from initial planning down to the key messages for that event. It was seen as important that everyone internal to the project was on the same page. In particular, that key messages were agreed upon so that when staff were in the community there would be no confusion or mixed messaging.

We do go to all of those community events, the shows, with key messages, so this is what we actually want – the messages that we want to get across, and here are the lines. However, it's how you actually respond to questions. R001

6.1.5. Reflexivity: One of the highlights of this project was how the DMP was able to reflect, respond and adapt their actions based on each of the activities they undertook. The project team, including some of the sub-contractors, would undertake a complete debrief to document key lesson learned, budgets required, questions asked and any other interesting information that could inform the on going communication activities. This reflection would occur almost immediately after the activity to ensure no tacit knowledge was lost due to a time delay. This was clearly a strength of the project overall and has provided a rich data platform for other CCS projects to draw from.

6.1.6. Keeping it local: the project proponents (DMP) made a great deal of effort to keep the whole project as local as possible. It was of the utmost priority for the Project Leader to have the project run from the Bunbury office, wherever possible. This goal was supported from the highest levels within the department in Perth. That meant all communication was sent from the local office. The keeping it local idea has been applied as much as possible throughout the life of the project including the use of local contractors when appropriate and purchasing from local suppliers for all events. It was deemed another way of raising the profile of the project in a positive way, and to send a message that a real component of the project was investing and supporting the local community.

6.1.7. Accessibility: The project team made it a high priority to ensure that anyone from the project area could contact them if they had an issue. It was so important, that they wanted to ensure even those that did not agree to land access would still feel okay to ask questions or make contact with them. To reinforce this need for accessibility, the Project Manager hired a room and put a public notice in the paper to advice that they would have a presence in Harvey every Thursday afternoon for individuals to make contact if they felt the need.

One afternoon a week in there, whether anybody went and saw him or not, it didn't matter. It was the fact that he was not sitting in the tower in Bunbury. He was out there and people saw him out there driving around. The contractors saw him. We were out driving around when the guys were putting in gates, it was – it's like being a bloody good boss, if you don't go down on the factory floor, you can't expect anybody to respect you. R003

6.1.8. Use of a community consultative committee: A local consultative committee, the Lesueur Community Consultative Committee (LCCC) was established early in the life of the project. An independent local Chair, who had a long history with planning and was familiar with the area, was selected and appointed by DMP. Others on the committee represented a range of organisations and interest groups. Some were appointed to attend to represent the local politicians and the shire councils. Several volunteered to be on the LCCC because they had an interest in the project in some shape or form, with one or two representatives being opposed to the project and who felt they could have the best input by participating on the committee.

In its most simple is that the DMP determined that there should be a committee set up to walk through the project and the information gathering process in partnership, as much as it's possible, with representatives of the community. R016

The individuals in some ways were to be advocates for the project - being able to provide a conduit for information out to broader community as well as providing feedback to the project team. During the interviews it became apparent that although originally the role of the LCCC was quite task oriented, over time they became more outcome focused. The landholders were found to be particularly helpful, especially those who were not supportive of the project, as it allowed DMP to test messages with them and alter accordingly.

The LCCC would also keep their finger on the pulse about current community sentiment toward the project. Through the interviews it became apparent that several representatives did not have much reach into the community except for their immediate friends or to report back to the relevant politician. However, there were examples where some representatives fulfilled the role as an information conduit out to the community. Some of this appears to be more as a result of the way that the Harvey Waroona community operates than a function of the LCCC.

So mainly just a few local farmers contacted me, or I'd talk to a few people down the road and what not. But that was about it, and they did find it helpful. R015

Several of those on the LCCC, were able to attend the various information sessions that had been organised by DMP and made themselves accessible in that way to talk with various members of the community. More recently two additional representatives were being appointed to the LCCC with the expectation they would bring a different perspective to the discussions.

6.1.9. Induction of all sub-contractors and daily meetings: As a commitment to project communication, it was a requirement by DMP that all subcontractors that would access a property received a complete induction to the project. This meant that both KD1 and DMP would provide information about the project and their expectations to ensure the landholders were treated with respect at all times.

In addition, to ensure optimal communication between all the different teams in the project, there would be a morning 'toolbox' meeting. This was when all sub-contractors would review any incidents that may have occurred the day before, discuss the order of properties to be accessed on that day, any special conditions of access and any other issues that may need to be addressed. This type of meeting ensured that there was very open communication between all of the sub-contracting teams and, where possible, they were all on the same page and therefore minimise disruption to landholders.

So they need to be probably, briefed as well in terms of, you know, and they were, they were briefed to a certain extent, but there was a couple of things, like, you know, don't just drive over the grass anywhere, stick to one track, and if a cow is acting distressed or whatever, stop and go and get the farmer. R015

6.1.10. Meaningful communication: Meaningful communication was a term that arose as a result of the interviews. It was seen as very important to be not only providing information, but also listening to what individuals had to say about the project and respond accordingly. This is somewhat different to one-way information sharing and appears to have been a positive component of the communication activities that DMP undertook.

It was a priority to ensure that all landholders were regularly communicated with and updated as to the progress of the project and anything that might impact their property. At times this was very frequent. However, it appears that this was appreciated because the landholders realised that the project team were trying to ensure that all impacted stakeholders had all the necessary information they required on a daily basis.

You get to the point where you sort of start to get embarrassed if you're ringing people three and four times a day because of changes and access requirements and that sort of thing. But while the survey was physically on, they were most accepting of that because they knew and respected the fact we're trying to give them as much information so that we don't go on there when they're not there or they don't know, and that sort of thing. R003

6.2. Initial contact

Initial contact with landholders, by DMP at the earliest stages of the projects, was done via a letter and then followed up with visits by the KD1 team. This was occurring at the time that other contracts had just been, or were being, awarded. According to some of the feedback, this process caused a number of complications in the very early phases of the project. In particular because once KD1 was on board, they were responsible for negotiating the land access but could not approach landholders until letters from DMP had been sent and received by landholders.

The other complicating factor was the time of year that the project was occurring. That is, with the contracts being awarded at the end of November. This meant that most land access discussions could not really start until the second week in December, which was then getting very close to Christmas when many people were not available due to other commitments for the festive season or were heading away for holidays over the December, January period.

As well, given that much of the area is wetlands, it was well known that once the wet season started, much of the wetland areas would become inaccessible, and therefore it would not be feasible for the 3D seismic work to be undertaken until after the wet season ended. As a result a decision was made to effectively postpone the project for about twelve months.

This project delay turned out to be a positive decision because it removed the pressure from both the land access contractor as well as the landholders. In some ways it gave the landholders some breathing space to ask questions, seek more information, and then decide if they would grant access for the project. Many were pleased to have the additional time and with a change in project manager also occurring, it helped to build positive relationships between many of the landholders, KD1, and other contractors.

6.3. Legal access to properties

One of the key factors that contributed to the rocky start appears to have been the initial contact letter that was sent to all stakeholders. Within the letter there was reference to Section 115 of the *Mining Act 1978* which allows public officers from the Geological Survey of Western Australia to access any land to make aerial, geological, geophysical or geochemical surveys. Although, it had not been the intention of the Department to force access, the inclusion of a reference to Section 115 in the initial letter appears to be unfortunate as it caused consternation for many of the landholders from the outset. This meant that DMP and KD1, in some cases had to work much harder to gain permission to access the land for the 3D seismic study. Although it seems that the initial project contact for the 3D seismic may have got off to a rocky start because of the reference to Section 115, the ability of the DMP to listen and respond to requests from the community appears to have helped to build overall trust and acceptance of the 3D seismic testing stage over time.

6.4. Specific engagement activities for different stakeholders

There have been a number of activities for various subgroups planned during this project. The key activities that stand out are the local shows, the information evenings, open office in the Harvey town centre every Thursday, working with schools delivering the Carbon Kids program, and a range of one on one meetings that were organized either with representatives from DMP or other science experts such as Dr. Linda Stalker from CSIRO to answer questions about the project. There was also a thank you barbecue at the end of the seismic testing program to ensure that everyone was acknowledged for his or her part in the project. Key successes of the specific engagement activities are expanded on below.

6.4.1. The use of a representative from the Otway project: a Victorian landholder was bought over to participate in a number of meetings and discuss the effects on his lifestyle from hosting the CO_2 storage project from the Otway Basin on his property. It turned out the landholder had worked in the Harvey area, which meant most landholders immediately warmed to him because he was easy to relate to and identify with. However, through the interviews it seems that there was a mixed response to the presence of the Victorian. This was because one individual, who had done his or her own research about the Victorian representative, felt that he was somewhat biased. There were also one or two who expressed disappointment that the Victorian representative did not want to address the whole meeting in plenary, instead opting for smaller one on one and individual discussions. Those who would have liked to see a plenary discussion felt that it would have been more effective because others, who perhaps may have been too shy to ask questions themselves, could listen to questions and the responses of others to have some of their own questions addressed.

6.4.2. Opportunities for informal chats: While the team was at the local show, the Project Leader would take the opportunity to informally meet with other peers, local identities, and politicians. This allowed the opportunity for informal chats with key influential stakeholders at various times of the project, to discuss what was happening with the project, let the stakeholders ask questions and even express concerns they may be feeling or had heard from others in the community. There was a recognition that by engaging influential others from across the Shire, albeit informally, it was another opportunity for information sharing and providing updates about the project across a range of stakeholders. Also noting that those in influential positions were likely to be interacting with a range of community representatives and therefore act as an informal conduit of information.

6.4.3. Scheduling various activities at the right time and place: By providing a number of options for landholders to meet with key experts and project proponents, it meant that most people only had to travel a short distance to reach their destination. This meant that events were easily accessible and individuals knew and identified with most of those who also attended the meeting, making it much more comfortable and non-threatening. This responsive scheduling of meetings was noted by several of the landholders and was commented on during the interviews. It seems it was useful in also building trust in the project proponents as people valued the opportunity to meet in small groups with their peers.

7. Media coverage

A range of media articles were collated by the project team and provided as secondary data for this research. After removing duplicate articles and public notices a total of 58 articles were analysed. The time period covered for the media analysis ranged from February, 2012 through to June, 2014. Figure **8** illustrates the frequency of articles appearing in the news over the two and a half years. Included in the 58 were six articles that were part of a special

feature in the Harvey Reporter in July 2013, however each of these have been treated as separate articles in this analysis.

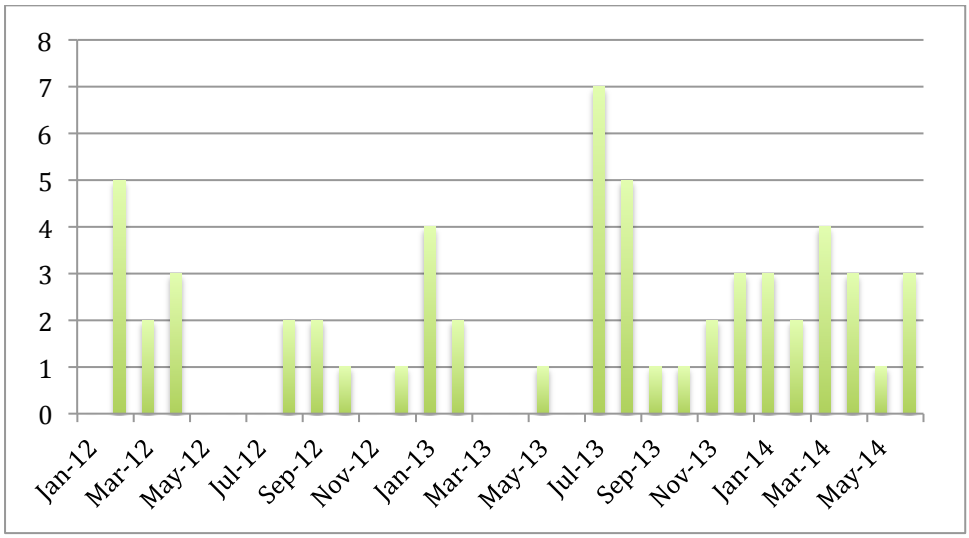

Figure 8 Frequency of media articles

The news articles were in a range of news sources however, the majority featured in local newspapers. The Harvey Reporter provided the most coverage with 20 articles across the two and half year time period. The others that featured more than once or twice are listed in Table **6**. A complete list of the articles and their titles can be found in Appendix C.

Table 6 Frequently reporting news outlets

News Media Outlet	Frequency
Harvey Reporter	20
South Western Times	9
Harvey Waroona Reporter	5
ABC News/Radio	5
The Western Australian	4

Closer analysis of the media articles using Leximancer illustrated the key themes that were most important from the analysis (please refer to Figure **9**). In total seven themes were identified grouped in bubbles showing the relative importance through size and also colour – warm colours being more important. The seven themes were:

1. Carbon – mainly focused on the need to mitigate carbon and sequestration
2. Project – this related to the South West Hub project itself
3. Plan – referred to the plan to undertake the work and project
4. Rights – was in relation to the rights that farmers held or should expect
5. Legislation – emerged as discussion of proposed changes to legislation
6. CO_2 – was about carbon dioxide and mitigation of it which was directly linked to the carbon theme
7. WA – refers to Western Australia, where the project was happening

From the size of the large red bubble it clearly shows that the major focus of many of the articles was about carbon. Concepts included the challenge of mitigating greenhouse gas emissions, the role of continued used of coal for energy, and how CCS might assist as an emerging low emission technology. Discussion also looked to the global stage with a focus of how progress for CCS has been relatively slow across the world. More detail of the major concepts is shown in Figure **10**.

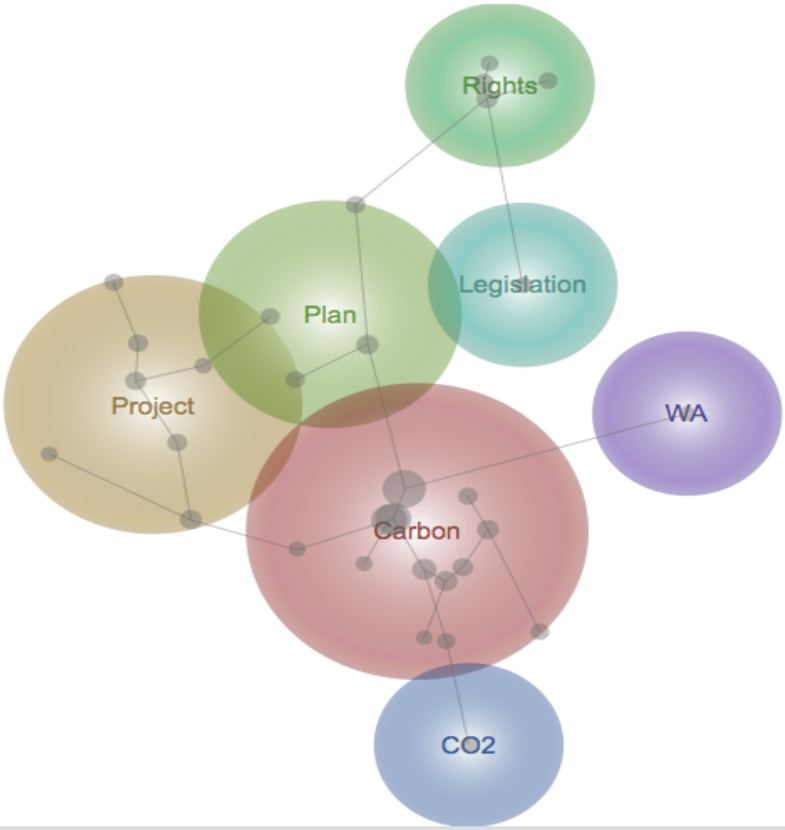

Figure 9 Key themes arising from media article analysis

The second major theme related to the stages of the South West Hub project itself. This included mention of the results from the Harvey 1 well drilling, the proposed 3D seismic work and subsequent delays to the program attributed to "seasonal conditions and landholders' concerns about the impact of vehicles on their properties" (Utting, Harvey Reporter, 26/2/2013). Many of the media articles seemed to directly relate to various announcements and updates that were generated from the DMP.

There was some mention of carbon storage being part of the proposed amendments to the Petroleum and Geothermal Energy legislation, which was being debated in the WA Parliament. This led to the local member for the Murray Wellington seat, Murray Cowper, raising the issue of whether landholders' rights would be removed as a result of these

proposed changes (ABC News 12/8/2013). As well, the changing legislation was linked to a discussion of property rights for farmers.

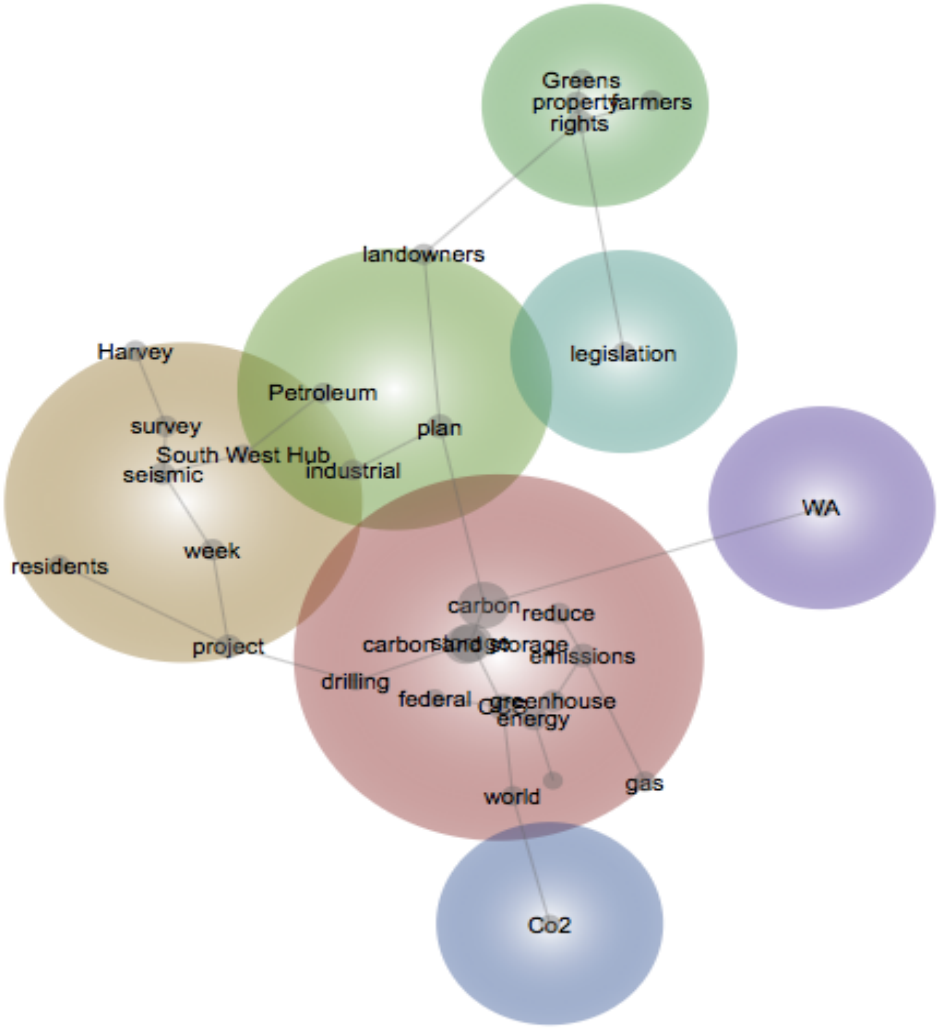

Figure 10 Key concepts arising from the thematic analysis of media articles

One article that was referred to in the land access negotiation notes was one by Haidee Vandenberghe featured in the Countryman (31/1/2013) “Waste plan angers farmers” (page 1) and continued on page 3 “dumping plan alarms farmers”. The Countryman is a weekly news/magazine that has a wide readership by many in the farming community of Western Australia and those living in rural communities. This article featured several of the local farmers who were openly opposed to the South West Hub project and 3D seismic surveying. The expressed concerns revolved around – the need to build a pipeline carrying industrial waste through their farm, putting their families and livelihoods at risk, industry encroachment on farming lands, potential damage to waterways, devaluation of their land, the project being seen as an experiment, and ultimately concern about the loss of their image as a clean and green food producing area.

The local MP was featured, demonstrating staunch opposition to the project. However, in spite all of the negative coverage the article did finish with a quotation from Dominique Van Gent of the DMP team where he reinforced that nothing would go ahead until access to the data had occurred.

Another article by Clare Negus, provides an example of the opposing views that exist in relation to the role that CCS might play for the local area going forward. It touches on some of the issues outlined in the literature review around perceived benefits and costs. This article appeared in the South Western Times (1/8/2013) and was titled "Greens, CCI at odds over hub". The article quotes the Bunbury Chamber of Commerce CEO, Ray Philp, being supportive of the South West Hub project as a deciding factor to attract other industry to the area "If the project is proven to be scientifically feasible and environmentally sound, then it will give local industries an option to dramatically lower their carbon footprint and therefore, give them a significant economic advantage." However, the Greens Senator for WA, Scott Ludlum, was less than supportive saying the project would be a "high risk, expensive white elephant that would do little to reduce pollution." Such opposing arguments have also featured in earlier proposed CCS projects for example, the Otway project and Futuregen 1.0.

8. Results from contact notes

From the total 125, of the 63 landholder records that were analysed for this research project, 37 of those allowed access for the 3D seismic survey while 26 did not. The major reasons for not allowing access for the 3D seismic survey are listed in Table **7**. Similarly, Table **8** documents the reasons provided by those who allowed access for the 3D seismic survey with KD1. Some of the reasons and concerns overlap and appear in both those who denied access as well as those who granted access. This seems to reinforce that it is likely there are other issues at play that are influencing attitudes rather than just opposition to the project itself.

8.1. Major reasons for not allowing access

From the database records of the 26 who failed to grant access there were a number of common themes that consistently arose as to why individual landholders refused access. Some landholders raised more than one concern so in total 68 different reasons were gleaned from the contact notes and these are listed below in Table **7** from the most prevalent reason to the least. There are subsequently expanded on below.

Table 7 List of objections against project and reasons for not granting access to 3D seismic

Objections against project and/or granting access for 3D seismic	Frequency
Historical context, i.e. ALCOA, Western Power etc.	16
Lack of community consultation, need for more information	10
Concerns about safety and impact on future generations	8
Devaluation of property and local area	8
Issues with process, i.e. forced access, excluded from open day	7
Environmental values and management	6
Privacy issues, lifestyle block	6
External advice from others i.e. Member of Parliament, lawyer	5
Negative media article in the Countryman	2

8.1.1. Historical context: Many of the landholders who refused access for the 3D seismic reported previous negative experiences with different public and private organisations. This had left them somewhat unhappy and disgruntled when it came to the idea of new developments. Basically there was a lack of trust that organisations, such as the DMP, would do the right thing given their previous negative experiences. The main examples of prior incidents that were cited included the fall out from the previous ALCOA[1] buyback (5), Western Power[2] not necessarily honoring commitments they had made to landholders (4), and dealings to do with the easement for the Bunbury to Dampier gas pipeline (3). Others were more general opposition to all government activities being proposed and the 'tone of correspondence received over the years'. This is exemplified in the quote below.

Not signing due to past dealings with state government which have been going on for 20 years now about their property at xxx, which is in a proposed industry buffer zone and has mucked them around for 20 years. Reluctant to agree to anything government - state or federal. LH13

8.1.2. Lack of community consultation, need for more information: There were a few landholders who expressed disappointment in the level of community consultation that had taken place – suggesting there was a need for a public meeting. It is not always clear what the individuals hoped to achieve from the public meeting however the sentiment below suggests that such a forum might provide more opportunities to provide assurances to

[1] ALCOA: In order to increase its buffer zone adjacent to the Wagerup Alumina refinery, Alcoa bought additional houses and farmland in and around the Yarloop town site in the early to mid 2000's. This buy back met with some local resentment.

[2] WESTERN POWER: Western Power maintain and operate the electricity network in the South West of Western Australia. Many comments were received about the lack of notification and standard of access by contractors for inspection and maintenance of power lines.

affected landholders. Others felt that they still required more information about the project to be able to make an honest assessment and that there should be more contact with landholders. It is worthwhile noting that many of these records were documented early in 2013 which is possibly before DMP responded to requests for more information about the whole project.

Very keen to attend formal public meeting convened by DMP to give answers and provide assurances to all affected landowners a position they have both held from the start. Felt the January information session was of little value as it consisted of many people in little boxes telling landowners how good their particular responsibility was. It provided no answer how/when the project will affect landowners. LH40

8.1.3. Concerns about safety and impact on future generations: Several of the landholders expressed their concerns about the concept of storing CO_2 underground and the impacts it might have on the land and water surrounding any potential storage site. One made reference to the legacy that they might hand on to their children if this was the case. There were some notes about the area being a food bowl for the state and so they could not understand why anyone would risk this by implementing a CCS project in the area.

Had very good discussion with 07 but they have very grave concerns with the project and the potential impacts on the area as a whole. Asked for a meeting with John Ridgway [Project Manager] to gain more insight into the project. Meeting arranged for next week. LH7

8.1.4. Devaluation of property and local area: An extension to the concerns about safety and impacts on future generations was the perception that any such project, if implemented, would devalue their properties and no one would be interested in buying into the area. This issue was also exacerbated by the fact that previously there had been some inflated prices caused through the land buyback process from ALCOA.

Main concern is the long-term devaluation of property. Angry at activities of agencies' subcontractors on their property. LH23

8.1.5. Issues with process, i.e. forced access, denied access on open day: Some of the landholders referred to different experiences they had with the project process so far. Again, some of this may have been influenced by past experiences however they associated their current attitudes with the DMP and this project. One landowner said they had turned up to visit the Harvey 1 well site but because they did not have a personal invitation were not allowed to attend and this had negatively impacted them. There had also been some negative reaction from the initial letter from DMP to all landholders. The letter cited Section 115 of the Act in relation to being able to have legal access to properties regardless of landholder consent. Although this had not been the intention of DMP, by including Section 115 in the initial contact letter, it had a negative impact on some landholders attitudes as exemplified below.

Does not wish to sign when DMP believe they have the right to enter the property and conduct survey anyway. LH43

8.1.6. Environmental values and management: A number of landholders held strong environmental values and this impacted on their ability to grant access. Issues included the potential for weeds to be introduced to their block if access was granted, the impact of having heavy vehicles traversing their property – particularly for those with high intensive market garden operations, and overall protection for environmentally sensitive areas.

I believe if we are protectors of our land it is in our interest to find out as much as we can about it. If there is anything growing which requires protection we would like to know so give consent for professional team from Parks and Wildlife to walk the property for this purpose. However, this consent must not be interpreted as consent to further access to the property as we have very strong reservations about the CCS proposal. At this point we are against it. LH21

8.1.7. Privacy issues, lifestyle block: A smaller number of landholders were more concerned about the impact of the project on their lifestyle and the issue of privacy. These landholders had purchased property in the area as a way of getting away from society to enjoy the peace and quiet of the area. Therefore the idea of allowing complete strangers enter their property to undertake the 3D seismic work was not tolerated. Within this group were two who worked away from their homes for periods of time and therefore they were concerned about what might happen in their absence. The response from one landholder illustrates their sentiment of placing more importance on their lifestyle than the project.

The landowner has decided the weather on Monday will be perfect for fishing and that is where he will be, on the ocean fishing. LH29

8.1.8. External advice from others i.e. Member of Parliament, lawyer: In the literature review a section explained the role of social norms and how different individuals may be influenced by significant others. Significant others can be those they trust such as friends and family but also people who they see as leaders or experts in the community. This is also compounded with social identity theory where individuals will seek out those who hold opinions similar to theirs. It appears this was the case for some who failed to grant access where the contact notes described how some of the landholders had been talking with their local Member of Parliament, and his feeling was not to support the project and that it would not go ahead. This is best evidenced by the excerpt below.

Local member for Murray advising them against the project. That it will be killed off post election. LH33

8.1.9. Negative media article in the Countryman: There were two examples in the notes where landholders had been influenced by a number of issues and one in particular was the media article that featured in the Countryman as discussed in Section 7. With a number of local farmers discussing their opposition through the media article, it seems that there was mounting pressure for some not to support land access. In this instance the farmer withdrew his permission after initially signing the agreement.

Rang 10 for survey access as he had signed agreement with Barry after the information night but he has since changed his mind and has withdrawn his permission and asked that the agreement be withdrawn. In his words "I am over the whole thing". He was very polite and apologised for any

inconvenience his change of mind has caused. The underlying cause for the change has no doubt come from the article in the Countryman last week. LH10

8.2. Major reasons for allowing access

Contrasting the above with the database records of the 37 who granted access, there were some similarities in concerns that were raised. However, a noticeable difference was that of the 37, there were 15 who had no comments recorded and one that read "still okay with the project and does not know what all the fuss is about" which meant 16 appeared to hold no real concerns toward the 3D seismic survey. The actual concerns that were raised from the other 21 totaled 32 and are listed below in Table **8**.

Table 8 List of concerns around project while granting access for 3D seismic survey

Concerns around project while granting access for 3D seismic	**Frequency**
Environmental values and management	7
Lack of community consultation, need for more information	5
Opportunities for compensation, new gates installed	5
Social norms, talk amongst the community	4
Concern about safety and impact on future generations (toxicity of CO_2)	3
Devaluation of property and local area	3
External advice from others i.e. Member of Parliament	3
Privacy Issues: logistics, potential theft	2

8.2.1. Environmental values and management: Seven of the landholders who granted access also expressed concerns about their environment and overall management of granting access to ensure it caused no additional damage to their property. This was particularly an issue for those who had heavy tree coverage and wanted to ensure they were preserved at all costs. This also meant that some survey lines could not be put down as planned because of the impact on trees and other flora and fauna and livestock.

8.2.2. Lack of community consultation, need for more information: Again the issue of lack of consultation and the need for more information about the project was raised by some of the landholders who agreed to the 3D seismic survey taking place on their property. These observations were recorded early in the negotiations however it is a worthy consideration for future CCS projects. It seems that given there is some uncertainty and perceived risks due to the nature of the project, that individuals would prefer as much information and detail that is available from the beginning. The quote below was recorded in February 2013.

XX stated there had been a lot of talk about the project in the Harvey District. Does not think he will be agreeing to any further action on his property. Not enough consultation with the community by DMP prior to KD1 land access officers arriving in the area. LH 27

Figure 11 & Figure 12 Pictures from the Uduc thankyou barbecue

8.2.3. Opportunities for compensation, new gates installed: From those who granted access five different landholders made reference to opportunities for compensation or perhaps some opportunity for receiving a benefit. For example, one offered an area for equipment to be left overnight if contractors required it. Another suggested that if he were impacted by having to return livestock agisted on his property early then he would need to be compensated for the loss in income. While others made reference to the opportunity for new gates to be installed and they saw that also as a direct benefit or bonus to them.

8.2.4. Social norms, talk amongst the community: As with most small towns and local communities, anything new will likely cause many people to talk and react in various ways. It appears from the early contact notes that several individuals were under pressure not to grant access for the 3D seismic survey. In small communities this can be quite divisive and there were examples in those who said no, where the pressure seemed to be too much. However, this was not the case for all and in one instance the power of social norms worked for the project where one landowner said they knew Brendan from the Joint Venture and that connection made him supportive of the 3D seismic component. The quote below demonstrates evidence of the social pressures that were occurring and also illustrates the interest in finding out more from the work that was carried out – perhaps seeing it also as a benefit.

XX said there was a fair bit of resistance to the project and he was under a bit of pressure to hold out, but he and his father were happy to sign but would like the results of the survey explained to them at some time in the future. LH32

8.2.5. Concerns about safety and impact on future generations (toxicity of CO_2): There were references to concerns about the toxic effects of CO_2 in three of the initial contact notes of those landholders who agreed to access. This was particularly if there was going to be a leak to the surface or if the CO_2 escaped from the pipeline. As well some conspiracy theories seem to have been talked about as part of the project. For example, one landholder mentioned that they had heard that ALCOA was going to take the CO_2 in exchange for being able to put waste down the storage well. This group may have considered specifics about CO_2 more because they were granting access for the 3D seismic survey. Other concerns about potential devaluation of the land and receiving external advice not to participate echoed those who refused access.

8.2.6. Privacy Issues: logistics, potential theft: Two different landholders raised this concept. One was more about how the town might cope if the project was to go ahead and it resulted in many more contractors and workers coming to the town. The second was really in relation to the idea of having contractors on site, that those contractors could potentially share information about the different farms to their own social network, which may include some interested in stealing from them. Again this invokes concerns around issues of trust and social identity in that those who live local are not perceived as being likely to steal but outside the local community there is a possibility.

8.3. Unexpected incidents that arose

Delving deeper into the contact notes of the database as the project evolved there were a number of incidents that occurred which seemed to cause some angst for the landholders and ultimately the DMP and other contractors - particularly KD1 who most often would be called to respond accordingly. Most of these are small accidents that could have potentially been avoided and so it is worth noting these for other potential projects that may involve land access and the use of contractors. The majority of incidents were bought about by actions of the contractors and then the associated impacts of those behaviours on the landholders. Each incident was classified into major themes and tallied and resulted in the following being recorded.

8.3.1. Contractor behaviour (n=30): There were 30 incidents documented that could be directly attributed to contractor behavior. This included everything from vehicles being bogged, gates left unlocked and livestock being spooked unnecessarily.

8.3.2. Inconvenience or safety issues (n=10): The main issue for landholders in relation to inconvenience and safety was around gates not being locked, or gates being locked in a way that resulted in the farmer being unable to enter the property causing them much inconvenience. Related to this was of course safety, but in addition there was one farmer that was very upset because contractors were moving machinery on a very hot day and he felt they could have caused a bush fire.

8.3.3. Livestock issues (n=8): Somewhat related to both of the above was that by leaving gates unlocked there were instances reported where stock were out on the main roads, or in to hay stocks that had been fenced off. Similarly, there were some incidents where the sheer nature of the contractors being on site upset the livestock and caused some impacts.

8.3.4. Environmental damage (n=9): Similar to the above, there were a few reported incidents that related to the damage of the environment in some way. This included damage to property such as water pipes, firebreaks and minor subsidence through to one mechanical failure which resulted in an oil spill.

8.3.5. Communication (n=6): From the notes there were six incidents that seemed to arise from miscommunication issues between the contractors and landholders. Some of these were technical in nature, in that perhaps an email had been sent but it ended up in their junk email, which meant the message was not received in a timely fashion and landholders were not alerted to contractors coming on farm. Similarly, there were a couple of examples where the contractors were driving where they had expressly been asked not to. This was in spite of the daily toolbox meeting (refer Section 0, p. 25) and regular updates that were implemented for quality control. It is worth being aware for future planning that even having the best communication plan there can be some things that do slip through unnoticed until an incident occurs.

8.4. Respecting special requirements of landholders

There were a number of other special conditions or requirements that were raised with KD1 and recorded in the contact notes which have bearing for this project and others going forward. These are summarised into appropriate themes for consideration below. Early

indication of some of these topics arose in the initial contact notes already reported, however more detail was available in the subsequent dealings with landholders. These provide further insight into their thinking and non-negotiable requirements for granting access to properties.

8.4.1. Concern for livestock: Not surprising, there were several notations made where farmers had requested that access would only be granted if contractors avoided livestock. For example, there were requests to respect the nature of cattle movement, particularly for some dairy farms that experienced high stock movement twice a day. Other requests were for being aware that cows were calving and there care was required not to spook them to cause any stock losses. To be aware when new stock would be arriving, and there was one request for an owner particularly concerned for his very expensive racehorses.

8.4.2. Advanced notice: Many of the landholders that granted access did so on the proviso that they would be given advance notice of anyone coming onto their property. The time required ranged from five days to 48 and 24 hours in advance. The main reason for wanting advanced notice was so that the landholder could be present when activities were taking place.

8.4.3. Environmental concerns: Similar to the initial contact, several landholders were very specific about trees not being damaged, that there be no vehicular access in environmentally sensitive areas and to take care of threatened plants and animals. For example, orchids and western long neck turtles. Others made stipulations that all vehicles would need to be cleaned down completely before accessing their property because of concerns of spreading weeds and dieback, which has been know to have devastating effects across Western Australia[3]. The quote below illustrates such concerns and also highlights some of the legacy issues impacting these landholders.

The group we talked to was the group who cleaned the trucks before entering our property. They assured us that they had a little brush and they made sure everything was clean before the vehicle entered our property. This is a change from when the gas pipeline was laid some years back. They steam cleaned any Vehicles before it entered a property Not a little brush. LH 21

8.5. Compensation and requests for compensation

Discussions around compensation and requests for compensation arose in various guises through the contact notes. Unlike private industry, as a government department the DMP was unable to offer direct compensation to the landholders. However, several of the landholders did actively seek compensation. Although these requests were not fulfilled there were examples where landholders were compensated for inconvenience or loss. This was based on the principle that all landholders should be "no worse off" as a result of the project. Many landholders were also interested in receiving the results from the

[3] The introduction of Phytophthora dieback into Western Australia is a disaster of global significance. The impact of this devastating plant disease is arguably the greatest threatening processes to the natural heritage of Western Australia and the impact of the disease on our State's biodiversity is greater than salinity. (Source: www.dieback.org.au; Accessed 20th September, 2014)

environmental survey and also the 3D seismic in relation to their farms and availability of such information did motivate some farmers to participate.

Possibly the most prevalent example of some form of indirect compensation was the upgrading of a number of gates and fence posts when it was required for the larger seismic equipment to enter the property. Obviously, this was an added bonus for many farmers, especially in upgrading some fences that possibly may have needed investment in the near future. One farmer was able to stockpile the old gates and recycle them for direct benefit. A few individuals were compensated for their lost time from work when they chose to be present when contractors were on site as they were paid a nominal fee. Others were even employed at different times to perform small, related tasks that needed to be completed as part of the overall 3D seismic survey. There was also a couple of examples, where hay stocks were damaged and so replacement hay was purchased, or additional agistment was found so as to protect livestock during the duration of the 3d seismic activity.

9. Results from interviews

To further investigate the research objectives and triangulate the initial findings from the contact notes, a number of interviews were conducted, either face to face or by telephone, with representatives from across the Harvey and Waroona Shires. These included representatives from DMP, contractors that were involved in the project, some landholders and other representatives from the community including members of the LCCC. In total 18 interviews were conducted which provide further insight into the local community and their views both toward the 3D seismic survey and the South West Hub project. A sample of the questions used for the interviews can be found at Appendix A.

9.1. Elements of CCS projects that pose the greatest concern to local citizens

There are a number of concerns that were drawn out from the interviews that confirm many of the issues that arose from examination of the contact notes. The key concerns included: the impact on land values; little or no perceived benefit; safety concerns which included threats to their environment, threats to their lifestyle, and threats to their friends and family; a need for transparency and a fair process; access to full information; political support. Each of these is expanded upon below. A specific list of questions that arose in relation to both CCS and the local project can be found in Appendix B.

9.1.1. Impact on land values: It was clear the primary stated concern that was raised by many was the perceived impact of the project on the value of their land. This issue was exacerbated by the fact that previously there had been some inflated prices caused through a land buyback process from ALCOA. Concerns extended to some feeling that the whole of the area, which is currently viewed as a green food bowl losing its image. There were many families who viewed their investment in the property as their superannuation, therefore the potential for their land to be devalued through a carbon storage project was intolerable. One landholder stated:

And I think, yeah, compensation is really important because it's not fair that they can – they can walk in and take an acre of your property and potentially reduce the value of that property which then impacts the rest of our lives. It doesn't impact their lives, it doesn't impact the government, it doesn't impact the private enterprise that are doing the storage, doesn't impact ALCOA but it impacts XX and I. When we go to retire and can't because we have a property that's got, you know, carbon storage on it that no-one wants to buy. R008

9.1.2. Little or no perceived benefit: Questions were also raised about what the benefit would be for hosting a carbon storage project. Although there was some recognition that each of the phases of the project represented some immediate benefits to the local community, there was little hope for longer-term benefits with many seeing the risks far outweighing any perceived benefit. Having completed the thematic analysis there was very little evidence of any perceived benefit for the longer time. The benefits that were mentioned were of course the increased contractor presence bringing additional funds to the community, possibly additional work while pipelines were being constructed and if wells were drilled that there would have to be some compensation for hosting them on farm.

9.1.3. Safety issues: Similar to most CCS projects a concern was often raised around the long-term safety of placing CO_2 underground. This ranged from a perceived personal threat to families' lives and/or whether the CO_2 might leak and make the ground unusable and possibly contaminate potential water supplies. For example:

- Threats to the environment: Water was a big consideration for many in the community because of the location to natural underground aquifers. These were considered the life-blood of farming communities. There were also some that made mention of the environmentally sensitive areas, that the area was a haven for various wetland flora and fauna and so any external threats were a concern for many who valued their environment.
- Threats to their lifestyle: One concern that often arose was the fact that many landholders had moved to the area to pursue a quiet and private lifestyle. These individuals saw the idea of a potentially large infrastructure project challenging their daily existence. For some, even the thought of allowing contractors and the 3D seismic trucks on their property as too invasive and something they were not interested in.
- Threats to friends and family: Obviously because of the perceived risk of carbon leakage and the fact that CCS is still considered relatively unknown meant that many of those interviewed expressed a concern that there was a fear for the safety of their friends and family. This manifested it in many ways from the direct fear of leakage, through to threats to safety by having unknown contractors on site.

A list of key questions and concerns that directly related to the project can be found at Appendix B.

9.1.4. A need for transparency and a fair process:
Several of those interviewed made mention of the need for transparency about the project and a process that was seen to be fair. It appears that in the early part of the project there was less formal engagement with the broader community. This meant that many landholders were surprised when they received their first letter from the DMP, which almost coincided with contact by KD1. It appears that there was a shift in the communication, in response to concerns and questions raised, which made people feel that there was greater transparency and fairness in the procedures being used. As discussed much of this was also in response to the nature of the initial letter, which mentioned Section 115 and legal access, although that was not the intent of DMP. Once this was communicated and realized, there appeared to be acknowledgement by the community that the process would be fair and landholders had the right to refuse access.

And I think that was the very first reaction to this. Whilst we have a fear, if it doesn't feel like it's going to be all too good for us there's that – the most we can expect is that we lose some of our private property rights. The worst case is we lose access to our land. R009

9.1.5. Access to full information: The need for information was a big feature across all of the interviews. There was a perception from some that there had not been complete disclosure about the full plans for a CCS project in the beginning. The response by DMP to set up various information evenings was also noted as a positive indication of their commitment to information sharing. It was suggested that as a result of these evenings some landholders changed their position and granted access for the 3D survey activity.

You know, there would have been just the immediate landholders who had that, kind of contact, but no-one else really had any contact until it came to do the seismic study. R015.

9.1.6. Political support: It has often been suggested that issues in relation to energy should transcend political ideologies however many of those interviewed made reference to how CCS in Australia was impacted by the political will of leaders. This had a negative effect on locals because they felt that even as they progressed through the stages of the project (and some of the stages were seen to be extremely invasive) that it could all be taken away if political support was lost. This would mean that they carried all of the burden of exploratory work and seen great expense expended for potentially a zero end game.

New political direction want this worked out why all the players, whether they are the corporates and there's been a show-stopper and the whole thing can't happen, impact that after it's done all this and what compensation? And I'm not talking particularly about money, but who's going to say, well sorry, we took up five years of your life and now we're not going to do it anymore. R009

9.2. Engagement for land access negotiations

There are a number of components that related to engagement in relation to land access negotiations that arose in the interviews. In almost all of the interviews, KD1 the

subcontractors responsible for the face-to-face negotiations, received high praise. Specific elements that seemed to contribute to their success are outlined below.

9.2.1. Social identity: Many commented that a key characteristic of those on the KD1 team was that they identified as old farmers and had a strong relationship to the land. As discussed in the literature review, identifying with a particular audience can be a powerful influencer in building trust and informing opinions. Because of their prior experiences the KD1 team was said to relate well to the range of landholders and were often accepted on farm when perhaps others were not.

I don't think it was limited only to KD1, but, certainly those people I met at KD1, did seem to demonstrate the right style – some of them had come from a rural background and they knew how to stand leaning against a gatepost talking to a property owner – understood the concerns of the property owner, why he was taking a particular view. R016

9.2.2. Local presence: The land access team of KD1 hired a house in Waroona, which then became the office they worked from for the 18 months of the land access negotiations. This meant they had a strong presence in the community. It also helped to make them accessible so that when issues did arise or there were specific incidents that required attention, they were promptly in the vicinity to help remedy the situation. In addition, the sub-contractors used the local motels as much as possible, which also reinforced the local presence across the community.

9.2.3. Mutual respect: Many of those who were landholders and impacted by the project talked about the need for respect. Whether it was showing respect when they might ask questions about the project that perhaps might seem a little odd, through to whether they acknowledged and followed the special conditions requested by the landholders. One landholder described their whole farm as being like their home and suggested that as one would expect anyone entering your home to be respectful of it, similarly they would like to see that respect shown when anyone enters the farm gate.

9.2.4. Above and beyond: Being present locally for most of the time, also meant that from time to time the KD1 representatives would go beyond the course of duty. For example, they would help by putting livestock back in a paddock that may have escaped from the paddock; helping someone who might have been bogged; checking gates were locked if such an issue was raised. Their success of building relationships is probably best exemplified by the number of cakes, beers, and other presents they were given by landholders after their visits.

9.2.5. Splitting the agreement for land access: Another component that helped to contribute to the success of this project was the splitting up of activities for land access. That is, there was a separate agreement for scouting and then a separate agreement for the 3D seismic survey. This helped to build confidence in the program of work and the way that contractors worked. It gave landholders some time to understand what was involved and build trust in those responsible for the project.

9.2.6. No worse off: As mentioned earlier, another commitment from the DMP project, which flowed through to the land access team was that all landholders should be no worse off as a result of participating in the 3D seismic survey. Although, there were no direct compensation (land access pay outs) to landholders there were payments made to assist with livestock movement, reimbursement of lost feed and so forth. This was appreciated by the community and seemed to assist in negotiating land access with certain stakeholders

9.3. Preferred methods of engagement

There were a number of examples provided of how best to engage with communities and in particular landholders. Face to face was by far the most preferred method for almost all individuals that were interviewed and this led to conversations about building trust through such engagement. There was also a small group that expressed a need to have a larger town hall style meeting. Those that wanted this felt that many of the engagement and information sessions had not achieved what was required in relation to project information and more of the detail about this is provided below.

9.3.1. Face to face engagement: When asked the question as to what they felt was the preferred method of engagement almost all interviewees responded with face to face. Being available to answer questions and demonstrate that the project team were willing to invest time in meeting with the range of stakeholders on a one on one basis sent a strong message that the stakeholders were considered important to the project.

In addition, the information sessions that were convened in various locations around the area, were made more accessible by scheduling them at times and locations convenient to landholders. This was also seen as valuable by many, particularly for those who were less confident in asking questions as the information sessions allowed them to hear questions from others without having to always ask their own question if they were too shy.

9.3.2. Early and continued engagement: Many have discussed the importance of early engagement and this was a factor that was raised again through the interviews. Some noted that for this project there had been little early engagement with landholders. It was suggested that early engagement with more information about the CCS project would have helped to build trust in the process. This supports the theme that was picked up from the contact notes that both those who supported or denied access for the 3D seismic study stated a need for more information.

9.3.3. Meaningful engagement and management: There was definite praise for the change in the DMP project manager on the ground, which bought about a new style of engagement. This was reflected in several of the interviews that highlighted the different approach that was taken toward the community and about how information was then communicated to them. Some even suggested that if this approach had been used from the beginning, land access might have been more successful from the start. Key elements included the importance of the need for open, transparent processes that are driven by somebody who is easy to approach and accessible.

9.3.4. Requests for a public meeting: There was one group of landholders who were diametrically opposed to the project. This group for some time had been asking for a “public meeting” - a form of a community town hall meeting. DMP were not keen to engage in such

a process as previous experience had demonstrated that such meetings, unless extremely well facilitated and controlled are often not constructive. As such, the project deferred to hold an information evening as described in Section 0 (p.20). One of the interviews raised an observation that by having individual information evenings it seemed that DMP were not treating the whole community equal. Instead were privileging a few with more information. This was not the expressed intent of the DMP but it is worth reflecting how such a choice can be interpreted.

9.4. The role of trust

Trust was cited in the literature review as critical for contributing to technology acceptance.

9.4.1. The role of trust in building relationships: The concept of trust did arise in many of the interviews. Trust appears to manifest not only in those in official roles but also in other family members, friends and neighbours. For example, the CSIRO was cited by many as a provider of trustworthy, credible information. Coming from Australia's national science agency the representatives were seen as experts from the scientific community who were outside of government.

Whether people trust politicians or departments, particularly the Department of Mines, I think because people know that mining is very strong legislation. So yes, I think scientists probably have a delivery that people at the best find more believable. R009

Another way in which trust was manifested was through the continuity of people representing the project. There were many references to "Dominique", "Martin" and "Alex" throughout the interviews, which reflects that each of these individuals had built credibility and were seen as the main contact points for the project.

One is they want to see a continuity in terms of the people who are representing the project. R007

On the other hand others reported that many in the community were unlikely to trust anyone and this was as a result of there being no natural leader within the community that one would look to for information. Through discussion it appears that there are a number of local groups that have developed over time which various individuals identify with, for example the Italian community, sporting community, the local shire council. However, it was apparent there was no single leadership group that people might seek out for information.

9.4.2. The role of information in building trust: Another issue that influenced the overall community's level of trust in the project was when the project proponents were seen to be providing information about the whole of life of the potential CCS project. It seemed that early on the focus was particularly on the seismic survey. This seemed a practical approach from the DMP's point of view given the complexity of the overall project. However, landholders wanted to know more about the whole project and subsequently demanded more information about transportation, storage and so forth. Once this information was provided it seems that some of the landholders felt the process was more transparent and therefore more worthy of support, at least for the 3D seismic survey stage. This highlights issues of procedural justice that has also been discussed as a critical component for technology assessment.

9.4.3. Trust in information sources: There was some discussion about the different sources of information that landholders and the broader community could access. It was apparent that some landholders were very Internet savvy and used Google and other search engines to track down information. As part of this the DMP website was also mentioned however, some found that at times there was so much information it was somewhat overwhelming. Although this did not hold true for everyone as others welcomed being able to find everything on their site.

Mention was also made of the information sessions which many landholders found useful. Although, there were some who did not and others who suggested that perhaps landholders were so busy trying to earn a living from their farm they did not have time to attend the information sessions. These comments reinforce the notion of the need to provide information in multiple ways to ensure all can access the necessary information in the format that is most helpful to them.

The media was seen to be helpful and special mention was made of the local paper. It seems that many people in the local area hold great stead in the local newspapers. So the project providing updates on their progress through press releases seems to have been a successful way of providing information.

There was however, acknowledgment that the media can also play havoc at different times depending on what is reported. This was highlighted by one of the participants who recognised that what is reported is not always accurate and needs to be treated with caution.

The media definitely, and they've got an important part to play which isn't always shaped – they don't always do straight reporting. To put information out but make it sound sexy, sometimes can be alarming. R009

The local Shire Council was also mentioned as a place people would go to, to access information about the project. Some expressed disappointment when those in the Shire did not seem to be able to respond to all of their questions. However, this was not the case for many who found them a useful source of information about the project that they found credible.

The other key information source was of course other locals who people identified with. There was one group that seemed to look for one another to reinforce their opinion to oppose the project. Others made reference to different individuals on the LCCC who they found helped to inform them via project updates. There were many who made references to individual families and how any decision made would be inclusive of all of their opinions and not just the one person who was representing the family in negotiations. This reinforces the notion of the important of societal norms and social identity as outlined in the literature.

They trusted people who knew their environment, who lived there, who they had seen around, people who were part of the community already. R008

9.5. Local context/legacy issues

As discussed in the results of the contact notes section, in the Harvey/Waroona area there has obviously been a number of events that meant many of the landholders had experienced some issues in the past with local industries, changing regulation and other government interventions. Specifics included the ALCOA (Wagerup) buyback, dairy deregulation, issues with contractors of Western Power, the building of the Bunbury Dampier Pipeline, and some other forestry related issues. The quote below reflects the sentiment of some of those interviewed and also confirms that picked up in the contact notes.

Oh, it's just another nail in the coffin, I think, for a lot of people. We get fed up with dealing with all these big agencies and, yeah, it's just one thing after another. R014.

As well as the industry/government legacy issues, there were also individual farmers who had experienced problems with rogue wild pig shooters and thefts occurring on their property as well. Because of this, any discussions of yet another project - in this case the South West Hub project - immediately bought about negative reactions because of previous, and sometimes ongoing, lived experiences. The quote below highlights the extensiveness of interactions that have taken place in this community and surrounds.

I was going to think that the Shire of Harvey was the golden triangle. Many years ago the gas pipeline came through which dissected a number of properties that were in the entire length of the shire. Then of course Kemerton has easements for gas and power going into the industrial estates. We had a desalination plant built two years ago. It's become operational in the last eight or nine months, or something. They have a pipeline running through to the Integrated Water Centre which runs east-west. So we have a major gas pipeline running north-south, we have a major water line to Perth running east-west and now probably not too far away from the crossover of those points we have a geosequestration hub, a research project. R009

10. Discussion

The opportunity to examine the contact notes of the land access negotiations has provided a unique insight into the thinking, perceptions and decision-making processes of landholders at one of the early stages of a CCS project. In total there were 125 landholders of which 75, granted access for the 3D seismic test. Of the 125, for the purposes of this research 63 records were analysed of which, 37 allowed access for the 3D seismic testing while 26 had not.

10.1. Factors that impacted support

Although the Harvey and Waroona Shires have obviously been impacted by previous legacy issues, and these do have a bearing on individual and community responses, there are many analogies that can be drawn that provide helpful considerations for other CCS projects around the world. Bradbury and colleagues suggest that the historical context of a community and how they have been treated will have a bearing on a community's potential support or opposition to a project. This was especially evident in the case of the South West Hub project. Close examination of the areas that granted access for the 3D seismic survey tended to be away from the northern plot of the project area, which is where the majority of landholders that were someway impacted by the ALCOA buyback issue reside. References to ALCOA, treatment by Western Power and other government departments was certainly an influencing consideration by many landholders from across the project area.

Like all proposed CCS projects, when such a concept is first mooted it creates some fear and concern within individuals and those in the Harvey and Waroona Shires were no different. Many of the concerns raised are the generic risks for any CCS project: What will it do to the value of my property? Will it leak? Will it affect the water table? How will I be compensated for potential damage? (see Appendix B for full range of questions). These concerns, as well as observations about the project, relate to the personal norms suggested by Huijts et al, informa2012 in relation to choosing to support or oppose a project.

What is striking from the content and thematic analyses of both contact notes and interviews, as well as the other secondary data sources, is the impact and influence of social norms and social identity on individual decisions. Many of the contact notes discussed the importance of ensuring all of the family was consulted before any decision was made. There were specific references made by individuals of peer pressure from other locals to provide consent or deny access to properties. As well, the influence certain political representatives seemed to have on some individual choices if they identified strongly with the message being communicated by that politician. This again is well documented in the contact notes and even in some of the media articles.

10.2. Ways of addressing concerns

There is no doubt that the Project Leader had a real commitment to ensuring there was a well-developed communication strategy from the outset of the project. This was best evidenced by the weekly internal project meetings, the design of mini communication activities and the ability to reflect on, discuss, evaluate and document the findings from each activity demonstrating a commitment to continuous improvement and a willingness to be responsive to external stakeholders. Such reflections helped to ensure that the ongoing communication plan was adapted to meet the needs of all stakeholders. This commitment by the project team was well recognized in the community as there were several anecdotal records within the contact notes and also through the interviews that testified to this.

When an individual expressed concerns or sought more information, the DMP had a number of strategies to help provide answers to the questions raised, in addition to direct responses

from them. This included the use of independent scientific experts, holding additional information sessions and the establishment of a local community consultative committee as a way of providing a conduit for two-way information flow between the community and the department.

The use of KD1 as the subcontracting company for negotiating land access also highlighted the role of social identity theory in that most landholders noted that Alex and the team were very easy to relate to, were farmers just like them and were even willing to lend a hand when certain issues arose on farm. This ability to relate to the farmers' needs and at times go above and beyond what the landholders would have expected of a land access team, helped to build ongoing trust in the relationship between KD1 and individuals. What was also apparent is that use of the third party (KD1) to undertake the negotiations helped enormously for all parties in that they were seen as identifying with landholders and not being part of the DMP, but at the same time had an excellent and open working relationship with DMP personnel.

This two way engagement and communication was recognized by all parties as creating a transparent and respectful process that allowed individual landholders to feel comfortable in not allowing access if their concerns were too great. A key aspect that came through strongly in the interviews was the importance of one on one face-to-face engagement as the preferred method of engagement for projects such as this. One stakeholder talked about the "opportunity to ask questions that perhaps I would not do in an open forum" as being very valuable. There was also some acknowledgement that with the change of personnel in DMP all questions were treated respectfully and every endeavour was made to answer them where possible. Although, as noted above, the fact that there are still some unknowns about long term storage of carbon dioxide does create some concerns for the longer term viability of the project going forward.

Figure 13 & Figure 14 Information evening in Harvey

10.3. Testing the technology acceptance framework

In the literature review, Huijts et al's (2012) proposed framework for technology acceptance that included a number of social factors was examined. Reflecting on the major findings that arose from the South West Hub case study, it seems that many of the factors that were highlighted do impact on an individual's potential to accept a technology or not.

For example, the researchers make reference to experience and knowledge and in the South West Hub project the legacy issues that had been experienced in the community over the years certainly influenced individual attitudes toward the project. Knowledge in this case, was possibly best represented by the need for information and people's constant desire to build their knowledge about the parameters of the project and obtain more detail about CCS technology.

Transparency of process was often linked with trust. Perhaps our results show that distributive fairness, particularly in relation to a project such as CCS, can also impact personal norms and this connection is not directly shown in the existing flow of the framework. The interplay between perceptions of costs, risks and benefits of the technology was definitely important. In particular, the continued and openly expressed concern of the impact of the project on the value of their land and ultimately their personal wealth was possibly one of the most important factors that influenced their immediate support for the project. The lack of any clear benefits to the landholders was also quite apparent although the project proponents approach to ensure that they were left 'no worse off' ameliorated this slightly but there were several comments made that individual landholders would support the 3D seismic survey component but it was unlikely they would show the same support for the storage project.

Each individual's positive and/or negative response to the project and its impact on personal norms was definitely a feature in the language that emerged from both the contact notes, interview responses and some media articles. The majority of those who failed to grant access expressed negative emotions and fears toward the CCS project and even the 3D seismic survey. Positive norms were less evidenced in the language however, as noted in the interview responses almost half of those that granted access made no comment which seems to suggest they had less emotional reaction to the project at all.

Social norms, and also social identity (not featured in the model) played out strongly through the process of land access negotiations. This was evidenced in comments about pressures from neighbours and others in the community to sign or not sign land access documents. It may also be helpful to consider the role of politics and their influence on individual attitudes as a separate factor although this may be best represented through including social identity as a stand-alone influencing factor.

The importance of perceived behavioural control was evidenced by the strong reaction to the inclusion of Section 115 in the initial contact letters. When landholders felt their individual choice to participate was taken away through the suggestion of legal access, they tended to respond extremely negatively. Some negative attitudes were turned around through the negotiations and hard work of the team but others refused. In addition, the

intrusiveness of the 3D seismic surveying and the perception of how much that would impact the individual landholder would also impact their perceived behavioural control.

Regardless of which factors seemed to have the most bearing on individual intention to accept it is obvious that there is a complex interplay between them and project proponent being able to respond accordingly certainly can help to influence the outcome. Particularly in ways to build trust and the examples used by the South West Hub project team provide some excellent foundations for other projects to consider. Their approach reinforces the concept of the informal social licence to operate that Moffat and Zhang (2014) have found critical for ongoing project acceptance within local communities.

11. Conclusion and recommendations

The opportunity to examine third party contact notes around the negotiations for land access provide interesting insights into the decision-making processes of landholders when presented with such a project. Although expressed support for access to complete the 3D seismic survey will not necessarily translate into support for the overall CCS project, the landholders' responses to planned communication activities and management styles of the project proponents, combined with examination of other external factors that impact their support contribute to the growing body of knowledge around energy technology acceptance.

Understanding the size of investment required to manage a land access project in this way is difficult to separate out from the overall project costs. However, it would be useful to calculate the amount that was invested to use the land access negotiators as opposed to providing a direct compensation benefit to landholders. Regardless of the amount, it seems that if the DMP had not taken such a careful approach to landholder access there is a likelihood they may not have enough farms for the study. At the same time, by minimizing the risk of public opposition and building a trusted profile, over a period, it allows the community enough time to absorb both credentials and science.

From the analysis it appears there are definitely legacy issues within the community that have meant that some landholders have had extremely negative experiences which have influenced their current attitudes and these are not likely to change. Personal norms clearly impact potential acceptance of a technology and in this case the potential or perceived potential for devaluation of the farmers' livelihoods was unacceptable for any landholders likely to be impacted by a longer term storage project.

The role of trust, social norms and social identity were also very evident and knowledge of these theories and ways to utilize these more effectively could easily help to enhance the possibility of gaining acceptance. A clear example of this was the use of the third party contractors, KD1, who many in the community respected and related well to because of their backgrounds and experience on the land. DMP's strong commitment to communication and their ability to be reflexive and responsive was noted by many and it

seems the changes to the project team occurred at a critical time and certainly helped to build more trust and integrity in the engagement activities.

A number of recommendations arise from this work both for the South West Hub and other CCS project. These are listed below in no order of priority.

1. Continue the reflexive approach to communication and engagement – a key strength of the DMP has been their reflexive approach to evaluate all activities and make changes and respond to needs being expressed by the community. Continuing with such an approach will help to build the quality of the relationship between the local community and the project team.
2. Continue to engage in an open and transparent manner throughout the project – continuing with the planned communication activities is a strategic investment for the project. Experience suggests that if things go too quiet between phases of a project, trust can erode as people start to question what is happening behind the scenes. This would include the promised communication of seismic survey results and updates on project progress.
3. Ensure the project team remains accessible to the community – the project manager and team have made themselves being accessibly by the community a high priority and this will be important to continue as the project moves forward.
4. Build the outreach of the Local Community Consultative Committee (LCCC) – several of those interviewed from the LCCC indicated that they have not engaged too much with the wider community about the project. As one of the roles of the LCCC is a form of advocacy and providing a conduit for information – finding ways for the LCCC to engage more broadly with the community may increase opportunities for locals to ask questions with people who they trust and are not the project proponents.
5. Engage local leaders within the community – leadership can manifest itself through both formal and informal roles. From the analysis it seems that to date, there has not been huge engagement of potential informal leaders of the community – although these are likely to exist. Shire Presidents, CEO's and local politicians have been engaged however other stakeholders, with potential influence, may become helpful advocates for the project. Time must be spent in identifying and engaging these individuals to develop relationships with them.
6. Determine and communicate potential local benefits for the project – the real challenge for the South West Hub in relation to community is overcoming the fear that a storage project, operating in the region, will not have an impact on land values. Consideration needs to be given on how best to overcome this concern.
7. Understand the role compensation might play in this project – many of the contact notes and interviews raised the issue of compensation which is relates to the local benefit issue. Although, DMP were unable to offer direct compensation, other contractors suggested that this has been helpful in overcoming objections for land access within other projects. It would be possible to explore potential compensation models in more detail through focus groups with a cross section of the community.
8. Ensure the opportunity for choice – it was very apparent that the inclusion of the Section 115 clause, the legal instrument to allow access, created a belief that enforced

access would take place if permission was not granted. Although not the intention of the DMP, the inclusion of such, negatively impacted on local landholders. Consideration must be given as to how this might evolve for other CCS projects. Obviously this will be influenced by the various regulatory regimes that exist in different jurisdictions and how important individual plots are but a key message from this work has been that enforced access is unlikely to be welcomed by landholders.

9. Consider a broader survey to quantify influencing factors - It seems that many of the factors suggested by the Huijts et al's (2012) framework do influence an individual's intention to accept the CCS project or in this case the 3D seismic survey. What is difficult to ascertain from this qualitative approach is the interplay between some of the factors. This would be possible to explore in more detail through survey measures across a representative sample of the community. Conducting such a survey could also provide an opportunity to understand current perception to the ongoing CCS project from a broader cross section of the community and help to inform ongoing communication activities for the project.

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Appendix A Interview questions

Please note that a semi-structure approach was used so that these questions were a guide for the interviewer and may not have been asked verbatim or in the order presented.

1. Tell me a little about yourself and your role and involvement in the project?
2. What do you think have been the successful components of the project?
3. What do you believe have been the challenges for the project?
4. In your view, what are the elements that pose the greatest risk to the overall project?
5. How do you think people in the community with to be engaged for projects like this?
6. Who do you think the community trusts most for information?
7. What do you think are the impacts of different stakeholders and their messages on perceptions?
8. What local issues may have impacted on the project and local perceptions?
9. Are there people in the community they look to for guidance on this type of project?
10. Do you think there is any difference between those local and affected landholders and the broader community in the area?
11. Is there a question you think I should have asked but have not?
12. Is there anyone else that you would recommend that I talk to?

Appendix B Common questions asked

List of concerns, questions raised in relation to CCS grouped by themes

WATER:

- I think the key concern is with regards to a fresh water aquifer and what might happen to the Yarragadee
- I suppose displacement to me is meaning that you're dumping something into a space and you displace water, is that going to change the quality of water in the border tables
- It is a bit of disbelief in the fact, and a lot of people are worried about our water supply, whether the liquid CO_2 would infiltrate it
- Farmers, in particular, are worried about the impact on the water system.
- The farmers who work their land and, you know, have sheep or crops or dairy or whatever, they're particularly worried about the impact on the water system – whether, you know, if there's any leakage, and that, sort of, thing.
- There is local argument and concern which – and if you talk to most people in – who would be expressing a generalised concern about this proposal, it is that either it will ruin the water resources – which it goes in part to the fraccing issue
- So, we will lose all our valuable water and there's some, dare I say, murkiness around that because the argument about this particular area is that it's not affecting the larger important aquifers – it sits between – straddles major aquifers, but, not straddles, but, it sits between two major aquifers, but, there is that concern.

STRUCTURE:

- And the old question on leaks and whether or not the whole thing is going to leak at all or something like that
- Essentially, the perception was they were trying to work out whether the structure under the ground would be able to hold carbon and whether it could
- And there was a drilling report done before we got there which indicated that there was an unknown there whether the structure would be able to hold it. And some people were thinking, well, if it can't hold the carbon there and they pump a whole lot in, what's going to happen to that and what's it going to do to the value of our property?

SAFETY OF SURROUNDING ENVIRONMENT:

- Is it going to come bubbling up and through our house and we're all going to fall over dead because we can't breathe the carbon dioxide?
- The other issue, of course, is CO_2 escaping and whether that was a possibility in the future that would affect the quality of the land.
- With geosequestration it's about the impact of stuff coming in and is there a long-term impact on our soils and
- Because I'm not knocking the concept that something has got to be done about carbon. I'm all in favour of something being done about it, but I don't – I cannot see how you can

justify putting at risk the prime pastoral land that you've got in the state where no-one knows what the outcome is.

- And at the moment, a dairy farm probably would cost you anywhere between two and a half and four million, so who's going to have that money set aside in their books as a provision just in case 30 years down the track we have managed to destroy two or three farming properties?

UNKNOWN EFFECTS:

- So there's always the unknown in there because it's not been done in this sort of geology before
- I suppose what we were hearing at committee level was we're going to the next step because different things that we're hearing and seeing is working and the whole world's watching if this works in this area. There'll be many places around the world that will have similar geology; now, that's a bit scary if people are hearing, oh, it's never been done anywhere else in this geology.
- But even then, what, you know, you start asking questions, like, well, sure you can pump it under the ground three kilometres deep, but what happens to it as the years go by, you know what's going to happen in, like, in a thousand years time. So, and no-one has answers to those questions.

PROCESS AND TECHNICAL

- I'm neither for or against the project but I have my doubts about the actual process of burying it underground.
- Area/volume of geological formation targeted as suitable for sequestration?
- Total mass of CO_2 targeted to be stored i.e. life of project based on 6mtpa injection rate?
- How many injection points will be required, both start of project and final?

PEOPLE:

- There was about 30 farms, that were not keen to have anyone come onto their farm - their place.
- But, at that stage, people were not - they couldn't - well they didn't understand a lot of it, so - and there was a lot of - for some people there was a lot of fear.
- And another part of the problem with people like us not wanting it here is the no-liability clause. They just walk away from it after X amount of time and hand the liability over to the government and thereafter.

EARTHQUAKES/SEISMIC:

- Wanting to understand whether or not CCS activity, or injection of this sort will cause earthquakes and seismic – that again is a very common concern
- The people really came out of the woodwork when the seismic study was about to happen

TRANSPORT:

- So you start wondering, well, you know, how's it going to be transported, where is it going to go
- Where will CO_2 be pumped in from?
- Will supply lines be buried?
- What size pipelines?
- What will be the location of all pipelines and what is the associated infrastructure?
- Will pipeline easements be required?

Appendix C List of media articles

MEDIA OUTLET	DATE	AUTHOR	TITLE
Harvey Reporter	1/02/2012	Murray Cowper MLA	Murray's beat Geosequestration update
Weekend AFR	11/02/2012	Louise Dodson, Mathew Dunckley, Marcus Priest	News Political Background Victoria next for carbon capture as WA plan falters.
Bunbury Herald	21/02/2012	NO NAME	Carbon project drilling begins
Harvey Waroona Reporter	21/02/2012		Test starts for carbon storage
ABC 720 Radio Perth	22/02/2012	Stephanie Dalzell	7:45 News
ABC South West WA	22/02/2012		Carbon capture trial drilling begins
Bunbury Mail Opinion Piece	8/03/2012	Urban_Doobies	Re: Drilling Begins
Harvey Reporter	30/03/2012		Students experiment with carbon capture
Bunbury Herald	10/04/2012	Erienne Lette	Drilling sets a record
Harvey- Waroona Reporter	10/04/2012	Ken Utting	Analysis to follow Cookernup 3km drill hole
ABC Radio	23/04/2012		Carbon storage testing proving positive
South Western Times	22/08/2012	Brendan Gaynor	Letter to the editor: Carbon capture and collection is safe
South Western Times	22/08/2012		New commitment to South West Science
Press Release Federal Minister	27/09/2012	Chris Evans	Western Australia at the forefront of international carbon research
No attribution	27/09/2012	No Name	Funding for world class research facility
The West Australian	24/10/2012	Georgia Loney	Life's a gas for clever carbon kids
No attribution	11/12/2012	No Name	Seismic test to reveal carbon storage ability
Media Statement	15/01/2013		Scrap the SW hub Pipedream now says Cowper
Countryman	21/01/2013	Haidee Vandenberghe	Waste plan angers farmers
Harvey Reporter	22/01/2013		MLA Calls for end to carbon storage plan
South Western Times	31/01/2013		Cowper: Scrap 'pipedream' Carbon Hub
The West Australian	31/01/2013	Brad Thompson	Industry bid to store CO2 under farmland
Countryman	14/02/2013	Haidee Vandenberghe	Seismic Survey for controversial Harvey Shire aquifer plan deferred
Harvey Reporter	26/02/2013	Ken Utting	Seismic Project on hold for farmers
International Longwall News	9/05/2013	Lou Caruana	Mooted budget cuts puts carbon capture at risk
ABC News	7/07/2013	Jessica Strutt	Cowper Petroleum and Geothermal Act
Harvey Reporter	30/07/2013	SPECIAL FEATURE	Talk to a cattle farmer who has experienced CCS
Harvey Reporter	30/07/2013	SPECIAL FEATURE	Why is carbon capture and storage important?

Harvey Reporter	30/07/2013	SPECIAL FEATURE	CCS to be governed by WA legislation
Harvey Reporter	30/07/2013	SPECIAL FEATURE	Harvey-Waroona CCS feasibility study continues
Harvey Reporter	30/07/2013	SPECIAL FEATURE	The 3D seismic survey explained
Harvey Reporter	30/07/2013	SPECIAL FEATURE	CCS Projects around the world
South Western Times	1/08/2013	Clare Negus	Greens, CCI at odds over hub
ABC News	12/08/2013		MP fears carbon plan a threat to landowners' property rights
South Western Times	15/08/2013	Colin Fairclough	Letter to the editor: No independent analysis is an opportunity lost
South Western Times	15/08/2013	Clare Negus	MLA Fears damage as bill passes
Harvey Waroona Reporter	20/08/2013		Celebrity duo unveil Carbon Kids support
South Western Times	12/09/2013		Carbon surveying approval granted
Harvey Reporter	1/10/2013	Ken Utting	Research keeps carbon storage on agenda
South Western Times	28/11/2013		2d Seismic Survey and presentation Invitation
Prospect	1/12/2013		Good Vibrations 3D Seismic Survey in the South West
Harvey Reporter	3/12/2013		Insight offered on carbon storage
Bunbury Mail	11/12/2013		Demonstration draws small crowd
South Western Times	12/12/2013	Clare Negus	Famers coming on board
Harvey Reporter	21/01/2014		Public notice: South West Hub 3d Seismic Survey
Harvey Reporter	28/01/2014		Gates make way for survey trucks
Harvey Waroona Reporter	18/02/2014		3D seismic survey starts this week AND PUBLIC NOTICE
The Australian - Business Pages	21/03/2014	Matt Chambers Energy	Carbon capture way to go Rio Chief
The West Australian	26/03/2014	Murray Cowper MLA	Letters to the editor: A looming disaster?
Harvey Reporter	1/04/2014		Getting a closer look at 3D survey
Harvey Reporter	15/04/2014		landowners thanks as survey finishes
Harvey Reporter	15/04/2014	Hannelore Hepburn	Seismic shift in love of science
Bunbury Mail	29/05/2014	Ross Verne	South West Capture Project Doomed
Collie Mail	5/06/2014	Ross Verne	Project halted
The Australian	16/06/2014	Trevor Paddenburg	Collie warned it must end its dependency on coal
Harvey Reporter	17/06/2014	Hannelore Hepburn	Students learn about carbon science