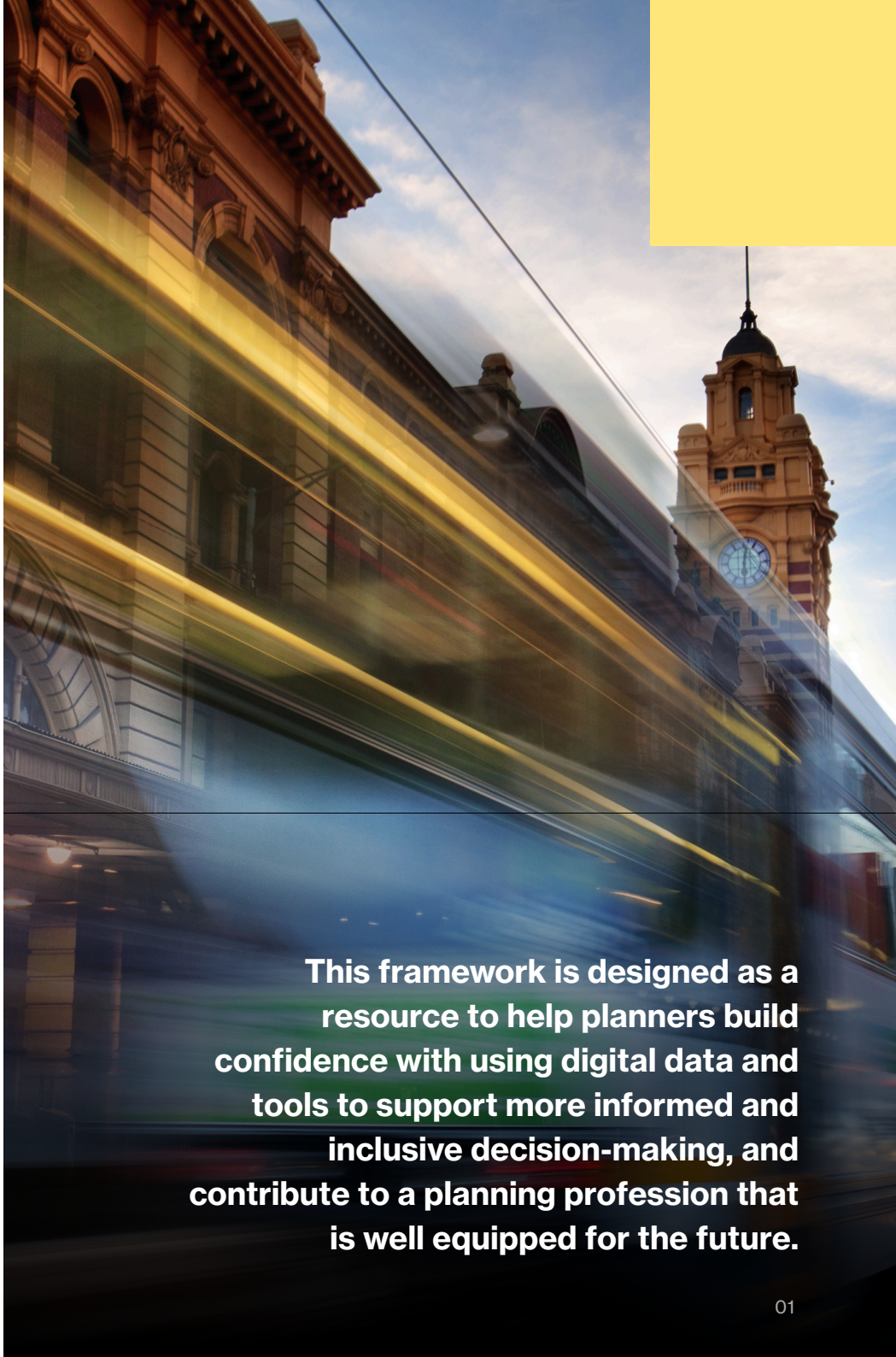
PIA Planning Institute Australia

Digital Planning
Core Competencies

This document outlines the core skills every planner needs to work effectively with current and emerging digital technologies, as well as the advanced skills for planners specialising in data and technology. It includes clear performance indicators to guide skill development and help planners, teams, and organisations strengthen their capability across four key areas:

- Understanding and data literacy - confident using data and digital tools in different contexts.
- Communication - leverage data and digital tools to improve communication and engagement outcomes.
- Organisational value - identify, improve and lead adoption of digital technologies to deliver better value.
- Governance - enhances trust and integrity of planning in the application of digital technologies.



This framework is designed as a resource to help planners build confidence with using digital data and tools to support more informed and inclusive decision-making, and contribute to a planning profession that is well equipped for the future.

	Core Skills	Specialist Skills
Core Theme and Competency	Performance Indicator	Performance Indicator
Understanding and data literacy *Confident using data and digital tools in different contexts.*	**Knowledge** • Knowledge of foundational data for good planning, including how to assess its suitability for use in terms of accuracy, source, completeness, and currency. • Awareness of the range of digital capabilities available and potential applications in planning practice including: office software; data portals; spreadsheets and dashboards; mapping, spatial analysis and scenario tools; social media and online community engagement platforms; generative AI and workflow automation tools. • Understands the limitations of statistical outputs, and AI-generated results used in their work. **Capabilities** • Ability to prompt AI tools to produce relevant results, and to critically assess the quality and accuracy of those outputs. • Able to search, retrieve, assess and use data from mapping systems, open data portals, and other organisational repositories. • Ability to use spreadsheets and apply standard formulas, analysis and visualisation techniques (e.g. sum, mean, max, range, pivot tables and charts). • Ability to create and interpret maps using digital mapping and GIS tools. • Confidence to trial new digital technologies and platforms, and incorporate them into daily work. • Communicate insights and limitations of data, statistical outputs, and AI-generated results to non-experts.	**Knowledge** • Up to date knowledge of the ecosystem of data, software tools, APIs and programming packages for data retrieval, analysis, visualisation mapping, content generation and workflow automation. • Knowledge of data standards, formats, ownership, and interoperability requirements. • Knowledge of statistical methods for checking bias and coverage in data inputs, and outputs from analytics and AI. • Understand how to structure planning policy and related content to be “machine-friendly” and support accurate dissemination by AI agents. **Capabilities** • Identify, prepare, analyse, and visualise data (including spatial data) to answer planning questions and effectively inform planning decisions. • Use coding tools (e.g. Python, R) and other statistical software for data retrieval, analysis and visualisation. • Apply data standards and best-practice management to source, store, and share data, digital documents and code for interoperability, scrutiny and re-use. • Commission data analysis, for example by preparing Requests for Quotation (RFQs) to ensure quality, interoperability, reusability, and alignment with project objectives.

	Core Skills	Specialist Skills
Core Theme and Competency	Performance Indicator	Performance Indicator
Communication *Leverages data and digital tools to improve communication and engagement outcomes.*	**Knowledge** • Understand differences in communication preferences across demographic factors (e.g. age, culture, land tenure) to ensure inclusive engagement. • Understand requirements for digital accessibility (e.g. alternative text for images). • Understand the need to declare use of AI in communication, and how AI can enhance stakeholder and community interactions. • Understand strategies to proactively publish planning information to minimise misinformation. **Capabilities** • Choose appropriate digital and non-digital communication channels to engage communities effectively. • Proficient using a range of digital technologies to supplement non-digital and face-to-face methods including: social media; questionnaires; participatory GIS; and collaborative design tools. • Able to use in-built accessibility checking tools to ensure documents published meet required standards.	**Knowledge** • Understand how to integrate data analysis into wider community engagement strategies. • Understand methods for effectively integrating AI to improve user experiences (e.g. chatbots) alongside their limitations. **Capabilities** • Use a range of data visualisation and cartography techniques to effectively communicate key insights to the general community. • Set up and maintain interactive web-based platforms to communicate and collect planning information from the public.

	Core Skills	Specialist Skills
Core Theme and Competency	Performance Indicator	Performance Indicator
Organisational value I*dentify, improve and lead adoption of digital technologies to deliver better value.*	**Knowledge** • Understand the importance of iterative testing and staged approaches to adopting new digital tools in planning practice. **Capabilities** • Identify where digital tools or data could solve problems and improve areas of planning practice. • Outline an initial case for adopting a new technology, tool, or approach aligned with organisational priorities. • Contribute effectively to technology selection and adoption processes, including problem definition, ideation, prototyping, and testing.	**Knowledge** • A foundational understanding of software development approaches (e.g. agile, design thinking). • Understand factors influencing the feasibility and appropriateness of technology solutions, including solution maturity, existing technology stack, available data, and resources. **Capabilities** • Provide advice on the technical feasibility and appropriateness of proposed technology solutions. • Set up systems for monitoring and evaluating the success of new technology implementation. • Fulfill the role of a product manager, or similar leadership role for the technical implementation and testing of digital solutions, working collaboratively to iteratively develop and refine them (e.g. product manager).

	Core Skills	Specialist Skills
Core Theme and Competency	Performance Indicator	Performance Indicator
Governance *Enhances trust and integrity of planning in the application of digital technologies.*	**Knowledge** • Understand the need to prioritise community and environmental outcomes alongside efficiency when adopting and deploying digital technologies. • Understand the importance of transparency, accountability, and public value in decisions supported by data and digital tools. • Understand requirements for responsible handling of data, particularly national and organisational rules for the protection of personal and sensitive information. **Capabilities** • Assist with ensuring datasets (including metadata) are accurate, complete, and stored and shared responsibly. • Advocate for open data, • Communicate and document how decisions are made with digital tools so they are explainable and traceable to source material.	**Knowledge** • Understand how to mitigate the limitations, potential biases and risks associated with the use of digital technology, data and AI tools. • Knowledge of national and organisational policies, standards, and principles for data management and digital technologies (e.g. de-identification, bias mitigation, AI governance). • Up-to-date operational knowledge of industry standards and organisational requirements for PlanTech systems. **Capabilities** • Apply relevant policies and standards to ensure compliant and responsible use of data and digital technologies. • Conduct technical reviews of PlanTech systems and provide compliance advice. • Provide technical advice on maximising public value, including ownership and sharing arrangements for digital assets. • Establish and maintain systems to collect, organise, secure, and disseminate code and daent standards

Planner - Persona in Action:
Sam sets the scene for a proposed mixed use development

Task:

Sam has been assigned to lead the early planning work for a proposed mixed-use development in an inner urban precinct. The project requires a community-informed approach and relies heavily on data to shape recommendations around land use, accessibility, infrastructure, and public space design. Sam is responsible for assembling the initial evidence base, preparing engagement activities, and advising on appropriate digital tools to support the project.

How Sam Uses Core Skills

Establishing a data-informed foundation
Sam begins by identifying the core datasets needed to understand the site and surrounding context—population data, transport patterns, zones and overlays, heritage constraints, flood risk areas, and community infrastructure. They assess each dataset for accuracy, completeness, source credibility, and how current the data is. Noticing gaps in pedestrian movement data — important for understanding how people access the site— Sam works with a data specialist to draft a request for a consultant to gather and analyse this, ensuring that the format aligns with council's spatial systems and interoperability standards.

Adopting and applying digital tools
Using the council's GIS platform, Sam layers spatial datasets to visualise constraints and opportunities. Sam analyses planning zones and infrastructure layers to produce a baseline site assessment. They've recently been introduced to a new digital engagement tool, which allows residents to make comments on an interactive map—Sam suggests integrating it into the engagement strategy and helps others on the team understand how to use it. Additionally, Sam works with a data specialist to prepare a 3D model of the site for their organisation's digital twin to allow the community to visualise the 3D scale of the proposed development.

Designing inclusive, accessible community engagement
To engage the diverse local population, Sam tailors communication strategies using both digital (social media, email, online mapping tools) and non-digital channels (translated flyers, pop-up events). They ensure that all digital materials meet accessibility standards, including alt text for maps and images and using plain language summaries. Sam also considers the different communication preferences of renters, elderly residents, and newly arrived communities to ensure no group is left out.

Transparent use of emerging technologies
In preparing community engagement materials, Sam uses a generative AI tool to draft plain-English summaries of planning documents. Aware of ethical considerations, they clearly disclose the use of AI in community-facing content and ensure all AI-generated materials are reviewed for accuracy, clarity, and relevance. They keep a record of how AI tools were used, ensuring transparency and accountability.

Advocating for better digital practice
During internal discussions, Sam highlights how better data practices could streamline future planning projects, noting that another department has been trialling a new platform to help collate data and provide tools for performing preliminary site analysis. They contribute to a business case for adopting and contributing to the shared data platform.

Balancing innovation with responsibility
Sam remains mindful that digital tools are there to support—not override—the planning process. They make sure that all recommendations can be clearly explained, linked back to source data, and assessed against community input from diverse demographics, noting where local insight complements or challenges the numbers. When preparing the preliminary report, Sam includes a dedicated section detailing the data sources and digital tools used, along with the limitations of the analysis, reinforcing both accountability and transparency.

Focused on community and environmental outcomes
At every step, Sam keeps the community and environment at the center of their decision-making. Noting community concerns, they work with a data specialist to make sure that different design options are tested for predicted impacts on green space, walkability, and local businesses. Sam's goal is not just a technically sound plan, but one that genuinely reflects community input and delivers long-term public value.

Outcome

By combining foundational digital and data skills with a strong planning ethic, Sam delivers a well-informed, inclusive, and transparent project brief that sets the stage for meaningful community engagement and informed design decisions. Their approach demonstrates how planners can use technology thoughtfully to enhance planning practice without losing sight of the people and places at the heart of their work.

Planner - Persona in Action:

Jordan manages a medium density residential development application

Task:

Jordan, a statutory planner at a council, has been assigned to assess a proposed multi-dwelling residential development on an infill site. The project involves coordinating referrals, verifying documentation, notifying the community, and preparing a recommendation for decision-makers.

How Sam Uses Core Skills

Building the evidence base
Jordan starts by verifying the application details against council records. An AI-assisted system cross-checks property boundaries against overlays and zoning in internal databases, and highlights any inconsistencies in basic height, setback and floor area requirements between the digital site plans and planning scheme. It also pulls past approvals on the site and surrounds it into a concise dossier. With this foundation in place, Jordan can focus on interpreting the implications rather than re-entering or chasing data.

Making sense of complexity
Using the council's GIS platform, Jordan layers the digital site plans with overlays to make sure they understand contextual constraints and referral requirements. The system provides a preliminary list of referral agencies with a link to the relevant legislation, Jordan reviews carefully, crosschecks against the application, and amends the list noting that their current system sometimes misses referrals triggered by areas of high heritage and environmental value on neighbouring land. A 3D visualisation tool automatically generates shadow diagrams.

The Council's online DA portal suggests a complexity rating based on past approvals of a similar type to help with estimating assessment time and effort, but Jordan adjusts it after noting a tricky interface with adjoining properties—something their AI can't fully capture in its assessment based on past approvals.

Community notification
When the application is advertised, automated tools generate notification letters and maps of the affected properties. As submissions arrive, AI clusters objections by theme: traffic, privacy, neighbourhood character, but keeps the records of the original submissions alongside summaries for human review to ensure the original submissions are correctly summarised and represented. Although the summary is helpful first glance, Jordan reads all submissions to ensure they have a fuller understanding and nuanced view of the concerns raised. Time saved by the AI in performing administrative checks means that Jordan is able to meet with the applicant and affected stakeholders, and work with them to find solutions.

Streamlining report writing
For the assessment report, Jordan uses a tool that pre-populates property details, relevant planning controls, referral responses, and objection summaries. They edit and refine the draft, applying professional judgment to conditions and ensuring the analysis is clear, accurate, and defensible. By disclosing where AI was used in drafting, Jordan reinforces transparency while keeping accountability for the final recommendation.

Balancing innovation with responsibility
Throughout the process, Jordan is clear-eyed about the limits of technology. Automated tools provide efficiency and consistency, but interpretation of planning schemes, assessment of objections, and discretionary judgments remain with the planner. Jordan makes sure councillors and the community can distinguish between AI-generated material and human analysis.

Outcome

By integrating digital tools with ethical judgment, Jordan delivers a clear, efficient, and transparent assessment process that strengthens decision-making and is community centred. Their use of AI to streamline data checks and reporting allows more time for genuine understanding of the local context and careful interpretation of planning issues. Jordan's approach demonstrates how planners can balance technological innovation with accountability, using digital systems to enhance critical thinking and ethical practice.

Technical Specialist Persona in action:

Gem prepares a neighbourhood revitalisation strategy

Task:

Gem is part of a multidisciplinary team preparing a revitalisation strategy for a historically industrial inner-city neighbourhood, transitioning to mixed-use residential and commercial precinct. Gem's role is to undertake and communicate data analysis to ensure the strategy is grounded in robust evidence.

How Gem uses advanced digital & data skills:

Reviewing and verifying planning data
Gem identifies, assembles and manages the datasets that underpin the strategy, drawing on sources such as land use, ownership, infrastructure location, census data, economic forecasts, and environmental constraints. They use scripts to extract data from relevant APIs, and undertake data cleaning and data interpolation to ensure the evidence base is reproducible and comparisons can be made between different variables.

Using digital tools to undertake analysis Evaluating suitability and quality of data
Gem utilises spatial and statistical analysis techniques available in programming libraries and specialist software, to forecast future infrastructure and transport demand. They analyse travel behaviour and mode share patterns in similar precincts, and assess the capacity of proposed infrastructure upgrades against projected household growth to estimate pressure on local transport networks and future walkability to community services such as schools, parks and libraries. They also evaluate data quality and biases, for example, underrepresentation of certain travel modes in surveys, and adjust their analysis accordingly. Interactive dashboards allow decision-makers and community members to explore data layers and scenario outcomes dynamically.

Preparing transparent documentation and recommendations
Gem prepares the technical appendices and visualisations that accompany the draft strategy. They ensure maps, data dashboards, and scenario comparisons are embedded within the report, with links to underlying datasets and explanations of assumptions and limitations. This transparency supports informed decision-making and helps stakeholders trust the evidence base.

Supporting inclusive and accessible communication
Working alongside the engagement team, Gem provides interactive mapping platforms and data visualisations for community workshops. They configure online surveys and AI tools to capture feedback, and ensure outputs are accessible across languages and formats. Gem's technical support allows the lead planner to focus on building relationships and facilitating dialogue.

A**dvocating for better plan monitoring with digital tools**
Within the project team, Gem highlights opportunities for longer-term monitoring, proposing that the revitalisation strategy be supported by an ongoing monitoring. They emphasise how this could integrate with the council's GIS, provide real-time measurement of indicators, and improve responsiveness to emerging issues. Gem also stresses that digital dashboards and automated feeds should be complemented by regular surveys and qualitative engagement, ensuring that lived experience and community perceptions are captured alongside quantitative data.

Ensuring ethical data use and privacy
Gem ensures that all community data is handled with strict privacy protections and that data governance frameworks are in place to manage work-in-progress data on sensitive issues. They advocate for transparent policies around data ownership and sharing, maximising public value while respecting individual rights.

Outcome

By providing rigorous analytical support, Gem enables the project lead and broader team to ground their revitalisation strategy in robust, transparent evidence. Their contribution ensures that technical insights are accessible, inclusive, and ethically managed—helping the strategy balance innovation with responsibility, and giving the neighbourhood a clear, data-informed path for renewal.

For more information

Nicole Bennetts RPIA
PIA Head of Advocacy
nicole.bennetts@planning.org.au

PIA Planning Institute Australia