ELECTRICITY

SECTOR SAFETY FORUM

A BYDA SUMMARY & RECOMMENDATION

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Author: Mell Greenall, BYDA CEO

BEFORE YOU DIG
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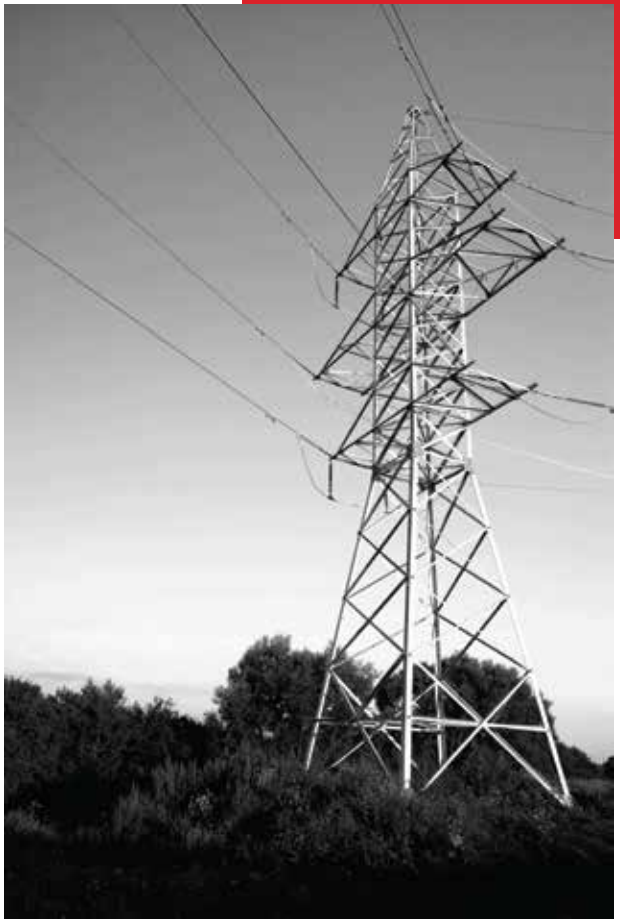
Zero Damage - Zero Harm



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BACKGROUND

Before You Dig Australia (BYDA) plays a pivotal role as a key stakeholder, influencer, and contributor to public safety. The BYDA service is a vital link between third parties engaged in ground breaking work and multiple utility owners, facilitating access to essential plans and critical safety information. Through this valuable service, BYDA significantly enhances safety measures within the community. BYDA also supports public safety through free education and awareness sessions and the delivery of key safety messages. This combined approach to promoting safe excavation practices by BYDA provides critical information for free to the industry and public about the presence of utility assets. It facilitates better planning, identification, and location of network assets, which drives improved safety outcomes.

The way the public consumes and engages with information is vastly different today from when BYDA was formed in the early 1980s. Yet, the primary way BYDA members provide information remains the same, through paper-based PDFs. The case for change is rapidly growing. Technology evolution sees social norms placing a higher value on digital data, which is sought out and produced by larger-scale civil and building contractors for their projects. As a result, industry users are putting increasing pressure on BYDA and members to evolve from the humble PDF plans as the primary information source and transition to a more agile digital environment that allows for greater consumption of essential safety information.

As an industry, we are starting to see the emergence of digital apps providing augmented reality viewing of asset data on smartphones or tablets. The concern here is the validity of the data

sources used. More importantly, these apps do not trigger appropriate notifications. No audit trail or critical information is shared, and asset owners will not be notified when work occurs near their assets. Nevertheless, there is a growing concern that industry and public users might transition to alternative apps driven by increasing frustration with utilities' reluctance to embrace engagement and innovation regarding the PDF format. This situation presents a critical juncture, and the race for relevance has now begun.

BYDA organised the Electricity Sector Safety Forum over three days (May 23rd to May 25th, 2023). The primary objective of this forum is to comprehensively assess and recognise opportunities for enhancing the following mission statements:

- How to reduce underground asset strikes
- Establishing Industry minimum standards – Asset plan information
- Exploring our planning tools to reduce underground and overhead electrical infrastructure strikes

The Sector Safety Forum enables organisations to learn through deference to expertise, engaging the people who perform the work and who are best informed to make decisions and improve work systems. BYDA aspires to consolidate the collective insights from the planned forums about the electricity, gas, water, and telecommunications sectors to create a road map for change and development. This undertaking aims to foster a more cohesive and collaborative working environment, with active participation from our members representing each industry. The overarching goal is to proactively shift our focus towards addressing significant issues such as digital plan exchange and enhancing information accessibility for all users. This will ensure that the industry is keeping pace with users' changing needs and that BYDA can support this collective change to continue to provide support for safety outcomes, not just today but well into the future.

WHAT'S THE RISK?

The risk profile can be looked at from several lenses. There is the risk that we do not collectively fully understand the scale and impact of damage on the underground networks nationally.

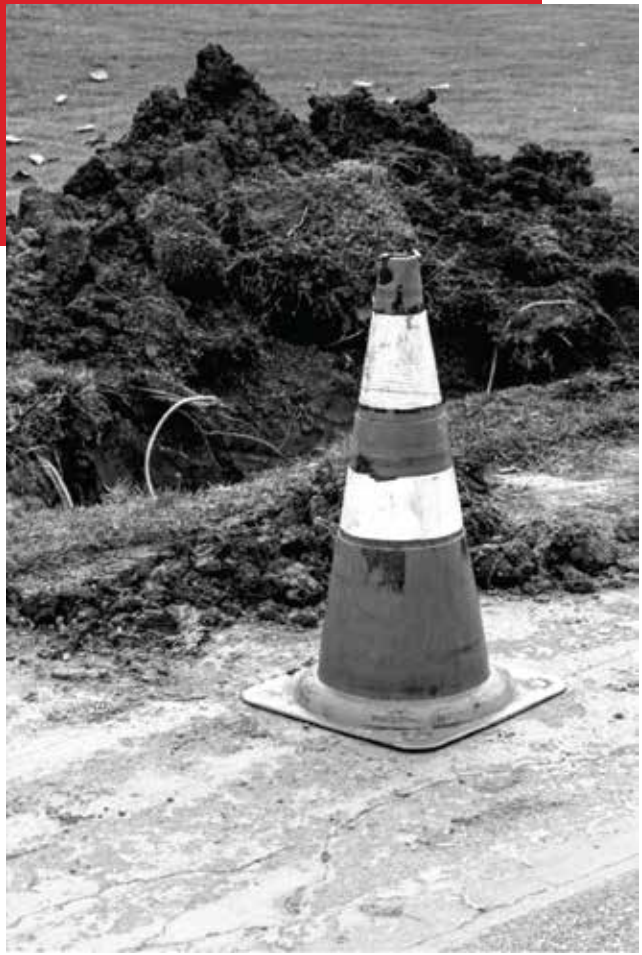
There is also the reputational risk of the service if it fails to evolve digitally to meet user needs and expectations due to the risk of digital disruption.

Risk of not knowing the full scale and impact of network damages

Internationally Australia is lagging in damage reporting. In the US, asset strikes are reported to the Common Ground Alliance – the BYDA equivalent organisation - enabling Damage Information Reporting, commonly known as the DIRT report to be produced and shared.

Unfortunately, there is no common motivator for Australian utilities to share damage data with BYDA. As such, the true impact of asset strikes nationally is grey at best. While BYDA has secured damage data from a small number of utilities, the data set may be considered indicative. It reveals that there are at least 200 asset strikes a month (approximately 2,400 strikes per year) occurring across the country. This implies daily disruptions to the supply of essential services in communities, posing a tangible risk to worker safety and potentially leading to costly repairs.

Considering the services BYDA provides through its partnerships with ESAs, BYDA can serve both the public and the excavation industry to create awareness, plan safe work, and support entities and their duty holders to discharge their safety and due diligence responsibilities.



BYDA's risk mitigation and safety focus can readily extend beyond underground utilities and encompass a full work site consisting of cultural, overhead, contamination and significant areas impacted by excavation activities.

The below table highlights typical safety risks managed through the partnerships and services. Those highlighted with an asterisk (*) are potential risks that could be managed if BYDA expands its services to maintain the Look Up And Live (LUAL) app.

Risk Description	Risk Hierarchy
Protection of Public Safety	Enterprise Risk
Contact with underground electrical assets	Operational Risk
Contact with overhead electrical assets*	Operational Risk
Defective network assets*	Operational Risk

Risks supported by BYDA services

However, BYDA is concerned as indicative data reveals that 70% of damages occur when a referral request has not been completed. This indicates the need for BYDA to enhance the usability, accessibility, and comprehensiveness of the information provided. It also highlights the importance of addressing the reasons behind work commencing without undertaking BYDA queries. BYDA feedback indicates a loss of trust in the information provided and user frustration with the accuracy and delivery format of the information. It also contributes to a laissez-faire approach to excavation within this work sector.

Reputation Risk of failing to evolve to the digitisation

A recent survey among 200 power users of the BYDA referral service produced compelling feedback, indicating a strong preference for transitioning towards digital-based information. However, the survey also highlighted significant concerns regarding the accuracy and consistency of plans provided by asset owners. The emergence of competitor apps promoting digital viewing, including augmented reality for asset locations, poses a growing risk of digital disruption in the Australian market.

This situation raises potential challenges for BYDA and its membership, as it may lead to a perceived loss in the value and relevance of the service. Additionally, users may face uncertainty regarding the origin and reliability of the digital data used in such augmentations. Proactive measures are required to address these challenges and uphold BYDA's position as a leading service provider in the industry.

If industry stakeholders and users perceive issues with plan accuracies and encounter inefficiencies while accessing information in PDF format, then the system's long-term sustainability becomes a matter of concern. This leaves asset owners uninformed about third-party activities around their network, leading to a lack of transparency. Additionally, a general lack of engagement and support from members hinders BYDA's ability to evolve, exposing both parties to significant risks arising from disruptive digital competitors and the potential fragmentation of service by open-source data providers.

The consequences of this scenario for the membership, including ESA's, would include a loss of visibility concerning activities near assets, diminished capacity to communicate essential safety requirements (such as permits), and ultimately, increased asset strikes, damages, and injuries. It is crucial for BYDA and its stakeholders to proactively address these challenges to safeguard the integrity and functionality of the system while upholding safety and operational efficiency.

BYDA USER SURVEY RESPONSES

They (BYDA Members) all need to get out of the mindset that construction activities are the primary driver to Use BYDA - this is the last step in the process in most instances.

A design must first be completed in the vast majority of cases before construction crews get out on site. To this extent, they must urgently focus on data sharing and work out ways past any "security concerns" (that may or may not be valid) to enable good designs to be undertaken in the first instance, thereby mitigating or avoiding as many impacts as possible.

The aim needs to be ability from the plans to determine whether a clash exists or not and, from there, do more extensive investigations, i.e. potholing or contacting the utility for permits

BARRIERS TO CHANGE IN THE ELECTRICITY SECTOR

- Each stakeholder, being both BYDA and ESAs, has shared responsibilities supporting safe excavation near underground assets. Improved clarity about each other's roles is required to understand better how to work together to achieve the objectives of managing public safety risks. A partnering arrangement is critical to continued success.
- Variable tolerability and exposures across the network are evident, leading to varying perspectives among different legal councils. This diversity impacts the treatment and approach towards risk management and learning.
- To gain a picture of performance and overall risk requires consistent and standardised metrics across entities, which currently do not exist. Challenges include the varied data extracts, quality, and granularity.

- The end user base for BYDA services is very broad, creating unique challenges, including:
    - Multiple user personas and customer requirements (how they consume data, improving the overall service and value proposition of BYDA).
    - No single voice exists for the end user groups, meaning BYDA is placed in the position of advocating for end-user needs.
    - Asset-owning member organisations may lack an understanding of the end-user needs. Therefore, there is a need to work more closely with BYDA to ensure users perceive the service as a trusted tool.
    - End users don't appreciate the risks in all cases, and training is not mandatory for locators unless they are certified.
- To enhance the value proposition of the BYDA service for end users, entities or data owners must strive for industry-wide consistency. This effort raises important considerations regarding what aspects they should standardise across the board versus those that may remain entity-specific.
- The quality, currency, and format of data and information are crucial factors driving end users' understanding and management of risk. A clear pathway for change has been established and agreed upon through the ongoing BYDA/member partnering arrangement to address these aspects.
- The varying complexity of GIS platforms, digital data sharing policies, and the differing levels of information and electronic data availability pose potential barriers to change. For example, hard-copy records that have not been captured into transferable electronic formats can hinder progress. It is essential for ESAs to understand the value proposition that supports the necessary changes to overcome these challenges. Also, the diversity in standards and symbology used by each ESA adds to the situation's complexity.

BYDA USER SURVEY RESPONSES

A single Map with layers that can be turned on and off or translated onto the construction drawings is much more 21st century and will significantly improve the information provided and make it easier to understand. It's like we are still stuck using literal "cut and paste" hard copy methods.

Plans must be made available in more formats to allow comparison to the design drawings. PDFs - especially the image-only ones, are useless in this regard and are time-consuming and cumbersome to work with.

Provide Plans in a digital format, e.g., GIS file, DWG file etc. Major projects have a significant amount of as-built information that could also be on BYDA or accessible, which would be of benefit to everyone in the future.

OPPORTUNITIES FOR CHANGE IN THE ELECTRICITY SECTOR

There is no doubt there is a compelling argument for embracing change. Although the industry faces real and perceived barriers, it remains crucial to determine a meaningful pathway towards digitisation within an appropriate timeframe. This is essential to position BYDA as a relevant and trusted source of information for users.

During the electricity safety forum, which spanned over three days, four key steps for change were identified, which could be worked on collaboratively among electricity asset owners. These steps are not limited to the electricity sector and can extend to other asset types. The four steps include:

- Change to Digitisation
- Referral Reset
- Collaboration for Industry Best Practices
- Damage Data Reporting

STEP ONE

Change to Digitisation

Undoubtedly, moving to digital poses the most difficult set of challenges; however, it is the most critical regarding the long-term relevance of BYDA and asset owner service relevance and protection. So how do we create a pathway that allows a series of step changes to build capability and confidence in how data is exchanged and utilised?

The electricity safety forum settled on the agreement that the first logical step is to have the ability to issue the current PDF information as a digital file, be it a CAD file or a similarly easily consumed file type. This step allows for the fact that increased accuracy will be a long-term goal for the sector due to the age of assets underground and the lack of detailed plans for some areas. It also provides some comfort around not exposing asset owners to increased risk as the information is the same detail already available to the public via the traditional BYDA PDF service.

The challenge is the IT capability. How difficult will it be for asset owners to adapt their internal referral management services to allow users to request a digital file? How can BYDA support this process, and what is a realistic time frame?

The second part of the digitisation discussion revolves around supporting electricity asset owners to understand BYDA users' changing needs better. It was agreed that the "one size fits all" business model is a thing of the past. This means ensuring users have a positive experience with the service and, as a result, continue to value it. BYDA can support members with clearly defined user profile modelling and relevant information needs. This allows the service to recognise and adapt information sent to 'Betty the homeowner' versus 'Bob the builder' or 'Barry the planner'.

STEP TWO

Referral Reset

Supporting a step change to digital was the need to reduce the complexity of the information issued by asset owners via the BYDA service. It has been identified that in a metro area, users of the service may receive up to 12 emails containing multiple attachments with a combined number of 67 pages. Upon review, much of the information is a variation of safety messaging duplicated across the various asset owners who own infrastructure in the referral area. This presents an opportunity for BYDA to work with asset owners to "reset" the referral templates and deliver greater consistency and clarity. This, in turn, will provide the end user with a more concise and informative experience. The process could include BYDA owning and issuing the key messages that apply across all asset types, such as the 5Ps of Safe Excavation and Duty of Care statements, to remove these from the individual utility responses.

The diversity of users, including those with English as a second language, was highlighted as a barrier to using the service. This is an opportunity for BYDA to collaborate with its members in identifying key messages that should be translated across different language groups. This aims to facilitate the use of the BYDA service and encourage safe practices when working near underground assets.

As part of this initiative, BYDA may also consider creating short videos to reinforce key messaging. This will empower users and ensure that literacy is not a barrier to safe digging and excavation practices.

STEP THREE

Collaborating for Industry Best Practices

Recognising the challenge posed by state-based regulations, which are often difficult to influence or lobby for change, it becomes crucial to explore viable avenues for embracing national safety "tools." In this context, a significant opportunity lies in identifying consistent best practices that can allow the adoption of such tools.

A significant scenario emerged during the forum, where vast inconsistencies across the country were observed concerning exclusion zones while working near underground infrastructure. The electricity safety forum pointed out the effectiveness of the Victorian "No Go Zones" and their associated permitting triggers for both above and underground assets as a prime example of an initiative that has the potential to be scaled nationally. Adopting best practices within the existing regulatory frameworks can significantly enhance safety measures.

https://www.esv.vic.gov.au/industry-guidance/electrical/electrical-network-infrastructure/working-around-powerlines

The Energy QLD initiative, Look Up And Live, is a significant example of a national digital safety tool adopted by above-ground asset owners across various organisations as a best practice, regardless of legislative mandates. Attendees at the Electricity Safety Forum discussed how the synergies between Look Up And Live and BYDA can be maximised to ensure holistic safety support for above and underground networks. This exploration of collaboration between the two entities is underway to enhance safety measures across the utility landscape.

STEP FOUR

Damage Data Reporting

Over the past decade, Dial Before You Dig (BYDA's earlier structure) has made multiple attempts to create an Australian asset damage data report. However, these efforts did not gain traction within the industry. Although there is a regulation requiring reporting electricity strikes to regulators in cases where significant risks to people and the community are involved, there are varying requirements around the regulator reporting. Therefore, the actual scale of risk remains unknown.

Based on the limited data pool accessible across various asset types, BYDA believes there may be up to 200 strikes per month, impacting service supply and posing risks to worker and community safety. Recognising the importance of a comprehensive approach to safety, participants at the electricity safety forum collectively acknowledged the benefits of sharing damage data through BYDA and across different asset types. This collaborative effort aims to facilitate the early identification of trends, at-risk demographics, and hazardous behaviours.

As a result, BYDA is committed to developing an updated reporting template that incorporates both regulatory-reported incidents and unreported strikes. This will enable BYDA to produce annual trend reports, providing beneficial insights and shared knowledge across all asset types and showcasing industry trends and areas of concern. With the active support of utility asset owners, BYDA intends to work on developing targeted solutions to address the identified issues effectively.

SUMMARY AND NEXT STEPS

BYDA is committed to working with its members across all asset types to develop and deliver a pathway for a seamless digitisation process while prioritising safety as the foremost consideration. This dedication ensures that BYDA users continue perceiving the information provided as an essential safety tool tailored to their needs.

Traditionally, the industry has operated in isolation, addressing changes from individual organisational perspectives. However, a paradigm shift can occur if asset owners perceive themselves as interconnected participants in an underground network industry. By viewing themselves collectively, the industry can create meaningful pathways to embrace change and digitisation, drawing upon the collective knowledge and experience of the entire sector.

Under its current three-year strategic plan, BYDA significantly emphasises investing in digital innovation and resetting the referral process. Priority projects include the development of a new user portal for collated responses and a digital library featuring key safety messaging in written and video formats. Additionally, this year will witness BYDA's effort to reset the referral template, eliminating duplicated messaging in asset responses and ensuring critical asset owner information is presented in a less complex format.

However, BYDA acknowledges that transformation requires active involvement and commitment from its member base. The challenge of digitisation necessitates a collective effort. In this regard, the electricity safety forum has identified a practical step forward. BYDA is keen to test this change by exploring the possibility of sending the current PDF as a CAD file or a similar digital exchange format for those who request it. As part of this process, BYDA seeks to support its members in transitioning to the new IT format and welcomes input and collaboration from all stakeholders.

The next sector safety forum will focus on gas and petroleum membership and is set to take place from September 19th to September 21st at the Pullman in Melbourne, hosted by BYDA. Registrations are now open, and those interested in joining this pivotal conversation can contact BYDA team member Jason Stanley at Jason.Stanley@byda.com.au or via mobile: 0417 100 255.

ACKNOWLEDGEMENT

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