

7 Strategies for Sustainable Urban Planning



Peter Calthorpe
Principal & Co-Founder

To my fellow urbanists,

The foundation of our future rests at the intersection of environmental responsibility, social equity, and economic strength in our cities. Building community consensus is critical to successful urban planning, yet the effort is often fraught with challenges. Particularly in today's political climate, the road to widespread adoption and prioritization of city sustainability is dotted with speed bumps.

Urban planners are on the frontlines trying to solve these issues, yet they've traditionally faced an uphill battle, armed with dated tools, analytics, and disorganized data. [UrbanFootprint](#) was built to bring planners, designers, architects, developers, environmental advocates and analysts together to overcome these obstacles and support a more efficient, sustainable urban planning process. This white paper discusses the seven strategies needed to help turn this vision into reality.

As our global population scales to what could one day reach 10 billion people, a new vision of community, prosperity, and urbanism is long overdue. Let's work together to help our cities survive and thrive with sustainable design.

Sincerely,



Peter Calthorpe

Principal & Co-Founder, Calthorpe Analytics



The Internet of Things and Big Data are making cities in many ways conscious.

They are more and more self-adjusting, homeostatic and autonomous. In this framework UrbanFootprint changes the way cities can think about themselves. It enables self-awareness (dynamic data), articulates expectations and goals (scenarios), allows reflection (analysis of

outcomes), and generates insights (patterns of co-benefits). Practitioners need to steer this process with seven key strategies for building smart, sustainable cities.

1 | Make Connections

Connect data, people, aspirations, needs, opportunities, futures, and outcomes.



More and more the act of creating an urban design, a plan, framing the right infrastructure or public policy, involves enhancing connections.

Creating connections is fundamentally what cities do, and it is what designers must do if they are to succeed. Great cities create connections between people of all ages, incomes, and races. They enhance connections to the natural environment, to history, to local culture, and to goods and services. They are also places that connect ideas, that cross-fertilize, that foster innovation and mix the foreign with the local, the regional with the neighborhood. They are the armature of the global world.

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are most typically between stakeholders and special interests that too often see their goals as isolated, view outcomes as winner-take-all, and understand plans as fixed. In addition, we need connections between isolated and growing data sets, stovepipe professional analysis, and facts that too often evade the discussion. Connecting information in ways that create insight is fundamental to understanding and design.

UrbanFootprint enhances the ability to realize this range of connections; between people, between people and place, between sets of information, and between solutions that reinforce each other.

2 | Collage Data

Integrate data to reveal patterns, educate stakeholders, and extend boundaries.

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We are swimming in data and it is growing at phenomenal rates. The challenge is to translate this onslaught into useful information. This involves synthesizing what are now isolated streams and distilling the data into useful information. And this information must be translated into insight and insights must be shared.

Digesting data is an interactive practice that involves much more than downloading bits. It involves layering data in ways that reveal new connections, synergies and causalities – effectively

revealing deeper patterns born of isolated data sets. It involves the ability to edit and layer diverse and complex information in ways that enhance understanding a place and setting directions for the future. It also involves asking the right questions easily in ways that integrates many dimensions of input.

Just as a collage brings a larger order into focus from fractured pieces, UrbanFootprint allows urban designers to combine, query, and connect data in ways that creates insight and supports solutions.

3 Solve for the Future

Design for multiple futures rather than perfecting the present.

We cannot understand the efficacy of new strategies and infrastructure without setting them in a future framework.

Much Smart Cities efforts are rightly focused on improving how we, piece by piece, make existing systems more efficient. Software and technology that makes better use of our buildings, roads, services, and open space is critical to setting the stage for a more inclusive and less demanding city.

But also needed are tools and practices that shape a more coherent long-range future, that look to the large changes in context and infrastructure that incremental fixes tend to miss. Future land-use patterns and circulation systems are the foundation of better cities,

shaping the next generation of investments, systems and policies. We cannot understand the efficacy of new strategies and infrastructure without setting them in a future framework.

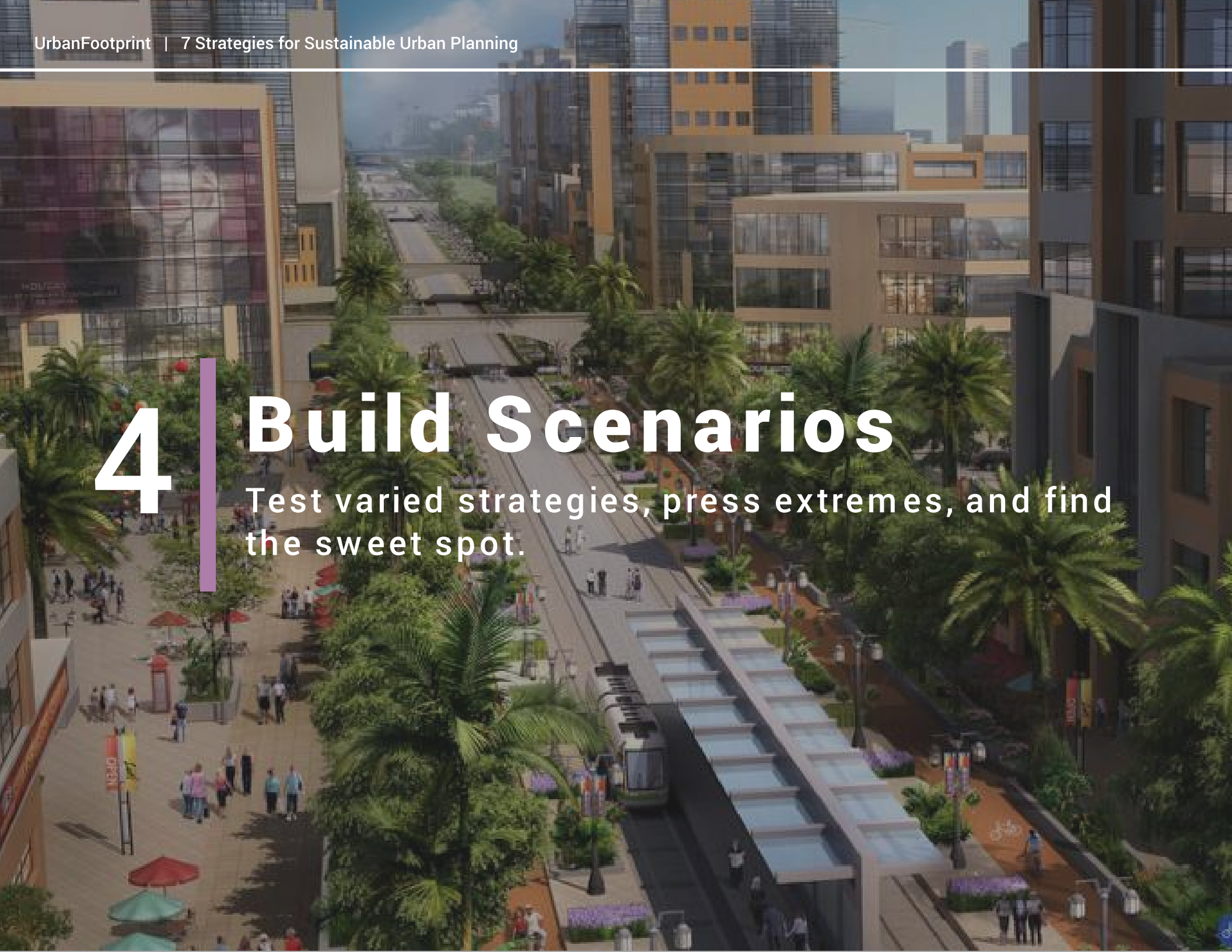
UrbanFootprint studies different urban futures, tests new policies, and understands their impacts over time.


Resilience, climate change, affordability, and economic growth are dependent on the right combinations of urban form, technology, economic investments, and social norms. What is viable today will be obsolete tomorrow if we do not solve for the future.

4

Build Scenarios

Test varied strategies, press extremes, and find the sweet spot.





Scenario planning assumes that we cannot predict the future because of unforeseen events and multiple forces.

Scenario planning has been used by the private sector and the military for decades for strategic planning based on a range of assumptions. Scenario planning assumes that we cannot predict the future because of unforeseen events and multiple forces. Instead it is a methodology that learns by testing different futures from a matrix of probable primary drivers. It brackets the future and reveals strategies that can adapt to differing futures or work with the largest range of outcomes.


But there is another reason for building urban scenarios – to be inclusive of and to test differing preferences of participants. Each stakeholder and special interest group brings their own ideal future born of their own priorities. These special interest scenarios tend to be shaped around

one preferred outcome rather than multiple advantages. Scenario planning allows all to see their idea affirmed as a potential future, analyzed across differing metrics, and then rationally compared to others. In so doing, scenario planning often reveals co-benefits and new coalitions between historically isolated interests. This is a catalyst for political change that in turn is the foundation of real change.

UrbanFootprint allows planners to build scenarios and run analysis quickly so that sensitivity studies or public preconceptions can be clarified in real time. It also reveals the potential co-benefits that can enhance new coalitions and political initiatives.

5 | **Seek Co-Benefits**

Transform single-issue advocates into coalitions, reveal interconnected outcomes.



Shaping the future of the city depends on consensus and coalitions; it is essentially a political act.

Shaping the future of the city depends on consensus and coalitions; it is essentially a political act. Current practice typically involves elected officials adjudicating the interests of multiple stakeholders; neighborhood groups, developers, unions, environmentalists, and social equity advocates to name a few. This diverse group of voices often leads to stalemate, delay, and least common denominator outcomes.

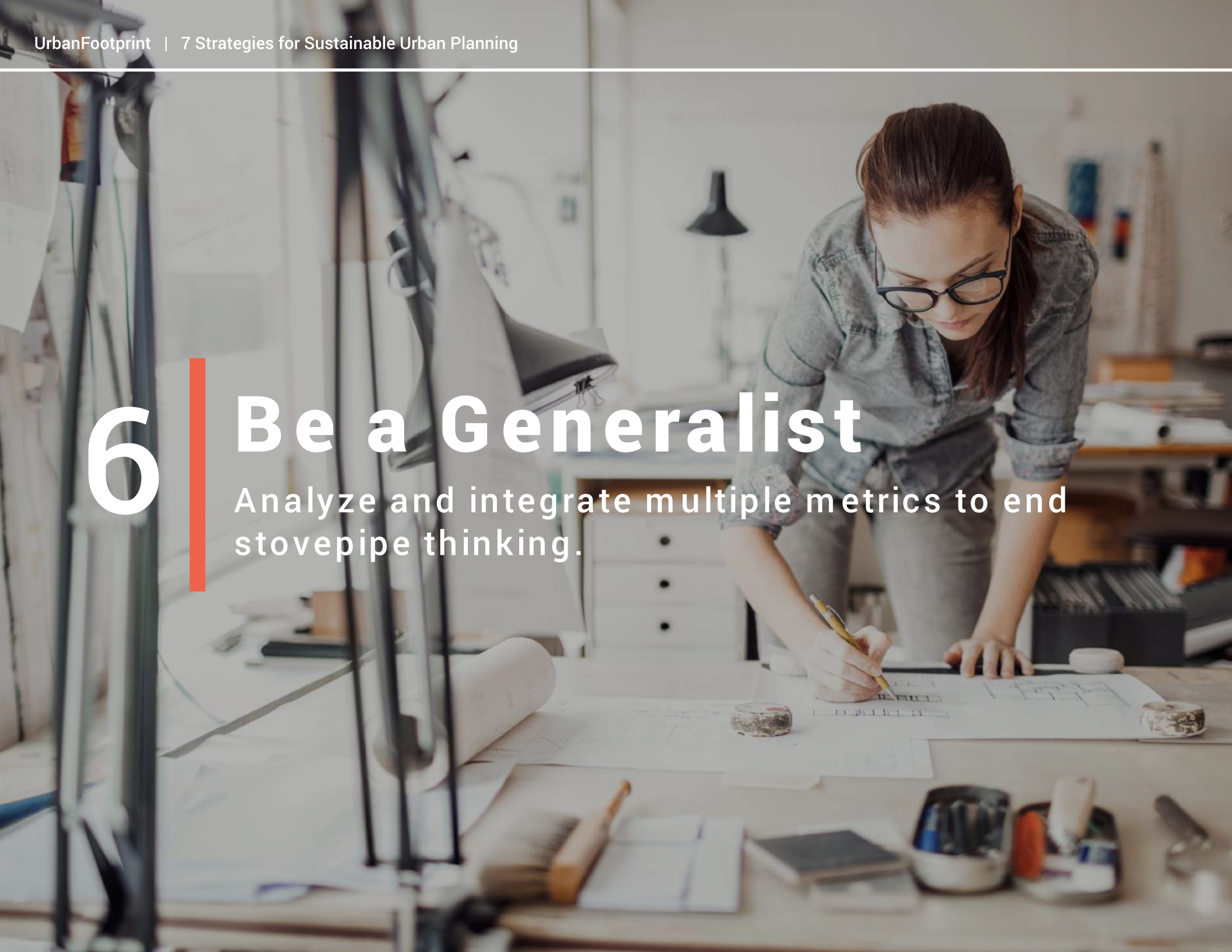
Uncovering what we call 'co-benefits' can uncover unseen common interests and coalitions.


Comprehensive analysis across a full range of metrics can reveal win-win strategies that demonstrate there are choices that do not involve painful trade-offs. Some virtuous development patterns can solve many problems simultaneously, amplifying cost effectiveness and smoothing the political process.

UrbanFootprint can help to find and highlight such co-benefits. Positive social, environmental, and economic outcomes can converge and when they do, political progress is always enhanced.

6 Be a Generalist

Analyze and integrate multiple metrics to end stovepipe thinking.





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Planners and designers are inherently generalists; they must integrate across issues, disciplines, and interest groups. Urban design amplifies this trait, calling on practitioners to understand the social, economic, and environmental dimensions of the built environment. They must balance all of these forces and find ways to communicate whole systems to an audience of specialists. They are conductor and composer of a complex orchestra.

Our cities are too often the product of specialization. Whether developer, engineer, or community group, each actor optimizes for their goals and interests without an overview of systemic impacts, tradeoffs, or synergies – without a sense of the whole story and its outcome.

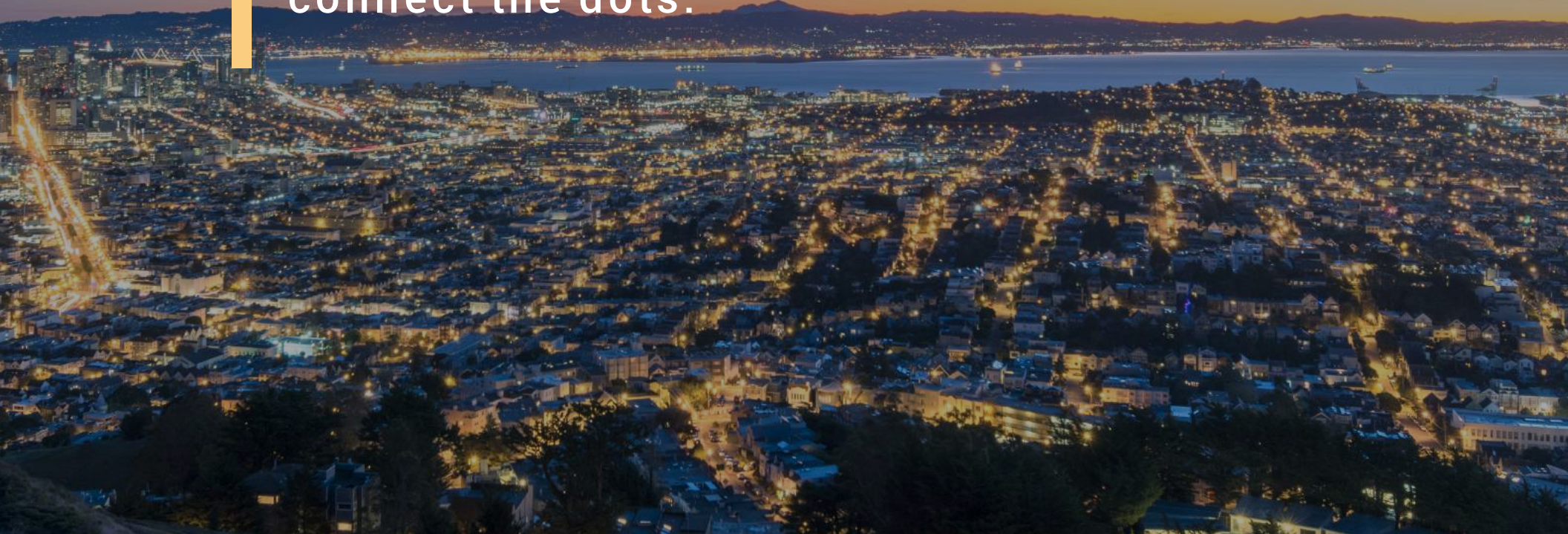
The role of the generalist, the urbanist in fact, is to understand all the forces at work and find the shared pattern that shapes the narrative. Multi-disciplinary action, though rarely taught, is the practice that creates value through synthesis rather than optimization.

UrbanFootprint is intrinsically a tool for Generalists. It allows planning and design practices to bring together a large range of options and analysis without convening a large team of specialists. It provides a framework for all the special interests to collaborate in an environment that is fact based and professionally sophisticated.

7

Think Beyond Horizons

Stretch boundaries, expand timeframes, and connect the dots.



The larger environment, history, culture, and economies shape the urban landscape whether for small sites, neighborhoods, districts, towns or cities.

Designers, planners, developers and architects are trained to look beyond the boundaries of their project or site. The larger environment, history, culture, and economies shape the urban landscape whether for small sites, neighborhoods, districts, towns or cities. The metropolitan region is now the platform from which cities interact with the globe. As a result, every project must push beyond static jurisdictional boundaries or simple property lines to the regional context. Expanding the domain always leads to more sustainable and powerful schemes. It is essential for planning in the 21st century.

Expanding time frames as well as boundaries also enhances the intrinsic value of design. Short term, local

thinking too often dominates the debate around significant developments, infrastructure, and policy initiatives -- it is baked into the political process and is hard to overcome. With long term visions, life cycle economics, generational social consequences, and geological environmental impacts can come into focus as a part of our public process.

UrbanFootprint supports expanding horizons by putting local, regional, and national data at the fingertips of all the stakeholders. It allows practitioners to telescope between scales quickly and efficiently. In addition, UrbanFootprint provides a platform for long-term thinking by facilitating scenarios of differing time frames.

Let's build a better future with smart city planning.

Fundamentally, the way we shape cities is a reflection of the kind of humanity we bring to bear. Urban planners and designers, together with the support of environmental policymakers, analysts, NGOs and advocates, will need to lead the way in building smart, sustainable communities. If we are to unlock political stalemate and

address the urgent need to solve for city resiliency and curtail the impacts of climate change, nothing short of a complete transformation of the current urban planning process and supporting technology will do. Today's practitioners must dedicate themselves to the practice of building mutually beneficial communities.

About the Author



Peter Calthorpe

Peter Calthorpe is Principal and Co-Founder of Calthorpe Analytics. His 30 year practice has helped solidify a global trend towards the key principles of sustainable urban development. Peter is driven by a desire to put better information and better tools in the hands of decision makers, advocates, and organizations on the front lines of development, energy, climate, and health planning.

UrbanFootprint

UrbanFootprint is a product of Calthorpe Analytics, a software and services company founded on 30 years of leadership in regional planning and analysis. Our tools help municipalities, NGOs, private urban planning firms, and regional planners enact innovative and sustainable solutions for smart city planning. We are a mission-driven firm, committed to sustainable urban design. We believe the future of our cities is the future of our social coherence, economic vitality, and environmental sustainability.

Ready to see UrbanFootprint in action?

We'd love to hear from you.

Discover the first end-to-end platform for sustainable urban design and planning. Sign up for a 30-day free trial or schedule a custom demo with our team and learn how UrbanFootprint can help streamline your next planning project.

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Questions? Get in touch.

We'd love to hear from you.

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