PIPELINE CORRIDORS – THE CASE FOR GREATER INTEGRATION OF LAND USE AND PIPELINE REGULATION

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Introduction

Pipelines for the transmission of oil, gas and water are an essential part of our energy and water infrastructure. They are crucial to serving the needs of growth for our residential communities and the industrial sector. However, along with their importance, the construction and operation of pipelines also present significant challenges. Indeed, the existence of a pipeline can require the imposition of constraints upon the use of the underlying or overlying parcels of land. Further, the presence of a pipeline, and particularly a high pressure transmission pipeline, can mean that some adjacent uses are not compatible, and can pose safety risks to nearby inhabitants further afield from the directly burdened parcels of land.

It is of paramount importance that these challenges are managed effectively, in order to preserve the safety of the pipeline, the environment and any nearby inhabitants. The protection of the pipeline and the community must however be balanced against the essential planning objective of maximising suitable and sustainable land use. In essence, development within close proximity to pipelines should not be unduly constrained, provided that appropriate measures are in place to ensure the protection of the community, the pipeline, the environment and any other nearby development. To a large extent, these are competing interests. It is readily appreciated that any introduction of new planning or land use constraints can have an immediate and substantial impact on property value, which in turn becomes a difficult political issue.

Managing the co-existence of high pressure gas transmission pipelines and significant urban development has been a long-standing issue experienced to varying degrees in all of the States and Territories of Australia, each with their own systems of land use and planning regulation on the one hand, and pipeline regulation on the other. The significance of the issue was acknowledged in Tasmania by then Minister Paul Lennon (later to become Premier of Tasmania) in his Seconding Reading Speech in relation to the Gas Pipelines Bill 2000 (Tas).\(^1\) The Minister identified that throughout Australia, there have been instances where homes have been built on or near pipelines, causing significant safety issues.

This paper will explore the way in which these competing interests are addressed within the current regulatory frameworks throughout Australia. The range of potential solutions will be considered. It will be seen that some jurisdictions are currently addressing the issues more efficiently than others, but there are nonetheless some inefficiencies and opportunities for improvement throughout the country.

In particular, it will be emphasised that the current manner in which developers and pipeliners must interact or collaborate, or are otherwise not required to interact or collaborate (or at least not in a timely or uniform manner), as the case may be, is unsatisfactory for landowners, developers, pipeliners and regulators.

Aside from the obvious and primary safety issue arising from higher density development in proximity to pipelines, one troubling issue is the delay, cost and uncertainty that can be caused through the current lack of integration of the systems of land use and pipeline regulation. Further, of particular

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\(^1\) Tasmania, *Parliamentary Debates*, Legislative Assembly, 28 November 2000, 38 (Minister Paul Lennon, Member for Franklin).
concern is the increased cost that may be incurred by a prospective developer in having to re-design a proposed development due to the presence of a pipeline. On the other hand, a pipeliner may incur costs through having to undertake additional measures to protect a pipeline, in consequence of increased development within close proximity to the pipeline. Whilst there may be no perfect balance to these competing interests, this paper will suggest that there is a way forward, and that improvements can be made to the current framework.

Further, aside from the competing interests of pipeliners and developers, there may also be a lack of community awareness of the existence of pipelines, the safety requirements those pipeline have (and the potential dangers they may pose). Whilst major pipelines will generally be secured by easements registered on title of the affected lots, there is currently no general notification requirement or process, to advise other nearby landowners and occupiers of the pipeline’s existence. These nearby inhabitants may not reside or work on the directly burdened lots, but they may nonetheless be within a range of potential impact (the heat flux zone), if a full scale pipeline rupture and explosion were to occur.

Whilst it is technically possible for a layperson to discover the existence and location of a major pipeline, the complexity of town planning schemes and online mapping tools for pipeline licences and a lack of public awareness of pipeline risks, may pose an unassailable barrier for the general public. There is of course the long-standing “Dial-Before-You-Dig” service, which acts as an immediate but ‘last bastion’ protection against impending actual excavation or other works over the actual ‘footprint’ of the pipeline. This service is essential and has its place for a wide range of subterranean cables and services. But what is lacking is a uniform means by which the corridors for major pipelines, as important means of long-term energy distribution, are given prominence or a sufficient “status” within planning documents so that they are in contemplation and consideration by all relevant stakeholders for future development planning – and well before any actual works are to be carried out.

Consequently, this paper will consider the merits of the concept of a notification zone, planning layer or code on a uniform basis throughout Australia, whereby landowners, land users and prospective developers are made aware, right at the earliest stages of proposing or considering any new development, of the existence of a major pipeline, and the impact or restrictions on potentially incompatible development in proximity to the pipeline. It is recognised that the introduction of any such notification zone has the potential to have an adverse impact upon land value within the zone. This presents yet another challenge or competing interest which must be assessed and balanced against the potential benefits of a uniform notification zone system.

**Pipeline safety and proximate development**

The Australian pipeline industry can be rightly proud of its excellent safety record, and happily, and the infrequency of major incidents involving damage to person or property is such that the ordinary member of the public may have very little idea about the potential impacts of a pipeline amongst urban encroachment from a safety perspective.

However, one need only look to the United States of America within recent memory to observe the potential consequences of the breach of a high pressure gas pipeline in an urbanised area – the San Bruno incident. This incident has been highly studied and much commented upon, by APGA members and others, but the incident serves to underscore why it is desirable for the systems of land use regulation and pipeline regulation to be better integrated. In 2010, a powerful explosion and an
ensuing inferno occurred in San Bruno, California, caused by a rupture of Segment 180 of Line 132 of Pacific Gas and Electric Company’s (PG&E) natural gas transmission system. The disaster resulted in the deaths of 8 people and the destruction of 38 homes. In total, over 50 people were injured and over 100 homes were damaged to some extent. The explosion was of such immense force that a 28-foot long section of pipe weighing approximately 1.4 tonnes was ejected from the ground and ultimately landed approximately 100 feet away.2

In investigating the incident, the California Public Utilities Commission (CPUC) found that PG&E had failed to follow accepted industry practices when first constructing Segment 180 in 1956, and had also failed to comply with regulatory requirements relating to pipeline integrity management.3 The specific cause of the rupture was the failure of a fabrication weld in Segment 180.

Interestingly, it had initially been postulated by various investigators that the defective weld was not the trigger of the incident, but rather that an external force had been created by a sewer line installation project in 2008, within close proximity to Segment 180. It was theorised that the proximate sewer installation might have caused some indirect damage or increased pressure and stress upon Segment 180, which had the effect of converting the threat posed by the welding defect from a stable, to an unstable threat.4

However, this theory was ultimately rejected in the National Transportation Safety Board’s (NTSB) investigation.5 Whilst this theory was rejected by the NTSB’s findings in this case, it can nonetheless be readily appreciated that proximate development to a pipeline can increase the risk of rupture through increased stress, or the risk of direct or indirect damage.

Regardless, it was observed that irrespective of whether the explosion had been caused or contributed to by the sewer installation:

‘…the project was characterized by an ineffective communication process between the city’s contractor and PG&E’s field engineering…’6

Critically, for the present purposes, the CPUC found that local residents were largely unaware of the close proximity of Line 132.7 The CPUC Independent Review Panel also observed:

‘In 1956, the city of San Bruno directed PG&E to replace an elevated portion of Line 132 at the intersection of Earl Avenue and Glenview Drive. Somewhere within the same general

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3 Ibid 3, 4.
period, we understand the city converted PG&E’s pipeline right-of-way from an easement to a franchise right as the community was growing and residential subdivisions were being laid throughout the area. It appears that the work done around this period may have been done to increase safety measures due to increasing urbanisation.

Australia has been fortunate to have not suffered a pipeline related disaster of this magnitude. Undoubtedly this is to a very large extent, a reflection of the high safety standards imposed upon, and observed in, pipeline operation in Australia. Notwithstanding this excellent safety record, this recent catastrophe ably demonstrates that Australia simply cannot afford to ‘rest on its laurels’. With ever increasing urban development and progressively concentrated populations on Australia’s coastlines, coupled with the growing age of many major pipelines, the inherent risks will tend to increase if an efficient and balanced regulatory regime is not in place to better manage land use around pipelines.

Pipelines on the landscape – impacts and risks

For the purposes of this paper, it should be understood that the pipelines under consideration are limited to high-pressure gas transmission pipelines, and to a lesser extent, oil transmission pipelines. We are not here considering water or slurry pipelines, or the pipelines of retail gas distribution networks, such as those delivering town gas to residential and other retail customers.

Aspects of pipelines impacting nearby development

There are a number of features of pipelines which it is helpful to appreciate in considering how pipelines and proximate developments interact. It should not be assumed by the pipeline industry that these features are well understood or appreciated by the public in general, or the property industry, or the construction industry, or even by land use regulators (such as planning or development approval officers). These include:

a) pipelines are generally designed and intended to have an operational life of at least several decades – so are long-term items of energy infrastructure;

b) because these pipelines are the transmission means between the gas or oil well (usually in a relatively remote or rural location) and the point of consumption or further distribution (usually in an urban or semi-urban location), they are usually hundreds of kilometres in length, traversing many, many properties and differing types of land tenure;

c) pipelines are generally buried at quite shallow depths of within a couple of metres of the surface – perhaps within a metre in some cases or at certain points; greater depths are possible, but impact upon construction and operation costs;

d) pipelines are usually made of steel, but with advances in technology can be made from other synthetic materials;

e) pipelines made of steel require anti-corrosion mechanisms such as cathodic protection and coatings;

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f) it may be possible for a pipeline to be buried for the bulk of its length, but above ground in certain parts;
g) because steel pipes are made by welding lengths of steel together, there are particular vulnerabilities around the site of the welds in the pipeline;
h) there are various above-ground appurtenances even for a buried pipeline, including valves, vents, access points, compressors and interconnections;
i) pipelines are required to be regularly inspected both from the outside and the inside; for inside inspections, there are very sophisticated devices and tools known as “pigs” which can detect and relay a large amount of information as to the status of the pipeline and its integrity – such as detecting corrosion or fractures in the pipeline;
j) pipelines are constructed to particular specifications, capacities and tolerances for their intended long-term life, but once constructed, these may not be readily capable of alteration – or not without enormous disturbance and expense;
k) there are special reinforcements and pipeline bedding that may be required around pipeline crossings under roads, railways and watercourses;
l) pipelines are capable of having their capacity substantially increased by being “looping”, which is a kind of duplication of the pipeline, involving constructing and laying a second interconnecting pipeline alongside the existing pipeline (usually with similar trenching and disturbance to the original pipeline); and
m) a typical pipeline easement corridor would be approximately 40m wide – being 20m either side of the pipeline.

The regulatory framework – planning VS pipelines

General

In many jurisdictions throughout Australia, transmission pipelines for gas and oil are exempt from town planning legislation. In each such jurisdiction, pipelines are incorporated into the town planning frameworks. However, the extent to which they are addressed does vary, and it will be seen that some jurisdictions have been more successful than others in identifying and addressing the competing interests of developers and pipeliners.

While this paper will provide a brief overview of the how transmission pipelines fit into each jurisdictions’ specific planning regime in Australia, a more detailed analysis will be included of Queensland and Western Australia. In many respects, these two jurisdictions provide the highest level of planning recognition of high-pressure transmission pipelines.

Queensland

In Queensland, land use and development is principally governed by the planning legislation, currently under the Sustainable Planning Act 2009 (Qld) (SPA), and the associated planning
Pipelines however, specifically for the transmission of oil and gas, are separately regulated under the Petroleum Act 1923 (Qld) and the Petroleum and Gas (Production and Safety) Act 2004 (Qld) and the regulations pursuant to those Acts (collectively, the Petroleum Legislation).

The Petroleum Legislation generally prescribes that major pipelines are to be built and operated in accordance with Australian Standard AS2885 Pipelines: Gas and Liquid Petroleum. Other jurisdictions throughout Australia similarly require major pipelines to be constructed, operated and maintained in compliance with AS2885.

Consequently, to a large extent, major pipelines throughout Australia are subject to a uniform national standard in respect of their construction, operation and maintenance.

Each local government area in Queensland is governed by its own independent and unique town planning framework. Thus, regardless of the uniform manner in which pipelines are regulated in Queensland, just how they fit into the broader planning framework varies markedly across jurisdictions.

Critically in the case of Queensland, development for an authorised activity under the Petroleum Legislation is not capable of being declared as development of a particular type under the SPA, and is thereby exempt development by virtue of section 231 of the SPA. As such, petroleum pipelines are largely exempt from planning regulation. It is however noted that the construction, operation or decommissioning of a petroleum pipeline might require the undertaking of certain associated activities that are not exempt. In any case, without delving too deeply into the complexities of Queensland’s town planning framework, it is prudent to observe that the planning framework is based on a tiered system, structured as follows:

a) At the highest level, the SPA and the SPA Regulation provide the overarching framework;

b) Next, the State Planning Regulatory Provisions are statutory instruments which regulate development and are capable of applying to all or part of Queensland;

c) Next, the State Planning Policy (SPP) expresses Queensland’s aspirations and interests in planning and development, for example to promote sustainable and responsible economic growth.

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9 It is noted, however, that the Sustainable Planning Act 2009 (Qld) is, at the time of writing, under review for replacement by the Queensland State Government, and a draft of the proposed replacement Act – the Planning and Development Bill, has been through a period of public consultation.

10 Petroleum and Gas (Production and Safety) Regulation 2004 (Qld) s 7, sch 1.


12 Sustainable Planning Act 2009 (Qld) s 232(2), Sustainable Planning Regulation 2009 (Qld) sch 4, table 5.

13 Sustainable Planning Regulation 2009 (Qld).

14 Sustainable Planning Act 2009 (Qld) s 16.
d) Below the SPP, there are numerous Regional Plans (RP) which express the development aspirations of a defined regional area.\textsuperscript{16} The objectives for a particular region are required to be consistent with the State’s interest, as expressed under the SPP;\textsuperscript{17}

e) Next, the Standard Planning Scheme Provisions (being, currently, the Queensland Planning Provisions) provide a consistent structure for local government planning schemes across the State;\textsuperscript{18} and

f) Local Planning Instruments (LPI) (such as Planning Schemes) provide the specific objectives and development rules applying to a particular local government area. The provisions of an LPI are required to be consistent with the SPP and the applicable RP, but will also focus on the specific planning and community aspirations for the specific local government area;\textsuperscript{19}

g) Within Planning Schemes, there will be the differing zones or designations for intended land use, and various codes and planning layers which apply to specific areas or features within the local government area.

How do petroleum pipelines fit into the Queensland planning framework?

Currently, there are 9 major pipelines in Queensland, including the 3 recent major pipelines constructed for the 3 LNG facilities in Gladstone, and the Moonie-Brisbane oil pipeline, which is no longer operational. There are also a number of significant subsidiary pipelines, and numerous interconnections and lateral pipelines connecting with these major pipelines. There is however just one pipeline specifically addressed at the highest level of the planning hierarchy, the Moonie to Brisbane strategic pipeline, held pursuant to Pipeline Licence number 1. Pursuant to the SPA Regulation, for certain categories of development on a lot which is subject to an easement registered in favour of the holder of Pipeline Licence number 1, the licence holder is declared as an advice agency under the SPA.\textsuperscript{20}

An advice agency may make recommendations about any aspect of the development application which is relevant to the assessment manager’s decision.\textsuperscript{21} The advice agency may make recommendations regarding the imposition of conditions upon any development approval.\textsuperscript{22} In addition, an advice agency may also provide advice prior to the submission of the development application.\textsuperscript{23} It is noted that under the SPA Regulation, oil and gas pipelines are also prescribed as

\textsuperscript{15} Sustainable Planning Act 2009 (Qld) s 22.
\textsuperscript{16} Sustainable Planning Act 2009 (Qld) s 33.
\textsuperscript{17} Sustainable Planning Act 2009 (Qld) s 25.
\textsuperscript{18} Sustainable Planning Act 2009 (Qld) s 50; the current version of the Queensland Planning Provisions is version 3.1 dated 27\textsuperscript{th} June 2014.
\textsuperscript{19} Sustainable Planning Act 2009 (Qld) s 88.
\textsuperscript{20} Sustainable Planning Regulation 2009 (Qld) sch 7, tables 2, 3.
\textsuperscript{21} Sustainable Planning Act 2009 (Qld) s 292.
\textsuperscript{22} Sustainable Planning Act 2009 (Qld) s 292(1)(a).
\textsuperscript{23} Sustainable Planning Act 2009 (Qld) s 271.
community infrastructure for the purposes of the designation of land powers for community infrastructure, under the SPA.\(^{24}\)

At the SPP level, Queensland acknowledges the importance of the mining and petroleum industries and acknowledges the importance of:

\[\text{...ensuring that mining and other resource activities are considered in land use planning because of the economic benefits to Queensland and the contribution to our quality of life.}\] \(^{25}\)

The SPP also acknowledges that development decisions \(\text{will require the careful consideration of competing interests.}^\) Essentially, the SPP prescribes that a planning scheme is to appropriately integrate the State’s interest by considering the location of specified petroleum infrastructure, including pipelines.\(^{26}\)

At the regional planning level, there is also some recognition of pipelines as a type of infrastructure warranting some “protection”. The South East Queensland Regional Plan for example, enshrines the key principle to:

\[\text{Identify, protect and manage key infrastructure sites and corridors and buffer areas for concurrent and future regional infrastructure and service.}\]

\[\text{...To achieve the strategic the strategic intent of the SEQ Regional Plan, sites and corridors for infrastructure such as transport and freight networks, pipelines, dams (and) transmission lines ... must be identified and preserved well ahead of time.}\] \(^{27}\)

**Pipelines at the local planning level in Queensland – some example local government areas**

**Brisbane**

The now superseded Brisbane City Plan 2000, incorporated the Gas and Oil Pipeline Code, which had the stated purpose of

- ensuring that development does not compromise the safe operation and maintenance of the Roma Gas or the Moonie Brisbane Oil Pipeline; and
- ensuring that ‘at risk’ activities are located a safe distance from those pipelines.

Essentially, the Code applied to proposed code or impact assessable development, which consisted of either the reconfiguring of lots, or of a material change of use within 100m of either of the two pipelines. Further, the code applied to proposed code or impact assessable development involving excavation or building work within 20m of the Roma Gas Pipeline or within 15m of the Moonie Brisbane Oil Pipeline.\(^{28}\)

The single prescribed performance criteria read as follows:

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\(^{24}\) Sustainable Planning Regulation 2009 (Qld) s 8.
\(^{25}\) State Planning Policy (Qld) 23.
\(^{26}\) State Planning Policy (Qld) 23.
\(^{27}\) South East Queensland Regional Plan 2009-2013 (Qld) 126.
\(^{28}\) Brisbane City Plan 2000 (Qld), Chapter 5, 87, later repealed by Brisbane City Plan 2014 (Qld).
The safe operation of the Roma Gas or Moonie Brisbane Oil Pipelines must not be compromised by the proposal, and life and property must not be put at risk by uses near the Roma Gas or Moonie Brisbane Oil Pipelines.

Interestingly, it was noted that compliance with the performance criteria could be demonstrated by a qualitative risk assessment in accordance with AS2885. This is noteworthy because AS2885 is not a publically accessible document. It might accordingly be inferred that the code contemplated some degree of collaboration between the pipeline operator and the developer.

Whilst the Gas and Oil Pipeline Code has been repealed with the introduction of the Brisbane City Plan 2014, its principles are retained within the new Brisbane City Plan 2014. Specifically, the Regional Infrastructure Corridors and Substations Overlay Code (Corridors Code) enshrines the principles of the former Gas and Oil Pipelines Code. The provisions of the Corridors Code are not limited to the Roma Gas and Moonie Oil Pipelines, but apply to oil and gas pipelines generally.

The Corridors Code applies the Regional Infrastructure Corridors and Substations Overlay map, which identifies the various existing corridors within the Brisbane City Council region. The Corridors Code now prescribes the following Acceptable Outcome for assessable development, namely that:

Development:

(a) will not compromise the safe operation of a gas (or oil) pipeline in accordance with the written confirmation of the pipeline licence holder the gas (or oil) pipeline; or

(b) is only for a boundary realignment.

In addition, the Corridors Code continues to provide that compliance with the performance criteria can be demonstrated by a qualitative risk assessment in accordance with AS2885. The requirement for the developer to obtain the pipeline licence holder’s written confirmation that the development will not compromise the safety of the pipeline is certainly a high threshold. Whilst the Brisbane City Plan arguably addresses the key community safety issue in an appropriate fashion, there are potential inefficiencies with the written confirmation requirement.

Unfortunately in practice, the requirement of written confirmation can lead to protracted and haphazard collaboration between the developer and the pipeline licence holder, which can span over a number of years. Ultimately, the pipeline licence holder bears the legal duty of ensuring the safe operation of the pipeline and will very likely be liable in the event of a rupture. Therefore, it can be expected that the pipeline licence holder will be motivated to minimise its legal liability to the greatest possible extent. Naturally, this involves ensuring that development does not compromise the safe operation of the pipeline. However, by testing the principle of safe development, it can be observed that the notion is somewhat axiomatic.

Indeed, once development has occurred within close proximity to a pipeline, if a full scale rupture then occurs for an unrelated reason, the development and its inhabitants will very likely be impacted.

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29 Brisbane City Plan 2014 (Qld) s 8.2.17.

Therefore, a pipeliner can legitimately take the view that any development within the applicable ‘heat flux zone’ is unacceptable, because even if the development itself does not damage the pipeline, once the property and people are within that proximity, the risk of disaster is created.

Whilst no suggestion or assumption is made that a pipeliner might be motivated to withhold its written confirmation inappropriately, purely in an effort to minimise its legal liability, this observation nonetheless demonstrates the sheer divergence of interests between the developer and the pipeliner. Moreover, pipelines are very often expanded through the installation of additional compression facilities. In some cases, major pipelines are even looped in full. As noted earlier, looping entails the construction of a second parallel pipeline, usually within the same easement, either flowing in the same or opposite direction. Naturally, such expansion will increase the risk profile of the pipeline and the size of the danger zone.

Therefore, if a pipeliner is anticipating that it will or may undertake such development in the future; this uncertainty can cause delays in the collaboration process. One further example of where such uncertainty can foster delay is where the pipeline is entering the decommissioning phase. On the one hand, the pipeliner might be investigating the possibility of selling or converting the asset or corridor for another use, whilst the developer is contemporaneously seeking to expedite its development approval process.

Further, the issue of costs will be at the forefront of any such collaboration. As stated, the pipeliner has the legal duty of ensuring the safe operation of the pipeline. Therefore, the pipeliner must take whatever additional measures might be required to ensure its integrity and protection, in the event of new nearby development. It will be seen that pipeliners unsurprisingly take the view that such costs should be borne by the developer.

Interestingly, the Corridors Code now also makes provision for decommissioned oil pipelines, by prescribing the following performance criterion:

- Development does not compromise the potential future operation of a decommissioned oil pipeline.

The corresponding acceptable outcome prescribes:

- Development is not located on land burdened by an easement associated with a decommissioned oil pipeline or will not impact on a decommissioned oil pipeline in accordance with the written permission of the pipeline licence holder.

The recognition of decommissioned oil pipelines is undoubtedly in contemplation of the fact that the Moonie Brisbane Oil Pipeline has not been operational since 2007, and is now in the process of being decommissioned.

**Toowoomba**

The Toowoomba Regional Planning Scheme prescribes similar requirements in its own Regional Infrastructure Corridors and Substations Overlay Code, namely to ensure that the safe operation of gas pipelines is not compromised by nearby assessable development.\(^{31}\)

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\(^{31}\) Toowoomba Regional Planning Scheme 2012 (Qld) 8.4.1.
In particular, the Toowoomba Regional Planning Scheme prescribes such objectives with respect to a lot reconfiguration within 100m of a high pressure gas pipeline. Interestingly, the draft Toowoomba Regional Plan contained an additional requirement with respect to such reconfigurations within 100m of a gas pipeline, namely that such reconfigurations do not increase the density of development.\footnote{Planning and Development Committee, Toowoomba Regional Council, Report of the Meeting of 13 November 2012, page 7 (published on the website of Toowoomba Regional Council).} This specific requirement was repealed from the Toowoomba Regional Planning Scheme, as indicated in a report of the Toowoomba Regional Council Planning and Development Committee.\footnote{Planning and Development Committee, Toowoomba Regional Council, Report of the Meeting of 13 November 2012, 7.}

The Planning and Development Committee recommended that the planning scheme be amended to remove this requirement, reasoning that the acceptable performance outcome of undertaking a qualitative risk assessment under AS2885 will provide sufficient protection for the community.

Interestingly, the report includes a discussion of the Toowoomba Regional Council’s potential legal liability from making the amendment, in the event that a rupture was to occur. The report concludes that the likelihood was low of the Council being found to have owed a duty of care to any future plaintiff, in exercising its power to make the amendment to the planning scheme.\footnote{Planning and Development Committee, Toowoomba Regional Council, Report of the Meeting of 13 November 2012, 6.} The fundamental point that can be gleaned from this discussion is that however rigorous the development assessment process and pipeline safety regulation might be, the possibility of a full scale rupture cannot be entirely prevented.

**Gladstone**

The recent development of an LNG export industry at Curtis Island has necessitated the construction of major gas transmission pipelines for each of the LNG export projects. In each of the regions examined so far, most of the major pipelines have been in place for a number of years, if not decades. Therefore, to some extent, the now comprehensive modern planning schemes in these regions have been developed after the pipelines were built.

Therefore, it is useful to examine how these relatively new pipelines were integrated into the existing planning schemes. At their delivery points, each of the pipelines enters the Gladstone State Development Area, which is regulated by its own independent planning scheme.\footnote{Gladstone State Development Area Development Scheme 2012 (Qld).} The pipelines, along with other materials transportation infrastructure, are included in the Materials Transportation and Services Corridor Precinct.\footnote{Gladstone State Development Area Development Scheme 2012 (Qld) cl 3(8).} Schedule 3 of the planning scheme essentially states that all uses within the corridor precincts, other than agricultural uses, or related materials or gas transportation infrastructural uses, will be likely to compromise the objectives of the State Development Area.\footnote{Gladstone State Development Area Development Scheme 2012 (Qld) sch 3.}

In addition, the planning scheme also prescribes a Corridor Buffer Area. In turn, Schedule 4 of the planning scheme essentially states that all uses, other than agricultural, or related materials or gas...
transportation infrastructural uses, will be likely to compromise the objectives of the State Development Area.\(^{38}\) The planning scheme recognises that the activities within the corridor precinct may have adverse impacts, necessitating a physical separation between these activities and areas where sensitive land uses occur.\(^{39}\)

### Other States and Territories

#### Victoria

Historically, the planning system in Victoria has arguably failed to afford sufficient consideration and recognition of major transmission pipelines. This can be observed through the late discovery during the planning process, ‘Amendment C246 to the LWPSP,’ that the critical Lara Structure Plan map did not identify a major gas transmission pipeline operated by APA Group.\(^{40}\)

At the highest level, Victoria’s State Planning Policy Framework provides detailed recognition of the objective and associated strategies of maintaining pipeline protection, adequate buffers and the protection of people and the environment.\(^{41}\) However, it does not appear that pipelines are specifically recognised in a large number of individual subordinate planning schemes, though there are sporadic references in the overarching Victorian Planning Provisions.\(^{42}\) In the absence of specific provisions in local planning schemes, it is understood that a somewhat informal practice has developed whereby local councils will often refer proposed development applications to pipeliners for consultation.

Interestingly with respect to Panel Report on Amendment C246, after making various recommendations toward the recognition and protection of the pipeline, the Panel also recommended that prospective landowners within the applicable 554m heat flux zone be notified of the existence of the pipeline.\(^{43}\) The Panel recommended that such notice be affected by requiring landholders and the local government to enter into a section 173 agreement, a statutory agreement which may set conditions or restrictions upon the use and development of land.\(^{44}\) These statutory agreements are capable of being registered on title.\(^{45}\)

The Panel took the view that whilst the risk of a rupture might be at a sufficiently low level for the developer, the pipeliner and the regulator, a landholder actually living within the heat flux zone might nonetheless understandably be concerned with the risk. The potential registration of such an agreement or notice on title is likely to have a deleterious effect on land value.

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\(^{38}\) Gladstone State Development Area Development Scheme 2012 (Qld) sch 4.

\(^{39}\) Gladstone State Development Area Development Scheme 2012 (Qld) cl 6(d), 6(2)(c).

\(^{40}\) Planning Report, Greater Geelong Planning Scheme, Amendment C246, Lara West Precinct Structure Plan (July 2013), 24.


\(^{42}\) Victorian Planning Provisions cl 66.

\(^{43}\) Planning Report, Greater Geelong Planning Scheme, Amendment C246, Lara West Precinct Structure Plan (July 2013), ii.

\(^{44}\) Ibid ii.

\(^{45}\) Planning and Environment Act 1987 (Vic) s 173.
It is self-evident that such an outcome is undesirable for landholders, developers and potentially even for pipeliners to the extent that landholders and developers might argue that they are entitled to be compensated by the pipeliner for the effects of any such formal notification process. In Queensland, if a similar process was put into place by planning bodies, this might even be capable of triggering compensation rights under the superseded planning scheme provisions of the SPA.\(^{46}\)

In addition, it is noted that a section 173 agreement is similar in form to a restrictive covenant. Whilst not widely utilised by local governments within Queensland, some local councils do require the registration of a covenant as a prerequisite to the approval of a development proposal, where for example, the council is motivated to preserve the particular amenity of an area. However, restrictive covenants are not widely used in this fashion, and are in any case not a suitable mechanism for a hypothetical land title based notification process.

**New South Wales**

New South Wales’ development consents are generally assessed by the relevant local council. The council-by-council approach to development approvals results in ad-hoc consideration of the impacts that a particular development may have on high-pressure transmission pipelines.

Most development proposals are assessed under Part 4 of the *Environmental Planning and Assessment Act 1979* (*EP&A Act*). To be approved under the Part 4 system, a development must be permitted with consent in the relevant land-use zone and will be assessed against local and State planning controls. This will generally require the lodgement of a development application.

Dependent on council policy, the council will publically exhibit the application, and then make a decision on it. Relevantly, New South Wales does not have an overarching requirement for the ‘consent authority’ being either the local council of the Minister for Planning (depending on the proposed development) to consider the impact of a potential development on or near a pipeline.

All high-pressure transmission pipelines are State Significant Infrastructure under the *EP&A Act* due to the creation of the *State Environmental Planning Policy (State and Regional Development)*. Accordingly, such pipelines are exempt from planning laws. These pipelines include those which require a licence under the *Pipelines Act 1967* (NSW). The licence requirements apply to more significant pipelines and will not necessarily include flow lines or gas gathering lines.

Importantly, New South Wales takes a universal approach to development in close proximity to the more significant licensed pipelines. Under the *State Environmental Planning Policy (Infrastructure) 2007* (NSW) (*SEPP Infrastructure*), the development consent authority must be satisfied that any potential safety risks associated with proposed development adjacent to a Gas Pipeline Corridor have been identified and taken into account. Gas Pipeline Corridor is defined as the licence area of a pipeline licensed under the *Pipelines Act 1967* (NSW), or otherwise within 20m of the centreline of a number of specifically identified pipelines in New South Wales, including for example, the Central Ranges Pipeline System.

Whilst the SEPP (Infrastructure) may provide consistent State-wide policy intent, this leaves considerable latitude for differences in the application of the policy between local councils. For example, it does not appear that the term ‘adjacent to’ a gas pipeline corridor is defined. Therefore,  

\(^{46}\) *Sustainable Planning Act 2009* (Qld) ch 9, pt 3.
local councils might adopt varying views as the appropriate distance to be considered. Further, it does not appear that pipeline operators are necessarily afforded the opportunity to comment on proposed development, though local councils may as a matter of practice seek such advice. Indeed, it appears that in several jurisdictions throughout Australia, local councils have adopted a standard practice of consulting with pipeline operators in the absence of a clear legislative obligation to do so.

**Western Australia**

Through the enactment of the *Dampier to Bunbury Pipeline Act 1997 (WA)* (DBP Act), Western Australia provides an example of the highest degree of regulatory recognition and protection of a high pressure transmission pipeline. The Dampier to Bunbury Pipeline spans over 1,500km and transports gas primarily sourced from the domestic gas plant associated with the North West Shelf Joint Venture.

The DBP Act essentially creates an independent planning system regulating development within the pipeline corridor, which is slightly wider than the registered easement. Essentially, land within the corridor may not be used in a way that is inconsistent with the rights of the pipeline operator.\(^47\) The DBP Act also prescribes offences for breaches of the land use restrictions.\(^48\) Interestingly, the DBP Act also establishes a compensation process whereby affected landholders can make a claim for compensation where the pipeline operator exercises its rights, or is granted new rights over the corridor.\(^49\)

The creation of a legislated access corridor is advantageous to the extent that a specific system can be tailored to the intricacies of an individual pipeline and the affected land. However, the administrative burden associated with such a system may render it undesirable to have separate legislation for every Australian pipeline that presents a risk to community safety. Moreover, the DBP Act is focussed upon the specific pipeline corridor and not the wider adjacent area which might be impacted in the event of a full scale rupture.

Within the Perth metropolitan area however, the Western Australian Planning Commission has published Planning Bulletin 87 – High Pressure Gas Transmission Pipelines, which applies to the Dampier to Bunbury Pipeline and the Parmelia Gas Pipeline.\(^50\) The bulletin was created in recognition of the fact that future urban development was likely to occur within close proximity to the pipelines. The bulletin is an administrative guideline, which planning authorities may refer to in assessing development proposals within close proximity to the pipelines.

The bulletin enshrines two distinct concepts. Firstly, the bulletin prescribes setback distances for various defined types of development comprising sensitive, residential and industrial development. The distances also vary depending on the relevant segment of the relevant pipeline. Taking the example of sensitive development only, the setback distance varies between 90m and 200m from the corridor, depending on the relevant segment of the Dampier to Bunbury pipeline. The distances are

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\(^{47}\) *Dampier to Bunbury Pipeline Act 1997 (WA)* s 41.

\(^{48}\) *Dampier to Bunbury Pipeline Act 1997 (WA)* s 41(4).

\(^{49}\) *Dampier to Bunbury Pipeline Act 1997 (WA)* s 42.

\(^{50}\) Western Australian Planning Commission, Planning Bulletin 87 – High Pressure Gas Transmission Pipelines in the Perth Metropolitan Region (2007), 1.
based upon the Environmental Protection Agency’s criteria for individual fatality risk from hazardous industrial plants.

The bulletin recommends that any proposed development, subdivision or scheme amendment occurring with the relevant set back distance area need demonstrate that any associated risks are mitigated to acceptable levels under AS2885, and that appropriate mitigation measures have been taken in accordance with the standard.

Secondly, the bulletin creates a wider notification area, whereby planning authorities are encouraged to notify the pipeline operators of any proposed rezoning within the notification area. The bulletin explains:

The notification area is purely an administrative tool, which provides a distance from the pipeline within which the pipeline owners should be aware of any proposed activity so they can monitor the risk profile of the pipeline.\footnote{Western Australian Planning Commission, Planning Bulletin 87 – High Pressure Gas Transmission Pipelines in the Perth Metropolitan Region (2007), page 3.}

The extent of the notification area of the Dampier to Bunbury Pipeline varies from 275m to 660m depending on the relevant segment. In the case of the Parmelia Gas Pipeline, the notification area is set at 356m.

Whilst Queensland has a similar setback distance principle within a number of planning schemes, the wider notification zone concept has not been adopted. It can be observed that the notification zone within Bulletin 87 is not concerned with providing awareness to impacted landholders, but rather with notifying pipeline operators about relevant development.

Whilst the notification zone in Bulletin 87 is ultimately aimed at keeping the pipeline operator informed, it does not confer or purport to confer rights upon the pipeline operator. Indeed, if a pipeline operator were given notice of rezoning within the notification area, which had the effect of increasing the population density, the pipeline operator would be compelled to take any additional measures that might be required in light of the increased number of inhabitants within the heat flux zone.

**Tasmania**

At the highest level of planning in Tasmania, State Policies can be created to prescribe key development and management principles which will guide subordinate planning instruments, with respect to particular issues.\footnote{State Policies and Projects Act 1993 (Tas) s 5.} There are only a small number of these State Policies in existence and none directly address planning for pipelines.

In addition, planning directives may be created to prescribe development principles, which must then be taken into account by local authorities administering municipal planning schemes.\footnote{Land Use Planning and Approvals Act 1993 (Tas) s 9.} For example, a Planning Directive was created to manage land use within bushfire prone areas.\footnote{Planning Directive No. 5 Bushfire-Prone Areas Code.} By way of further example, a draft Planning Directive was created to ensure the safety and efficiency of roads and

\footnotetext[1]{Western Australian Planning Commission, Planning Bulletin 87 – High Pressure Gas Transmission Pipelines in the Perth Metropolitan Region (2007), page 3.}
\footnotetext[2]{State Policies and Projects Act 1993 (Tas) s 5.}
\footnotetext[3]{Land Use Planning and Approvals Act 1993 (Tas) s 9.}
\footnotetext[4]{Planning Directive No. 5 Bushfire-Prone Areas Code.}
railways and to regulate proposed development within prescribed distances from major roads and railways.

There is no planning directive directly addressing the planning for pipelines issue. Further, Regional Land Use Strategies may also be created to ensure consistency between rural and municipal planning objectives, where necessary. Finally, local planning schemes are created which must not be inconsistent with the three superior planning instruments identified. However, pipelines legislation in Tasmania allows the Minister to declare pipeline corridors in order to limit impacts on the risk profile of a pipeline.

When a declaration is made, development applications must then be specifically referred to the pipeline licensee, who has the ability to provide advice in response to the application as to the safety conditions required. The planning authority must then have regard to that advice and any recommended conditions. There is one such declared corridor in Tasmania, which varies in size depending upon the location, but in some areas extends up to 700m wide. It would also appear that there local planning authorities routinely refer development applications to pipeline licensees for advice in considering a proposal. However, there is little publicly available information and transparency about this process.

South Australia

In South Australia, there is a complex relationship between pipeline regulation and planning laws. Land use is regulated by a tiered structure of planning instruments, the highest of which is the Development Act 1993 (SA). Beneath the overarching Act is South Australia’s Strategic Plan, which is prepared by the State Government to guide all development actions and priorities. Under the strategic plan, development plans can be created to address particular aspects of development or the use of certain areas of land.

Local councils also prepare strategic plans which incorporate similar concepts, but at the applicable local level. Transmission pipelines are essentially excluded from the operation of the Development Act, other than Part 8 of the Act which contains provisions relating to mining and petroleum. In certain circumstances, these provisions may require that certain pipeline licence applications be referred to the Minister for Planning for advice. Similar to other jurisdictions, the planning legislation also provides for the referral of certain development applications to prescribed authorities.

There does not appear to be a formal process for existing transmission pipeline operators to be afforded the benefit of such referrals. However, it is understood that the Department of Primary Industries and Regions South Australia has created an informal system to receive referrals from local councils with respect to developments near pipelines in the absence of a statutory process.

As such, it would appear that there is an opportunity for improvement in the South Australian jurisdiction, such as through the creation of a formal legislative and transparent consultation process.

55 Land Use Planning and Approvals Act 1993 (Tas) Part 3, Division 1A.
56 Gas Pipelines Act 2000 (Tas).
57 Development Regulations 2008 (SA) s 24.
Northern Territory

In the Northern Territory, there is a clear interrelationship between the planning regime and pipelines legislation as there is no specific exemption for transmission pipelines under the planning law. In granting a pipeline licence under the *Energy Pipelines Act (NT)*, the Minister must have regard to whether the construction of the proposed pipeline or any apparatus or works on the land specified in the application would contravene the development provisions, or an interim development control order, under the *Planning Act (NT)*.\(^{58}\)

The Northern Territory Planning Scheme (*NT Planning Scheme*) applies in relation to the whole of the territory except areas excluded from the scheme. There is currently only 1 ‘stand alone’ planning scheme independent from the NT Planning Scheme.\(^{59}\)

Essentially, a Planning Commission is established under the planning legislation to, inter alia, prepare integrated strategic plans for inclusion into the overarching planning scheme. In preparing these strategic plans, the Commission may identify key utility corridors and essential facilities.

The key land use controls in the planning scheme arise from various zoning maps. These maps indicate the type of land use that is preferred in a particular location. In particular, the overarching planning scheme includes a Utilities Zone (*Zone U*). Essentially, a Zone U area may be created for utilities including gas pipelines.

Land in Zone U may be used or developed, other than for a utility purpose only with consent and in accordance with the requirements of the agency or service authority responsible for the utility. However, it appears that Zone U is only used for pipelines are part of public utilities, rather than privately owned pipelines. Nevertheless, Zone U does act as a form of buffer zone for public utilities. Northern Territory planning legislation similarly prescribes a mechanism whereby body corporates can be appointed as referral agencies, which can in turn provide advice to the development consent authority with respect to development proposals.

Australian Capital Territory

Land throughout the Australian Capital Territory is governed by a system of leasehold tenure, which arises from the special status of the ACT as the location of the national capital, and the manner in which the land comprising the ACT was originally acquired by the Commonwealth from the State of New South Wales, and the assumption of control of the area by the Commonwealth. Similarly to the Northern Territory, gas pipelines are not exempt from land use planning laws.\(^{60}\)

Development in the ACT is primarily regulated by the *Planning and Development Act 2007 (ACT)*. Development in the ACT must be consistent with the Territory Plan. There is little reference in the Territory Plan and various other ACT planning instruments to pipelines. No doubt this is because transmission pipelines have limited impact in the ACT at the present time – the only gas transmission pipeline within the ACT so far as the author is aware is the lateral from the Moomba to Sydney Pipeline, operated by APA Group. Gas distribution throughout the ACT is undertaken by ActewAGL Distribution pursuant to the *Utilities Act 2000*. ActewAGL Distribution is a joint venture between Icon

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\(^{58}\) *Energy Pipelines Act (NT)* s 15.

\(^{59}\) Jabiru Town Plan 1981 (NT).
Water Limited (formerly ACTEW Corporation) – an entity owned by the ACT Government, AGL Energy Limited and Jemena Limited.

The way forward – striking the right balance

From this summary ‘tour’ around the various jurisdictions, the essence of the problem is that:

- there is insufficient and inconsistent recognition or “protection” of existing pipelines against the impact of future encroaching development; and
- there is insufficient planning for future pipeline corridors.

The case for greater integration of the regulatory regimes for land use and pipelines lies largely in the following key issues and practical problems:

a) managing urban expansion and encroachment;
b) lack of awareness amongst intended developers, the general public and local occupants of pipeline location and proximity;
c) late interaction between proponents of intended development and pipeline owners and operators about the intended development;
d) impact of the intended development on pipeline access, operation and maintenance;
e) the costs of increased safety measures required for the pipeline – whether or no mandated by AS 2885;
f) costs and delays in development re-design to accommodate late ‘discovery’ of the proximity of a pipeline;
g) a lack of uniformity or certainty for any party – reliance upon ad hoc engagement, with uncertain outcomes;
h) long term issues – planning for future pipeline corridors.

It can be seen that a number of planning schemes throughout Australia incorporate some form of buffer zone, or setback distances for high pressure pipelines, in which additional requirements are imposed with respect to proposed development. However, the wider notification zone concept is not largely utilised. Were a notification zone concept more widely incorporated, the question must be raised as to whether its purpose should be along the lines of Bulletin 87, namely to keep the pipeline operator apprised of relevant development, or whether the purpose should be to notify all affected inhabitants.

It has been seen that several individual planning schemes and codes incorporate, as an assessment standard, the requirement to undertake a qualitative risk assessment in accordance with AS2885. This practice also used more widely used by planning and development authorities throughout Australia. It has been observed that whilst there is obviously merit in such a requirement, the divergence of interests between developers and pipeliners may to some extent frustrate efficient collaboration in this regard. Whatever system is used, a degree of interaction and collaboration will...

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60 Utilities Act 2000 (ACT) s 20.
likely be required, as only the pipeline operator is likely to have sufficient knowledge of AS2885, and only the pipeline operator will be aware of the risk profile of its specific pipeline. There is a question though as to whether some form of independent body should be appointed to facilitate this collaborative process, potentially with some technical expertise and knowledge of AS2885.

There is also a question as to whether a developer should be required to obtain the pipeline operator’s written response as to the extent to which the proposed development will compromise the pipeline. If some form of independent body were appointed, it may be more suitable for pipeline operators of major pipelines to simply be designated as advice or referral agencies within each jurisdiction’s planning framework.

In effect, the independent body could be appointed to perform the risk assessment, with the ability to require information and submissions from the pipeline operator. The use of an independent body could also mitigate the potential delays that can be associated with direct collaboration between the developer and the pipeline operator, as traversed throughout this paper. Whilst the notion is not dissimilar to the development application process itself, as the local council ultimately has the task of assessing the development application, it has been noted that a local council will likely not have the requisite expertise, resources, or the ability to perform a risk assessment pursuant to AS2885.

Whilst there may be some merit in such a proposal, the system would naturally involve additional costs. Turning to the issue of costs generally, it has been identified that the pipeline operator bears the legal duty to ensure the safe operation of the pipeline. Therefore, the ultimate onus is on the operator to take whatever measures are required by AS2885 and otherwise, to keep the pipeline operating safely. There is a legitimate question as to which party should bear the costs when new development necessitates that additional protective measures be carried out on the pipeline.

Currently, this issue is largely unregulated. As noted in the Toowoomba Planning and Development Committee report, the relevant pipeline operator in that situation advised that where development was proposed within close proximity to the pipeline, an inspection would be carried out and any additional upgrade work would be carried out at the developer’s expense.61 It is open to debate as to whether the issue should be regulated, such as by making one party legally liable or otherwise decided in a quasi-judicial fashion, with the outcome depending on the peculiarities of the specific development and the works required on the pipeline.

It is prudent to reiterate though that whoever bears these costs, the potential liability of the pipeline operator to third parties will inexorably increase in proportion to the increased urbanisation and population within close proximity to the pipeline. As the risk of disaster cannot be entirely prevented, there is perhaps some force to the argument that the pipeline operator should not be required to solely bare the protective measures costs due to increasing development, where that development will inherently have the additional effect of increasing the pipeline operator’s potential legal liability to third parties, well into the future.

There may be some elegance and simplicity with a first in time concept, namely the notion, for example, that if the pipeline came first in time, any subsequent upgrade costs due to proximate

development or ‘encroachment’ should be borne, or contributed to, by the second in time developer. However, as this would constitute an additional development cost across the board, the concept may not strike the appropriate balance given the State’s interest in the maximisation of land use and economic growth. Further, any such system would need to be carefully scrutinised to ensure that developers are not subsidising pipeline upgrade and maintenance costs that aren’t solely related to the effects of that specific development.

Another difficulty is that any such system could create a disincentive to be the first in time developer to propose major work near a pipeline. As the upgrade costs would presumably only occur once in the case of multiple subsequent similar developments in the immediate area, later developers could simply wait it out in hopes to avoid the cost entirely. Another approach, such as a cost contribution system might therefore be more preferable.

In any case, returning to the wider community notification concept, there are once again legitimate competing arguments as to its utility. A land title based notification procedure may be undesirable due to its potential to have a deleterious effect upon land values, as essentially creating a ‘blot on title’. In turn, in some States, if additional protections are put in place for major pipelines to those which currently exist in planning instruments; this may theoretically expose local governments to compensation claims under the superseded planning scheme provisions of the SPA in Queensland, or like legislation elsewhere.

Indeed, the incorporation of a notification zone into planning instruments could also have a deleterious effect upon land value, as such matters would then be discoverable during conveyancing due diligence. The landholders of the directly burdened lots will likely have been paid compensation for the construction activities and for the grant of the easement, or otherwise will have acquired the land after construction, with notice of the easement as an encumbrance on title. Whilst the compensation is not provided in recognition of the safety threat, but rather on account of the constraint upon the use of the land, it is nevertheless noted that any directly adjacent lot owner would not have received any compensation at all, but yet might be equally at risk in the event of a full scale rupture.

It is however noted that the potential diminution of value may be limited, if there is any at all, given Australia’s excellent pipeline safety record. There may also be something to be said for the right of a landholder to have ready access to information about a nearby high pressure gas pipeline which, in the event of disaster, has the potential to cause a threat to life and property.

Conclusion

It is clear that as major long-term items of energy infrastructure, pipelines are not comprehensively or uniformly dealt with in the regulatory framework of land use and planning throughout Australia. Forward planning of pipeline corridors has been limited. The separation of the respective systems of pipeline regulation on the one hand and land use and planning regulation has meant that these two systems are presently not well integrated, and this can lead to difficulties, uncertainty, cost and delay for all interested parties. The prospect of long-term reliance on gas in particular as both an energy source (and an export commodity), and the ever increasing urban development and population growth, arguably make this is a significant public policy issue both for the present, but perhaps more importantly for future generations.
All in all, it can be seen that there is no simple solution to these complex issues and the competing interests at play, and it is recognised that providing a solution would likely be legislatively complex and require political "courage" at both the State and local government levels. Given the general "tiered" nature of the planning regulatory frameworks throughout Australia, the solution is likely to lie in utilising a combination of the elements involving:

a) the upper tier planning policy documents, and potentially supported by statutory guidelines, to require greater recognition of pipelines within planning schemes;

b) increased prominence of pipelines within planning scheme maps and increasingly sophisticated online mapping tools so that the presence, exact location, and any desirable buffer zone for certain development is readily ascertainable by landowners, prospective purchasers and developers at the earliest stages of considering new development;

c) a notification zone around pipelines as a trigger for notification to both pipeliners and developers, potentially supported by specific codes or planning layers within local government planning schemes to provide specific treatment for development around pipelines in the areas affected;

d) potentially expanding referral to or required consultation with pipeline operators in the development assessment phase of development applications (with or without intervention of a specialised independent body), including use of independent expert reports where necessary, so that impacts of the development on existing pipelines, and vice versa are understood in the design and feasibility stages of proposed development;

e) consideration of how the potential increased cost of the proposed development and/or pipeline operation should be addressed.

It is submitted that the best solution is unlikely to lie in either creating further land title-based registered encumbrances or notifications, or in mandating individual agreements be negotiated between pipeline operators and prospective developers.

It is noted that the Corridors Committee of APGA is making progress with the availability of pipeline location information for those who seek it out, and to assist local government planning officers – and this is considered a very valid and worthwhile endeavour to advance the position pending more structured legislative reform.

Beyond that, in order to take forward a notification zone concept, it must be recognised there are many issues to be considered:

- striking a balance between promoting pipeline safety and awareness, but not causing undue alarm;
- the meaning and impact of very long-standing property laws and expectations of the public of the freedom meant and implied by property ownership;
- increased pipeline operation costs, increased development costs – which parties should bear these;
- to the extent of imposition of limitations on land usage rights – what impact that might have on property values, and potential compensation rights under existing planning regimes;
the desirability of providing certainty and predictability of outcomes for all parties.

Whilst this paper does not attempt to spell out exactly where the balance might lie, it can be seen that there are some unanswered questions and opportunities for improvement to the current system. To find a workable uniform Australia-wide solution, targeted consultation and the consideration of submissions from industry proponents and community stakeholders would be essential in reaching a balance between the competing interests for the greater and long-term public benefit, which can then be reflected in the regulatory framework. Achieving Australia wide consistency will likely best be achieved through direct coordination between the States and Territories, rather than through Commonwealth-initiated reform.

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