BYDA Digital Utility Portal Proof of Concept Findings

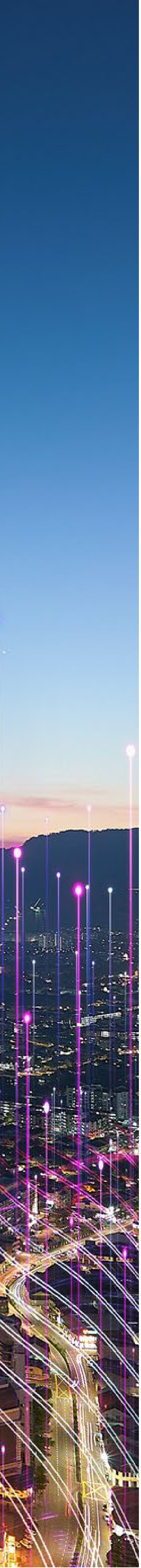
Before You Dig Australia, October 2025

Contents

BEFORE YOU DIG byda.com.au

Look up and Live

Zero damage - Zero harm - Zero disruption



1. Executive summary

Before You Dig Australia (BYDA) published a national study in 2024 highlighting how underground utility strikes cost Australia over $4.6 billion each year in delays, safety risks and wasted labour. The study concluded that a national digital utility data platform could reduce utility strikes by approximately 17%, delivering annual savings of over $782 million. Alongside this, BYDA identified that a digital platform has the potential to address major inefficiencies in current PDF-based processes, improving productivity across the infrastructure sector and unlocking further economic value.

To test this potential, BYDA initiated a Proof-of-Concept (PoC) for a BYDA Digital Utility Portal (BDUP): a secure, GIS-enabled map of utility assets. Development began in collaboration with Reveal and industry experts in December 2024, followed by early testing from April 2025.

This report outlines the outcomes of the PoC, which attracted participation from more than 1,000 industry stakeholders. The PoC demonstrated both safety and productivity benefits. Productivity gains alone were estimated at $330 million annually, driven by faster access to asset location information, fewer manual processes, and earlier design starts. Taken together, the findings confirm BDUP's value as a digital solution that reduces risk while significantly improving efficiency across the infrastructure sector. The next phase will focus on securing asset owner location information, launching a multi-state pilot in 2026, and preparing for national rollout.

Highlights

- ❖ **Engagement**: 1,000+ involved; 95 PoC testers, 65 active testers, 280 requests lodged.
- ❖ **Technical Feasibility**: Platform performance proven; early feedback has already led to 65 improvements made.
- ❖ **Compliance**: Confirmation that sharing digital asset location information complies with the Security of Critical Infrastructure (SOCI) Act.
- ❖ **Cyber safety:** Numerous security protocols in place, including ISO 27001 compliance, 2-Factor authentication, audit logs and more.
- ❖ **Industry Buy-In**: Major asset owners including Telstra, Ausgrid, Jemena, Endeavour Energy and NBN Co onboard or committed.
- ❖ **Economic Impact**: Average time saving of 9.6 hours per BYDA planning request (~$600). Scaled nationally, 5.2 million hours a year (~2,750 FTEs) saved, worth around $330 million.
- ❖ **Next Steps**: A multi-state pilot planned for 2026. Early indications suggest WA or Greater Sydney as likely candidates, as well as major projects such as Brisbane 2032 in Queensland.

2. Context: reducing utility strikes through digital innovation

In 2024, BYDA published a national study on the impact of utility strikes in Australia[1], drawing on 16 case studies across gas, energy, water and telecommunications. The study found considerable direct and indirect impacts of utility strikes. Annually, conservative estimates of direct repair costs of reported utility strikes were estimated to exceed $138 million. Indirect and social costs reached $4.6 billion, 32.4 times higher than the direct costs.

The national study proposed three recommendations to reduce the frequency and severity of utility strike incidences:

1. Implement nationally consistent legislation for underground asset management;
2. Establish minimum data standards and a digital asset register for utility locations and;
3. Uplift skills and capabilities in utility risk management.

Taken together, the 2024 national study estimated that these recommendations could reduce utility strikes by 30%, saving $1.38 billion annually. Crucially, it identified that current PDF-based systems for identifying asset location information were inefficient and contributed to the significant costs from utility strikes. Productivity losses from the current PDF-based system are also significant, requiring manual re-digitisation, collation, and rework. By establishing digital access, both safety and productivity outcomes can be achieved: utility strikes can be reduced, and inefficient engineering processes can be eliminated.

Developing the BYDA Digital Utility Portal (BDUP) Proof of Concept (PoC) was BYDA's response: digitising asset location information to both reduce risk and deliver major productivity improvements across the infrastructure pipeline. The BDUP PoC marked the first step in building this system. The PoC demonstrated the technical feasibility and value of a digital approach, with strong engagement from industry, clear productivity gains, and broad support for further rollout. This report presents the findings of the PoC, including feedback from users and asset owners, and sets out the next steps toward a multi-state pilot and eventual national rollout.

[1] https://portal.byda.com.au/byda-initiatives/economic-research/

2.1 The BYDA Digital Utility Portal Proof of Concept

In response to the 2024 national study recommendations, BYDA developed the BDUP PoC. The purpose was to demonstrate the technical feasibility and public and industry benefits of a digital asset location system for planning and design.

The BDUP PoC is the first step towards a more innovative system for presenting asset location information. The PoC was a secure, GIS-enabled digital map of utility assets that displayed the same asset location information available through the standard BYDA process, but in an overlayed, interactive map with downloadable formats. To build confidence, BYDA scaled from a 10 ha Woolloomooloo prototype to a ~100,000 ha Greater Sydney PoC, ensuring a larger area to validate use cases and rigorously test the system's technical capability. While future developments of the BDUP may introduce more advanced features and wider use cases, the BDUP PoC deliberately focused on a simple, flat-layer digital presentation for the purpose of planning and design as a foundation. BYDA's approach was, and continues to be, to move steadily, ensuring industry needs and preferences guide development.

PoC Development Timeline

- December 2024: Prototype developed for Woolloomooloo, Sydney (10ha).
- January–April 25: Expert interviews with stakeholders across Australian industry informed the development of the full Greater Sydney BDUP PoC (~100ha).
- March 2025: Pre-launch blind survey of asset owners and BDUP users (engineering, construction and more) captured needs and expectations before anyone had seen the BDUP PoC.
- April 2025: Nationwide BDUP PoC launch webinar held with asset owners; 100 PoC testers were recruited across asset owners and BDUP users.
- April–July 2025: Active BDUP PoC testing period, with feedback gathered through interviews and surveys. System analytics used to assess technical feasibility.
- August-September 2025: PoC closed. Analysis of feedback culminating in this PoC findings report.

PoC demonstration

Built on Reveal's[2] Undermaps technology, the BDUP PoC was a GIS-enabled digital map of overlayed utility assets, with several features allowing users to explore asset information and download the asset location information as GeoJSON. This short video demonstrates both the functionality in the BDUP PoC and BDUP's potential for future development: 🎬 BYDA Digital Utility Portal Showcase. The following screenshot shows the BDUP as it was during the final stages of the PoC.

[2] https://www.reveal.nz/

Screenshot of the BYDA Digital Utility Portal PoC

2.2 What was tested

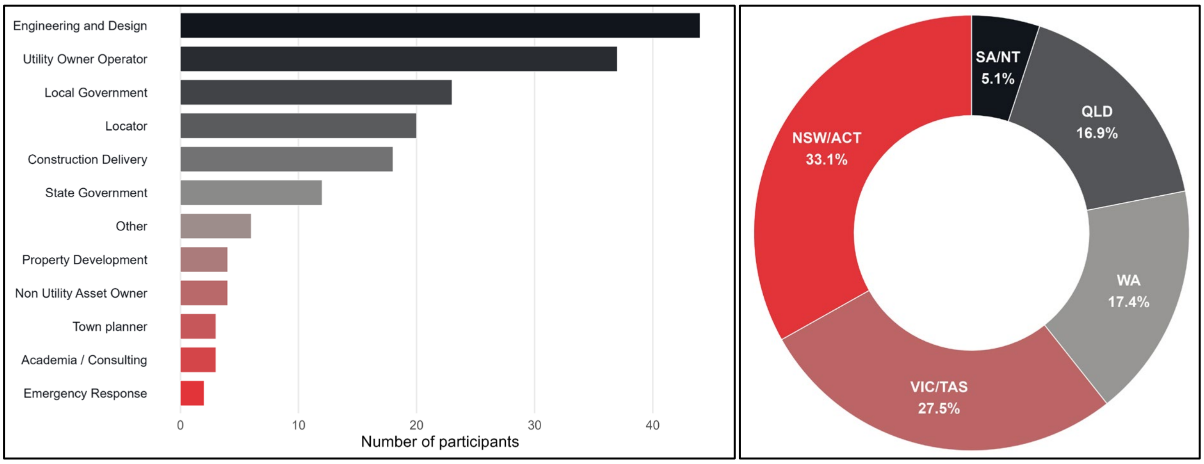
The BDUP PoC was tested against two key components:

1. **Practical feasibility:** assessing technical performance, cybersecurity, and operational manageability.
2. **Value assessment:** evaluating industry interest and economic and commercial viability, in line with BYDA's not-for-profit mission.

2.3 Engagement in the PoC

Over 1,000 stakeholders engaged with the PoC through surveys, testing, webinars, interviews, conferences, and media coverage. Engagement included engineers, surveyors, locators, asset owners, and councils from every state and territory. Asset owners played a central role. Telstra, Ausgrid, Jemena, Endeavour Energy, and NBN Co shared or committed to share their data, showing strong momentum toward future uptake.

PoC and Survey Engagement by Industry (left) and Territory (right)



Evidence base for findings

The main feedback gathered and included in this report was drawn from four main sources:

1. **Blind survey** of 90 asset owners and users, before seeing the BDUP PoC.
2. **PoC surveys** of 4 asset owner and 25 user testers actively onboarded to the BDUP PoC.
3. **Interviews** with 25 companies, including early expert input and follow-up from PoC testers.
4. **Webinar and event feedback** gathered through Q&A and direct discussions at launch and industry events.

3. Practical feasibility: usable technology and security risk management

Once the full Greater Sydney BDUP PoC had been developed using insights from the initial expert interviews and the blind survey run in April 2025, BYDA onboarded testers to the BDUP PoC. This process allowed BYDA to gather views on the value of the system whilst also examining the BDUP PoC's practical feasibility: specifically whether the technology was usable, stable, and secure.

Of those invited to test the PoC over April to July 2025, the BDUP PoC saw[3]:

65	280	42	7.8 mins	85 hrs
Logged in users	Total requests	Total exports	Average session length	Total session time

3.1 Technical Feasibility

BDUP demonstrated strong technical performance during the PoC, tested through system analytics and user and asset owner feedback. It successfully delivered a secure, reliable, and centralised access point of asset location information.

- **Performance:** 100% uptime during business hours, no unplanned outages or session errors, median page load time was 8 seconds, export formats (PDF, GeoJSON, CAD-ready) were tested and endorsed.
- **Support:** 7 support requests raised, all resolved within 1 day.
- **Data Upload:** Champions of change onboarded asset location information with varied ease, depending on readiness. Reveal was able to provide support for digitisation and alignment.

[3] Note, despite the PoC being limited to Greater Sydney and a short timeframe, several testers were able to apply BDUP on live projects, providing valuable real-world insights. BYDA continues to gather more real-world insight through ongoing case studies.

Feedback based feature updates

The BDUP has been developed continually based on user feedback. Key updates were delivered quickly, with others added to the BYDA development backlog for pilot or future releases.

In total, **65 improvements and changes were made based on feedback over the course of the PoC,** significantly enhancing the platform's usability and laying the groundwork for scaling into a multi-state pilot, followed by a national rollout.

Key improvements included full alignment with industry standards (AS5488 colours), better onboarding and guidance for new users, more intuitive navigation and map tools, enhanced data transparency, additional export options (PDF), and improved asset owner information. Analytics and monitoring tools were also introduced, alongside clearer communication and support features. These updates have ensured that the platform was more user-friendly, reliable, and ready for commercial pilot testing. *A full list of updates has been included in the annex of this report.*

3.2 Security and Compliance

The PoC aimed to prove two things for compliance and security: first, that asset location information could be managed securely in the BDUP and second, that asset owners could share asset location information to the BDUP in a way that was compliant with safety and regulatory requirements.

Cyber security

A central requirement of the PoC was to demonstrate that asset location information could be shared and stored securely within the BDUP. BYDA implemented a suite of security protocols, with Reveal finalising additional certifications. These include:

- All asset location information is hosted exclusively within Australian-based Azure infrastructure.
- Asset location information at rest is encrypted using 256-bit AES encryption.
- ISO/IEC 27001 compliant, certification expected to be finalised prior to pilot.
- Documented Cybersecurity Incident Response Plan.
- Strict access controls, with SSO and Multi-Factor Authentication. All users are validated by domain, ABN and relevant professional body registration (e.g. National Engineering Register) and subscribe to the platform.
- Use controls including request area size restrictions (20h/a) and AS5488 colours and quality levels.

Full details on cyber security are outlined in the BDUP Cyber Security Fact Sheet. These measures ensured the BDUP PoC operated with security by design, giving asset owners confidence that data was being managed in line with best-practice cyber standards. All protocols will be carried forward into the multi-state pilot and potential national roll-out.

Compliance

Equally important was demonstrating that asset owners could share their data into the BDUP while remaining compliant with safety and regulatory requirements. A key milestone was securing endorsement from the Department of Home Affairs' Cyber and Infrastructure Security Centre (CISC), which confirmed that the act of providing asset location information for the purpose of being used in the BDUP PoC (and future BDUP developments) met requirements under the *Security of Critical Infrastructure (SOCI) Act 2018*. Following direct engagement with the Department, this clarification was explicitly reflected in updated CISC guidance on protected information[4]:

> *"A construction company needs to know the location of a critical telecommunications asset (underground cable) before commencing digging works. The location is included in the asset registration and can be shared to prevent the company striking it and disrupting services (including design and engineering stages of a construction project)."*

Furthermore, the BDUP is a fit-for-purpose platform to host asset location information for the purpose of planning and design safety and efficiency. The PoC showed that the asset location information required to meet the Open Geospatial Consortium (OGC) Model for Underground Data Definition and Integration (MUDDI) standard used in the BDUP requires less information than many asset owners provide for the standard BYDA referral system: the BDUP can help asset owners more easily meet requirements under SOCI.

4. Value assessment: industry interest and benefits

Beyond the practical assessment, the BDUP PoC sought to test the level of interest in, and the benefits of, a digital view of asset location information. This was considered from three perspectives:

1. **Users** of BDUP's asset location information view and downloads in planning and design,
2. **Asset owners** contributing their asset location information to the platform, and
3. **Government and wider public**, who stand to benefit from improved safety, efficiency and productivity across the infrastructure sector.

[4] https://www.cisc.gov.au/resources-subsite/Documents/cisc-factsheet-protected-information.pdf

4.1 User Uptake

The PoC demonstrated strong and diverse user interest in the BDUP. BDUP users span construction planning and design, education, town planning, emergency response, asset owners themselves and more. The PoC tested whether the BDUP met users' needs and whether there was sufficient appetite to support a future, fully-fledged platform.

User interest was assessed through two surveys (blind and PoC, see pg4), interviews, and system analytics for onboarded PoC testers. Of the 95 invited testers, 65 logged in and submitted 280 requests. Both blind and user surveys suggested strong expected usage:

- 91% of blind survey respondents and 86% of PoC testers anticipated using the system monthly or more.
- Only 9–14% of survey respondents anticipated rare or infrequent use.
- Median expected usage ranged from 4.5 to 10 requests per month, with outliers suggesting some users would rely on the platform even more heavily.

Interest has continued beyond the PoC period. System analytics showed several users attempted to access the system after the closure notice, while others requested early access for live projects. Some offered to present BDUP internally and support case studies, underlining the momentum for a permanent platform.

BYDA has received the following views of from users of the benefit of using the BDUP:

"I can see [the BDUP] has tremendous potential."
Utility Locator

"Anything that provides those of us that work on the networks constantly, an easier way to see what we are dealing with would be a move in the right direction… if a digital format was available this would help to protect [asset owners] infrastructure costing them less in damages etc."
Project Manager, Construction Delivery

"We can see a real value in this concept and believe it could greatly reduce asset strikes."
Senior Quality Engineer, Construction Delivery

"You've built a wonderful tool and I look forward to using it!"
Engineering University Professor

4.2 Commercial interest

Commercial viability is essential if BDUP is to move from PoC to a sustainable service. An encouraging signal of demand is that more than three-quarters of PoC testers were either willing or potentially willing to pay for the platform.

Those who responded “maybe” or “no” raised a range of concerns that will need to be addressed in the next phase of BDUP development:

- Asset location information data remaining at the same accuracy it is in the standard BYDA referral system (AS5488 Quality Level D).
- Belief that utility asset information should remain free to the public, with costs borne by asset owners.
- Satisfaction with the existing BYDA system for their needs.
- Interest limited to educational or academic access.
- Lack of direct commercial responsibility in their business.

Some of these concerns sit outside the PoC’s scope but are important signals for future development and will be looked to be addressed during pilot. Asset location information data quality will be a major focus for the BDUP’s longer-term pathway, through feedback loops with asset owners and advanced tools such as AI-powered risk assessment. BYDA also recognises that utility information should remain publicly accessible, which is why the existing PDF-based BYDA service will always be free. Any BDUP pricing will be designed within BYDA’s not-for-profit, safety-first ethos and in recognition of asset owners’ role in providing data.

Overall, the PoC highlighted both strong appetite and clear conditions for success. Pilot testing under real project conditions, combined with further market research, will be critical to confirm demand, refine pricing, and validate the commercial model.

4.3 Asset Owner Support and Interest

BDUP will only be effective with the support of asset owners, who must be confident in sharing their asset location information, just as they currently do through the traditional BYDA referral service. Alongside listening to users, BYDA engaged closely with asset owners during the PoC to understand their needs and expectations.

Encouragingly, several major asset owners provided data for the PoC and signalled their commitment to ongoing involvement. These included Telstra, NBN Co, Jemena Gas, Ausgrid, and Endeavour Energy. Local councils also reached out proactively to offer support and share asset location information. However, not all asset owners are on board yet and one asset owner opted out of the Greater Sydney PoC after raising concerns about their data being included. BYDA acted immediately by withdrawing the data.

While some concerns remain, the PoC has demonstrated growing momentum among asset owners, with more signalling interest in contributing data for future pilots. The pilot stage is important for this. BYDA will continue to work closely with owners to build trust and provide confidence that BDUP can deliver value safely, securely, and in line with both regulatory and partnership expectations.

4.4 Productivity and Economic Benefits

A key part of the PoC was to assess the general benefits of the BDUP to the public and the economy. At its core, the purpose of BDUP is safety by design: reducing the likelihood of costly and dangerous utility strikes by providing better, faster, and more usable data at the planning stage. While the PoC did not directly measure strike reductions, BYDA expects this to be one of the most important long-term benefits. The 2024 national study suggested that digital data access could significantly cut strike incidents, and BYDA will continue to explore this link through the pilot, rollout, and further research.

Alongside safety, the PoC demonstrated that BDUP also delivers substantial workflow efficiencies, productivity gains, and broader economic benefits.

At a glance: BDUP Benefits

- **Safety by Design:** As highlighted in BYDA's 2024 national study, digitisation is expected to reduce utility strikes and excavation repeats, reducing overall risk.
- **Workflow Efficiencies:** PoC testers reported time savings from faster data requests and collation, fewer manual tasks, earlier design starts, and better internal coordination.
- **Per-Request Savings:** Surveys indicated an average of 9.6 hours of engineering time saved per planning and design request (worth ~$607 in engineering wages saved per request).
- **National Scale:** At 100% adoption for planning and design requests, BDUP could save 5.2 million engineering hours annually (~2, 750 FTEs), valued at $330m. At 50% adoption, the figure is ~2.6 million hours, worth ~$165m.

Workflow benefits

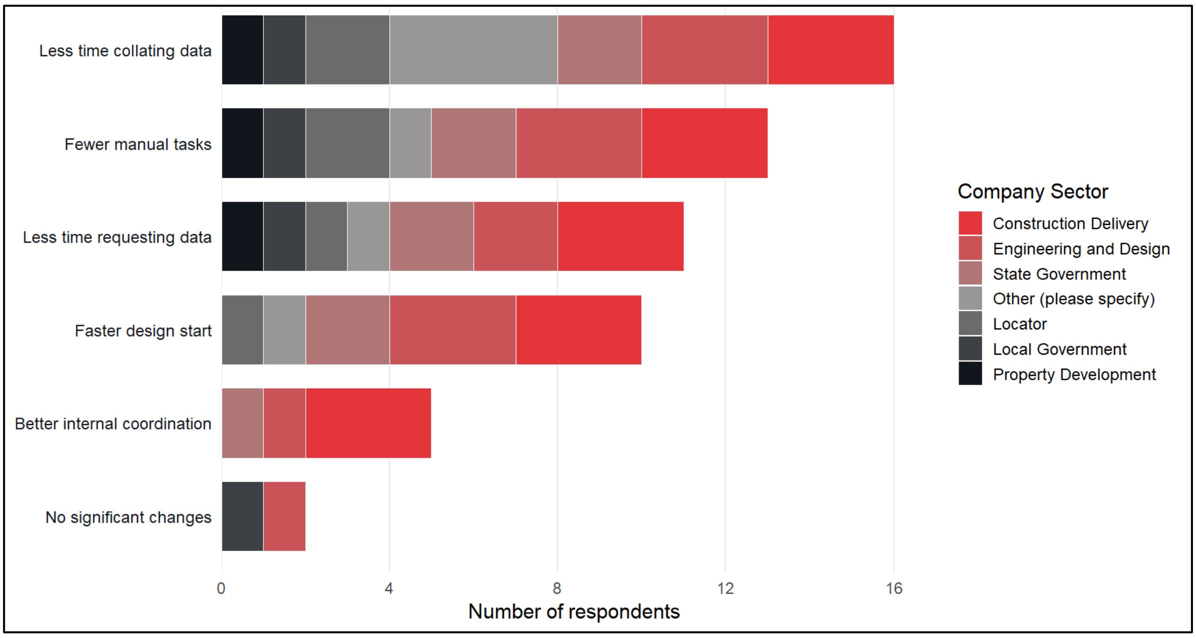
PoC testers highlighted that the primary benefit of the BDUP PoC in its current form came from time savings and efficiency gains. BDUP eliminates the need for manual re-digitisation and collation of plans, removing a major source of inefficiency in the current system. PoC testers reported:

- Less time collating and converting asset location information.
- Fewer manual tasks and reduced rework.

- Faster project starts and improved internal coordination.

Only a very small number of respondents indicated no significant changes, suggesting the platform broadly delivered positive value across sectors.

PoC testers identified planning and design workflow benefits of the BDUP, by sector



Per-request Productivity benefits

Across planning and design activities, PoC testers reported an average of **9.6 work hours saved per request** (equivalent to 1.3 working days), valued at around $607 in engineering wages. This ranged by sector, with some, like construction delivery reporting even higher time savings: 18.3 hours per request (2.4 working days).

Looking at the breakdown of time saved per request, PoC testers reported:

- **7.1 hours** from collating or converting data.
- **2.1 hours** from reduced rework or clash avoidance.
- **2.0 hours** from starting design earlier.
- **1.2 hours** from requesting data.

Comparing results from the blind survey (completed before anyone had seen the BDUP PoC) with responses from PoC testers (who had hands-on experience), both the average and median hours saved increased. This indicates that once users trialled BDUP, they recognised greater efficiency gains, suggesting the platform may deliver even higher real-world value as adoption grows.

State and National Impact

Using BYDA's broad industry data and applying PoC use cases to historical volumes of planning and design requests, BYDA scaled these results nationally. At full adoption, BDUP could save 5.2 million engineering hours annually, equivalent to 2,750 full-time professionals for an entire year, with a range of 1.3 million to 5.2 million hours/year (680 to 2,750 FTEs per year). Even at 50% adoption, the savings would still be 2.6 million hours (around 1,375 FTEs), valued at $165 million annually.

9.6 hrs
Average time saved per request

5.2 million hrs
National engineering hours saved

$330 million
National productivity savings

These projections show that BDUP's impact is not limited to faster access to information. It also removes the manual effort currently required to re-digitise and collate plans and reduces excavation repeats caused by fragmented data.

While the PoC scope and short period meant benefits analysis focused on workflow and productivity, BYDA's 2024 national study also highlighted that digitisation is expected to reduce utility strikes by providing earlier, more accurate data. Measuring strike reduction is complex and was not within the scope of the PoC, but it remains central to BDUP's purpose of safety by design. BYDA will continue to investigate this impact through case studies, pilots, rollout, and future research.

Case Study: Brisbane 2032 Olympic and Paralympic Games Productivity Benefits

The Brisbane 2032 Games highlight how BDUP could transform delivery in high-pressure, high-density environments. Thousands of planning and excavation requests are expected in the Olympic precincts each year, with the construction bringing major risks of delay, cost escalation, and safety incidents particularly if utility data remains fragmented.

Adopting the BDUP in Olympic precinct planning transforms this picture:

- **Scale of activity:** Over **90,000 planning requests expected annually** in the Olympic Precinct.
- **Productivity gains:** BDUP adoption would **save over 880,000 hours** annually in planning and design engineering, equivalent to **470 full-time engineers**.
- **Economic impact:** These time savings equate to between **$42-72 million in annual efficiency gains.**

In addition to workflow efficiencies above, BDUP would allow planning to begin up to two days earlier by replacing referral response times (which currently range from 5 minutes to 48 hours) with instant access. These benefits will grow further when factoring in additional benefits such as reduced project delays, potential strike reductions, and environmental gains. They will also be amplified by future integration of overhead data from Look Up and Live.

4.5 Stakeholder Benefits Summary

Stakeholder	Benefits Identified	Supporting evidence from the PoC
Users	Faster, standardised access to digital-ready data reduced errors and manual collation, enabling earlier design starts and better coordination.	**Evidence:** PoC testers reported an average of **9.6 hours saved per request**, with follow-up surveys showing greater savings than the blind survey.
Asset Owners	Fewer rework costs, reduced need to manually generate plans, improved safety outcomes, and freed-up internal resources.	**Evidence:** Major owners (Telstra, NBN Co, Jemena Gas, Ausgrid, Endeavour Energy) contributed data; councils expressed willingness to participate.
Governments and the Public	Greater productivity and safety across the infrastructure pipeline, supporting housing delivery, reducing duplication, and de-risking major projects. Aligns with priorities in procurement, planning, labour markets, and modern construction methods.	**Evidence:** Scaling PoC results nationally suggests BDUP could save **5.2 million engineering hours annually** (equivalent to 2,750 FTEs), worth **$330 million** in efficiency gains.
Future Benefits	Safer planning and excavation, fewer project delays, reduced excavation repeats, and environmental gains.	**Evidence:** BYDA's 2024 national study indicated that digitisation can reduce utility strikes, though this was not measured in the PoC. This will be tested further through the pilot, rollout, and future research.

5. Next steps: securing asset location information and progressing to pilot

The PoC findings demonstrated in this report support BDUP as a foundational digital utility map for Australia, uplifting infrastructure productivity, supporting digital twin development, and reinforcing BYDA's mission of zero damage, zero harm, zero disruption. Achieving this will take time, and BYDA will continue to work with industry and government to refine the product.

5.1 Securing support from utility asset owners

The next step is securing asset location information from asset owners nationally. This is being facilitated by a Memorandum of Understanding (MoU) and an asset location information data readiness questionnaire, available to sign or download at the BDUP Member Partnership Page. This page also contains downloadable packs on the BDUP itself including in-depth cyber security information.

5.2 Government support for the rollout

Formal government endorsement at the state and federal level would also assist in embedding the BDUP in procurement and planning approvals nationwide. BDUP aligns with a number of federal and territory level priorities and programs, including clear alignment with the federal government's *Australian Data Strategy* released in October 2022. Several submissions have already been made to the Australian and Queensland Government, all of which can be downloaded on the BYDA portal[5]:

- Economic Reform Roundtable – July 2025
- Digital Utility Information as a Productivity Driver – BYDA QPC Response
- Paper to Portal: Australia's Call to Action on Underground Data

5.3 Additional research and testing: Case Studies and 2026 Pilot Rollout

A multi-state pilot is planned for 2026. Rollout location will depend on several factors, with asset owners' location information being key. Early indications suggest WA or Greater Sydney as likely candidates, as well as major projects such as Brisbane 2032 in Queensland, which is directly aligned.

Although the BDUP PoC has officially closed, the platform is continuing to be developed using the feedback outlined in this report in preparation for the pilot. During this period, BYDA is also conducting in-depth case studies in which the BDUP PoC is being applied to live projects with tier 1

[5] https://portal.byda.com.au/byda-initiatives/reform-for-utility-safety/

construction firms. The findings from these studies will inform further development and will be published in due course.

A few technology updates will be added in time for the pilot rollout, including:

- **Overhead assets in BDUP:** Bring powerlines and other above-ground assets into the same map and exports as underground layers for a complete planning view.
- **Polished PDF exports:** One-click, print-ready PDFs that mirror the on-screen view for easy sharing and approvals.
- **Accountable activity logs:** A per-request audit trail showing who made the request, when it was made, and where it covered, backed by verified identities (SSO/MFA). Ensuring only known, authorised users are in the system and supports incident response.

A key part of the next phase: overhead asset integration

One important enhancement ahead of the 2026 pilot is the integration of overhead utility infrastructure into the BDUP. This will make the BDUP the first platform in Australia to provide single-point access to both underground and overhead assets – further amplifying its value.

Until recently, designers had to undertake a separate Look Up and Live (LUAL) request and then manually combine overhead information. Now, the traditional BYDA system integrates LUAL information, but this is still on separate PDFs, needing to be manually combined. By incorporating overhead asset locations directly into BDUP's visual interface and downloadable files, the efficiency gains will exceed the current average of 9.6 hours saved through the underground-only platform. The result will be even greater reductions in engineering effort, delays, and safety risks, alongside new benefits such as:

- Avoiding construction delays of up to 12 months from powerline relocations.
- Preventing roadworks from lowering clearances and creating traffic hazards.
- Reducing electrical safety risks and site shutdowns from scaffolding encroachments.
- Minimising delivery delays and high-load issues caused by contact between large equipment (e.g. civil machinery, wind towers) and powerlines or bridges.

5.4 Risks, Barriers and Mitigations

- **Data Sharing Reluctance:** Some asset owners remain hesitant due to liability and cyber concerns. Mitigation: transparent Memorandum of Understanding (MoU), strong cyber standards, and advocacy.

- **Data Readiness:** Many asset owners need support to digitise or standardise. BYDA offers onboarding assistance and data readiness guidance.
- **Commercial Uncertainty:** Pricing models require further refinement. The second pilot will test and validate.
- **Operational Capacity:** Scaling nationally requires careful governance and resourcing.

5.5 Post Pilot and Technology Roadmap

If the 2026 phase 2 pilot succeeds and key risks are addressed, BDUP will progress to national rollout. Future plans include continuous innovation alongside industry, to ensure the BDUP and its asset location repository keeps pace with global technological development.

One widely supported innovation is the ability to **load as-builts into BDUP**. This feature is already on the technology roadmap. It will allow users of the BDUP to consolidate, analyse and share their asset location information, and crucially, feed this back to others. It will create a continuously improving repository for underground information. The technology is already built, as shown in the BDUP showcase video[6]. Once industry is ready, this feature can be launched.

Other planned technological improvements include potential for:

- **AI-powered risk alerts:** Proactive flags for potential clashes, proximity breaches and data gaps.
- **Integration with the traditional referral service:** Initiate a traditional BYDA at the same time the BDUP request is run.
- **Permit integration:** Initiate, track and link permits to scopes/exports to cut double-handling and delays.
- **Collaboration spaces and shared project tools:** Shared workspaces with versioned requests, annotations and audit trails.
- **Mobile and field functionality:** Use BDUP on iOS/Android in the field; view cached map packs, add mark-ups/photos, and sync when back online.
- **Inclusion of easements:** Visualise easements alongside assets, with clear constraints in exports to support compliant design.

6. Summary and thank you

The BDUP PoC has demonstrated strong technical performance, industry engagement, and measurable economic benefits. With over 1,000 industry stakeholders participating and 65 platform improvements, the PoC confirms the feasibility and value of a national digital utility platform. The

[6] https://www.youtube.com/watch?v=cofEjP82ZHk

next phase will focus on securing broader asset owner participation, launching a 2026 multi-state pilot, and preparing for potential national rollout if the pilot is successful. We thank all contributors and invite continued collaboration to build a safer, more efficient future for underground utility management.

How to get involved

We'd love to have you involved in the next stages of bringing the BDUP to life. There are a few ways you can do this, depending on where your interest lies:

- **Want to discuss?** Get in touch with BYDA CEO Mell Greenall (Mell.Greenall@byda.com.au) or your local BYDA territory manager to arrange a meeting.

- **Asset owner ready to find out more about committing to contributing asset location information?** Head to our BDUP Member Partnership Hub to download info packs and sign the memorandum of understanding (MoU) to commit interest in sharing your asset location information in the future: BYDA Portal | BYDA Digital Utility Portal – Member Partnership Hub.

- **Future user interested in finding out more and signing up for future updates?** Head to our BDUP User Hub to download info packs and Be the first to hear about updates and to join early testing in 2026: BYDA Portal | BYDA Digital Utility Portal - User Hub.

Contact

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CEO

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Key Links

- BDUP Showcase Video: https://www.youtube.com/watch?v=DnS-qVwFZa0
- https://portal.byda.com.au/bdup-member-partnership-hub/
- https://portal.byda.com.au/bdup-user-hub/
- https://portal.byda.com.au/byda-initiatives/reform-for-utility-safety/

Thank you to early supporters

A key priority in building the BDUP is that it reflects industry priorities. This would not have been possible without the support and engagement of the many individuals and companies who contributed their time, feedback, asset location information, and expertise.

For those directly involved in the PoC, participants are listed below. BYDA also acknowledges the hundreds of additional stakeholders who engaged through webinars, events, and talks. Their contributions have been invaluable, and BYDA looks forward to continuing this journey together through the pilot and beyond.

Asset Owners: *APA Networks, Ausgrid, Blacktown City Council, Brimbank City Council, City Of Moreton Bay, City of Tea Tree Gully, Endeavour Energy, Energy QLD, Glen Eira, Jemena Gas, Landgate, Logan City Council, MRWA, Metro Trains Melbourne, Mid Coast Council, Mid-Western Regional Council, NBN, North Queensland Bulk Ports, Powercor, South East Water, Spatial WA, Taswater, Telstra, Transgrid, Transport For NSW, Wannon Water, Water Corporation, Wollongong City Council.* ***Users:*** *AECOM, Absolute Utilities, Arcadis, Australian Locating Services, V-Mark Survey, BAP Services, BCC, Ballarat Locating Services, Beveridge Williams, Cable Locates & Consulting, Contour Consulting Engineers, Croi, DCS Spatial Services, Digital Spatial Connect Consulting, Engineering Surveys, Ertech, FYFE, Fulton Hogan, Future Spatial, GHD, Geolink, Geosurv, Geotrace, Jacobs Group, Land Solution, Locate And Map, Locaters Pty Ltd, Macquarie Geotechnical, Martinus Rail, Melbourne Business School, Mott Macdonald, NULCA, Onemap, RMIT University, STANTEC, STS Locating, Servicestream, Techwave, UDEC, UNSW, Ventia, Whitfield Excavations, Udrew Pty Ltd.*

7. Annex: feature updates during PoC

Feature category	Updates following feedback
Core Functionality and Standards Alignment	• Map features color-coded according to AS5488 standard to align with industry expectations. • Ability to filter map features by Asset Owner, improving focused analysis. • Preview and access files associated with Asset Owners. • User agreement to Terms & Conditions introduced for compliance. • Feature selection added with popup details. • Map enhancements including street names by default, darker opacity when drawing scope, and automatic selection of new requests.
User Onboarding & Guidance	• Introduced a basic in-app walkthrough, triggered for all first-time users, restart able from the user menu. • Added address search in the new request form and the ability to zoom to selected requests. • Made the 'New Request' button more prominent. • Terms & Conditions PDF linked in user menu and agreement popup.
Visual and UI Enhancements	• Scope extents made more prominent with a color-coded system to indicate size acceptability (under/over 10ha, later increased to 20ha). • Basic legend and measurement tool added for better map interpretation. • Usage monitoring and analytics implemented. • Branding added ("Powered by Reveal") and reduced basemap noise for clearer map view.
Asset Owner and Data Provider Improvements	• Contact details added and files reorganised under 'Supporting Documents' with improved preview functionality. • Sidebar resizable; breadcrumbs introduced for easier navigation. • Created/updated date exposed on features with improved popup details (Quality Level renamed, long text overflow fixed). • Asset owner logos displayed where available, notes fields added for design, safety, and general notes. • Attribute filtering enabled to refine visible data.
Navigation & Interaction Refinements	• Map zoom controls and north-align widget introduced. • User documentation space with demo video added. • Navigation back to 'All Requests' resets map view to whole-of-Sydney for spatial context. • Back button and clickable data provider/request cards improve UI consistency. • Warnings appear when request scopes exceed data boundaries, but request creation still allowed.

Analytics and Monitoring	• PostHog event tracking added for map interactions and request submission metrics via the BYDA Insights dashboard. • User metadata management introduced in admin for enriched analytics.
Export & Reporting	• Export to GeoJSON and PDF introduced. • PDF export template finalised with north arrow, legend, UI polish, and legal disclaimers. • Exported PDFs saved to respective requests with preview/download options; option to download on export added. • Map view locked to top-down for consistency in app and exports. • CAD export functionality prepared and planned for testing during PoC with Ventia, ensuring readiness for pilot rollout.
User Support & Communication	• Improved user instructions added for request scope editing/deletion. • Clear messaging on data availability within Greater Sydney with visual indicators. • Enhanced selected feature modal to show more attributes with less scrolling.
Data Transparency & Clarity	• Added notes explaining asset owners present without visible assets to reduce confusion. • Feature counts and data availability states (‘Unavailable’, ‘0 features with notes’) added to data provider tables and details.
Remaining & Future Work	• Ability to delete requests from UI. • Improved PDF export formatting. • Password reset issues fix.

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