Common Insights
Among the five sectors surveyed – delivery agencies, consultants, construction companies, business advisory organisations and industry associations, three common insights have emerged:

- Adopt the right team and culture
- Ensure early contractor involvement
- Capture and share lessons learnt

About This Study

180 Respondents ANZ Workshop, face to face and online

15+ Years experience
In government delivery agencies, construction firms or engineering

3 COMPONENTS
Prioritisation of Themes impacting major project delivery

33 Propositions for improvements

TOP 2-3 Recommendations for success

Timeframe
MAY 1 2019 to SEP 30 2019

State of Play
AUSTRALIAN INFRASTRUCTURE BY THE NUMBERS

The value of a megaproject has increased rapidly

Financial outcomes of 28 completed projects

GDP accounted for by infrastructure

Ryan & Dufield 2018
University of Melbourne*

Key Australian Infrastructure Stats, ABS

TOP Recommendations for success

$8 BILLION

$500 MILLION

$50 MILLION

1990 2000 2015

43% LOSS TO 1% PROFIT

Ryan & Dufield 2018

$239 BILLION

$20 BILLION

$100 BILLION

Committed in state budgets over 4 years

Federal government investment for next 10 years

Projects delayed, cancelled or mothballed due to community opposition over past 10 years

State Budgets 2019
Budget 2019
Australian Infrastructure Audit 2019, Infrastructure Australia

*Based on a sample of 10 projects representing contracts awarded to Tier 1 Infrastructure Contractors since 2000. Of these, 28 are completed projects with commencement dates from 2000 to 2015, while 22 are current projects with commencement dates from 2015 to 2020.
Our Perspective

We are in the midst of an unprecedented infrastructure boom. Economic development and population growth are fuelling demand for the essential services all Australians rely on – from transport networks to energy, water and telecommunications as well as social infrastructure including health, education, public administration, housing and justice facilities.

Deloitte Access Economics’ quarterly Investment Monitor, released 30 October 2019, shows the value of definite projects in Australia (those under construction or committed) increased by $8.4 billion over the quarter, while the value of planned projects (those under consideration or possible) increased by $30.2 billion.

As the size, complexity and number of these projects grow, so too does the risk of failure. Widespread shortcomings such as cost-overruns, delays, litigious threats, community opposition and low success rates are now so pervasive that there is a clear mandate to rethink the way we plan, deliver and operate our infrastructure.

As engineers, construction professionals, business advisers, researchers, financiers and government officials, we have an obligation to find a better way to improve the lives of Australians with quality, accessible and cost-effective services to connect us to jobs, education and other opportunities.

Setting Up Projects for Success

The focus of this joint research between WSP and the University of Technology Sydney (UTS) aims to help industry proponents better understand the critical steps we can take to realise the necessary improvements in both our living standards and national productivity through infrastructure. We have tapped into the wealth of experience of professionals that have been involved in major public and private projects in both Australia and New Zealand in order to establish a set of insights on good practice that we can adopt now.

Use these insights, borne out of real-life experience, to:

- Improve awareness of risks and opportunities
- Gain greater certainty in execution
- Ensure added clarity over performance
- Build more simplicity into governance and management
Survey respondents were asked to assess eight key themes for their impact on project success:

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<th>THEME 1</th>
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<tbody>
<tr>
<td>Strengthen government and political engagement</td>
<td>Improve integrated business case and early community engagement</td>
<td>Efficient choice of contract</td>
<td>Improved confidence in project pipeline delivery</td>
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<th>THEME 5</th>
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<tr>
<td>Increase emphasis on project assets lifetime costs</td>
<td>Reduce unknown environmental impacts</td>
<td>Improved industry ecosystem</td>
<td>Effective use of technology and data</td>
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**Highest Impacts on Projects**

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<th>Percentage</th>
<th>Comment</th>
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<tr>
<td>99%</td>
<td>say a more integrated planning and robust business case process is needed combined with front-end engineering design and early community engagement.</td>
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<tr>
<td>92%</td>
<td>say choosing the right contract for the right project is required, standardising the use across both delivery agencies and construction firms.</td>
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<td>86%</td>
<td>say strengthening government and political engagement is key to success.</td>
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Percentages of respondents who rated these issues as having a high or medium impact on a project’s success.

**Lowest Support for Proposed Actions**

- Increased use of Design Build Finance Operate Transfer (DBFOT) model
- Increased independence for Infrastructure delivery agencies (through a reporting line into a parliamentary committee)
Survey respondents were asked to provide their support for 33 proposed actions, of which nine key success factors have been identified.

**Key Success Factors**

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<th>Percentage</th>
<th>Description</th>
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<tr>
<td>96%</td>
<td>say it is important to ensure a collaborative culture is established between partners, and the most competent team members are selected.</td>
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<tr>
<td>94%</td>
<td>say undertaking early contractor work on complex brownfield sites will identify latent conditions and utilities.</td>
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<tr>
<td>93%</td>
<td>say lessons learnt and best practices need to be adequately captured and used on future projects.</td>
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<tr>
<td>92%</td>
<td>say early engagement and inception workshops with contractors, consultants and delivery agencies will enable risks to be identified and assessed much earlier in the project lifecycle.</td>
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<tr>
<td>87%</td>
<td>say improved use of integrated technology across all delivery partners is needed.</td>
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<td>83%</td>
<td>say a culture of collaboration between agencies and delivery partners can provide consistent processes for handling variations and claims.</td>
</tr>
<tr>
<td>78%</td>
<td>say lower costs can be achieved by undertaking thorough front-end engineering.</td>
</tr>
<tr>
<td>77%</td>
<td>say technical skills and expertise within the delivery agency must be improved.</td>
</tr>
<tr>
<td>73%</td>
<td>say sharing data transparently between agencies and contractors on environmental requirements and non-contestable utilities reduces risk.</td>
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Percentages of respondents who agreed or strongly agreed with the proposed actions.
The study calls for focus on:

1. **SKILLS**
   - **Expertise**: Strengthen government and political engagement

2. **COLLABORATION**
   - **Process**: Choose effective contracts

3. **EARLY ENGAGEMENT**
   - **Approach**: Take a complete lifecycle view

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**Culture**
- Adopt a collaborative industry ecosystem

**Clarity**
- Reduce risks of unknown contaminants and utilities

**Organisation**
- Undertake integrated planning and ensure robust business cases

**Certainty**
- Improve confidence in project pipeline

**Tools**
- Use technology and data more effectively

**Community and Stakeholders**
- Involve stakeholders and engage with the community earlier

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Research Insights: WSP & UTS 2020
1. Skills

With ultimate responsibility for projects that are worth millions or billions of dollars, decision-makers are accountable for the commercial outcomes of success or failure.

Considerations

— Increase technical skills and expertise within delivery agencies.
— Capture and leverage lessons learnt from previous projects.
— Improve understanding of commercial intent.
— Develop greater agility to quickly and appropriately assess and maintain delivery programs.
— Establish a culture of honesty and integrity.
— Ensure strong governance and accountability for delivery based on performance.

EXPERTISE

☐ Change is inevitable (and desirable) and State agencies need to have the expertise to quickly and appropriately assess and maintain delivery programs. ☐

☐ We need skilled government staff who manage contracts, not skilled government staff to manage contractors. ☐

☐ . . . Most failing projects occur in a culture of denial and blame. ☐

CULTURE

☐ Earlier identification of risk through a collaborative approach with industry is needed. ☐

☐ High quality project management professionals working for both the client and the contractor are required with a focus on collaboration. ☐

☐ We need collaborative contracting partnerships with aligned objectives, including well-developed concept design including extensive site investigation. . . ☐

CERTAINTY

☐ Provide funding certainty for at least five years ahead of project commencement. ☐

☐ . . . Adopt a strict delivery model based on a whole of system thinking approach. ☐

☐ Increase collaboration at the early stages of planning, agree on outcomes, timings and bi-partisan political involvement. ☐
2. Collaboration

With a large pipeline of infrastructure projects in Australia, there is an increasing realisation about the importance of a collaborative working approach in meeting challenges to budgets, risks and delivery timescales.

Considerations

— Mobilise the right team and culture - easily said, but needs to be done.
— Establish a partnership with all parties and run project inception workshops.
— Allocate clear accountability between all parties, and align objectives.
— Choose the right contract for the right project and allocate risks accordingly:
  • Increase use of standard contracts (GC21) for traditional projects.
  • Use collaborative/alliancing contracts for complex brownfield sites across both delivery agencies and construction firms.
  • Standardise contracts as much as possible.
— Share critical risks early surrounding environmental impacts and non-contestable utilities.
— Align risk allocation and pricing/contingencies to manage risks.
— Use digital technology consistently to identify and resolve issues early.
— Enable full data transparency.

PROCESS

☑ Increase the use of standard contracts and approaches for the majority of projects. ☐

☑ Contracts should be standardised as much as possible, no bespoke authoring/negotiation/disputing; clear accountability between parties is critical. ☐

☑ Choose the right contract, allocate risk to the best party and recognise the value of Alliances beyond the dollars [in value for money]. ☐

CLARITY

☑ Risk allocation has not materially changed over time, however with the large increase in scale, value and complexity of the major projects, the consequences of the risks have grown exponentially. ☐

☑ There needs to be some reconsideration of sharing critical risks with limited information and control (non-contestable utilities, contamination, latent conditions, and ground conditions) between asset owners and contractors. ☐

TOOLS

☑ Clear environmental requirements, consistency in approach for government approvals and detailed front-end engineering can reduce risks. ☐

☐ We need to have integrated information management systems across all project facets and parties to the contract. ☐

☐ The sharing of standardised data across all infrastructure delivery partners during project delivery and commissioning is required. ☐

☐ Strong governance and accountability for project delivery should be based on measurement of performance. ☐
3. Early Engagement

Adopting a more integrated planning and robust business case process combined with front-end engineering design and community engagement will enable the right strategic and investment decisions. Additionally, start early to gain clarity, confidence and consistency.

Considerations

— Improve integrated planning, business cases and front-end engineering design.
— Community engagement is needed to ensure a social licence is obtained.
— Get input from infrastructure operators earlier in the design process to better align design with operations.
— Involve contractors early to identify and overcome constructability issues.
— Take a lifecycle approach by integrating whole-of-life costs and operational objectives. Include thorough front-end engineering.

APPROACH

إصابة whole of environment and lifecycle cost-benefit analysis and comparison prior to commitment to proceed.

Integrate planning with whole of lifecycle analysis and early contractor engagement.

When a project is being scoped out, we need to get the operators more involved.

ORGANISATION

Apply an increased, transparent and consistent level of business case detail across all types of infrastructure business cases.

Mandate a public project business case approvals process that separates political announcements from a GO decision.

Build value for money in decision making for the principal and the vendor that includes clear assumptions and processes that deal with risks . . . and commercial complexities within project operations.

ENGAGEMENT

Projects must gain early support from the community to avoid delays associated with disputes and protests.

The ultimate operator of the infrastructure asset should be involved in the set-up of the project as early as possible.

A social licence to operate is increasingly important as public opinion on land use and other issues can really impact project success.
Conclusion

Deloitte Access Economics’ quarterly Investment Monitor, released 30 October 2019, shows the value of definite projects in Australia (those under construction or committed) increased by $8.4 billion over the quarter, while the value of planned projects (those under consideration or possible) increased by $30.2 billion.

This extraordinary financial and social investment in infrastructure makes it ever more critical to ensure that these projects are set-up to succeed and support the growth and diversification of our economy.

We have a unique opportunity to stem the tide of litigation, delays and over-runs, and truly engage our communities in transformation projects which will improve the way we work, live and play.

The experienced respondents in the WSP/UTS study are clear in their united call for us to learn the lessons of the past and avoid failed infrastructure projects. The path to success is through determined, sustained and clear focus on early engagement, collaboration and the right mix of skills and expertise in our teams.

How Can WSP Help?

Our technical and strategic experts work with private and public sector clients to bring clarity and vision to complex challenges. We provide holistic and commercially focused advice that aids decision making to create and enhance value for future organisations and communities. We help our clients including governments and utilities with strategic advisory services across the transport, power, water, resources and property sectors.

Integrated Solutions

Make robust infrastructure investment decisions through business case, commercial and economic advice:
- Business case development
- Business case/investment assurance, gateway reviews
- Economic appraisals
- Due diligence
- Procurement strategy
- Strategic infrastructure investment advice
- Value capture and benefits realisation
- Investment logic mapping
- Data analytics and insights for infrastructure planning and evidence-based policy development
- Digital transformation advisory and program delivery

Optimise the value of your assets and projects by leveraging a comprehensive and practical understanding of industry-specific economic and regulatory environments through:
- Regulatory framework development and assessment including developing regulatory strategies
- Industry benchmarking
- Efficiency reviews
- Capital and operational expenditure review
- Strategic asset management

Empowering communities and future generations with Indigenous Specialist Services:
- Indigenous-led design and knowledge
- Indigenous-led partnerships
- Indigenous participation and social impact

Enhance value by identifying opportunities to improve organisational effectiveness and help to navigate organisational change through:
- Business process improvement
- Business transition and change management
- Portfolio and program strategy, establishment and management
- Organisational strategy and planning
- Workforce planning, capacity and capability development
- Quality assurance reviews and compliance audits
- Risk management and analysis
- Governance (framework development, assessment and monitoring)
- Complex procurement advisory and collaborative sourcing for technology investments

Research Insights: WSP & UTS 2020
About WSP

WSP is one of the world’s leading engineering professional services consulting firms. We are dedicated to our local communities and propelled by international brainpower. We are technical experts and strategic advisors including engineers, technicians, scientists, planners, surveyors, environmental specialists, as well as other design, program and construction management professionals. We design lasting Property & Buildings, Transportation & Infrastructure, Resources (including Mining and Industry), Water, Power and Environmental solutions, as well as provide project delivery and strategic consulting services. With 5,500 talented people in more than 50 offices across Australia and New Zealand, we engineer projects that will help societies grow for lifetimes to come. wsp.com

About WSP’s Advisory Services

WSP’s Advisory team brings clarity and vision to complex challenges. We see the future more clearly through key trends in political, economic, social, technology, legal and legislation. We work with our clients to advise on solutions and opportunities that are both ready for today and the future. Our local experts collaborate with a strong network of international brainpower and best practice projects from across the world.

Leveraging our comprehensive and practical industry knowledge and experience, our team delivers holistic and commercially focussed advice that aids decision making to create and enhance value for future organisations and communities. We help our clients including governments and utilities with strategic advisory services across the transport, power, water, resources and property sectors.