If cities are designed for people, can they be shaped by them?

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Introduction

Amid a rolling wave of change – climatic, demographic and economic – there is a blueprint emerging for a city shaped by the needs of its citizens.

In collaboration with FT Longitude, EY teams spoke to leaders in 12 cities and pulsed 6,000 citizens based in those same cities. These new city voices tell us that equity, engagement and an evolution in development lie at the heart of sustainable transformation. We explore each of these themes in this trilogy of short, interconnected articles.

Articles

On balance: how cities are placing equity at the heart of sustainability strategies

Increasing opportunity and reducing vulnerability will enhance the prospects of citizens — and the cities they live in.

Inequality in cities is nothing new: Throughout history, urban centers have been divided, by design and by accident, into disparate neighborhoods, close in proximity but worlds apart in terms of quality of life. Shocks − climatic, geopolitical or economic − have brought the problem into sharp focus, exposing imbalances in life expectancy, economic opportunity, digital access, community cohesion and environmental wellbeing.

City leaders, planning experts and government officials are taking different approaches in their responses, but the overall goal is the same: to level up their cities for all citizens.

01

Fix affordable housing

Most residents say housing is unaffordable, and many will leave. Can city leaders stop an exodus?

We pulsed a total of 6,000 citizens living in 12 diverse cities across the world to understand the extent to which they agreed housing in their city was affordable. Less than half (40%) of respondents agree that housing is affordable. And when asked which factors would have the greatest influence on their decision to leave their city, 28% said unaffordable housing would (as high as 42% in Sydney and 44% in Vancouver).

This reflects a global and local phenomenon. In the US, there is a shortage of 7.3 million rental homes that are affordable and available to renters with extremely low incomes.[1] In the UK, the Centre for Cities estimates that there is a backlog of 4.3 million homes to be built.[2] So, how are the city leaders we spoke to tackling this?

In Sydney, the Greater Cities Commission is preparing a "Region Plan" with a vision to integrate six cities into a connected multicity region, to maximize its productivity and global competitiveness at the same time as enhancing local quality of life, with homes close to jobs and greater access to education, recreation and culture.

Stephanie Barker, Greater Cities Commission Head of Strategic Planning, says the Six Cities Discussion Paper[3] included this vision, and that specific housing supply and affordability aims are a central part of the strategies being investigated. "We've proposed a few ideas, such as 30% of government-owned sites should be affordable or social housing, and a minimum of 10% of affordable housing in areas with uplift or close to stations."

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> Stephanie Barker, Greater Cities Commission Head of Strategic Planning

Barker also emphasizes the role of setting housing targets, so there's enough supply to deal with market fluctuations in the shorter term and bigger capacity in the longer term to support a strong pipeline of housing supply.

"We're looking at setting housing targets for five, 10 and 20 years," she says. "That way, if there's suddenly a higher rate of growth or changing preferences, we've got a pipeline to draw on which can be coordinated with infrastructure delivery."

In Manchester in the UK, the City Council has committed to building 10,000 affordable homes over the next 10 years.[4] As part of the strategy, it has identified 27 brownfield sites across the city where low-carbon, affordable homes will be built by local housing associations.

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[1] The Gap: A Shortage of Affordable Rental Homes, National Low Income Housing Coalition, 2023.
[2] Watling, Samuel and Breach, Anthony, "The housebuilding crisis: The UK's 4 million missing homes," Centre for Cities, 22 February 2023.
[3] Six Cities Region Discussion Paper, Greater Cities Commission, 2022.
[4] "Council moves ahead with first phase of the Project 500 housing initiative," Manchester City Council, 2022.

To what extent do you agree with the statement about living in your city: housing in my city is affordable?

City	Respondents	
Chicago	500	51%
Copenhagen	500	38%
Dubai	500	49%
Hamburg	500	26%
Jakarta	500	47%
Los Angeles	500	58%
Lyon	500	29%
Manchester	500	49%
Pimpri-Chinchwad	500	44%
Singapore	500	37%
Sydney	500	22%
Vancouver	500	27%

Pulse of 6,000 citizens, living in 12 cities, taken in March 2023
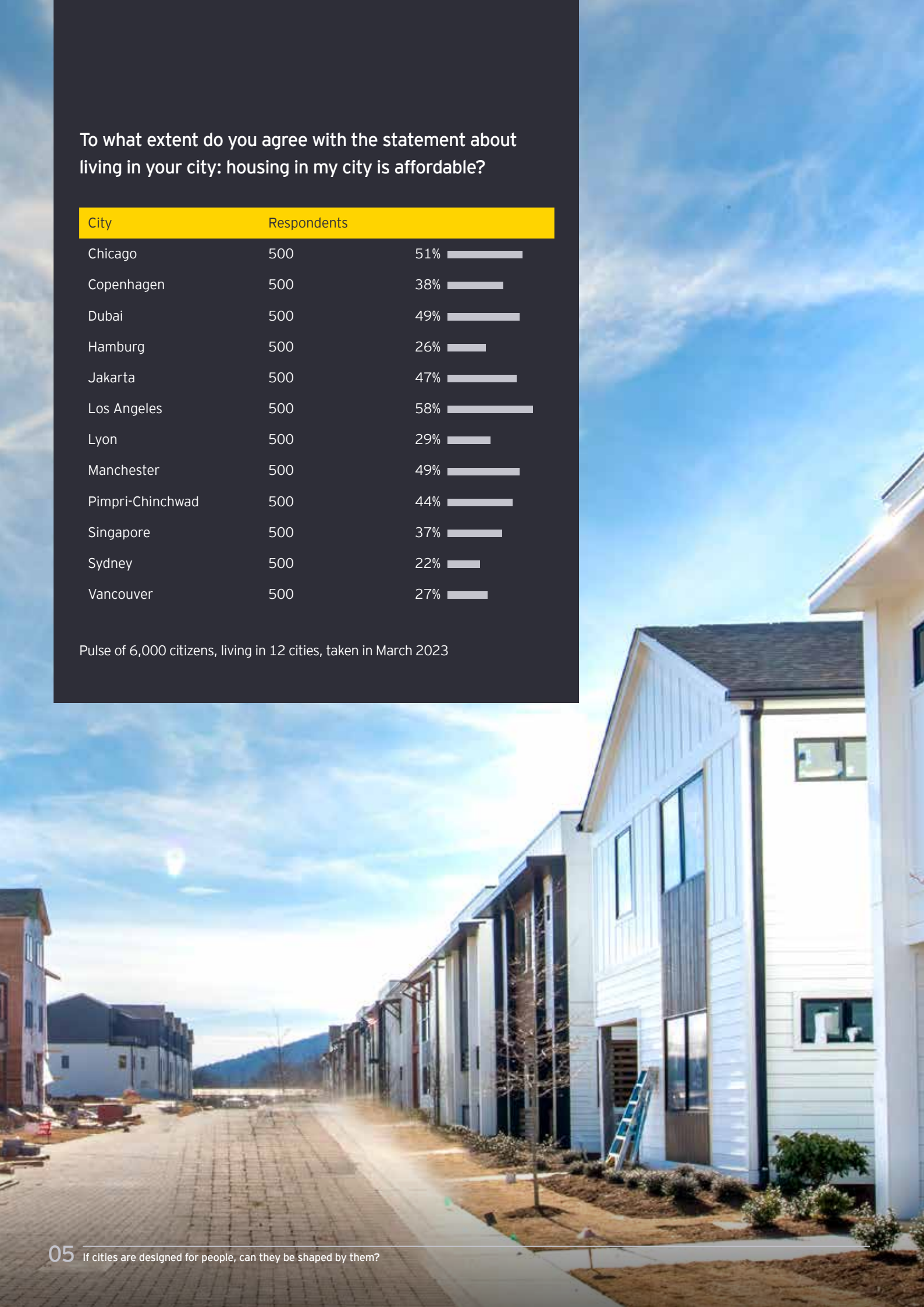
02

Create new economic centers

From Central Business District to Working From Home: How can leaders rework the urban model and revitalize their cities?

At the height of the COVID-19 pandemic, when central business districts turned into ghost towns and working from home became the norm, many struggled to see a positive future for the traditional city structure model. But diversifying economic centers of metropolises was always on the agenda – the pandemic simply brought that goal into sharper focus.

The Six Cities Region is one example: Its aim is to optimize, rather than maximize, the area's population by creating multiple economic centers. By linking improved public transport with affordable housing targets, it aims to give citizens the option of commuting within their neighborhood in 15 minutes, their city in 30 minutes and the region in 90 minutes.

For Singapore, as a small island city-state, planning for livability and reducing car use is crucial. This means changing the urban structure to decentralize jobs and encouraging people to walk, cycle and use public transport.

Singapore currently has two main job centers: the central business district in the south and a manufacturing region in the west.

"In the morning, because of where the job centers are traditionally, you'll see traffic converging toward the south and the west," says Ng Lang, Chief Executive of Singapore's Land Transport Authority. "For more than two decades, we've been trying to bring jobs and amenities closer to homes through our decentralization policy – using planning to change the urban structure of the city."

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>
> Ng Lang, Chief Executive, Land Transport Authority, Singapore

Elsewhere,[5] the fluid merging of economic hubs and residential communities has the potential to shape up in a different way. Working from home has pushed occupancy rates of office buildings to dramatic lows in cities across North America, where central business districts typically have a higher concentration of commercial property than they do in other continents.

In Canada, the Downtown Calgary Development Incentive Program[6] supports property owners to redevelop underused office space in order to improve the resiliency of the central business district. It is part of a 15-year Greater Downtown Plan[7] that recognizes the importance of not just converting buildings into residences but also creating a livable neighborhood in what was once a working place by investing in amenities, green spaces and community events.

Multiuse of buildings is also a trend that can change the nature of a previously single-use area, and potentially contribute to making facilities within communities more accessible and optimally used. In the United Arab Emirates (UAE), post-pandemic thinking around one-purpose premises has started to shift among innovative building owners and developers, according to Jamila El Mir, MENA Policy and Strategy Advisor, with examples of hotels affected by travel restrictions converting to furnished apartments or co-working spaces, and offices providing leisure spaces, such as fitness classes, after working hours.

Lauren Sorkin, Executive Director, Resilient Cities Network, says she sees many cities taking a more "resilient district" approach. "Having an arts district, having a business district and having communities that are built up around different things in a city ensures that each district can be self-contained and self-sufficient if it needs to be."

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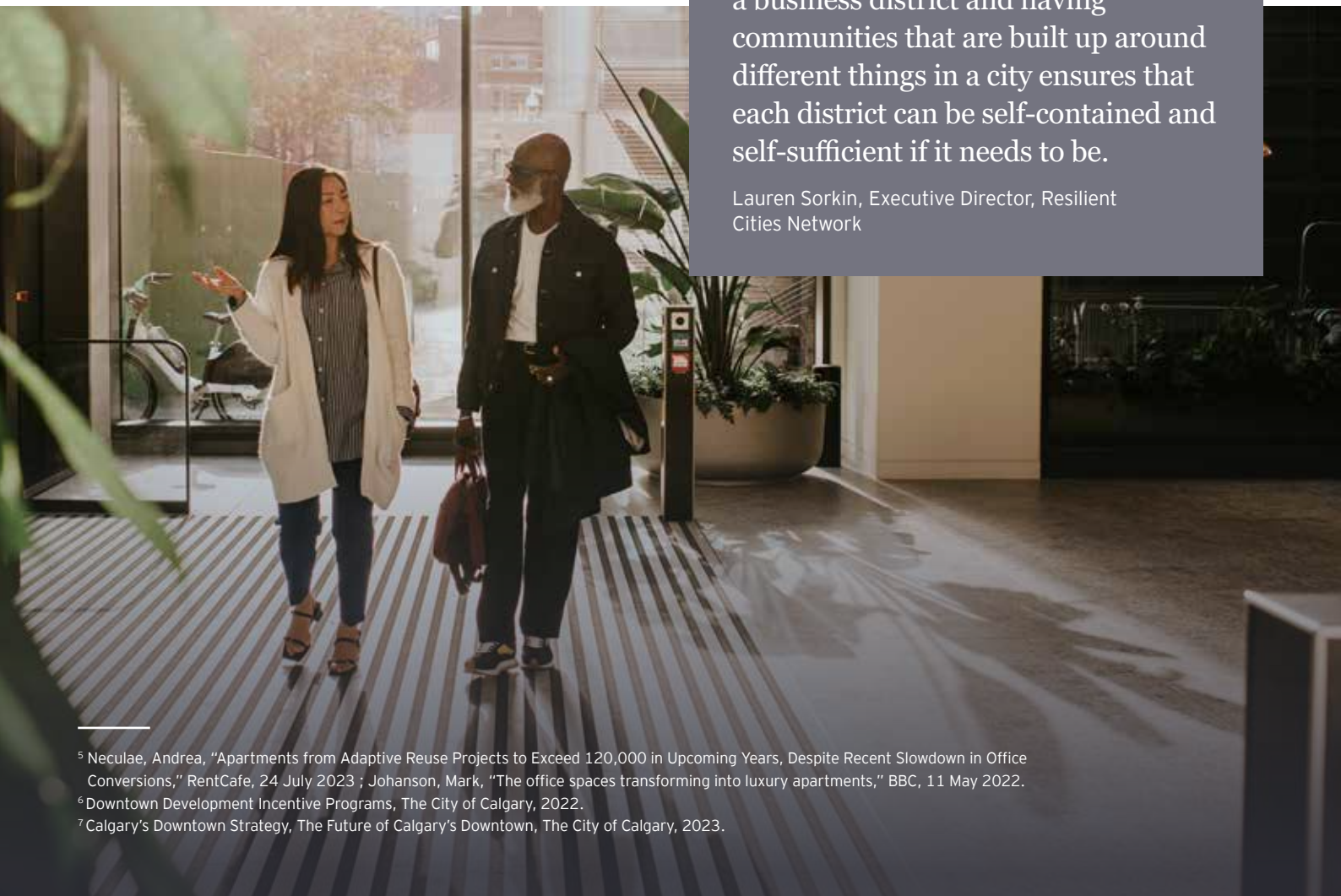
[5] Neculae, Andrea, "Apartments from Adaptive Reuse Projects to Exceed 120,000 in Upcoming Years, Despite Recent Slowdown in Office Conversions," RentCafe, 24 July 2023 ; Johanson, Mark, "The office spaces transforming into luxury apartments," BBC, 11 May 2022.
[6] Downtown Development Incentive Programs, The City of Calgary, 2022.
[7] Calgary's Downtown Strategy, The Future of Calgary's Downtown, The City of Calgary, 2023.

03

Make livable neighborhoods a reality

Access to open spaces and amenities makes areas more attractive — and breaks down social divisions.

An important part of Singapore Urban Redevelopment Authority's planning for new residential projects is the creation of inclusive, community-centric, connected neighborhoods. Landscaping in new developments is designed to improve environmental access, and includes rooftop garden spaces and "skyrise" greenery. Infrastructure designs encourage walking and cycling instead of car use, and the strategy aims to incorporate more play and sports facilities into residential areas.

In Jakarta, local access to public parks is an important part of the city's equitable planning. "We've built more than 400 parks across the city," says Anies Baswedan, Governor of Jakarta between 2017 and 2022. "And 91% of our population are now within 800 meters of one."

The city has also made the experience of being in parks more inclusive by lifting restrictions such as not being allowed on the grass. "Now, when you come to a park, especially in the afternoon, you see families with kids playing," says Baswedan.

Making parks the focus of neighborhoods also breaks down societal barriers, says Baswedan. "You don't have to be rich to enjoy the park," he says. "You will meet individuals from different socioeconomic backgrounds. The objective of our infrastructure works is beyond physical – it's also sociological."

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>
> Anies Baswedan, Governor of Jakarta, 2017 to 2022.

In Chicago, one of the city's goals is "intentional placemaking": creating more community meeting places in all its 77 neighborhoods, particularly in underserved areas. "Millennium Park is a jewel in downtown, but it took more than a decade of city government and business focusing on this one crown jewel," says Michael Fassnacht, Chicago's Chief Marketing Officer. "I think there are opportunities to create much more black- and brown-centric placemaking."

"While we love and respect the identity of each of our 77 neighborhoods, we need to create opportunities that are equal across all the different neighborhoods," he says. "Talent is equally distributed, but opportunities are not – and that's a very stark reality for Chicago."

Anies Baswedan, Governor of Jakarta between 2017 and 2022, believes strongly in social planning: the ability to better engineer a sense of community space in a city. "It's just like when you design a house. Do you want to design a house to create togetherness or to create individualism within your family?" he says. "It's the same with the city – to support reform, you need to create more opportunities for interaction, not less."
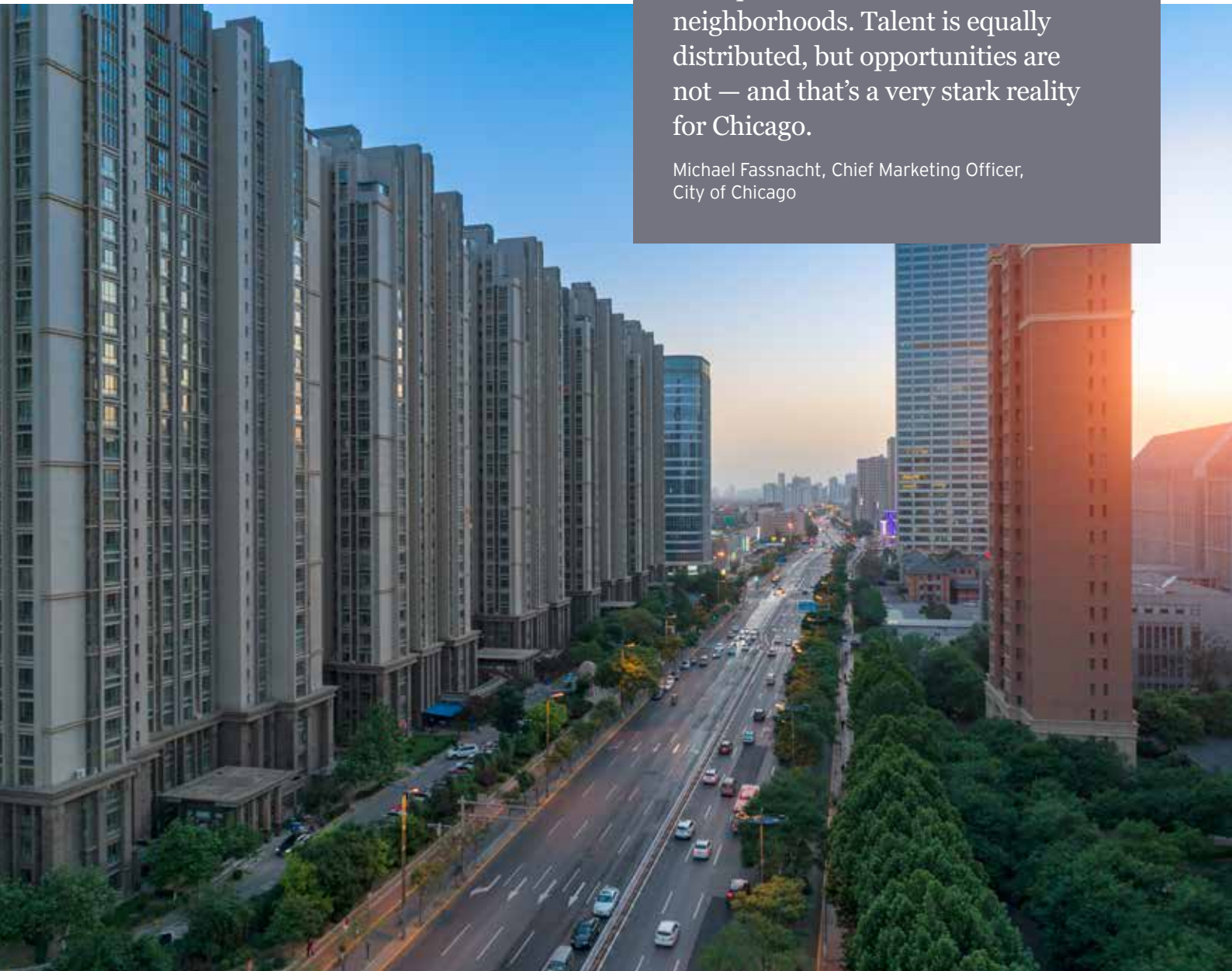
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>
> Michael Fassnacht, Chief Marketing Officer, City of Chicago

04

Give public transport a pivotal role

Transport is a significant factor in livability, but only when it is done well.

A recurring theme in cities is the pivotal role of public transport in equity. Sydney, Singapore and Jakarta, for instance, all have affordable housing and livable neighborhood ambitions that have better public transport at their cores.

But the design of transport infrastructure itself can be symptomatic of inequality, with less prosperous communities often underserved by reliable services and even damaged by the building and placement of transport infrastructure. Of the 6,000 citizens we pulsed, 68% say they can rely on public transport.

Wellington "Duke" Reiter is founder of Ten Across, an organization that highlights and analyzes issues affecting communities along the southern US Interstate 10 corridor, which runs from Jacksonville in Florida to Los Angeles. "You see vulnerabilities throughout this sector of the country, which is on the leading edge of climate change, economic change, and demographic change," he says.

"If you think about the Interstate 10 and the whole highway system inaugurated by President Eisenhower, that had to be threaded through existing communities," he adds. "You can imagine where it was decided roads would go – not through communities that were powerful and could say, 'No, not in our community.' It went inevitably went through minority neighborhoods with less political clout."

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>
> Wellington "Duke" Reiter, founder, Ten Across

In Maryland, West Baltimore is a prime example of the win-or-lose impact of transport infrastructure on the prosperity of neighborhoods. The area around West Baltimore MARC station should be prime commuter real estate: It is 80 blocks of old brick factory buildings and convertible land parcels just a 30-minute train ride to the heart of Washington DC on the high-speed Maryland Area Rail Commuter rail line. But while the fast Penn Line service runs through the station, it does not stop. According to the HUB West Baltimore Community Development Corporation, this is a missed opportunity that is a major factor in the area being the most disinvested area in Maryland. The provision of a proper service, it says, is critical to attracting new investment and transforming the area.

To what extent do you agree with the statement about living in your city: I can rely on public transport services?

City	Respondents	
Chicago	500	65%
Copenhagen	500	63%
Dubai	500	79%
Hamburg	500	54%
Jakarta	500	81%
Los Angeles	500	71%
Lyon	500	68%
Manchester	500	62%
Pimpri-Chinchwad	500	67%
Singapore	500	85%
Sydney	500	60%
Vancouver	500	64%

Pulse of 6,000 citizens, living in 12 cities, taken in March 2023
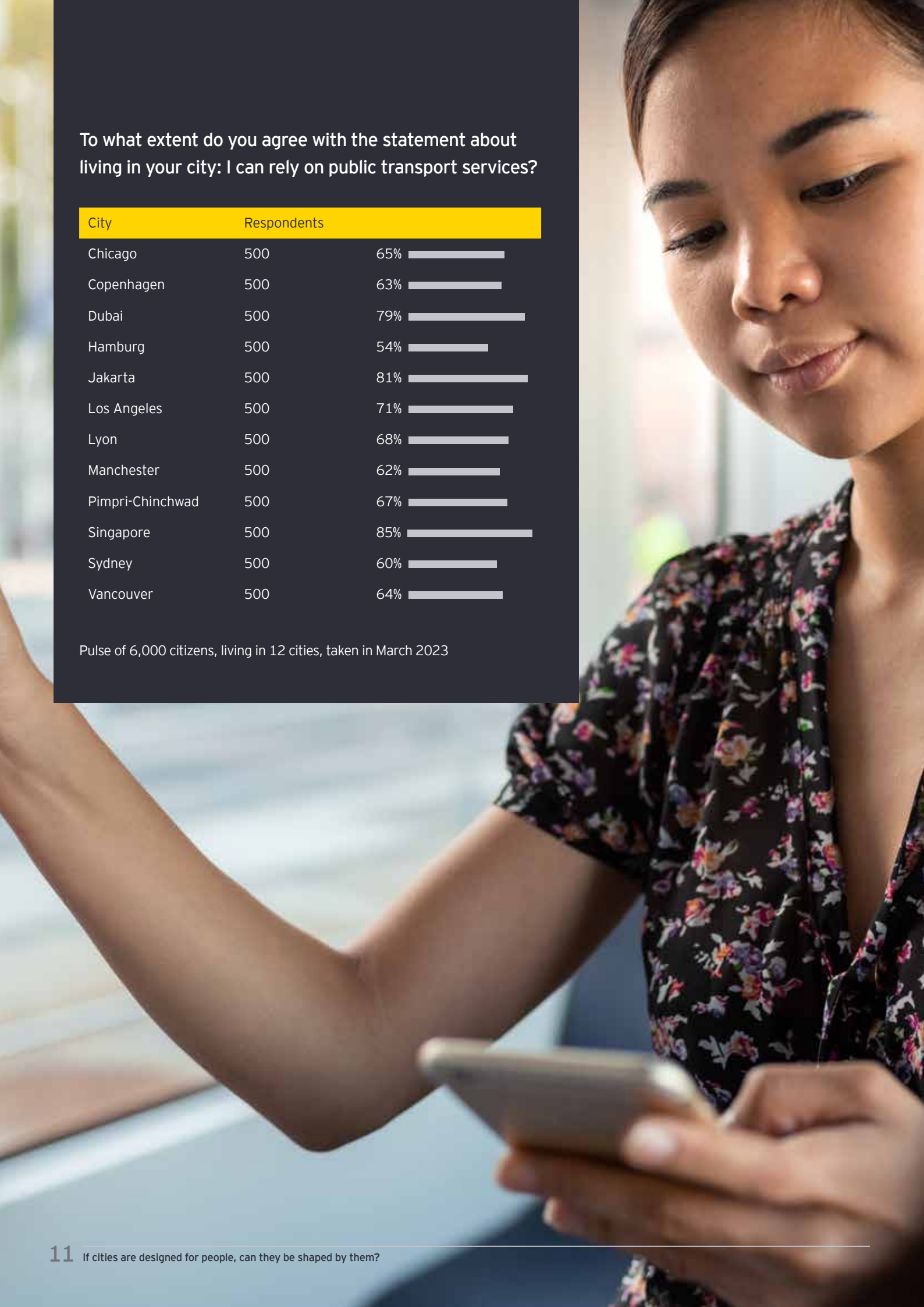
Involving communities in the process of designing new transport options is of paramount importance, agrees Kevin Quinn, Chief Executive Officer of TransLink, Vancouver.

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> The approach we take should be one that is receptive and sensitive to community needs — whether it's Indigenous nations, urban Indigenous people, people in underserved areas — we need to learn and understand what their transit needs are.
>
> Kevin Quinn, Chief Executive Officer of TransLink, Vancouver

"Transit service to Indigenous reserve lands has been a matter of concern because of the way transit has been planned over the years," he says. "The approach we take should be one that is receptive and sensitive to community needs – whether it's Indigenous nations, urban Indigenous people, people in underserved areas – we need to learn and understand what their transit needs are."

In Jakarta, the area of the city covered by public transport increased from 42% to 82% between 2017 and 2021. This creates a feeling of togetherness, says Anies Baswedan. "When you are on public transport, you use the same tickets, you sit in the same car and the same chair, stand in the same place, regardless of whether you are a chief executive officer or if you are unemployed – there is a sense of equality."

Tree equity in Chicago

Our Roots Chicago is an initiative that aims to plant 75,000 trees over five years, equitably spread across the city to address the current eco-imbalance. In 2022, it exceeded its target and planted more than 18,000 trees.

Two elements underpin the project: Tree planting locations are data-informed then community-driven within neighborhoods. Areas of particular focus are historically marginalized communities in the city's west and south — neighborhoods where data shows there is poor tree canopy coverage and where life expectancy is significantly lower than in other parts of Chicago.

And the data goes beyond this. It also overlays that information with statistics on air quality, land surface temperatures, economic hardship, and other social vulnerability and environmental factors, including public health equity issues such as asthma. The combined data indicate where tree canopy improvement is most needed, then selected community groups from those neighborhoods suggest specific locations for the new trees.

"We said, 'What if the city supplies and plants the trees, but the community groups do what they're great at doing: the interaction within their neighborhoods and community?'" says Raed Mansour, Director of Environmental Innovation at the Chicago Department of Public Health. "So the project is not city-directed, it's community-driven."

A key strategy was to take away a lot of the bureaucracy often associated with city or government schemes. Local residents are trained to survey where trees could be planted, then given phone and web platforms to pass the suggested sites on to the tree equity working group to arrange the planting.

As well as the health benefits that come with greening a neighborhood, the scheme helps people in communities to develop skills and vocational training.

"We're creating excitement around becoming a tree ambassador in terms of training that can lead to jobs and apprenticeships and internships," says Mansour. "It's an opportunity to address racial justice issues in the environmental movement through employment programs.

Tree growing is a slow process, so the health benefits are initially hard to quantify, but there are other indicators of more immediate change: Cleaning and greening vacant lots have been found to help decrease crime and violence.

"Some community members called us out to a corner where they'd planted trees outside vacant lots — it really changed the feel of the place," says Mansour. "When that happens, people start seeing that there's a renewed investment in the communities. While the tangible health effects probably won't be seen for a while until canopies grow, these social aspects are where we could get early measurement of change in terms of social cohesion and belonging."

Mansour is also conscious of steering away from making poorer neighborhoods take the brunt of climate change effects they are not responsible for creating. "The focus of Chicago's Climate Action Plan is to lift the burden on the people that are going be most affected by climate change," he says. "Why should it be on them to do something? You're talking about those that have more means actually contributing to most of the climate change, the effects of which are now disproportionately placed on the more vulnerable communities."

05

Embed equity in policymaking

How can policymakers make the most of the powerful part they play in increasing urban equity?

Just over half (54%) of citizens pulsed say there are sufficient work opportunities for all citizens (this drops below 50% in a number of cities, including Hamburg, Jakarta, Lyon and Vancouver). While 60% agree that there is equal access to resources for all people in their city (irrespective of age, gender, race or beliefs).

What stands out in many cities is that equity in policymaking, whether in infrastructure, digital, economic or environmental planning, is vital to producing an equitable outcome.

Dr Nelson Ogunshakin, Chief Executive Officer, International Federation of Consulting Engineers (FIDIC), says that this applies to recruitment too.

"The engineering profession needs to be open-minded to be inclusive in the people that come into the industry, and through that, it can be inclusive in the infrastructure design solution prescribed for society," he says. "If we don't do that, there will still be segregation and division in society – cities will not be inclusive."

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> Dr Nelson Ogunshakin, Chief Executive Officer, International Federation of Consulting Engineers (FIDIC)

The Los Angeles County Racial Equity Strategic Plan aims to use policy to close significant racial disparities in the county's 88 incorporated cities and unincorporated areas on priority issues impacting residents. These include family stability, health and wellbeing, education, employment, economic development, public safety, criminal justice and housing.

Dr D'Artagnan Scorza, Executive Director of Racial Equity for Los Angeles County, says governments have a responsibility to address equity in policymaking.

"What racial equity means is that, in many ways, governments are accountable for ensuring that someone's race or ethnicity does not determine whether or not people can thrive and do well," he says. "Government has a responsibility to be responsive to people's needs based on where they live, so we're able to direct and utilize resources in the most efficient way possible."

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>
> Dr D'Artagnan Scorza, Executive Director of Racial Equity for Los Angeles County

"My role is to help eliminate structural racism and bias," he adds. "It's incredibly complex, but it involves the examination of policies, procedures, programs and operations through a lens of racial equity or an equity lens more broadly. I also help provide a deeper level of analysis using data and effective practices in the field to push our institution toward altering the way in which we carry out our programs and services."

As well as equitable policymaking in planning and infrastructure improvements, city leaders are incorporating equity in digital policy.

When we asked citizens which public services, they most appreciated, 27% say digital delivery of public services. This suggests there is work to be done in bridging the gap and increasing access to all.

"Data and technology are potentially tremendously empowering," says Lauren Sorkin, Executive Director of the Resilient Cities Network. "The key principle for technology adoption is making it inclusive and accessible to everyone and, in particular, to vulnerable communities."

Lee Mulvey, Executive Director Region Plan, Greater Cities Commission, says providing universal digital access is hugely important: "Equity in digital infrastructure is an area that we need to improve – during the pandemic, it became clear that certain demographic areas were not well served, with kids trying to learn online at home with no access to a computer or the internet. Just like water or roads, digital infrastructure and connectivity is essential infrastructure."

To what extent do you agree with the statement about living in your city: there are equal access to all resources?

City	Respondents	
Chicago	500	61%
Copenhagen	500	57%
Dubai	500	71%
Hamburg	500	51%
Jakarta	500	71%
Los Angeles	500	66%
Lyon	500	44%
Manchester	500	58%
Pimpri-Chinchwad	500	66%
Singapore	500	62%
Sydney	500	51%
Vancouver	500	54%

Pulse of 6,000 citizens, living in 12 cities, taken in March 2023

What next for city equity?

The redrawing of the lines between residential areas and economic centers creates new opportunities for cities and their citizens. The challenge for leaders is to make sure that improvements in local amenities, public transport and open spaces are felt by all citizens.

To conquer that challenge and embed equity in policymaking, design and development, city authorities need clear leadership, new skills and new thinking. And where they lack resources and expertise, bring in innovative partnerships to help weave equity and inclusion into their planning strategies.

Questions for city leaders

1   How will you find new funding partners for affordable housing programs?

2   How are you adjusting financial incentives to reshape urban centers?

3   How are you ensuring equitable access to open spaces?

4   How are you involving communities in the design of new transport systems?

5   How are you developing the expertise to ensure greater equity in policymaking?
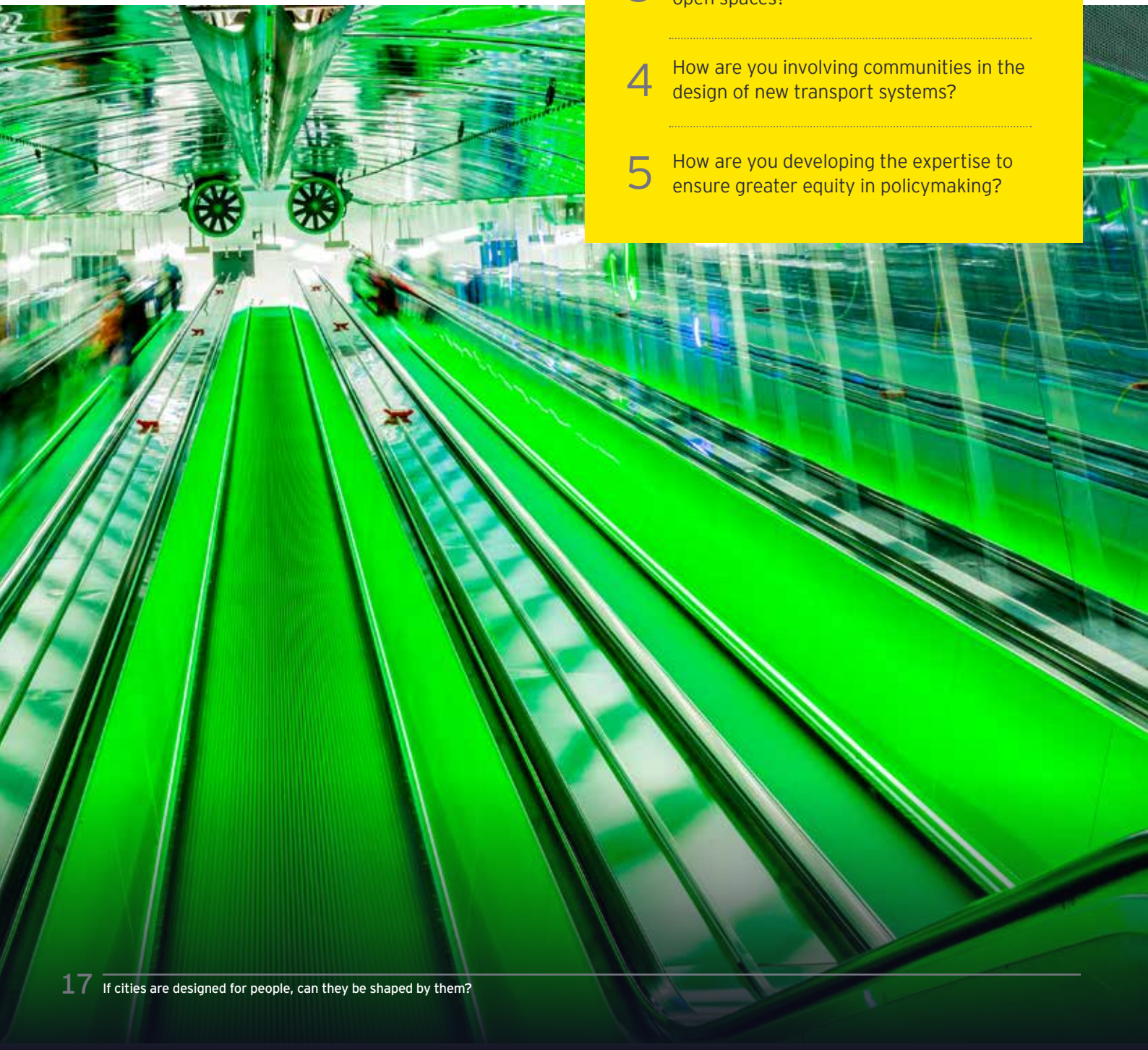
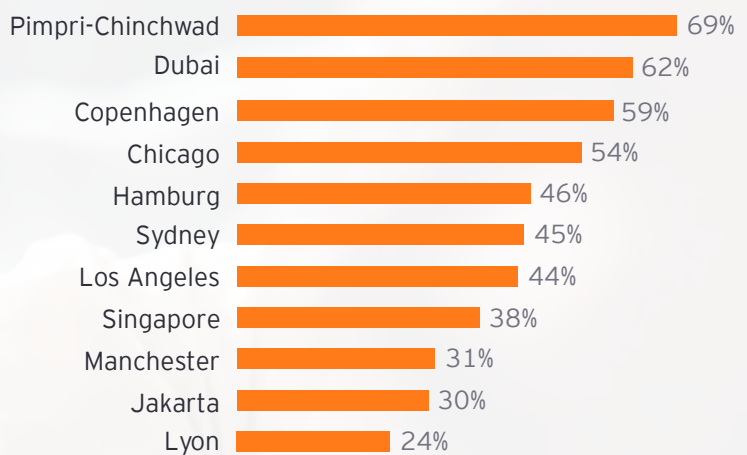# People power: why citizen engagement makes cities more sustainable

Cities should bring their citizens along on the quest for a sustainable future by listening and learning then leading.

If there is one resource major cities the world over have in common, it is people — millions of them. Yet people can be overlooked in the planning and functioning of cities with decisions made about them, rather than for them and with them.

There is growing recognition (and action) among authorities of the importance of citizen engagement in making cities sustainable. Yet, to what extent do people feel involved in the process and planning? When we asked citizens how closely they feel their city's leadership listens to individual needs and concerns, 63% said, "mostly" or "somewhat." Just 13% said "completely."

To what extent do you feel that your city's leadership mostly or completely listens to your individual needs and concerns?

Pulse of 6,000 citizens, living in 12 cities, taken in July 2022

City	
Pimpri-Chinchwad	69%
Dubai	62%
Copenhagen	59%
Chicago	54%
Hamburg	46%
Sydney	45%
Los Angeles	44%
Singapore	38%
Manchester	31%
Jakarta	30%
Lyon	24%

01

Make people part of the plan

Real engagement starts with trust. To get it, leaders have to bring citizens in at the start.

"One of the things you often hear in our country is that states are the laboratories of democracy, but I would argue that cities are the laboratories of democracy at the moment," says Wellington "Duke" Reiter, founder of Ten Across, an organization that highlights and analyzes issues affecting communities along the southern US Interstate 10 corridor, which runs from Jacksonville in Florida to Los Angeles. "Mayors feel like they have agency – they can do things and make decisions for their communities."

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> One of the things you often hear in our country is that states are the laboratories of democracy, but I would argue that cities are the laboratories of democracy at the moment.
>
> Wellington "Duke" Reiter, founder, Ten Across

But cities' sustainability challenges are too complex for political leaders to solve alone. Instead, authorities need to win the trust of those who live there and then collaborate with them, and that means putting real engagement at the heart of development strategies.

"Where cities and councils are at their greatest is when they are truly acting in the best interests of their citizens," says Shauna Sylvester, Executive Director of the Urban Sustainability Directors' Network, an organization that brings together local government practitioners in the US and Canada. "In terms of people skills, we need the engineers – absolutely. But we also need those who deeply understand what it means to engage."

People will only connect with and trust their city's leaders if this engagement happens at all stages of the development process and in a variety of ways. Data and digital platforms can power sustainable strategies, but only if authorities continue to view change through a human-centric lens.

"One of the big trends [in cities] is the capacity to convene, to collectively make sense, engage and act in concert with others," says Sylvester. "Embedded in that is a deep understanding that those most affected need a role in the design, development and implementation of whatever is created."

Which of the following digital tools or practices, if any, help you engage most effectively with city authorities?

Pulse of 6,000 citizens, living in 12 cities, taken in July 2022

Access to open data (for example, information produced by local and national government on planning, health, transport, education and spending)

| 30% |

Access to online information on city policy or plans

| 29% |

Social media feedback mechanisms

| 28% |

Digital forums to submit ideas

| 27% |

Single citizen portal

| 27% |

The Vancouver Plan

The Vancouver Plan is the city's first city-wide strategic land-use plan. It intends to "guide growth and change over the next 30 years" and was shaped by the opinions of residents, with special attention given to historically underrepresented groups. Engagement activities included dedicated workshops, pop-up activities and custom-designed events.

"Right now, quite a large component of the city is what you call suburban, single-family neighborhoods with nothing else around them," says Doug Smith, Director of Sustainability for the City of Vancouver. "In fact, if you go back 50 years, there used to be corner stores in those neighborhoods, and yet we said we didn't want businesses and residences mixing together.

"We're essentially going to go back in time, to make more villages – more complete communities," he adds. "Neighborhoods will have different types of housing, not just single-family homes that look a certain way. There are going to be apartments and condos and townhouses and small walk-ups. There are going to be small stores in these neighborhoods, libraries, community centers, home-based businesses. And we're going to put in a lot of green space."

02

How to build on trust

Real urban change happens when citizens and authorities work together.

When citizens were asked what they consider most important in a city leader, trustworthiness (36%) was the top answer by a large margin. Accountable came in second place with 22%.

"A quote that always resonates with me is 'Progress moves with the speed of trust,'" says Laura Jay, Regional Director for North America at C40 Cities. "So building that trust within communities is critical to being able to do any of this work. We are seeing cities hiring more community engagement staff who can really build those relationships with the local community to engage long term – and not just on specific projects."

Some of those people are already on the ground, which is where partnerships come in. "It's critical to become partners with local community groups that already have those relationships," adds Jay. "The person you're going to listen to the most is someone you already trust. It's a combination of all those things that can really help to ensure that community voices are at the forefront of planning decisions."

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>
> Laura Jay, Regional Director for North America at C40 Cities

Trust can also be built in other ways. Local community groups are most likely to persuade residents to engage, so their funding becomes critical to relationship building.

"These groups need to be compensated for their time spent in supporting this work," says Jay, "because we know they help to ensure that community voices are at the forefront of planning decisions."

Grassroots engagement keeps up the pressure on leaders

Engagement can also grow from the bottom up. Copenhagen's city leaders, for instance, have struggled to meet some of their 2025 Climate Plan targets, so the community has stepped in.

"Citizens are becoming even more progressive than the municipality," says Ditte Lysgaard Vind, Chair of the Danish Design Council. "I think we'll see more of that: the community pushing civil servants and the municipality to move a lot faster, not just on goal setting but on finding tangible solutions in the coming five years."

An engagement process that is transparent, accountable and has a clear reporting mechanism helps to build trust, according to Shauna Sylvester. She cites the example of Burnaby near Vancouver, where there has been extensive consultation with residents on the city's housing needs.

"The mayor embarked on one of the most impressive citizen engagement processes I've ever seen," says Sylvester. "There would be times when they would take their lead from what citizens said, and then they'd tell them what they heard and what they implemented and why they implemented certain things and not others. It made sure that the stakeholder process was in step with citizen engagement."

03

People-powered technology gives cities an edge

Innovative tech works when it is powered and shaped not by authorities or data, but by citizens.

In Chicago, a five-year community health-improvement plan focusing on racial and health equity depends on community involvement – and a lot of data. Raed Mansour, Director of Environmental Innovation at the Chicago Department of Public Health, stresses the importance of resident involvement.

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> Governments will say that this is data driven, but it's not necessarily data doing the driving — it's humans. And it should be driven by the community, especially those who are most vulnerable, marginalized or historically disinvested in.
>
> Raed Mansour, Director of Environmental Innovation at the Chicago Department of Public Health

"Governments will say that this is data driven, but it's not necessarily data doing the driving – it's humans," he says. "And it should be driven by the community, especially those who are most vulnerable, marginalized or historically disinvested in. A lot of people conflate innovation with technology, but it's not about a shiny new object; rather, it's about enabling the people to power the tech and drive the data-informed process."

C40 Cities' Laura Jay agrees with this idea of people-powered tech. "Sometimes, what technology misses out on is that we all have our own human patterns," she says, "particularly when it comes to transportation, which needs to be what's easiest and most efficient for us. Leading with technology is not necessarily going to create that. We need to lead with the kind of human-centric thinking that can then be enabled or accelerated by the technological solution."

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> We need to lead with the kind of human-centric thinking that can then be enabled or accelerated by the technological solution.
>
> Laura Jay, Regional Director for North America at C40 Cities

Partnerships between users, local authorities and tech providers are one way to deepen citizen trust in technology working for them. This can be seen in the success of Safetipin,[8] an app that designates "safe" and "unsafe" areas in cities and is built on crowdsourced and other qualitative data.

[8] Banatvala, Steffie, "Crowdsourcing app aims to make cities safer for young people," Financial Times, 14 December 2022.

Case study
Manchester's citizen-designed, data-refined environment plan

The UK's Greater Manchester Combined Authority, which brings together 10 councils across the city-region, as well as the mayor, co-created its Five-Year Environment Plan with residents and businesses. The plan links to the city region's aim to become carbon neutral by 2038 and uses citizen-led data metrics and quarterly reporting to analyze and guide implementation.

"We try to look through the lenses of economy, people and place across all of our strategies," says Mark Atherton, Director of Environment at Greater Manchester Combined Authority. "The environment plan wasn't just about carbon reduction. It was about creating a great place for people to live and where businesses thrive. Health and wellbeing were integral."

An initial action plan, Springboard to 2038, came out of a sustainability tracking and carbon trajectories tool that uses bespoke data variables and feedback from more than 1,200 citizens to create a clear vision for the city. The authorities then took another year to consult with citizens and businesses to co-create a final blueprint.

"It was definitely a co-creation rather than a consultation," says Atherton. "We used face-to-face meetings, 42 listening events and online surveys that asked open questions about what people wanted for their environment.

The focus on the community also informs sustainability strategies at a hyper-local level. "We've now developed local energy plans for each district," says Atherton. "This brings together all of the data sets we've previously collected for buildings, houses, renewable energy generation and electric vehicles, for example, which means we can plan the net-zero energy transition down to street level. That's really helpful because it allows us to identify and work better with some of the community groups that are most in need: it's not just a top-down approach – it becomes a bottom and top approach."

04

Behavioral change is a dialogue

If city leaders can listen to citizens and learn from them, they will achieve great things together.

Involving communities at the planning stage is a good start, but authorities then need to get enough residents to engage with the new policies. Clear incentives and positive messaging are crucial.

Authorities are responsible for putting in place a solid plan to get people involved, says Doug Smith, Director of Sustainability for the City of Vancouver. "We started by trying to encourage residents to do more: recycle more,

walk more, buy electric cars. And we quickly learned that, while those things are important and people are willing to do them to a certain degree, if we're really going to be successful as a society in moving away from fossil fuels, it's going to take significant government action and policy."

"People are afraid of change, even if you can be very clear that it's positive change such as cheaper transportation, greater mobility, better air quality – more equitable for everybody," he adds. "As much as everybody agrees with it, when you actually put the changes in place, it's difficult. You have to carry out change management to ensure the community can move forward with you and you're not forcing things on them."

Tell the right stories

The Danish Design Council's Ditte Lysgaard Vind says that to change citizen behavior, authorities need to tell a positive story – not a negative, fear-driven one.

"There are a lot of climate scientists communicating important, relevant, necessary data, but there's often not a lot about what the future might look like," she says. "Is it necessarily going to be horrible, or is there actually something better waiting for us if we make it through this transformation? If there's something we can look forward to, we are more likely to work toward that."

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> We started by trying to encourage residents to do more: recycle more, walk more, buy electric cars. And we quickly learned that, while those things are important and people are willing to do them to a certain degree, if we're really going to be successful as a society in moving away from fossil fuels, it's going to take significant government action and policy.
>
> Doug Smith, Director of Sustainability, City of Vancouver

Sustainability change messaging should be built around a vision of hope rather than couched in negativity, and citizens should feel that it is economically and socially beneficial for them to get involved. Two thirds (68%) of pulse respondents believe that environmental initiatives are designed to benefit all, but change doesn't just happen.

It's not just about what you say but how you say it. For Michael Fassnacht, Chicago's Chief Marketing Officer, the challenge can also be how to reach your residents in the first place.

"It is very challenging in today's media landscape to find the right platform to really engage 2.8 million residents, because the proliferation of different media is just increasing every day. That's a challenge not just for Chicago but for any modern city now," he says. "And the second question is: how can we create our own content to reach, in a meaningful, relevant manner, all of our constituents? Nowadays, you need to have a strong marketing communications capability within city government to make sure your constituents are informed and can engage with you."

Listening to residents is an important first step, but acting on what they have said is not so easy, as Kevin Quinn, Chief Executive Officer of TransLink, Vancouver, explains: "Do we listen to our customers well? Yes. Do we tell them what we've done in response to listening to them? Perhaps we could do a better job at communicating with them, because we make a number of changes based on their feedback."

In London, the introduction of Low Traffic Neighborhoods (LTNs)[9] has shown that behavioral change takes time, with proposed measures often coming up against fierce opposition, particularly when local businesses are affected by changes in traffic flow. A report on the impact of LTNs[10] has found that early engagement with the public is critical to the effectiveness of such zones.

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Kevin Quinn, Chief Executive Officer, TransLink, Vancouver

Case study
Open dialogue and data in Hamburg

Hamburg's Environment and Energy Authority (BUE) wanted to reduce traffic and emissions levels, and, therefore, air quality, by initiating changes in behavior.[11] This was achieved by adapting company mobility policies and addressing citizens directly. The BUE wanted to present its findings in a way that would have maximum impact and encourage widespread adoption of positive behaviors.

Hamburg is a member of the Open Government Partnership, whose Digital Strategy for Hamburg considers all aspects of living in the city, with a particular focus on digital participation, and collection and analysis of urban data. It has successfully implemented a digital participation system, DIPAS, which combines an online participation tool with digital planning tables to create an integrated digital system for citizen participation.

[9] Speed, Madeleine, "Are low-traffic neighbourhoods good for our cities?," Financial Times, 20 May 2022.
[10] Bosetti, Nicolas, Connelly, Kieran, Harding, Claire and Rowe, Denean, "Street shift – The future of Low-Traffic Neighbourhoods," Centre for London, 9 June 2022.
[11] Action plan – Hamburg, Germany, 2022–2023, Open Government Partnership, 2022.

Education is one part of a valuable ecosystem

Education plays a vital part in getting citizens on board with behavioral change. As part of Singapore's Green Plan 2030, the city-state is looking to "nurture the next generation of environmental stewards." This includes integrating environmental sustainability into the curriculum of schools and institutes of higher learning to prepare graduates for the green economy, and promoting a culture of sustainability among students through its Eco Stewardship Program in public schools.[12]

"The Singapore Green Plan 2030 is about climate mitigation, adaptation, and sustainable development," says Grace Fu, Singapore's Minister for Sustainability and the Environment. "It's a coherent and comprehensive set of policies and actions that positions Singapore to achieve our net-zero emissions goal.

"Pursuing sustainable development requires hard trade-offs to be made, and close coordination in execution. This is especially so for Singapore, as a small, island city-state with limited access to alternative energy sources. We will need to evaluate our trade-offs carefully, and find the right pace and balance in our policies and actions, in close consultation with our citizens and stakeholders."

> "
> Pursuing sustainable development requires hard trade-offs to be made, and close coordination in execution.
>
> Grace Fu, Singapore's Minister for Sustainability and the Environment

Academia and the private sector are part of a wider ecosystem that city leaders need to plug into to generate an open and inclusive approach to innovation.

"We always think about how to make things better," says Ng Lang, Chief Executive Officer of the Singapore Land Transport Authority. "It's very much in Singapore's DNA

for the private and public sectors to collaborate and innovate together. We like to say we're an urban lab for the world. If you've got new ideas, then come here to try them out."

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> It's very much in Singapore's DNA for the private and public sectors to collaborate and innovate together. We like to say we're an urban lab for the world.
>
> Ng Lang, Chief Executive Officer of the Singapore Land Transport Authority

Working in partnership means that city authorities need to admit when they need help. "Leaders need to be open, have clear vision and goals, good emotional intelligence, be collaborative and allow themselves to be vulnerable at the early stage of development," says Dr Nelson Ogunshakin, Chief Executive Officer of the International Federation of Consulting Engineers (FIDIC). "But it is not easy, because some leaders don't have that capability to say, 'We don't claim to have a perfect solution,' so we want to get everybody involved to help us shape the answers."

Greater consultation with stakeholder groups requires city leaders to identify and engage the right people from the outset. "Who are the key people? The business community, the residential community, the political community, the infrastructure community, supply chain, end users and the academic community," says Ogunshakin.

An approach that targets these key stakeholders in the ecosystem will enable leaders to secure expert thinking on the likely needs of citizens – now and in the future.

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[12] "Learn for Life - Equipping Ourselves for a Changing World: Nurturing Stewards of the Environment," Ministry of Education for Singapore, September 2023.

What next for city engagement?

For a sustainable city to thrive, citizens should be deeply involved in planning, development and implementation. And real citizen engagement is built on trust. To win that trust, leaders must bring citizens in from the start. But how?

Affording community groups a bigger, deeper role will help leaders reach out to those most affected by policy change and keep them in touch with their perspective. However, this requires a nurturing, long-term approach, as well as an investment of time and expertise.

Showing that you have listened to, learned from and responded to feedback from residents is equally important – and just as demanding to fulfill. Digital technology can foster genuine two-way engagement, but there is also a danger that it will widen, not close, the gap between groups of residents.

The best examples of city engagement employ a variety of means and channels to connect with residents and discover what matters to them. They then invite those individuals and groups to participate in the creation of policies and frameworks, which evolve and develop over time through collaborative input. Saying that you have listened to the voices of the city is one thing; showing how you have acted and then listened again is another.

Questions for city leaders

1 Have you won the trust of citizens by involving them early on?

2 How are you bringing people together so they can contribute at every stage of the development process?

3 Are you using technology in a way that involves citizens instead of alienating them?

4 Do you see urban development as a team sport, and would your city's residents agree?

The green evolution: why cities are going back to nature

As part of their quest to make urban centers more sustainable, city leaders and planners are reassessing their approach to development.

Most urban development in the 20th century happened at the expense of nature: Countryside and green space were swallowed up by the ever-growing sprawl. Now, as cities try to adapt to the climate crisis and their citizens struggle with the strain of modern metropolitan life, that relationship between nature and the built environment needs rebalancing. But when they start with a concrete jungle, authorities and planners have to be smart, innovative and bold.

01

Flex policy to serve today and tomorrow

Sustainable development takes concerted action from city authorities.

There is no single way to embed and finance green infrastructure (the network of natural spaces and green design): Each city's geography (and budget) dictates how planners can tackle sustainability challenges.

For example, in more densely populated cities in North America, such as New York City, Boston and St. Louis, the focus is on policy that requires existing building owners to retrofit energy-efficient upgrades, either through energy benchmark deadlines or incentives. While Boston Mayor Michelle Wu is proposing to introduce a dual-focused green building code that would make older properties more energy efficient (70% of Boston's emissions are generated by buildings).[13]

In the more sprawling cities, one key development strategy is to improve public transport connections and the livability of communities around transport hubs. And the demand for it, apparent with 40% of citizens pulsed ranking it their most appreciated service provided by the city on a par with education and schooling.

"Los Angeles, Houston, Austin and Phoenix are all doing incredible things," says Laura Jay, Regional Director for North America at C40 Cities. "Phoenix is building a new light rail, and Los Angeles is electrifying a lot of its bus fleet and also trying to create a lot more transit-oriented development."

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> Phoenix is building a new light rail, and Los Angeles is electrifying a lot of its bus fleet and also trying to create a lot more transit-oriented development.
>
> Laura Jay, Regional Director, North America, C40 Cities

These developments include a focus on "transit-oriented communities," which are places that, "by their design, make it more convenient to take transit, walk, bike or roll than to drive."[14] This includes better first- and last-mile planning, and station designs that integrate public art and landscaping to tie each station to its surrounding community.

Policy is having to evolve to encourage these greener planning trends. "The Governor of California recently took away parking minimums for transit-oriented development projects, because building parking spaces is really costly for developers," says Jay. "This makes it more affordable for developers to build housing near transit, create accessibility and give citizens more options."

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[13] "Mayor Wu targets energy efficiency in 2 new steps to make Boston's buildings greener," Boston.com, 16 March 2023.
[14] "Transit Orientated Communities," Metro, 2023.

02

Maximize the impact of transport

Unless city authorities improve networks, too many citizens will stay away from public transport.

When we asked what they had done to actively contribute toward carbon reduction in their city, only 39% of respondents to our citizen pulse survey said they had increased their use of public transport overall. This shows how important it is for cities to develop better, more accessible public transport networks.

In rapidly expanding cities in the United Arab Emirates (UAE) and Saudi Arabia, heat and distances have typically made the air-conditioned car the transport mode of choice. But even here, public transport is an increasingly important part of the development strategy.

Dubai's population of 3.5 million is forecast to reach 5.8 million by 2040.[15] The Emirate's transport authority, RTA, recently invited tenders for the extension of its metro network. According to the Director General of RTA, the existing metro has saved about one billion car journeys since its launch in 2009.[16]

"Dubai started with its metro running along one central spine and a second smaller line, but has since been expanding to cover a much wider portion of the city – it has become a key asset for the city and its community," says Jamila El Mir, MENA Policy and Strategy Advisor. "More recently, Riyadh has developed a city-wide metro network."

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> Dubai started with its metro running along one central spine and a second smaller line, but has since been expanding to cover a much wider portion of the city — it has become a key asset for the city and its community
>
> Jamila El Mir, MENA Policy and Strategy Advisor

In which of the following ways, if any, have you actively contributed toward carbon reduction in your city?

Reuse or recycle appliances:
40%

Increased use of public transport
39%

Use of green energy or electricity at home
35%

Sourcing and buying locally grown food
32%

Use of electric bikes, scooters or vehicles
32%

Solar panel or renewable energy incentives
29%

Local cooperative schemes
(e.g., shared energy schemes, food production)
22%

0   10   20   30   40

Pulse of 6,000 citizens, living in 12 cities, taken in July 2022

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[15] "Dubai population set to double: How the city will benefit," Arabian Business, 3 October 2022.
[16] "Dubai Metro saved a billion car journeys over 11 years, say transport bosses," The National News, 2023.

The Riyadh Metro project design incorporates six main lines covering 176km and 85 stations, and is being developed, along with a bus network, as part of the King Abdulaziz Project for Riyadh Public Transport. According to the Royal Commission for Riyadh City (RCRC), the projected target is to have 3.6 million passengers daily within 10 years of operation, reducing car trips by 250,000 and fuel consumption by 400,000 liters a day.[17]

Singapore finds new ways to do transport better

In Singapore, expanding transport networks is creating opportunities to introduce more sustainability.

"Through better design and the use of technology, we are now looking at new strategies across the whole value chain," says Ng Lang, Chief Executive of Singapore's Land Transport Authority, "From procurement to design and build, and to operation and maintenance."

Whether it is purchasing trains with regenerative batteries, installing solar panels on land transport infrastructure or fitting LED lighting, Lang says there are huge opportunities to look at "how we can do things better."

As part of its 10-year priorities, TransLink in Vancouver plans to add more than 400 battery-electric buses to its fleet by 2030 and transition to a zero-emission fleet by 2040.

Electrification of the agency's bus fleet is not only an opportunity to reduce emissions but also to integrate technology with other systems. "As a data enthusiast, I'm really excited by the additional benefits that modernization will bring: systems that talk to each other, and provide better insight from a scheduling and customer experience perspective," says Kevin Quinn, Chief Executive Officer of TransLink.

> **"**
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> I'm really excited by the additional benefits that modernization will bring: systems that talk to each other, and provide better insight from a scheduling and customer experience perspective.
>
> Kevin Quinn, Chief Executive Officer of TransLink

[17] "RCRC launches first phase of 1900-km Riyadh bus service network," Arab News, 26 March 2023.

Case study
The future is electric in Singapore and New York City

To support Singapore's net-zero ambitions, the land transport sector needs to significantly reduce emissions in absolute terms. The Singapore Green Plan 2030 includes a strong push to electrify the city's vehicles, which would help it to achieve its vision of 100% cleaner-energy vehicles by 2040.

"Since 2018, we have stopped the growth of private cars and we now operate a market system that has helped us to cap the car population: you need to bid for a certificate of entitlement to own a car," says the Chief Executive of Singapore Land Transport Authority's Ng Lang. "By 2030, we'll stop the registration of new pure internal combustion engine cars and taxis. By 2040, we'll have only cleaner-energy vehicles, including hybrids, on our roads. We also aim to deploy 60,000 electric vehicle charging points on the island by 2030."

As part of its plan to achieve its vision for "a reliable, people-centered land transport system by 2030," Singapore plans to expand its rail network to 360km by the end of the decade. "People expect high standards from us," says Lang. "Safety and reliability are hygiene – and we have been working on other ways to make the journey easier, such as providing reliable data to commuters."

Funding the electric vehicle transition

In New York City, where transportation is responsible for almost 30% of the city's emissions, increasing the number of electric vehicles is an important strand of the target of 80% emissions reduction by 2050. In a city where much of the car parking is on-street rather than in driveways or garages, the infrastructure of charging points is a logistical challenge that requires innovative design and collaboration between city authorities and private companies.

The New York City Department of Transportation, energy company Con Edison[18] and electric vehicle charging network FLO are working together to roll out a four-year curbside charging pilot scheme involving the installation of 120 power ports.[19] Locations of the first batch of charging points will factor in considerations of demand, geographical diversity, community stakeholders and business owners, and usage will provide a useful guide to the electric vehicle blueprint for the coming decades.

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[18] "Electric Vehicles," NYC Dot, 2023.
[19] "NYC Charging," Con Edison, 2023.
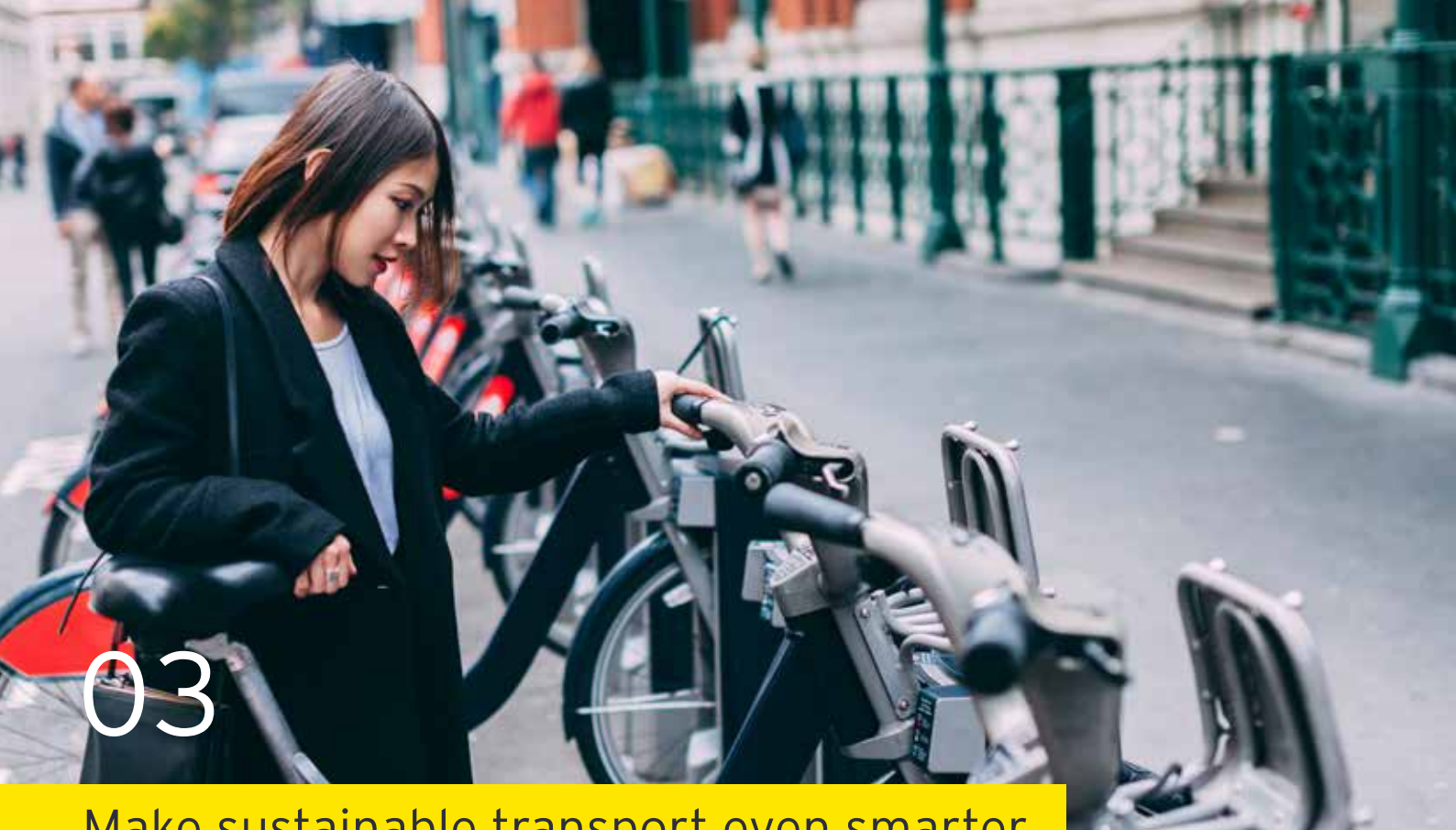
03

Make sustainable transport even smarter

Some city leaders are learning that long-term transport goals can have short-term gains.

One problem planners face is how to balance their long-term goals with the short-term expectations of residents. This is especially true for transport.

Kevin Quinn, Chief Executive Officer of TransLink in Vancouver, says that an important part of the city's transport network's strategy is to structure the overall development into smaller segments so that citizens can feel the benefits sooner. The city has a 30-year plan to create an 850km traffic-protected Major Bikeway Network, for instance, and has earmarked 450km to complete within the first 10 years. It is taking a similar approach to its 30-year rapid transit scheme.

"One of our big goals for our customers in the region is to ensure they have access to transit frequencies of 15 minutes or less," says Quinn. "From the mapping analysis, we can determine a way to align our 10-year priorities to move along this 30-year timeframe."

> "
> One of our big goals for our customers in the region is to ensure they have access to transit frequencies of 15 minutes or less."
>
> Kevin Quinn, Chief Executive Officer, TransLink, Vancouver

In the meantime, smart enhancement of existing facilities, such as adding bike lockers at stations and creating more space for bikes on buses and trains, will encourage new, more sustainable customer behavior.

"We have, with success, experimented with how we can better facilitate 'active' transport on our system," says Quinn. "We knew there were a lot of bikes on the ferries coming into terminals, so we facilitated bike users by retrofitting a bus, removing about half the seats to accommodate bike racks. This was received very well."

04

Give city planners and engineers new job descriptions

As sustainability becomes **the agenda**, city planners are changing the way they work.

The role of the planner and engineer is changing. Here are three ways:

1   They are getting involved earlier

As city visions change, so too does the role of urban planners and engineers. But they need to be involved from the outset of strategy.

"Before, it was, 'Here is the project, get on with it,'" says Dr Nelson Ogunshakin, Chief Executive Officer of the International Federation of Consulting Engineers (FIDIC). "But engineers need to be involved much earlier in the planning and development process – that's where you

start to look at how resilient your future city will be in terms of engineering circular economic solutions, growth, sustainability, mobility, healthy streets, step-free access and caring for people with different needs."

In regions that are developing rapidly, government authorities and private sector planners can be misaligned on environmental goals. Now, this relationship is beginning to change.

2   They are learning to be more flexible

While sustainability performance has become a key consideration in new developments, carbon footprinting is at its infancy at a planning stage in Dubai, says El Mir.

"But the general principles for sustainable planning are well known, including designing compact, connected and mixed-use developments, and minimizing urban sprawl – which also makes economic sense," she says. "There is also an increasing trend of designing in modularity in developments, especially from a land-use perspective. What that really means is not getting locked into something that you can't adjust to with changing policies and economic and social trends."

El Mir says that Dubai's developers are becoming increasingly demanding about optimizing public transport and minimizing single ridership, and that flexible planning procedures are encouraging this shift.

"You need to allow this modularity in design to be factored in from the start," she says. "It's happening – not necessarily through official memos, but through increased collaboration between private sector developers and policymakers. They're open to this dialogue."

3 | They are adding nature to the job description

For a long time, the built environment was planners' main consideration, but now it shares that status with the natural environment.

"In the past, urban planning was about developing buildings, urban water, power plants, electricity and so on," says Florent Sainte Fare Garnot, Director General of Lyon Part-Dieu, which is a project to make a district of Lyon more livable. "It was not about living forms – it was about a very technical notion of environment, and it had very little to do with nature. Today, the work is about how to bring nature into cities, how to reconnect ourselves and our urban planning to the trees and the soil, and to ensure the soil is healthy and living. For us, this is the new reality of urban planning."

It's not just green spaces that are being incorporated into urban design: There is growing evidence around the need for more access to blue spaces – water – too. In Scotland, a 10-year research project by Glasgow Caledonian University,[20] for instance, focused on the Forth and Clyde Canal, which runs through some of Glasgow's most deprived areas. The canal has been undergoing regeneration for nearly two decades to turn it into a "smart canal," using technology to control water levels and reduce flood and other climate-related risks.

Close to a third of pulse respondents say they have appreciated the creation of green or blue spaces in their city. Using data from the UK's National Health Service (NHS) from more than 120,000 residents over a decade, the research found that living near the revitalized canal reduced the risk of mental health conditions derived from socioeconomic deprivation by between 4% and 6%. Physical health benefited from the improved blue space too: The study showed that living within 700 meters of a canal reduced the risk of cardiovascular disease, a stroke or hypertension for people in deprived areas by up to 15%, and lowered the risk of diabetes by 12% and obesity by 10%.

Incorporating nature into cities is critical for the physical and mental wellbeing of residents. Lauren Sorkin, Executive Director, Resilient Cities Network, points to the example of the Oasis Schoolyards project in Paris.[21] "Over time, it will transform about 700 schools in the city by tearing up

asphalt in schoolyards and creating greener areas of shade that are also able to absorb water in the event of intense storms," she says. "The program will open up more natural places for local residents, as well as schoolchildren."

Case study
Part-Dieu reinvents itself

The Part-Dieu district is in the heart of Lyon, France's third-largest city. It is the focus of a major urban development project that was initiated in 2015 and is scheduled for completion in 2029. The goal is a more resilient, inclusive district that is focused on nature and low-carbon mobility. The project aims to:

▸ Reduce the density of real estate, with no more high-rise buildings and a better balance of offices and housing.

▸ Increase the proportion of affordable housing.

▸ Rethink construction methods to reduce the carbon footprint of buildings and prioritize rehabilitation over demolition.

▸ Focus on peaceful public spaces that are heavily vegetated and open to all, and give priority to pedestrians, cyclists and public transport.

▸ Diversify economic activity to incorporate the social economy, as well as local shops and services.

"Style in natural design and architecture, the atmosphere in public spaces, the trees you plant, the way buildings and nature talk to each other – these aspects of sustainability are just as important as metrics and reducing carbon impact," says Florent Sainte Fare Garnot.

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[20] "How blue spaces could play a part in making our cities healthier," The Scotland Herald, 1 October 2023.
[21] "Paris Oasis Schoolyard Programme in France," Climate Adapt, 2022.

To what extent do you agree with the following statement about living in your city: environmental initiatives are designed for the benefit of all people?

City	Respondents	
Chicago	500	62%
Copenhagen	500	64%
Dubai	500	80%
Hamburg	500	56%
Jakarta	500	83%
Los Angeles	500	72%
Lyon	500	58%
Manchester	500	62%
Pimpri-Chinchwad	500	69%
Singapore	500	76%
Sydney	500	66%
Vancouver	500	63%

Pulse of 6,000 citizens, living in 12 cities, taken in March 2023

Case study
Circular cities take the lead

Copenhagen has a goal of becoming the world's first carbon-neutral capital in 2025. The city's green regulations, including lifecycle assessments and annual CO_2 emission limits for individual buildings, are stringent — but they are accepted by the population. "It's part of our perception of our identity that we are green first movers — it's embedded in our culture," says Ditte Lysgaard Vind, Chair of the Danish Design Council.

One of the key design principles in Vind's work is circularity: eliminating waste generation through waste-to-resource innovations in the short term (reusing, remanufacturing or recycling) and designing out waste completely in the long term. She says that building with reused and recycled materials, for instance, is a growing trend: "Developers and institutional investors are really seeing this as part of their competitive edge, so they're also pushing the market now."

But these types of circularity schemes are not always successful. Back in Copenhagen, a scheme that used waste incineration to generate heat for the city was initially successful but is now having unintended consequences.

"Originally, the incineration was a really smart idea because we didn't know that we could use or recycle the waste for anything else," says Vind. "But now we do, and we also know we can heat that water in many different ways. So we have a very large waste problem because no one from a municipal perspective has been incentivized to change that system."

If Copenhagen can overcome these challenges, circularity can be good for its image. Two buildings that Vind was part of creating, almost half of which comprise reused or recycled materials, have attracted major international interest. This creates a buzz that is encouraging more local developers to include circularity in their projects.

"Positive international attraction on circular solutions within Denmark has helped to move more of the industry players in this regard," says Vind. "So now it's on the agenda of the developers, both private and municipal, to set targets in tenders in terms of how much material should be reused or recycled."

05

Make climate resilience investment No. 1

City leaders are realizing that climate resilience is the most crucial infrastructure of all.

There is little point in a city having a world-class transport system and impeccable circular credentials if it faces catastrophic flooding every year.

One place that understands its geographical vulnerabilities is Singapore. The low-lying island city is susceptible to both rising sea levels and temperatures. According to the worst-case scenario, by 2100, sea-level rises combined with high tides and storm surges could flood a third of Singapore. This is why the Singapore Green Plan 2030 has a focus on making the country more climate resilient.

"We have set aside an initial US$5b to fund coastal and flood protection measures," says Grace Fu, Singapore's Minister for Sustainability and the Environment. "The first step is to try to understand the science. How do we translate climatic changes and projections at the global level to Singapore's context? Climate science is something that we need to invest in so that we can get better projections to help us create a more effective and cost-effective coastal protection system."

Work so far includes developing better flood risk assessment, studying engineered coastal protection such as sea walls alongside nature-based enhancements such as mangrove plantations, and undertaking site-specific analysis of vulnerable areas.

How to turn vulnerability into opportunity

Singapore is pursuing integrated planning to make sure its climate-resilience measures also improve the wellbeing of its citizens.

"We want our coastal protection solutions to be an opportunity to create even more useful spaces for the community around it," says Minister Fu. "We do not just see it as a cost – it's a chance to reimagine the way we design our coastal areas to create a more livable space for all."

A similar process is underway in Vancouver, where the Sea2City Design Challenge is calling for ideas to combine better sea defense strategies with more equitable and environmentally responsible living.

> "
> We want our coastal protection solutions to be an opportunity to create even more useful spaces for the community around it.
>
> Grace Fu, Minister for Sustainability and the Environment, Singapore

"We're exploring what the city will look like in 2050 and 2100 due to sea-level increases, but a lot of people say, 'just build a dike,'" says Doug Smith, Director of Sustainability for the City of Vancouver. "But you don't want a four-meter dike in front of your neighborhood, because you won't be able to see the waterfront. And we have a really special relationship with the waterfront here in Vancouver."

"So do we allow the water to come into the community and create canals like Amsterdam?" he asks. "We're playing around with some of those ideas, like New York and San Francisco did. We're trying to find positive solutions."

On the eastern side of Singapore there is a stretch of coastline that includes both a long stretch of popular beach and Changi Airport. It is a complex ecosystem that illustrates the challenge faced by planners all over the world: how do they preserve the natural environment and improve the quality of life for citizens and at the same time protect their cities from the worst ravages of climate change?

"Each part of that coastline needs a different solution, so studying the climatic science and interpreting with engineering solutions to find the right options is really important," says Minister Fu. "This is going to be a project that will last a lifetime, that works 100 years in the future. So we don't want to invest in something that's either under spec or over spec – it has to be just right."

Case study
The long view of resilience

Lauren Sorkin, Executive Director, Resilient Cities Network, believes cities that take a longer-term view, that plan holistically and try to capture multiple benefits from single investments, are more resilient.

"Let's take Wellington as an example," she says. "When they analyzed the city's infrastructure, they saw that if they experienced an earthquake equivalent to that which affected Christchurch, that they would lose water services for more than a week."

The city designed a project that would create several community water sources, ensuring that everyone would have access to a backup water supply for more than a week, within walking distance of their home, in the event of an earthquake.

Food security

The COVID-19 pandemic, the Russia-Ukraine crisis and climate change have highlighted the risks of disruption in the global food supply chains. It has gained prominence on the agendas of many government leaders, in reviewing and ensuring robust food resilience plans to be able to withstand disruption risks.

Singapore imports more than 90% of its food and has limited land and resources to grow its own food. To strengthen food resiliency, the government has set the '30 by 30' goal, to build local capability and capacity to sustainably produce 30% of Singapore's nutritional needs by 2030.

Grace Fu, Singapore's Minister for Sustainability and the Environment, says: "We are doing this strategically with highly productive, climate resilient and resource-efficient farming methods; building the capability and capacity to produce a variety of fresh food that are a staple of Singaporeans' everyday lives."

What next for sustainable development?

The shift to sustainability among the planning and development community requires smarter allocation of funds and a desire to set realistic low-carbon goals.

To plan infrastructure that has a closer relationship with nature, including circular models, developers will require greater policy flexibility and the setting of achievable short-term targets to build toward longer-term ambitions.

Such flexibility is critical when local governments are obliged to make difficult trade-offs between longer-term spending on infrastructure and more pressing economic needs. Climate-resilience planning can be an opportunity to improve quality of life and resident experience.

City leaders who finance and plan effectively are developing innovative partnerships with the private sector that focus on implementable projects to meet specific stakeholder needs.

A city's sustainable development aims should be ambitious, but its program of delivery must be grounded in pragmatism.

Questions for city leaders

1 Are you making policy that promotes and supports sustainable development?

2 Does your development strategy prioritize public transport?

3 Have you considered the small transport tweaks that can have immediate benefits for citizens?

4 Are you thinking differently enough?

5 How are you building the infrastructure that will protect your city and its citizens from climate change?

The link between equity, engagement and evolution

From affordable housing to diversifying economic centers, equity runs through the ambitions that city leaders have for levelling up their cities.

The redrawing of the lines between residential areas and economic centers creates new opportunities for cities and their citizens. The challenge for leaders is to make sure that improvements in local amenities, public transport and open spaces are felt by all citizens.

To do that, they must increase genuine engagement across community groups. Our research suggests that there is growing recognition among authorities of the importance of genuine citizen engagement in making cities sustainable, but the results also tell us this is not translating into action.

Sustainability change messaging should be built around a vision of hope rather than couched in negativity, and citizens should feel that it is economically and socially beneficial for them to get involved.

Policy change can trigger significant moves toward sustainability among the planning and development community, while a flexible approach will allow adaptability as requirements evolve.

This research also finds that instead of being just an unavoidable cost, climate-resilience planning can be an opportunity to improve quality of life and resident experience.

These new city perspectives show us that sustainable development aims should be ambitious, but the program of delivery must be grounded in pragmatism and, above all, the needs of the people who call the place home.

Contacts

George Atalla

EY Global Government & Public Sector Leader

+17037471548

george.atalla@ey.com

Meghan Mills

EY Global Government & Public Sector Strategy & Operations Leader;
EY Global Sustainability and Green Economies Leader and Future Cities
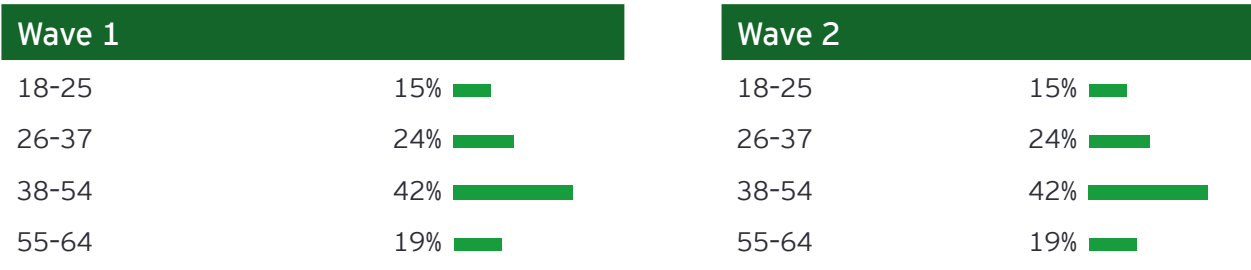Co-Leader

+12015515875

meghan.mills@ey.com

Methodology

FT Longitude pulsed 500 citizens in each of 12 cities: Chicago, Copenhagen, Dubai, Hamburg, Jakarta, Los Angeles, Lyon, Manchester, Pimpri-Chinchwad, Singapore, Sydney and Vancouver. Two waves of research took place in July 2022 and March 2023.

Age
Base: 6,000 respondents

Wave 1	
18-25	15%
26-37	24%
38-54	42%
55-64	19%

Wave 2	
18-25	15%
26-37	24%
38-54	42%
55-64	19%

Length of time living in the city
Base: 6,000 respondents

Wave 1	
Less than a year	0%
1-3 years	8%
4-5 years	11%
6-10 years	18%
11-20 years	21%
21-30 years	19%
31-40 years	11%
More than 40 years	12%

Wave 2	
Less than a year	0%
1-3 years	7%
4-5 years	8%
6-10 years	16%
11-20 years	25%
21-30 years	19%
31-40 years	11%
More than 40 years	14%
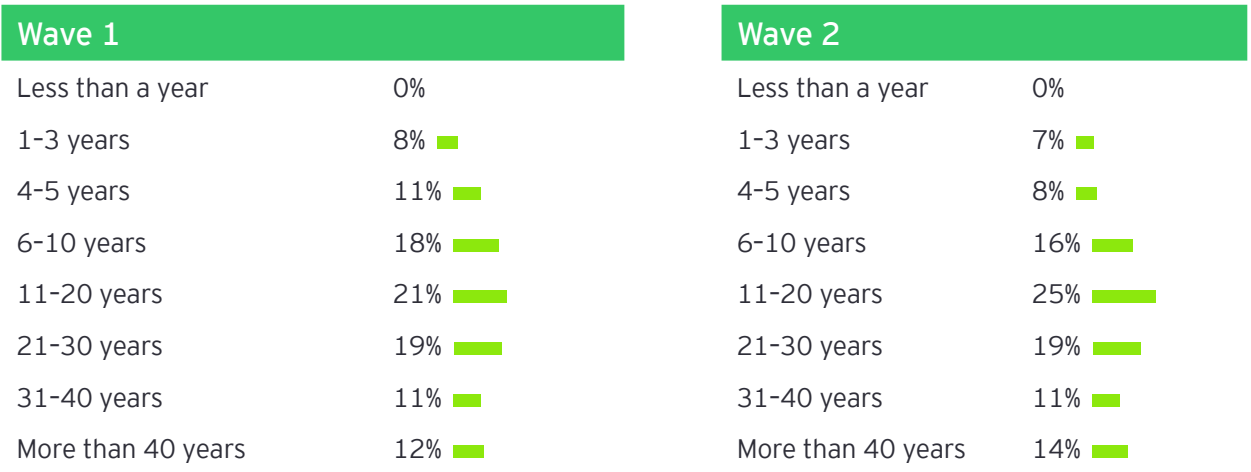
Senior city leaders and experts were also interviewed as part of the research.

Michael Fassnacht
Chief Marketing Officer, City of Chicago

Raed Mansour
Director of Environmental Innovation at the Chicago Department of Public Health, Chicago

Ditte Lysgaard Vind
Chair of the Danish Design Council, Copenhagen

Jamila El Mir
MENA Policy and Strategy Advisor, Dubai

Anies Baswedan
Governor of Jakarta between 2017 and 2022, Jakarta

Florent Sainte Fare Garnot
Director General of Lyon Part-Dieu

Mark Atherton
Director of Environment, Greater Manchester Combined Authority, Manchester

Dr D'Artagnan Scorza
Executive Director of Racial Equity, Los Angeles County

Grace Fu
Minister for Sustainability and Environment, Singapore

Ng Lang
Chief Executive Officer, Land Transport Authority, Singapore

Stephanie Barker
Head of Strategic Planning, Sydney Greater Cities Commission, Sydney

Lee Mulvey
Head of District Planning, Sydney Greater Cities Commission, Sydney

Doug Smith
Director, Sustainability, City of Vancouver

Industry bodies and associations

Laura Jay
North America Director, C40 Cities Climate Leadership Group

Dr Nelson Ogunshakin
Chief Executive Officer, International Federation of Consulting Engineers (FIDIC)

Lauren Sorkin
Executive Director, Resilient Cities Network

Wellington "Duke" Reiter
Founder, Ten Across

Shauna Slyvester
Executive Director, Urban Sustainability Directors' Network