

Building permit and enforcement



Healthy cities continuously develop and evolve. Indeed, the economic prosperity of a city can often be judged solely on the number of cranes that loom over the skyline. But to keep those cranes from sitting idle, contractors and developers need fast and cost-efficient access to building permits. And that means a more efficient and effective building permit and enforcement service.

Defining the service

Building permission and enforcement services (also known as building permit services) issue building, demolition and alteration permits for new and existing structures in a city and conduct inspections of active sites to assess compliance. In some cases, occupancy permits issued by the local fire department have been included.

Topline findings

- The cost of building permits ranges from as low as US\$218 to as high as \$5,000 per permit.
- The median cost per permit is between US\$860 and US\$1,403.
- The median time required to issue a building permit is between 30 and 60 days.
- However, time to issue a building permit ranges from 6 days to 684 days.

Efficiency

Operating and capital cost per building permit. This measure combines reported operating costs and capital costs for all building permission and enforcement services and divides the total by the number of building permits issues and inspected.

Points to consider

It was challenging to justify some of the outliers for the cost of a building permit. Some cities show such a cost at less than US\$500 while other cities suggested costs at US\$5,000 or more. For the eight cities that did report costs, the adjusted mean works out to approximately US\$1,700/permit.

Cities will be quick to point out that the cost of issuing a permit for a single family dwelling bears no comparison to the cost of issuing a permit for a shopping mall or 50 story office building. Further refinement of costs would focus on distinguishing between the cost of different types of permits while not necessarily getting mired in too much detail.

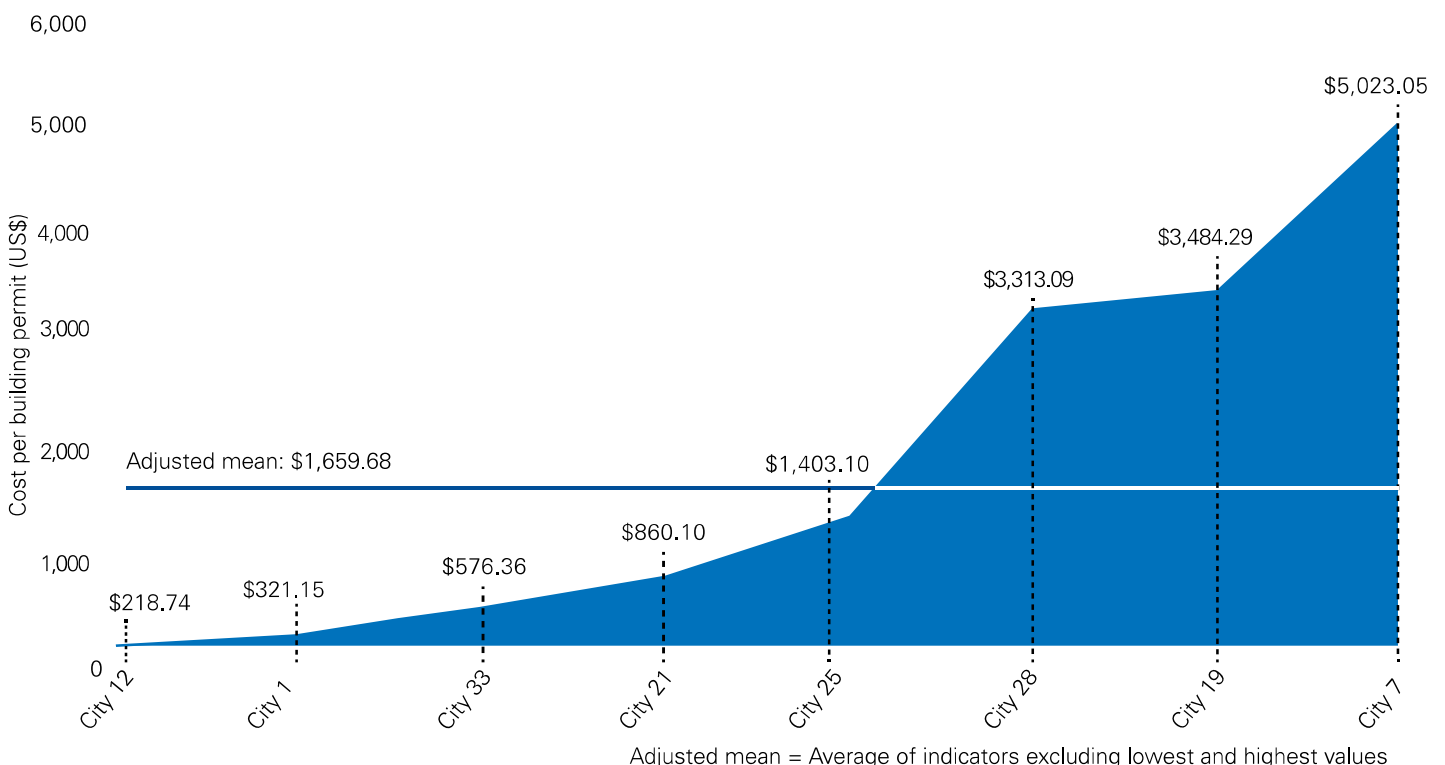
Factors influencing the cost of building permits might include the complexity of the regulations governing construction of buildings

and how these may differ substantially between countries. Additional factors may be influenced by the age and density of the city, the degree of involvement of various departments in the approval process, and whether the city uses technology solutions, such as electronic submission of building permits as a means of speeding up the work flow.

In the Economic Cities Authority in Saudi Arabia (not a participant in this study), they were striving for issuing building permits within 60 minutes or 1 hour. Clearly such a fast turnaround time means that the effort on the part of staff to review such plans is reduced to an absolute minimum, or in the case of the Economic Cities, outsourced to qualified private sector plan examiners. These innovations are being considered and in some respects being used as economic development incentives to attract businesses to these new, greenfield cities.

The example from Saudi Arabia points to cost saving measures based on revolutionary thinking. While not every city will adopt such innovation, the example points to ideas that break the barrier of traditional thinking and seriously challenges laborious work flow approval processes.

Figure 8: Operating and capital cost per building permit (US\$)



Effectiveness

Average length of time to issue a building permit: This indicator captures the average length of time to issue a permit from the time an application was received.

Points to consider

When we look at the length of time to issue a permit we note that on average it takes 50 days based on 12 observations. One city takes almost two years (684 days) to issue their building permits. This city might seek out innovations to reduce the average time to issue such permits, but it may also be mired in traditional bureaucratic processes that will require substantial changes to the culture in which this service operates.

Many cities operate this service where permits are typically issued within 2–3 months. These same cities will point out that the length of time is frequently predicated on the cooperation of the contractor/developer in supplying the necessary required supporting material in a timely fashion. Some cities actually monitor the percent of applications that are processed upon the initial application versus second and third submissions, and are working to increase this percentage by publishing more information about

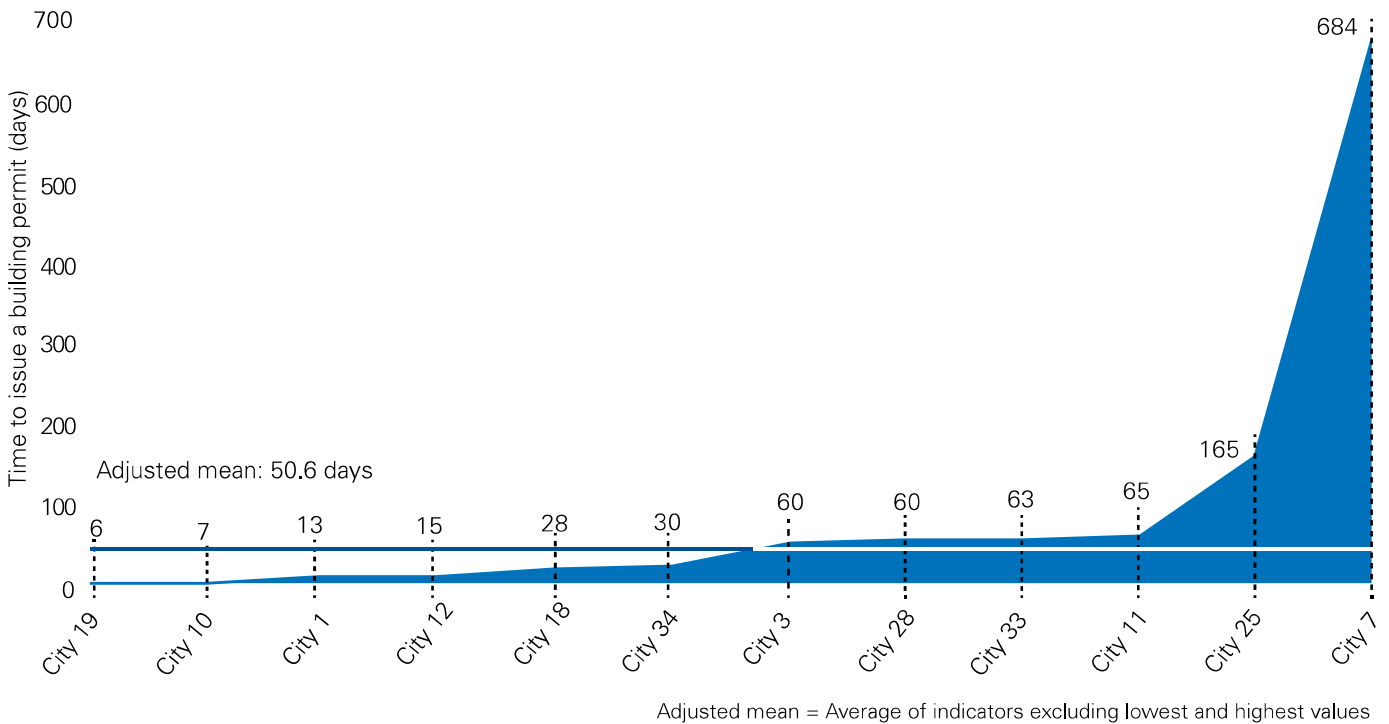
what might be expected of the application based on the type of building subject for approval.

The complexity of building permit applications and the regulations controlling new construction continue to be a source of concern and certainly an important factor in benchmarking. For example, a high rise building that has multiple uses — retail, office, residential and institutional uses — brings multiple construction code considerations to the table and in so doing this can involve different structural examiners prior to the final approval being awarded. Seeking out ways to speed up the process while not compromising the integrity of the review process is becoming increasingly important and more challenging.

Depending on the age of buildings within the city, there may be historical building considerations that will delay the permit approval process so as to ensure that the building’s architectural and aesthetic qualities are preserved.

More and more cities are now accepting digital submission of building permit applications. This can allow for quicker distribution to all required departments and agencies to receive and comment on the application leading to faster processing times.

Figure 9: Time to issue a building permit (days)



Persistent problems

- Managing rapid urban development and the associated increase in demand
- Improving inter-sectorial and inter-agency coordination
- Implementing new IT and back office systems
- Reducing overall permit processing times
- Increasing the number of permits approved upon initial application
- Enhancing customer experience
- Encouraging economic growth and development

Common cost factors

- Type of permit being issued
- The level of complexity of the project

- The complexity of the permit process and application
- The level of digitization

Innovative ideas

- In **Brisbane**, the Suburban Construction Management Team has used the new Planning Act and Environment Protection Act to adopt a stronger compliance focus, including training to facilitate the implementation of Prescribed Infringement Notices.
- Authorities in **São Paulo** have implemented a new Electronic Licensing System (SLCe) that should allow projects to be approved in less than five working days by unifying documents within a single permit.
- Over the coming year, the City of **Philadelphia** will introduce a new customer queuing system (that will enable customers

- to schedule appointments) and a new IT system that should allow customers to submit and pay for permits online.
- Having split their applications into sub-categories, authorities in **Cape Town** are now introducing electronic submissions and registering users as business partners with the city.

Transformative trends

- *Reducing complexity:* A number of cities are currently exploring how they might reduce the overall complexity and burden of permit applications by streamlining processes and integrating applications.
- *Leveraging technology:* New IT systems and mobile platforms are helping building permit authorities improve effectiveness and enhance customer satisfaction.
- *Managing resources:* Rising demand for permits and — in some cities — citizen complaints have forced authorities to

- rethink the way their resources are deployed and supported.
- *Aligning revenues:* Cities are starting to take a more sophisticated approach to setting fees that reflect the complexity of the project, the resources required and the responsiveness of the contractors.
- *Improving approval rates:* Some cities are monitoring the number of applications that are approved after their first submission to identify further opportunities for improvement.

What else did we measure?

For our benchmarking exercise, we collected a wide variety of data on the effectiveness and efficiency of this service area. The following indicators lacked sufficient data or respondents to illustrate in this report:

- Revenue collected for building permits
- Capital cost of building permits.

Q&A with Alan Mitchell, Executive Director, Cities Global Center of Excellence, KPMG International



Alan leads KPMG’s Cities Global Center of Excellence where he is responsible for developing and delivering best-in-class solutions to support KPMG member firms around the world. Alan is recognized globally for his work developing program/service models for cities and local authorities.

Q: With so much now on the city agenda, why should city leaders be focused on improving the efficiency and effectiveness of building permit and enforcement services?

A: The reality is that building permits generate lots of economic value for a city. And city leaders recognize they can help increase the pace of development by reducing some of the regulatory hurdles that an applicant must clear in order to turn their ideas into reality. A more efficient and effective building permit service means that economic value can be achieved much faster without compromising the safety of citizens.

Q: In your experience, why might the cost to issue a building permit vary between cities?

A: It is quite possible that the specific types of permits a city processes will directly affect the cost per permit. One might expect large cities with complex development applications for multi-story buildings to report higher costs per permit than those that process mostly permits for a single-family home, or a deck on the back of a home.

Q: Is there value in benchmarking building permit services against other cities?

A: Absolutely. But first you need a really clear understanding of the costs and inputs that underpin the different types of building permits that the city issues. You can’t do this at an aggregate service level. City leaders also know that benchmarking is about more than just comparing data. It’s also about uncovering new ideas, models and opportunities that can be adapted to their own situations.

Q: What are leading cities doing to improve the efficiency and effectiveness of this service?

A: We’ve seen a lot of cities achieve incremental improvements by investing into productivity tools and workflow management solutions. And many cities are starting to really focus on monitoring, measuring and improving a wider set of key performance indicators than before. But the more radical improvements are coming from those cities willing to fundamentally rethink the status quo to create new models.

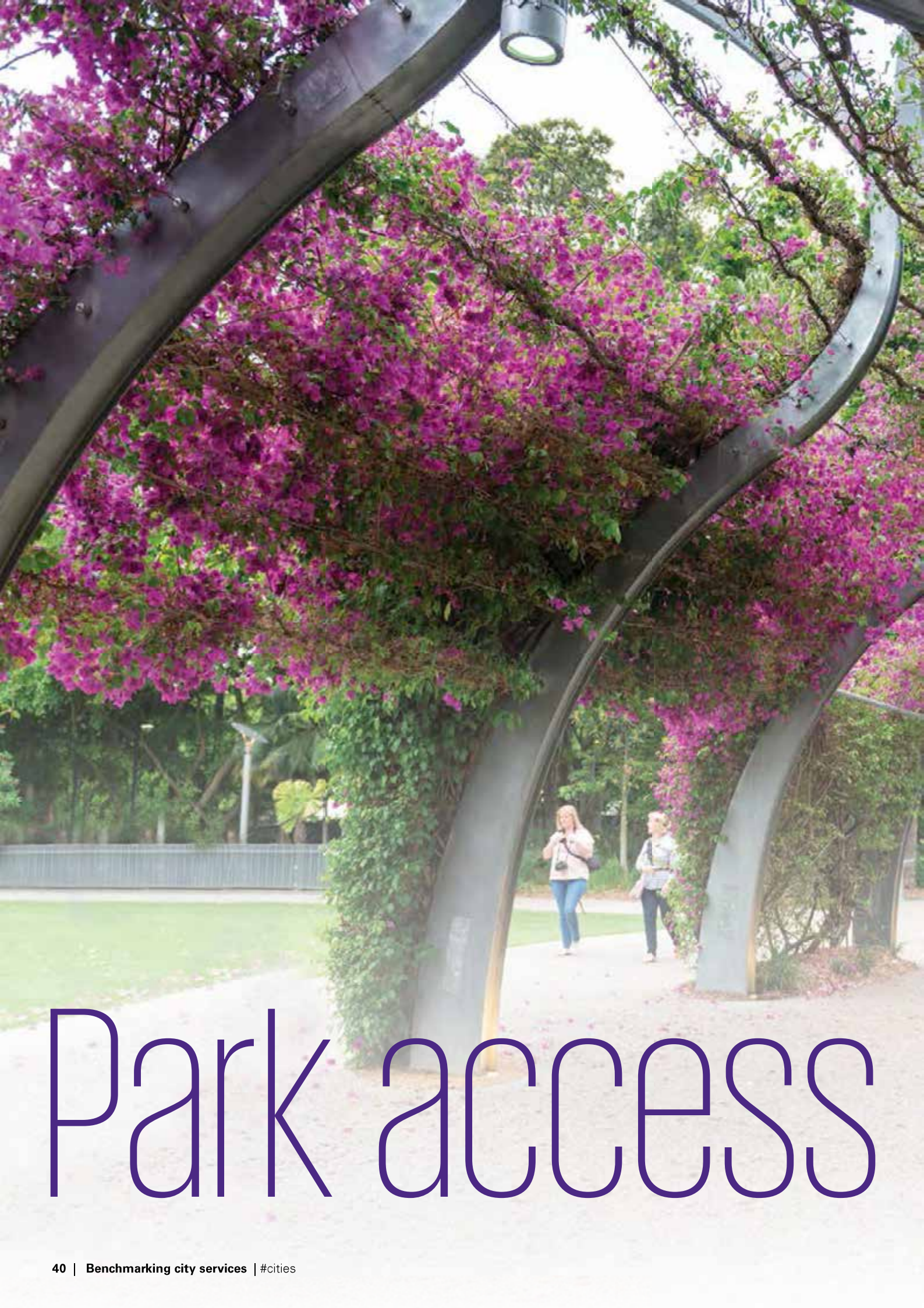
Q: What are some of the new models you are seeing emerge?

A: Some cities, particularly in the emerging markets, are questioning the fundamental roles and accountabilities

of the building permit process. They are empowering the private sector to conduct certified inspections, pushing accountability to engineers and architects and creating new IT systems that allow permits to be processed in less than an hour. They are not only getting faster processing times and reduced costs, they are also shifting the accountability for structural integrity of buildings back to the developers and contractors.

Q: Is regulatory reform necessary for success?

A: Not always. But many of the cities we’ve worked with maintain incredibly complex approval processes — some permits require more than 100 approvals, depending on the nature of the building. Regulatory reform is one approach to reducing the burden for clients. Cities may also want to consider implementing a ‘first in’ system where the receiving authority assumes responsibility for coordinating data across the other agencies in the process. It’s really all about rethinking the processes and finding ways to reduce the friction for clients. ■



Park access

Access to a park encourages healthy living and builds stronger communities. Yet few cities have a clear understanding of how many people actually use their parks. Few cities doubt the tremendous value that their parks provide, but unfortunately they find difficulties in sustaining their park budgets with only a partial picture of how parks are performing. It's time to take a closer look at our parks.

Defining the service

Park access services include the design, construction, maintenance, repair and operation of parks. These may include active parks and parkettes, sports fields and public open spaces such as ravine lands, urban forests and scrubland. Recreational facilities within parks may or may not be included.

Topline findings

- On average, cities spend US\$12,730 per hectare of parkland.
- Spend on parks ranged from US\$3,200 per hectare to US\$54,900 per hectare.
- Most cities report at least 90 percent of population living within proximity to a park.

Efficiency

Operating and capital cost per hectare of park. This measure combines the total operating costs with the total capital costs and divides the total amount by the number of reported hectares of park within the city.

Points to consider

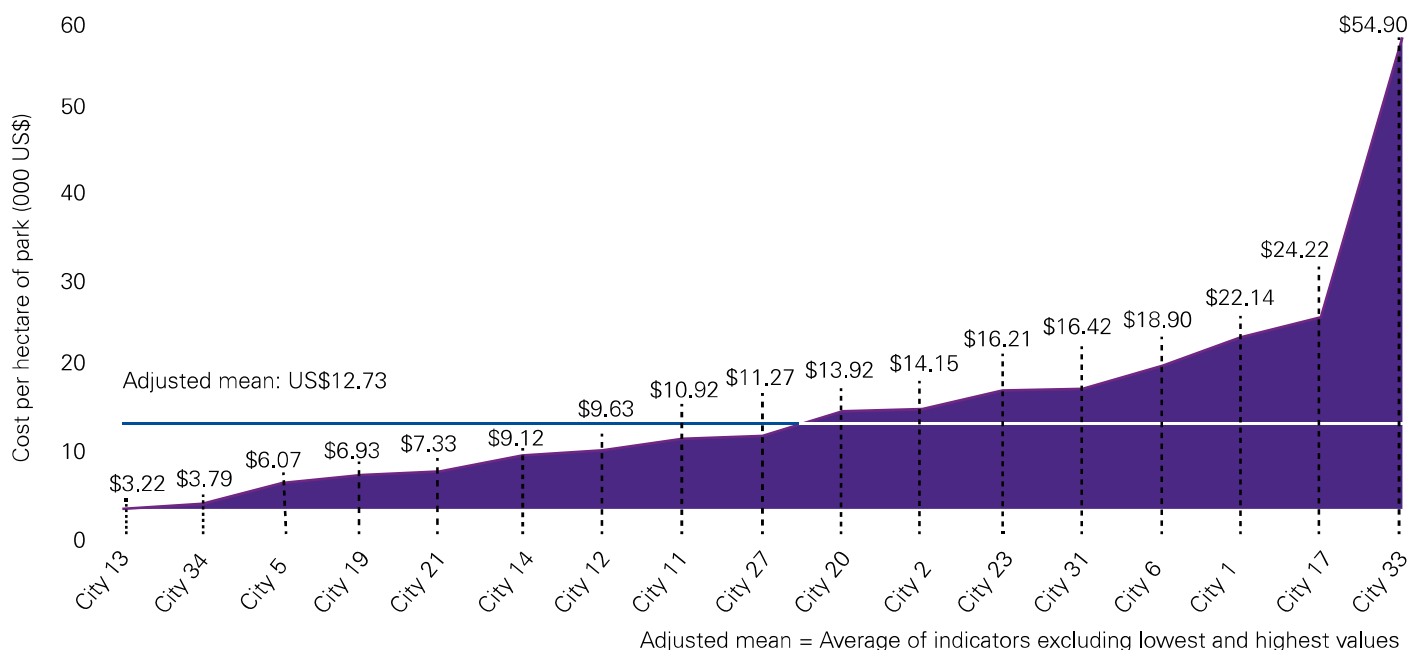
The high cost of US\$55,000 per hectare does not appear to be an aberration but clearly this city spends considerably more on operating and capital costs than any other city — are parks more precious in this city?

Is US\$3,200 per hectare far too low, or has this city actually sought out revolutionary cost saving measures to reduce operating and capital costs?

Is US\$13,000 per hectare on average enough or should it be higher to cover off park infrastructure that may be in severe need of replacement or refurbishment?

Differences in park costs can be attributed to different types of parks that comprise a city's portfolio. If a city had a higher than average number of parks as unmaintained woodlots, ravines or bush lands, then their costs would be lower than a city with high-maintenance sports fields in their portfolio.

Figure 10: Operating and capital cost per hectare of park (000 US\$)



Effectiveness

Percent of residents within walking distance of parks. This measure indicates the accessibility of parks as a percentage of the total city population that lives within 800 meters (approximately a 10-minute walk) of a park.

Points to consider

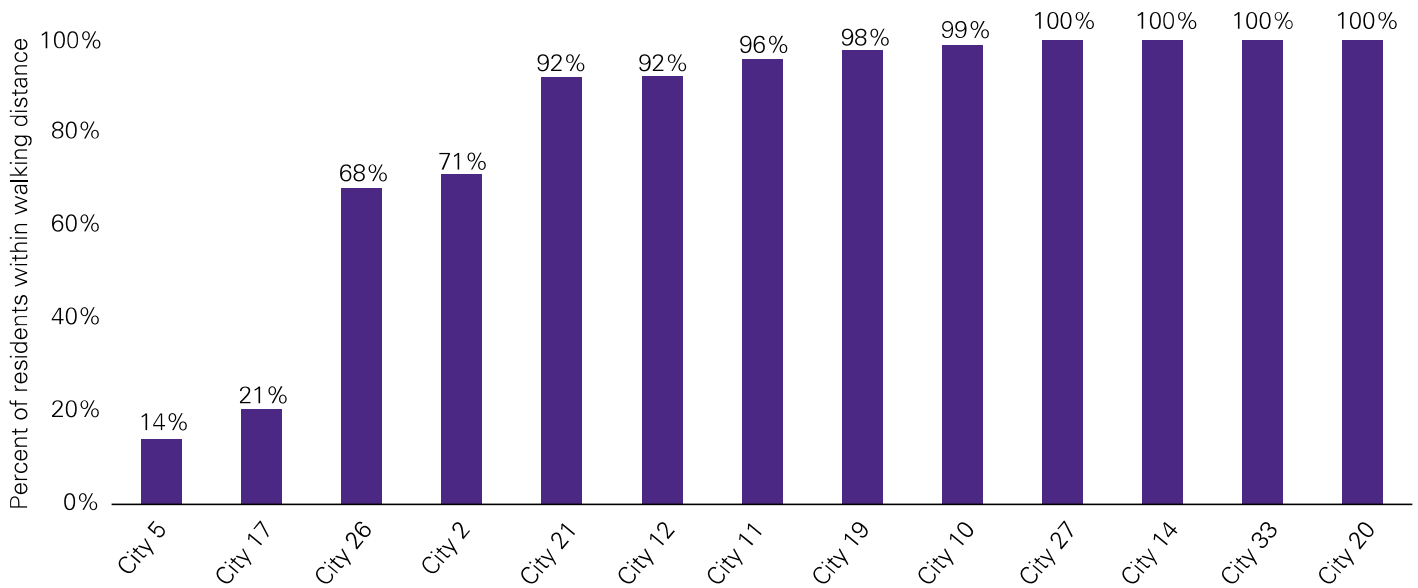
Regarding the percent of parks within walking distance of residents, ideally every city would be at 100 percent. Of the 13 cities that responded, more than half of the cities have achieved this goal.

Two cities fall below this target by a substantial margin at 14 percent and 21 percent respectively. Where a city is within close proximity to

inland national parks that are not part of the city's service offerings, this would also increase the accessibility to parks within reasonable walking distance. This type of scenario would not be reflected in this study's data.

While the relative location of parks to residents is an important statistic, ideally cities would like a better idea of how many of these residents actually used the parks. KPMG attempted to capture the number of park users per annum but few cities could report this statistic. With the advent of new technology, some cities are exploring how they can capture such information either through mobile technology or "trip counters" located at strategic locations throughout the park.

Figure 11: Percent of residents within walking distance of parks



Persistent problems

- Changing demographics and park usage requirements
- Improving the effectiveness and attractiveness of park features
- Securing experienced park design and development services
- Increasing demand for connectivity and information and communication technology (ICT) infrastructure within parks
- Creating shared funding mechanisms between different levels of government

Common cost factors

- Type of parkland provided
- Sophistication and class of assets
- Maintenance requirements (grass cutting, horticultural care)
- Energy and input costs (fertilizer, etc.)
- Climate and topography

Innovative ideas

- Wi-Fi and internet nodes have been installed in city parks in many cities including **Adelaide** and **Moscow** in order to encourage increased usage, particularly by millennials.
- Parks staff working for the **Sunshine Coast** authorities are enabled with mobile technologies that allow them to report and receive work orders while roaming on park sites.
- In **Moscow**, parks authorities are testing a variety of new park uses including providing places for psychological rest (such as paths created especially for barefoot walking), ethnographic discovery (a place for cultural dialogue) and ‘extreme’ amusement parks.
- In an effort to broaden access to parks in **CapeTown**, authorities have developed a ‘Smart Parks’ program that takes a principles-driven, community-centered and sustainable approach to the development of parks facilities.
- The city of **Kazan** has increased total park space by 50 percent over the past four years through the parks and public gardens project that saw the development of more than 50 new parks ‘from scratch’.

Transformative trends

- *Rising expectations:* As residential density increases and citizens become more focused on health and environmental concerns, expectations for parks facility quality, access and service levels are rising.
- *Encouraging biodiversity:* By introducing native plants, meadows and un-maintained green space, cities are improving the diversity of park features, reducing costs and enhancing environmental sustainability.

- *Improving standards:* From asset quality standards through to environmental and maintenance standards, many cities are now focused on creating a more consistent quality of service across park assets.
- *Seeking new revenues:* Some cities are working to introduce and modernize retail facilities within parks as potential new sources of revenue.

What else did we measure?

For our benchmarking exercise, we collected a wide variety of data on the effectiveness and efficiency of this service area. The following indicators lacked sufficient data or respondents to illustrate in this report:

- Park usage
- Revenue collected for parks.

Combined efficiency and effectiveness analysis

Points to consider

A new performance perspective on parks combines both one efficiency and one effectiveness indicator. In this example, the cost per hectare of park (efficiency) is combined with the percent of parks within walking distance (effectiveness). Thirteen cities provided sufficient information to generate this fascinating picture of parks.

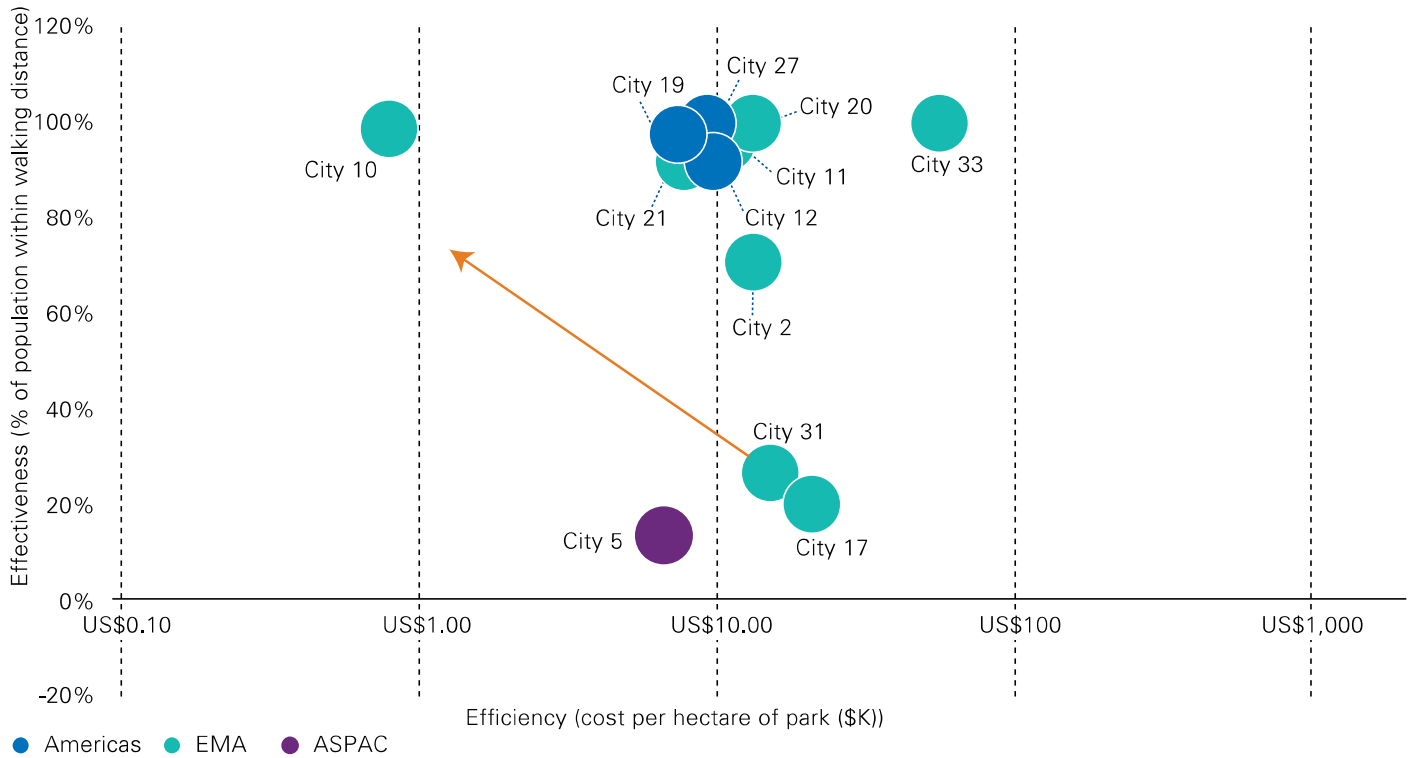
Significant to note that there appears to be a cluster of cities that provide 100 percent (or nearly 100 percent) of their parks within walking distance at a price point of US\$8,000–US\$14,000 per hectare of park. City 10 boasts 100 percent coverage at less than US\$1,000 per hectare but this requires closer scrutiny. If it stands the test of further analysis then City 10 can provide lessons to other cities about how to become more efficient.

City 33 may wish to focus on reducing costs while maintaining its “walk to park” appeal. Meanwhile, City 17 may be spending the right amount of money but access to parks appears to be an issue and there is room for improvement.

As previously mentioned, the context in which a city operates its own parks relative to other natural features (i.e. beaches, national parks) can directly influence costs and ease of access to parks. Sometimes this context is forgotten in the benchmarking comparisons and lends itself to incorrect conclusions about efficiency and effectiveness.

As the number of cities involved in such benchmarking studies expands, we believe that greater insights will be forthcoming.

Figure 12: Park access — combined efficiency and effectiveness



Q&A with Daniel Boulens, General Manager of Public Parks and Gardens, Lyon



Daniel is the General Manager of the Open and Green Spaces Department at the City of Lyon. He has served as Vice President of the French Association of Directors of Parks and Gardens and has won numerous awards for his work improving the parks of Lyon.

Q: In your opinion, why might costs for city parks access vary within a single city?

A: There are many factors that could result in different costs for parks within a city. For example, the size and location of the park can have a massive impact on costs. Smaller spaces are generally more expensive to upkeep, as are those in more densely populated areas where usage may be high. The composition of the park is also important. Natural spaces are often cheaper to develop but cleaning costs can be higher depending on the terrain.

Q: Do higher costs translate into higher quality parks?

A: The level of quality is certainly very important as it has a direct impact on the quality of life, wellbeing and attractiveness of a city. In Lyon, we plant a lot of flowers in strategic locations. The costs of flowers may be higher than lawns or perennials, but the results in terms of quality are also quite different. But I think a lot depends on what is included in the cost accounting. We hold a lot of events in our parks — free of charge — and that is included in our overall costs.

Q: Is demand for parks changing?

A: We are certainly seeing a rise in demand for parks in Lyon, particularly parkettes or proximity parks with trees, playgrounds, benches and fountains. Residents and city leaders recognize that green spaces can act as very social environments within a city which, in turn, improves livability and quality of life. An attractive city is good for business, for industry, for culture, for leisure and for tourism. So demand is constantly rising.

Q: What are the challenges with meeting this rising demand?

A: Like most other cities, we face significant cost and budget pressures. And the problem is that, while parks contribute to the wealth of a city, they do not tend to generate direct revenues for the parks. So while we are under pressure to improve parks access and quality, our budgets are not going up. That means we need to find alternative techniques for maximizing our existing budget.

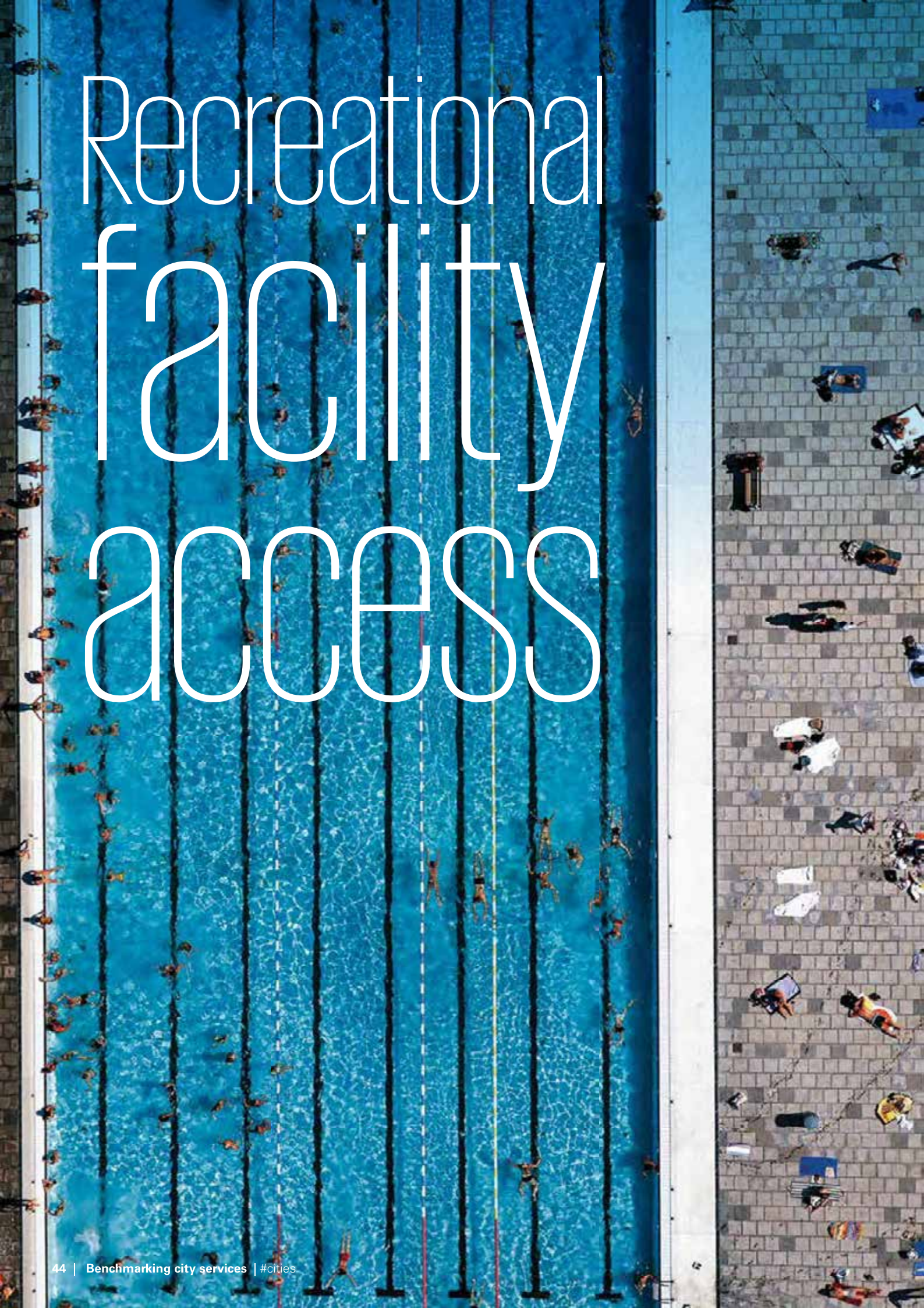
Q: What are you doing to help improve park efficiency and effectiveness?

A: We put a lot of effort into measuring and improving our efficiency. We have spent

time really understanding the different types and compositions of our parks in order to improve our maintenance and have more informed discussions with politicians and residents. We focus on reducing our impact on the environment through reduced energy use, water use and maintenance. And we put significant effort into improving access to parks by promoting them in the community and by organizing educational and environmental programs.

Q: What advice would you offer policy makers and park leaders?

A: I think policy makers need to focus on having smart discussions with the population about costs, maintenance, value and benefits of city parks. We need to encourage the public to become more involved in the maintenance and management of our parks. Parks managers need to support this effort by talking about parks in accessible and understandable language that promotes efficiency and drives value. Most importantly, they need to count everything. If you don't count, you don't count. ■



Recreational facility access

Recreational and sports facilities add to a city’s quality of life. They encourage socialization, healthy living and civic participation. They celebrate culture, bring people together and build community cohesion. But — as demographics shift and assets age — many municipalities seem to be struggling to forecast and then deliver against current and future demand.

Defining the service

Recreational facility access refers to city-owned recreational facilities such as buildings, swimming pools, community centers, sports fields and arenas. For this report, we made a distinction between recreational facility access and recreational programming.

Topline findings

- The average city spends around US\$114 per revenue hour but only collects US\$15 in revenue from fees.
- Labor and utility costs account for the greatest variances.

Efficiency

Cost of recreational facilities per hour. This measure reflects the cost per hour of recreational facility per program hour of operation. This cost is equal to the operating and capital cost of designing, building, operating and maintaining recreational facilities divided by the hours of program usage of the recreational facility. Recreational facility per program usage is the number of hours of operation of the facility and programs.

Points to consider

Cost of recreational facilities per hour

Of nine cities reporting costs, one city reported costs of less than US\$1 while another reported costs in excess of US\$270 per hour of recreational facility usage. Further examination of both city submissions did not reveal any evidence of incorrect reporting. However, dropping these two outliers results in an adjusted mean of US\$114 per hour of recreational facility usage.

When operating and capital costs are separated, one city reported extremely low operating costs versus its capital expenditures raising questions about whether the costs they reported may be in error. Setting aside observations out of the norm, cities

report between 5–40 percent capital of total costs. Costs for any given year may be influenced by a significant capital expenditure. Ideally a five-year average would normalize such fluctuations.

Different cities provide different features in their recreational facilities. For example, some cities might provide swimming pools, gymnasiums, ballparks, ice rinks, etc. while others might provide fewer features. Different facilities have different costs and the proportion of more expensive facilities will obviously tilt them towards the higher cost side of the graph.

Despite efforts to separate the costs of recreational facility access from recreational programming cities have clearly combined the two in their cost submissions. This may be a result of the challenge they have in separating the costs.

Can cities maintain, on average, their recreational facilities at US\$110–US\$115 per hour of recreational facility usage? If so then are they charging revenue to offset this hourly charge sufficient to cover these costs? The answer is that many cities do not, particularly given the fact that they provide these facilities to level the playing field for those participants who can ill afford to pay for privately operated facilities.

Figure 13: Operating and capital cost per hour of recreational facility usage (US\$)

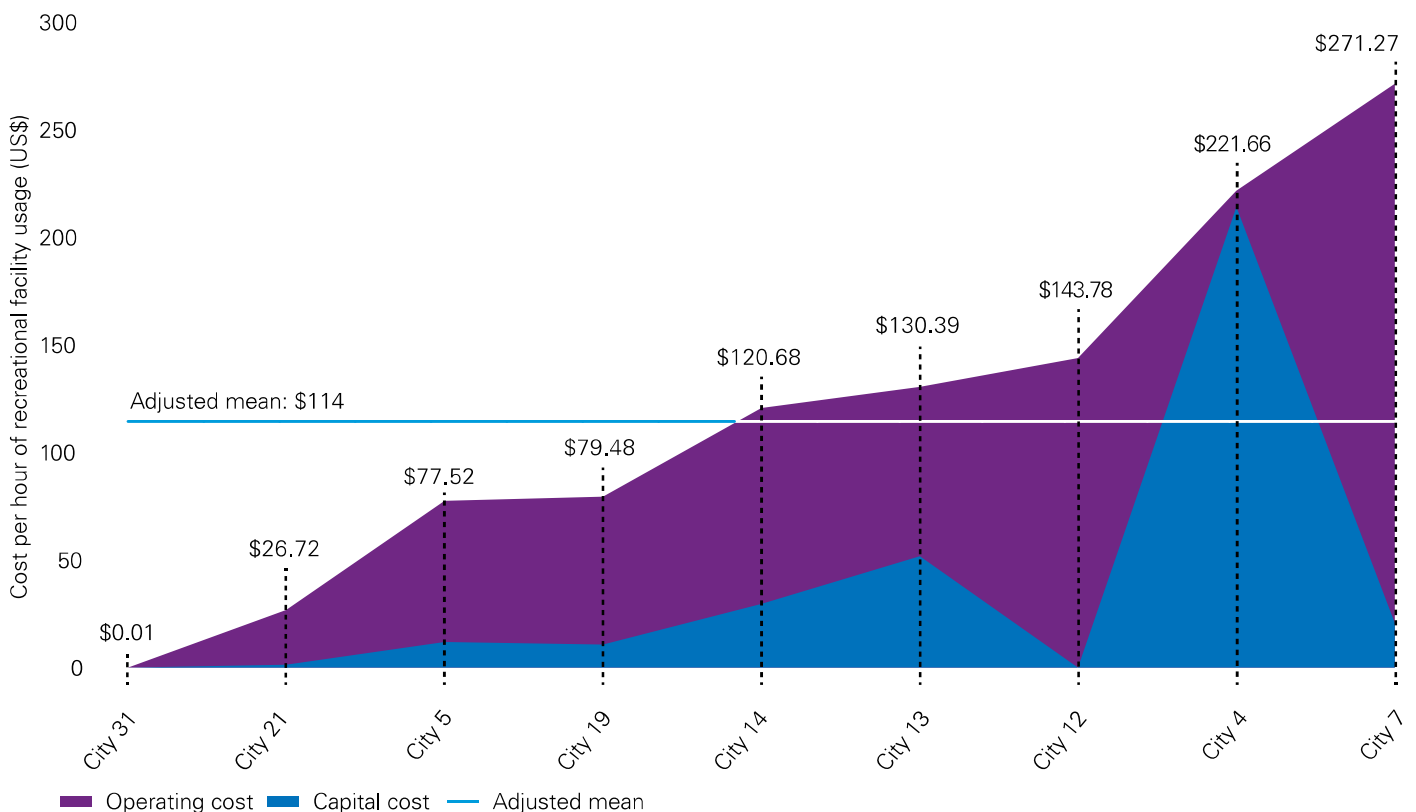
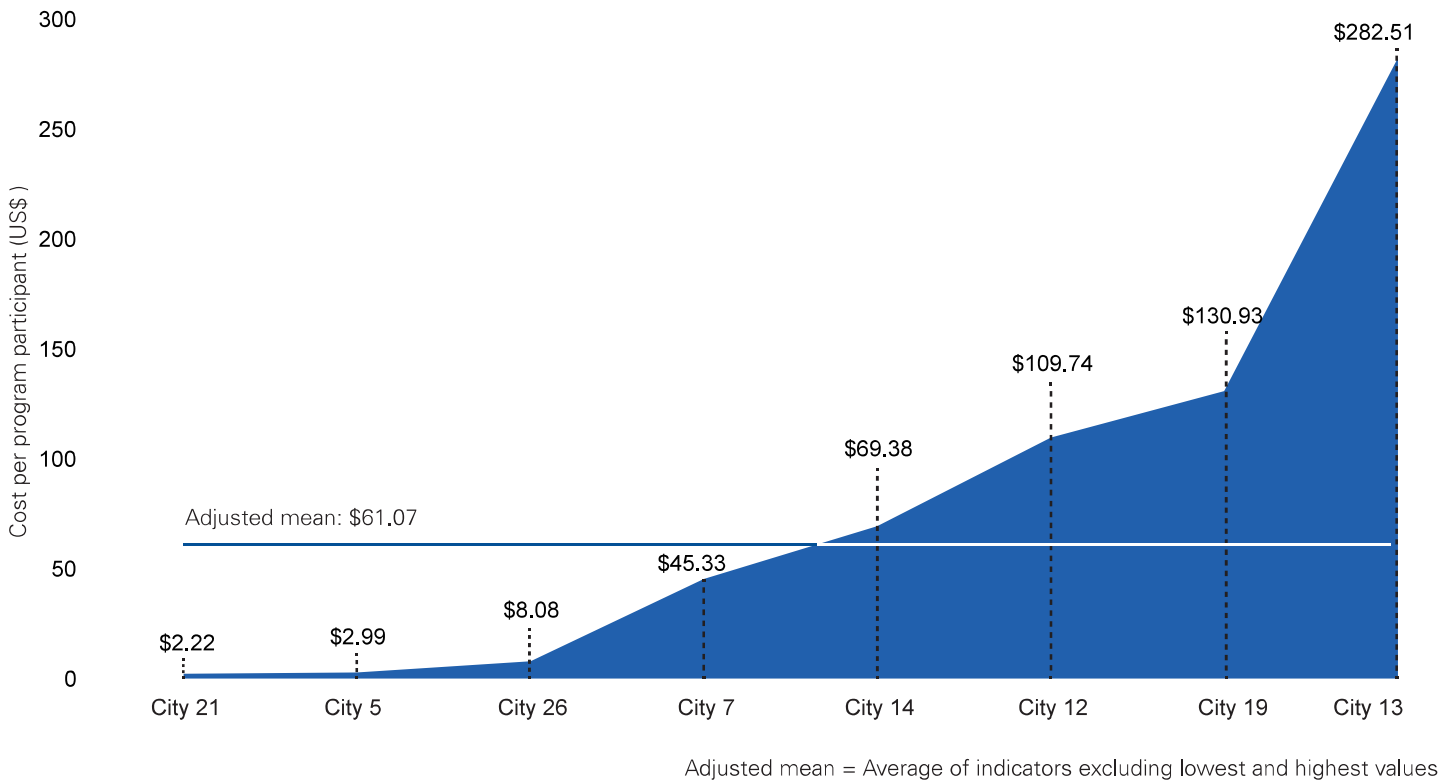


Figure 14: Operating and capital cost per program participant (US\$)



Effectiveness

We would have liked to capture data around effectiveness, specifically on revenue generated per hour of usage. Many cities either did not monitor this data or did not have it readily available at this time.

Points to consider

Cost of recreational facilities per program participant

Eight cities reported the cost per program participant — a slightly different perspective on efficiency from the cost per hour of recreational facility usage. Costs range from a low of US\$2 to a high of US\$280. On average the cost per participant was US\$61. The intention behind this indicator was to illustrate the true cost of servicing program participants regardless of the fee that may be charged to recuperate costs.

This indicator does not refer to the city providing the programs but rather to other organizations, such as football, hockey, baseball and cricket clubs, running the programs within a city facility. A key component in the formula for this indicator is the number of participants. These participants would be the registrants in the clubs' programs and not all cities capture this information.

In future, capturing both the participants and the attendees will help to clarify this distinction. However, if the number of participants actually reflects attendees and not participants, then the implication would be a much lower cost as reflected in some of the calculations.

Variations in cost may be explained by a city that included a large capital cost in their reporting year which would have translated into an overall higher cost per participant.

As costs to run facilities begin to mount year over year, the challenge for recreation departments is to balance the challenge of recovering as much of the costs as possible through fees while

not restricting participation in recreational activities which is a key outcome of the recreation program.

Persistent problems

- Limited capital budgets
- Natural resource (particularly water) scarcity
- Low public awareness
- Inconsistent access to facilities
- Aging infrastructure and equipment
- Legacy back office technologies
- Facility renovation and revitalization

Common cost factors

- Labor costs and benefits
- Type of facilities and sophistication of assets
- Degree of asset depreciation and associated capital costs
- Equipment and supply costs
- Asset renovation and rejuvenation requirements
- Service level requirements or volume

Innovative ideas

- To ease the strain on existing sports facilities, **Mornington Peninsula** created a partnership with local schools where access to grounds is provided in exchange for maintenance and capital works.
- **Moscow's** digital Leisure and Recreation services portal allows citizens to sign up for clubs, register for events, provide feedback and vote for the creation of new clubs and services.
- Recognizing growing water constraints, **CapeTown's** recreational facility leaders have installed water-efficient 'spray parks' and synthetic sports fields across the city.

- **Sunshine Coast Council**, where pools represent a key service, has operations delivered by outsourced service providers, and tenure renewals are aligned to management models.
- **Mississauga** is creating operational innovation through its IT Roadmap that, amongst other benefits, better connects residents with recreational programs and services.

Transformative trends

- **Cost recovery:** Many municipalities are starting to move towards a greater focus on cost recovery to support ongoing renewal, maintenance and revitalization of assets and programs.
- **Demographic shifts:** Greater female participation in sports, shifting demographic demands and aging populations are forcing municipalities to rethink their portfolio of assets and services.
- **Private participation:** Municipalities are increasingly looking for ways to improve efficiency and service levels by working with private operators and contractors.
- **Connected populations:** Cities are finding new ways to connect with their citizens to encourage active lifestyles and improve participation in recreational and sports programs.

- **Asset management:** Particularly in more mature cities, greater focus is being placed on updating and revitalizing aging assets and facilities to respond to new demands and improve costs.

What else did we measure?

- For our benchmarking exercise, we collected a wide variety of data on the effectiveness and efficiency of this service area. The following indicators lacked sufficient data or respondents to illustrate in this report:
 - Percent of recreational facility usage (hours) of total operating time (hours)
 - Percent of recreational participants of total population
 - Percent of city's population served by recreational facilities per programs within one km of residence of total population.

Q&A with Bernie Asbell, Vice President of Sport Operations, WinSport Canada



Bernie is one of the world's leading recreational facility experts with deep experience advising municipalities and operators on facility development and operations WinSport Canada.

Q: Why are leading cities focused on providing good recreational facilities?

A: Cities recognize that recreational facilities are a great way to get people participating in their communities and to encourage healthier lifestyles. They add to the vibrancy, the diversity and the strength of the community. I think that municipal leaders increasingly view recreational facilities as an essential component to encouraging community development and pride.

Q: What can cities do to improve their recreational facility efficiency and effectiveness?

A: One of the first things you should do is find out what others are doing. There is always something to learn and something that can be adapted. So benchmarking exercises — like this one — are very important. But, at the same time, cities still need to be true to the culture and expectations of their citizens. It's about finding new ideas, not complete solutions.

Q: Should municipalities be focused on revenue generation or social benefits?

A: A lot of municipalities are starting to realize that they can generate some

revenues and then put that back into revitalizing and modernizing their facilities. But there also needs to be a balance. It's okay to make a profit from recreational facilities, as long as the community and social benefits are protected, ideally with a proper legal contract that defines services, delivery models and commitments.

Q: Does that mean private operators?

A: Not necessarily. I do think that municipalities are starting to recognize the value that can be added by involving private sector operators — private operators can often be more efficient and are usually more entrepreneurial in the way they deliver services. But that is generally easier to implement in more sophisticated facilities that are already generating some revenue — arenas and aquatic centers, for example.

Q: How can municipalities adjust to changes in demand and demographics?

A: Many cities are starting to recognize that recreational services and infrastructure can be a catalyst to renewal. And so there is a desire to continuously update and modernize recreational facilities to keep current with shifts in demand. But

I don't think there is a single roadmap to renewal. Each community needs to assess what would be best for them and what is going to add value today and in the future. And that needs to be based on proper studies and research.

Q: What role does technology play in that equation?

A: Technology is extremely important. Whether it is speeding up processes or making activities more accessible, I think cities recognize that technology is a critical enabler to improved use, efficiency and effectiveness. Going forward, I suspect the ability to manage a facility by touch will become increasingly important, allowing operators to gain better control over their facilities and costs. Whether it's facility management, customer engagement or process improvements, technology is key.

Q: What advice would you offer municipal leaders?

A: I think the key is to remain relevant and to always be future-forecasting so that you can deliver services that work for the city you live in today and want to live in tomorrow, rather than the city you knew in the past. That's the tricky part. ■