



# 5 Market Trends for Public Infrastructure in 2023

How data is the missing puzzle piece



## Picture this:

You work in public infrastructure. Across the board, funding is strained, residents are unhappy, and your local infrastructure feels uncertain around the edges. You need help, something to put everything in the right place and make everyone feel secure.

So, what can make it all fit together?

By unlocking better planning, decisions, and communications, data is the missing puzzle to solving public infrastructure leaders' core challenges. To understand better, we are digging into some of the top market trends facing public infrastructure leaders, including:

1. **Sustainability**
2. **Rising energy costs**
3. **Digital transformation and electrification of fleets**
4. **Internet of Things (IoT) and connected communities**
5. **Supply chain-driven cost increases**



## Trend 1: Sustainability

Sustainability can hardly be called a trend anymore—it's now a driving force to maximise existing resources, change human behaviours, and safeguard the planet for future generations

### Sustainability: Worth the hype

In Australia, sustainability makes sense. Rising energy costs call for renewable energy sources and stopping energy waste, and future generations—not to mention current residents—appreciate sustainability.

As public infrastructure leaders must do more with fewer resources, sustainable processes such as maximising workflows can save considerable time and money.

### What you need to be sustainable (spoiler alert, it's data)

Data can be a powerful tool for supporting sustainability efforts through:



**Goal setting:** Measuring and tracking progress towards sustainability goals and helping organisations to identify trends and patterns, set targets, and adjust strategies as needed to achieve their sustainability objectives. The right tool can assist in efforts to reduce carbon emissions, increase energy efficiency and reduce waste.



**Identifying opportunities:** Many public infrastructure leaders are pressured to reduce environmental impact and improve performance. Energy usage data can reveal areas where energy-efficient technologies could be deployed. Insights on waste streams can highlight opportunities for recycling or reuse.



**Communicating:** Having technology that can process data can help inform decision-making and enable the engagement of stakeholders and communities. For example, sharing data on energy usage or carbon emissions can help citizens understand their actions' impact and encourage them to reduce their environmental footprint.

### Powering up your infrastructure—sustainably

Overall, data can be a powerful tool for supporting sustainability efforts by providing the information needed to make informed decisions, track progress, and drive innovation—so long as you have the right technology.

Public infrastructure leaders can utilise solutions including asset management, asset lifecycle prediction modelling and capital planning software to better serve citizens and help communities sustainably thrive for years to come.

Brightly is driven by [sustainability](#). By connecting infrastructure leaders with powerful technology, we are helping build more efficient and sustainable communities. At Brightly, we help clients use their data to save money, identify utility waste, prove funding requests and improve operational efficiency.



Australia has the potential to be a leader as the world transitions to a cleaner decarbonised future. But if we've learnt anything in our 150 years in Australia, we need to take a big picture and whole economy view.



**Peter Halliday**

Chairman and Chief Executive of Siemens Australia<sup>1</sup>

## Trend 2: Rising energy costs

In Australia, the pressure to deliver capital works is a reality for public infrastructure leaders. Though felt more directly by the individual, government and private sector organisations cannot help but keep a close watch on the rising costs of energy.

### **It's all connected; it's all expensive**

Globally, rising energy costs are one of the top trends impacting public infrastructure leaders today. For starters, one of the biggest challenges associated with increasing energy costs is competing funding needs; revenue budgets decrease while public services—such as education or social care—are often fixed expenses.

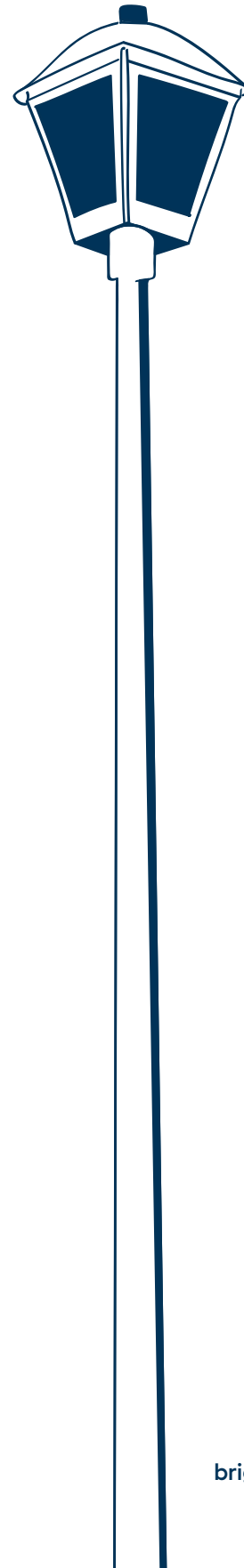
With budget crunches come additional concerns. One example is that as closer attention is paid to the direction of funds, every investment decision is subject to scrutiny, thus requiring more justification. And, at the same time, the cost of necessary maintenance increases, not to mention environmental concerns are amplified as the price of energy increases.

### **Better budgeting depends on data**

Doing more with less is always a reality in public infrastructure, where leaders are responsible for solving a litany of challenges.

Utilising data is critical for those facing budget crunches due to rising energy costs. The right tool can help to identify areas where you can optimize your assets and resources and give you the data to back your decisions.

For example, if your maintenance teams are doing projects ad hoc, they are not functioning optimally. By centralising workflows, inventory, maintenance schedules, and more, decision-makers can make small changes to help teams work more efficiently with available budgets—and communicate why specific projects are prioritised.



## Data in the details:

Once operational inefficiencies have been identified, data can also help leaders prioritise projects by helping to determine which activity will most significantly impact reducing costs. A few ways to utilise data include:



**Monitoring asset health:** Broken or failing assets can be expensive, regardless if you are forced to replace or repair them. Real-time data can reveal a lot, helping to identify trends and anomalies with individual assets so leaders can take strategic action to reduce failure and downtime.



**Predicting future asset health:** Data analysis of the past—using information such as historical maintenance issues—can help predict and plan preventive maintenance schedules to keep assets running at optimum functionality.



**Optimising work crew schedules:** Plan workflows to cover more ground with fewer resources. Such as having one crew systematically fill all potholes in a given area to minimise travel (and reduce fuel usage) or adapting grass-cutting schedules to five times a year instead of six to save resources.

While data can help perform tasks more efficiently, at the end of the day, it all boils down to communication. For public infrastructure leaders who must be accountable to the public for their actions, data is the best source of truth to help explain the reasoning behind decisions.

## The Brightly side of budget crunching

Brightly can bring together data from assets, facilities and people via software that helps public infrastructure leaders identify operational inefficiencies to prioritise action and make smarter operational decisions through centralised asset management.

## Trend 3: Digital transformation and electrification of fleets

With rising energy costs leading the trends facing public infrastructure leaders, one might expect digital transformation or investing in electric vehicles to be the answer. And it is, sort of.

### Beyond the boardroom: Digital transformation for cities, towns, and governments

For about the past decade, digital transformation has been a buzzword for organisations and companies looking to technology to evolve how they do business.

In the context of public infrastructure, digital transformation refers to the use of digital technologies to improve the efficiency, effectiveness, and delivery of public infrastructure services. Or, you can look at it as the integration of digital technologies into the infrastructure systems of cities, governments, and public organisations.

Either way, it's about improving the lives of citizens and residents.

To achieve digital transformation, leaders need to approach projects strategically, a directive made easier with data.

### Finding the (not-so-small) pieces that can deliver maximum impact

For leaders considering where to direct time and energy (both physical exertion and fuel-powered), it's important to pick projects that can realise maximum impact, especially when funding is hard to come by. As far as considering digital transformation for public infrastructure, here are two practical application examples that can deliver effective utilisation of resources for those very important long-term cost-savings:



**Mobility:** Technology can be implemented into transportation systems to improve traffic flow, reduce congestion, and enhance public transit services through real-time data analytics and smart transportation systems.



**Water and waste management:** From fresh water supply to drains and sewer systems, strategically placed sensors and usage monitoring can help leaders spot issues—and opportunities.

There are many other use cases for digital transformation in public infrastructure, as data enables better decision-making with available information—especially around the [transportation of people and goods](#).

Ultimately, if leaders can implement technology in the right places, they'll have the opportunity to increase operational efficiency, reduce costs, enhance safety, and improve the quality of life for citizens.

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Cities must dare to be bold and work alongside technology companies to deliver a better quality of life for their residents. The ultimate objective of any mobility solution should be to provide convenient and affordable mobility options, while at the same time enhancing overall living standards in cities through decarbonisation and decongestion.

Kunal Chandra

Vice President, Shared Autonomous Mobility at Siemens Mobility<sup>2</sup>

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### Setting up the edge pieces to help move forward

For public infrastructure leaders, achieving digital transformation is possible, so long as it's approached with a data-forward mindset.

Asset management tools to collect data, make decisions (and justify those decisions), schedule preventive or proactive maintenance and optimise workflows can help leaders stretch whatever valuable funding they have.

### A puzzle cannot be completed in one move

The transportation sector is ripe with [opportunity](#). You might think that switching to electric fleets right away would solve a lot of problems, especially with the rising energy costs mentioned earlier. However, immediate electrification of fleets and vehicles isn't the easy answer.

Let's consider the power grid and existing infrastructure. Now imagine the drain on the power grid if everyone decides to switch from petrol to electric cars tomorrow. Chances are, as is, the grid can't support everyone if a switch were to happen overnight. Additionally, some electric vehicles cause more waste because of bad battery technology, not to mention abandoning petrol-using vehicles that are in fine working order is just as wasteful.

### A strategy for successful completion

The electrification of fleets should happen strategically. Instead of putting a charger at every light post, install chargers at public transit stations to modify human behaviour. Then, instead of switching out the entire fleet of non-electric buses, do it in a phased approach as assets reach end of life.

By using existing fleets more strategically—oh, hello, data—can be more cost-saving than adding new vehicles to a fleet.

### Digital transformation minus (how do we get there) = data

In short, data is the answer to it all: It shows where to implement digital initiatives to make the most impact and helps justify decisions. Data also helps track just about everything—the progress, results, challenges, opportunities, and more.

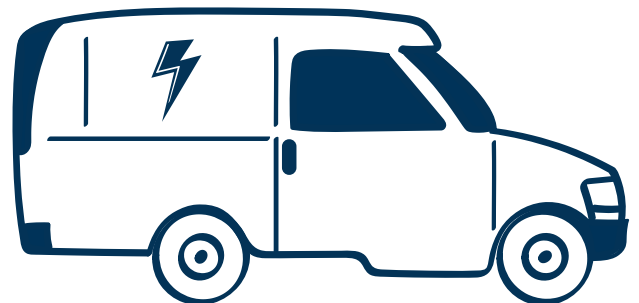
You can better facilitate fleet management using data to monitor and manage fleets more effectively, with tasks such as tracking vehicle location, monitoring driver behaviour, and optimising routing.

Better information and insights ultimately can enable fleet managers to reduce fuel consumption, improve safety, and minimise vehicle downtime.

### There's to help know where to place your pieces

Asset management software can help centralise data so you can utilise assets as effectively as possible.

Brightly helps public infrastructure leaders with digital transformation efforts by streamlining the management of assets through a computerised maintenance management system. Our technology makes managing your facilities, public works, public utilities or public services more efficient, all while protecting your most important assets.



## Trend 4: Internet of Things (IoT) and connected communities

A few years ago, everyone around the globe was buzzing with the concept of the Internet of Things, often abbreviated as IoT.

The possibility to use technology to connect everything was exciting—and it still is! By leveraging a combination of vast amounts of (usable) data and planning, public infrastructure leaders can strategically deploy technology in impactful ways to improve the quality of life for residents.

Once again, it all boils down to data and what leaders can do with it, assuming they can capture it.

### Down under is right-side up

Australia is one place where the [concept of the smart city stuck](#); through the responsible and creative use of smart technology, smart cities in Australia can deliver services to their citizens in a way that is a hundred times more efficient than they previously did.

Sometimes referred to as connected communities, these cities rely on collecting and analysing large amounts of data from various sources, such as sensors, mobile devices, social media platforms, and more. This information helps make informed urban planning, resource management, and public safety decisions.

### The keys to the city? It's data

Leveraging data can impact connected communities in many ways.



**Improved infrastructure:** One of the easiest ways to spot the benefits is through improved infrastructure. Smart cities can better use resources such as energy and water. Transportation is another area where harnessing information can work its magic, such as by capturing data from sensors installed in city infrastructure to optimise traffic flow, reduce congestion, and improve the efficiency of public transportation.



**Better urban planning:** Data also makes more strategic urban planning possible. City planners can use data to identify areas where capital planning investments will have the most impact as well as spot trends, predict future needs, and design more effective and efficient public services.



**Improved communication:** For any elected or visible leader, increased citizen engagement is perhaps the most valuable benefit of having the ability to utilise data, as it can help public infrastructure leaders engage with citizens and involve them in the decision-making process. For example, cities can use mobile apps to enable citizens to report issues such as potholes or broken streetlights.





### Smart tools to lead cities, well, smarter

Asset management software and capital planning solutions are powerful tools that can help public infrastructure leaders grab all the available data to make better choices and inform the public with the right information so they can support decision-making.

Brightly understands how to help public infrastructure leaders maximise their data. Explore how we helped the [City of Salisbury](#) embark on a digital transformation of their asset management systems to optimise their costs and improve efficiency. With a broad range of activities and a need to capture increasingly detailed data, they are now able to accurately track the data for each asset, which includes everything from roads, playspaces, trees and reserve furniture.

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Because of the near real-time tracking of status, jobs don't fall through the cracks and our community see better outcomes.

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**James Corletto**

Team Leader, Strategic Asset Management at the City of Salisbury

[Read the full Case Study](#)

## Trend 5: Supply chain-driven cost increases

With rising energy costs come other added expenses. No person, organisation or industry can escape the general cost of living increases. So when breaks, bottlenecks or delays hit the global supply chain, public infrastructure leaders feel the backlash even more.

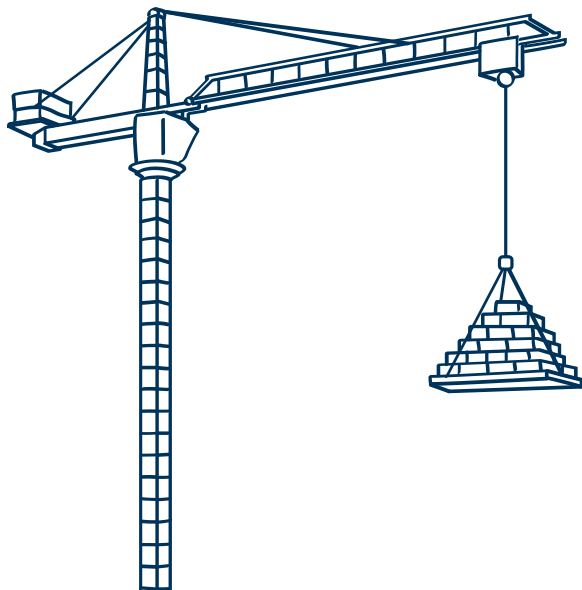
From projects not being completed, to increased costs, to unhappy residents wondering why services and projects seem to be taking so long, navigating supply chain cost increases is yet another area where having the right data can help public infrastructure leaders and owners get ahead of issues.

### One way to assemble the puzzle? Outside help

One way public infrastructure leaders try to save money is to outsource activities such as with contractors for construction projects. Outsourcing helps to control expenses and cost caps. It also shifts risk to supply chains that bid for contracts when fuel, energy, and materials were possibly cheaper or easier to obtain.

When supply chain-driven cost increases occur, some contractors find they cannot make money and try to exit contracts, which puts pressure on public infrastructure agencies to solve problems.

Now, we're looking at a data and communication problem.



### Cheat sheet: Questions to ask

Key questions leaders are asking that relate to getting ahead of supply-chain challenges:

**How can I extend the life cycle of my assets to ensure they last a long while, especially amidst supply-chain uncertainties?** It's great to have a plan but without a revenue budget to accomplish new projects or replace failing assets; it is easy to revert to reactive measures—which can be very costly. If an asset goes down unexpectedly, they may spend even more to rush repair or replace when preventative maintenance could have helped catch a minor issue before it became major.

**How do I drive maximum efficiency from the resources that I have?** With an unreliable supply chain, leaders want to maximise what they can achieve with what—or who—is available. This question might materialise in a few forms, such as:

- How can I get the 20 people I have to do 20% more work?
- How can I reduce resources and deliver the same amount of service?
- How do we manage our internal resources to drive efficiency?

**How can we utilise external providers to drive cost-saving and efficiency by outsourcing the work?** For public infrastructure leaders, labour costs can add up quickly, not to mention needing additional resources to find, hire, train, and manage employees. Hiring outside organisations on a per-project basis is one way to control costs, with the caveat we covered earlier: What happens when outsourced work encounters supply-chain issues?

### **Putting it back together when the unexpected happens**

Imagine you're working on a puzzle when out of nowhere, a cat jumps up on the table and displaces some of your hard work. But, unlike when you freshly dumped the puzzle out of its box, you now have a little bit of contextual knowledge of how the pieces need to go back together.

Having access to data is a bit like knowing how to reassemble something you've already put together. You have the historical information or the general idea of what goes where. For the puzzle that is public infrastructure, asset management software can help pick up the pieces should supply chain challenges hit your workspace.

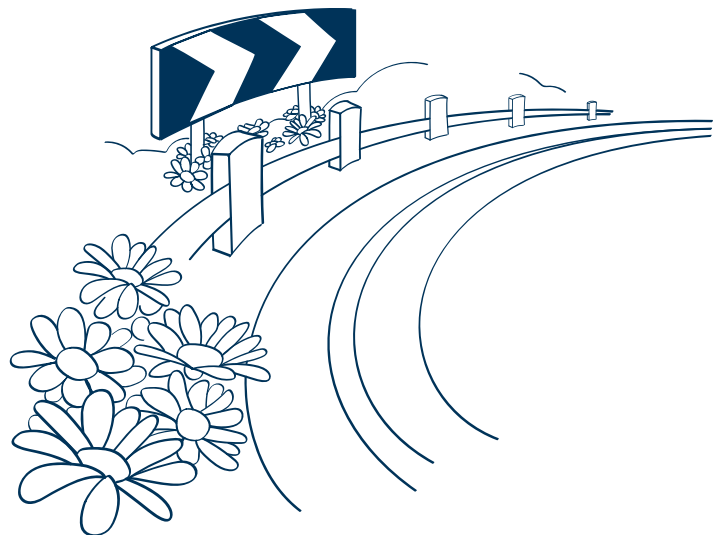
### **Technology that has the future in mind**

Public infrastructure leaders are not on their own when it comes to solving supply chain issues. Whether you are looking for smarter logistics that provide more informed inventory control or assistance with troubleshooting, preventive maintenance, scheduling, planning and more, the right tools can help you act smarter—and make it easier to communicate what's going on.

Capital planning software can also enable leaders to leverage data to make better decisions. With the capability to compare various funding scenarios that help protect complex asset portfolios and keep infrastructure in good shape for citizens, this type of tool is invaluable during supply chain uncertainties.

### **Illuminating opportunities in uncertainty**

Brightly understands how the supply chain affects public infrastructure and the maintenance teams that keep everything running. Our solutions enable leaders to compare various funding scenarios and manage assets more effectively to solve challenges successfully.



## The Brightly side of market trends: bringing all the pieces together

There is no one leading issue, challenge or opportunity that public infrastructure leaders must tackle. The puzzle pieces are many, and they are all interwoven and threaded—with data.

The right tools in the hands of leaders can help with:

- Predictive maintenance enables public infrastructure facilities and operations managers to fix issues before they cause significant problems, reduce downtime, increase safety, and save money on repairs.
- Better public services such as transportation, roadway maintenance, utilities, etc.
- Enhancing sustainability initiatives, such as reducing carbon emissions or conserving natural resources.

Brightly can help public infrastructure leaders identify problems by enabling evidence-based decision-making, optimising existing workflows and infrastructure, enhancing predictive and preventive maintenance, and improving public services and sustainability, all through the power of data.

**Connect with an expert today.**



## About Brightly Software

Brightly, a Siemens company, is the global leader in intelligent asset management solutions, enables organisations to transform the performance of their assets. Brightly's sophisticated cloud-based platform leverages more than 20 years of data to deliver predictive insights that help users through the key phases of the entire asset lifecycle. More than 12,000 clients of every size worldwide depend on Brightly's complete suite of intuitive software – including CMMS, EAM, Strategic Asset Management, IoT Remote Monitoring, Sustainability and Community Engagement. Paired with award-winning training, support and consulting services, Brightly helps light the way to a bright future with smarter assets and sustainable communities. For more information, visit [brightlysoftware.com](https://brightlysoftware.com)

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