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Tecnológico de Monterrey

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# **Adequate and Affordable Housing for 2040 Metropolitan Monterrey: Applying Participatory Foresight**

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**Adequate and  
Affordable  
Housing for  
2040  
Metropolitan  
Monterrey:**  
Applying  
Participatory  
Foresight

**Steven W. Popper<sup>1,3</sup>, Jose Antonio Torre<sup>2</sup>, Eduardo Armando Aguilar Valdez<sup>2</sup>, Roberto Ponce Lopez<sup>2,3</sup>**

## Overview

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The sixteen municipalities and surrounding areas that comprise Metropolitan Monterrey continue to be among the greatest drivers of Mexico's prosperity. Great demographic growth has attended this economic dynamism. Providing adequate, affordable housing to accommodate this growth-- a problem for decades -- is becoming even more acute in recent years. Several factors discussed in this report combine to make this not just a difficult public policy problem but one of a type that is often referred to as a "wicked" problem.

A typical wicked problem involves many voices, interests, perspectives, and bodies of experience. These problems look differently to different people, are difficult to define, and connect many complex systems composed of people and organizations acting --and reacting-- independently. Outcomes of policy or individual actions are not easily predictable. There are profound uncertainties that prevent calculating optimal strategies. Comprehensive solutions are difficult to frame; it is most often the case that managing the underlying issues and consequences over time requires incremental approaches resulting from wide consultation and deliberation.

Providing adequate, affordable housing in Metropolitan Monterrey is therefore a local issue but also an archetype of a more general type of public policy problem. Resolving the local concerns could affect the lives of millions of people. Pioneering the means for addressing similar wicked problems in many different settings could change all of Mexico and, indeed, transform a world facing an increasing number of wicked problems with each passing year.

This report briefly outlines the structure of and findings from a 2-day experiment in participatory foresight. The workshop was intended to begin a regional process within Metropolitan Monterrey for a comprehensive, many-sided, policy-oriented group deliberative process to jointly determine what a vision for housing could be in the year 2040 and what pathways might be available to attain it.

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## ➤ Workshop Objectives and Basis

The central concern is the question, **"How can Metropolitan Monterrey meet the need for affordable and quality housing for all its communities and inhabitants?"** We began the search for answers by holding an initial workshop on December 5 and 6, 2024, at Tecnológico de Monterrey's (TdM's) School of Government and Public Transformation, San Pedro Campus. During the two days, the larger question was addressed in two parts:

- What are the details for a vision of 2040 Metropolitan Monterrey that would meet the housing needs of its population, ensure economic and security benefits for residents, and improve coordination between municipalities and public institutions for the benefit of all involved?
- What are alternative pathways for policies and strategies to achieve this vision by 2040 and how resilient might these alternative pathways be to trends, uncertainties, and future disruptions?

The intention of the workshop was not to come to final conclusions on visions and pathways. Rather, it was to set the conditions for beginning a process of structured deliberations among authorities, communities, and stakeholders that can provide such answers through a collaborative process.

The event was organized as a partnership among researchers from TdM's Center for

the Future of Cities, the School of Government and Public Transformation's Center for Research in Decision Sciences, and TdM's Faculty of Excellence initiative. It was directed under the leadership of Dr. Jose Antonio Torre Medina-Mora, Dr. Steven W. Popper, Mr. Eduardo Armando Aguilar Valdez, and Dr. Roberto Ponce Lopez along with other collaborators from the partnering institutions.

The workshop featured the participation of representatives from Tecnológico de Monterrey, the University of Monterrey, and the Autonomous University of Nuevo León, and representatives from:

- **Local public institutions**, such as the Nuevo León Housing Institute, the Monterrey Municipal Urban Planning and Coexistence Institute (IMPLANC), the Escobedo Municipal Planning Institute (IMPLAN), among others;
- **Private sector companies** dedicated to real estate development in the region also participated including U-Calli Inmobiliaria, Desarrollos Delta, Patria Desarrollos, Tu Casa Más, Urvita, CREO, Misión Obispado, Prosperia, and 4S Real Estate;
- **Representatives from civil society and other organizations**, such as the Society of Urbanism Region Monterrey, A.C., the Chamber of Real Estate Owners of Nuevo León (CAPROBI), the National Chamber of the Housing Development and Promotion Industry (CANADEVI), the Monterrey Region Urban Planning Society (SURMAC), among others, and
- **Staff from several of the municipalities** that constitute metropolitan Monterrey.

## What is the problem?

The workshop was preceded by several months of interviews across the spectrum of parties and stakeholders to the housing issues confronting the larger Monterrey metropolitan area. Some of the major concerns and factors affecting housing outcomes across Metropolitan Monterrey include:

|                                                                                                                             |                                                                                                                                                                                    |                                                                                                                                                                     |                                                                                                                                                                            |
|-----------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Intense regional economic development continues to bring much <b>in-migration and demographic change</b> .                  | Sixteen centers of <b>government exist with no regional planning body</b> , little to no integrated regional planning, and a history of political discord and regulatory mismatch. | The sense that <b>adequate housing and affordability are a responsibility of the local level of government</b> is weak and unevenly shared.                         | Policy priorities across municipalities are <b>ill-defined or mis-aligned</b> .                                                                                            |
| There is <b>lack of synchrony on housing issues</b> between levels of federal, state, and local government.                 | <b>Regulations are poorly aligned</b> across municipalities and even across the missions and interests of government offices within a single municipality.                         | The cumulative de facto incentives in finance and construction lead to <b>sprawl in new housing development</b> .                                                   | There are insufficient resources or planning to provide <b>utilities, transportation, education, health, and employment</b> services and assets to the widening periphery. |
| <b>Long commute times</b> to employment and services arise from insufficiently integrated regional transportation planning. | Incidents of home ownership debt and equity traps, and therefore <b>housing abandonment</b> , are common due to insufficiently flexible financial instruments.                     | There exist strong social, cultural, and economic <b>incentives pushing toward single-family residence (SFR)</b> housing solutions on both demand and supply sides. |                                                                                                                                                                            |



The issue therefore is not only one of affordability in the narrowest sense. It is also very much one of whether purchasers and residents of Metro Monterrey housing are able to actually obtain the full benefits usually presumed to be associated with housing services and home ownership. While the general problem of housing is often placed under the rubric of housing affordability, the broader concept should be of housing adequacy.

## Methodology: The VSCARP Approach

The workshop was structured to overcome many of the difficulties associated with multi-party discussions of wicked problems. It sought to maximize viewpoints and ideas while also channeling them into a series of actionable steps. One of the goals was to remove direct confrontations. This was achieved through using a combination of four foresight methods as a participatory process, the "VSCARP" Method (Vision, Strategic Concepts, Assumptions and Robust Pathways). This method focuses on the combination of small and large group sessions to explore elements for a group vision and possible courses of action and their resilience properties. Contrary to more traditional discussions, VSCARP begins at the end: what is the long-term vision that any strategy is intended to bring about? The intent is not a drive to consensus but rather to conduct a laboratory to gain policy insights through interaction. Paradoxically, using this approach makes it possible to gather a diversity of perspectives for structured discussion and analysis, creating a common language among diverse interests and establishing a common ground while recognizing key uncertainties. Strong group findings often emerge – often to the surprise of the participants.<sup>4</sup>



<sup>4</sup> First developed and used by the RAND Corporation in 2012, more information on VSCARP as applied in the Monterrey workshop may be found in Appendix A.

## ➤ Elements of a Housing Vision for 2040 Metropolitan Monterrey Emerged

Achieving a shared vision is a strong requirement for a discussion of strategies and pathways. A sense of what a desirable future state looks like has to precede any discussion of ways and means. Doing so on a collaborative basis is a difficult task. For this reason, it is sometimes useful – and sufficient in the early stages – to instead identify what the elements of such a vision need to be. That is, without stating priorities and how tradeoffs are to be made later on, is it possible to identify what factors need to contribute to such a vision.

It is also notoriously difficult as a group to conceive of such a future. The present has such a rich context enveloping each aspect of our lives. The future, on the other hand, could take so many unfamiliar turnings and directions that it is difficult to grasp. For this reason, the VSCARP process first places the participants in a well-described future and instead asks them to look backwards. This is done in a series of small- and plenary-group sessions.<sup>5</sup> Participants were assigned to small groups to maximize the diversity of experience and background.

Each small group of 3–5 participants was given a prompt, a magazine cover from the year 2040, which proclaimed an article on what had happened to housing in metropolitan Monterrey in the prior fifteen years. Some groups were given a positive story to relate while others received the prompt of a negative outcome. In each case, the groups were instructed to describe the main points of the story, what needed to happen for the outcome to occur, what did not happen, what groups were affected, and why the situation described in their description of 2040 continued and was sustainable.



After two small-group rounds followed by a plenary discussion, several main points appeared either to be consistent across several groups or were agreed to in the large-group discussion. These represent an initial set of elements of a vision for adequate housing in the Monterrey of the year 2040.

<sup>5</sup> This takes advantage of both small- and large-group dynamics. Further, the small groups are usually composed of participants with differing, and often conflicting, views, expertise, and interests. As individuals they are placed in an uncomfortable place—the unknown future. The only resource they may draw upon are the others in the same small group. This begins the process of creating a shared experience and language.

- ① **Public safety** is a cornerstone for the stability and well-being of any community. This includes implementing preventive and reactive measures to ensure citizens' protection against crime and other threats. Moreover, collaboration between security forces, governmental institutions, and the community is vital to creating an environment in which individuals feel safe and confident in their daily lives.
- ② To ensure a **clean and sustainable environment**, it is fundamental to implement practices that promote the efficient and responsible use of water and energy as well as developing technologies and policies that support their long-term sustainability.
- ③ Achieving **equity in access** to adequate housing involves minimizing the effects of gentrification and real estate speculation. This can be accomplished through the creation of trusts that protect and promote the availability of affordable housing for all socioeconomic groups.
- ④ Access to **high-quality public and commercial services** implies the creation of complete neighborhoods, districts, and corridors that efficiently integrate a wide range of essential community services. This ensures that residents have access to everything necessary for a comfortable and productive life, thus promoting a better quality of life.
- ⑤ Reducing **social conflicts** is fundamental to maintaining cohesion and well-being in a community. These conflicts can be socioeconomic, such as income inequality and lack of opportunities, and neighborhood-related, such as coexistence problems and cultural differences. Implementing policies that promote social justice, inclusion, and dialogue among residents can be key to mitigating these conflicts and fostering an environment of respect and collaboration.
- ⑥ Access to **financial instruments** is vital for economic development and improving quality of life. Housing policies, such as those implemented by INFONAVIT, and the financial facilities offered can help increase access to housing and contribute to sustainable urban development.
- ⑦ There is need to pay attention to **generational and lifestyle changes**. This includes recognizing and responding to the different needs and preferences of each generation, from young people with more technological lifestyles to older individuals who may require more support and specific services.
- ⑧ Accessibility and proximity involve implementing a **multimodal and integrated mobility** system with bicycle and pedestrian options. Efficient integration would enhance access to work and services, reduce travel time, and improve connectivity within metropolitan Monterrey.
- ⑨ **Institutions for coordination and dialogue** play a crucial role in efficient governance and sustainable development. These would improve institutional coordination across all levels, including regional, federal, state, metropolitan, and municipal. Additionally, they should focus on capacity building and addressing fiscal issues to ensure effective and equitable implementation of policies and projects.
- ⑩ **Measurable, flexible, and adaptive planning** involves data-based planning to support informed decision-making and policy impact evaluation. It is also essential to streamline and/or regulate procedures to facilitate the implementation of projects and services. Technically oriented city staff ensures more efficient and professional management focused on tangible results and adaptability to emerging changes and needs.
- ⑪ **Greater density** requires reducing informally settled land and promoting various central nodes. It also involves the creation of housing in suitable areas rather than the expansionist city model of simply doing so where it is feasible to build. This involves prioritizing needs to complete neighborhoods, utilizing abandoned homes, developing suitable land based on a metric that considers development costs against available services, and a focus on providing housing to the lower-income sector.
- ⑫ **Cultural adaptation** to vertical living and short-term rental options involves a significant change in how people relate to their living space. Creating community programs and activities, as well as educating people about the benefits and challenges of vertical living, can facilitate this cultural adaptation and help them better navigate a more shared and community-based lifestyle which may include accepting common rules, increased interaction with neighbors, and shared use of common spaces.

The items on the list that emerged after discussion are not surprising. Another day and another group of participants could also have produced something similar or different. A more extended session, or holding several sessions with different participants, might be illuminating. But these elements of vision provide two values. Substantively, they represent a starting point to begin the discussion of alternative policies and actions. The process value, however, is that the list was generated by a highly differentiated group of participants starting from basic principles and working collaboratively to do so.

## ➤ Five Strategic Concepts for Achieving the Vision for Monterrey Housing

To end the first day and continue into the next, participants went through several small-group and plenary sessions in which they gradually offered strategic alternatives for achieving the elements of the vision. They were encouraged to think in simple, even simplistic terms, about the over-arching strategic concepts, the “big ideas”, from which more sophisticated strategies could emerge. The purpose at this preliminary stage was to develop a range of such strategic concepts that could then be compared for their differing strengths and weaknesses. This would then feed into a later stage during which such simple strategies could be combined to produce a complex course of actions that could be flexible and adaptive toward future developments.

Some twenty alternative strategic concepts were offered. Upon discussion, it became clear that most of the concerns and recommended actions motivating the strategic concepts could be contained within five different alternative “big idea” concepts. These simple ideas for framing a nuanced strategy to ensure adequate housing in the metropolitan area, and the main points behind each, were:





## EFFICIENT MONTERREY

**“Efficient Monterrey”** views the principal problem as being lack of **effective and consistent means for framing, implementing, and enforcing policy and regulation** for housing.



### **Accountability:**

Clarify responsibility and strengthen accountability for both developers and public officials.



### **Quality Public Services:**

Emphasize the provision of quality public services.



### **Flexible Regulation:**

Promote more flexible regulation.



### **Metropolitan Vision:**

Establish a metropolitan and consistent vision at the sectoral and district level.



### **Public Spending:**

Ensure that public spending is better directed and aligned with policy and development objectives.



### **Technology:**

Foster better and more intensive use of available technology.



### **Coordination:**

Ensure effective inter-institutional coordination between autonomous entities.



## WELL- FINANCED MONTERREY

**“Well-financed Monterrey”** sees the fundamental issue as **gathering financial resources and distributing in a manner to enhance incentives** for adequate housing.



### **INFONAVIT Guidelines:**

Expand and modify INFONAVIT guidelines, including options such as rent, renovation, and transferable mortgages.



### **Land Trusts:**

Create or strengthen state and municipal land trusts or banks.



### **Municipal Financing:**

Ensure sufficient financing for municipalities to develop the necessary infrastructure.



### **Tax Collection:**

Improve municipal tax collection and other revenue sources.



### **Integrated Taxes:**

Design taxes to achieve integrated and consistent policy goals.



## PLANNED MONTERREY

***“Planned Monterrey”*** rests on the notion that **better coordinated planning, information sharing, and transparency** are keys to housing and regional urban transformation.



### **Information Exchange:**

Foster the exchange of information and coordination within a permanent metropolitan organization.



### **Data-based Planning:**

Implement flexible, adaptive, and data-based planning.



### **Service Access:**

Improve the match between housing development and access to services.



### **Neighborhood Planning:**

Focus planning at the neighborhood or district level.



### **Master Plans:**

Develop master plans for infrastructure.



### **Transparency:**

Ensure planning documents are transparent and easily accessible.



### **Leadership and Integration:**

Promote social leadership and political will; ensure effective integration in all these processes.



## PROXIMATE MONTERREY

***“Proximate Monterrey”*** takes the view that the best way to bring housing, employment, transportation, and broad services access to metropolitan Monterrey is to **turn the region into a cluster of many centers** for economic and social activity.



### **Land Use:**

Promote more effective, dense, and mixed land use.



### **Walkability and Accessibility:**

Prioritize walkability and accessibility in zoning and development.



### **Public Services:**

Ensure immediate access to public and commercial services through complete streets.



### **Opportunities and Diversity:**

Increase access to opportunities and foster diversity by designing a city with multiple centralities and medium-height clusters.



## RECONCEIVED MONTERREY

***“Reconceived Monterrey”*** focuses less on the material and more on the necessity for **change in culture and attitude** for a reconceptualization of the region and its housing choices.



### **Cultural Shift:**

Understand that change will not happen until there is a cultural shift.



### **Housing Acceptance:**

Promote greater acceptance of non-single-family housing.



### **Municipal Responsibility:**

Ensure municipalities take responsibility for providing affordable and quality housing.



### **Public Transport:**

Transform the perception of the role of public transport.



### **Collective Solutions:**

Promote greater acceptance of collective over individual solutions.



### **Public Participation:**

Strengthen public participation in planning and decision-making.

## ➤ Strategic Alternatives: Key Assumptions, Vulnerabilities, Signposts, and Actions

Defining the five main strategic concepts allows discussion to consider how to move from the present toward a future that can approach some or many of the items previously nominated to be part of a vision for housing in 2040 metropolitan Monterrey. As with the elements of that vision, the strategic concepts emerged from a collaborative process without having participants being identifiably attached to or advocating for one strategic concept over another.

VSCARP moves toward an examination of strategic concepts as different possible policy directions in a manner that avoids many of the direct conflicts of more traditional competitive strategic planning. Each concept is clearly insufficient by itself to be the sole strategic guidance for the region. But much benefit can come from examining their comparative strengths, weaknesses, potential outcomes, and

consequences. The results of this examination can then inform more detailed planning.

The method used for this structured discussion of strategies and pathways was similar to the one that generated the elements for a vision –a series of small-group sessions interspersed with plenary discussions. On the second day, participants were assigned to new small groups to interact with a new set of partners.

They were asked to identify the **key, load bearing assumptions<sup>6</sup>** underlying each concept, how they might be vulnerable, what indicators might provide early warning of potential failure, and what hedging or shaping actions might affect success in achieving intended outcomes. What follows is a brief review of these findings.



<sup>6</sup> All plans rest upon assumptions. Some are stated explicitly while others are only implicit, perhaps not even recognized by the planners themselves. Many of these assumptions would affect plan outcomes. The key assumptions are those that are crucial to the plan. If they turn out to have been erroneous, such broken assumptions would seriously undermine the capacity of the plan to succeed.

**“Efficient Monterrey” depends on resources and political will to simplify processes through technology as well as to facilitate citizen participation and streamlining procedures.** Resources include both economic and technical capacity for effective technology implementation. There needs either to be a central entity or a collaborative forum. In addition, there needs not only to be commitment and alignment of strategic actors, they need to recognize a unified vision and avoid particular interests counter to that vision. As planning is shared among government levels, the strategy assumes that different levels of government will be willing to collaborate and reconcile interests to implement unified urban norms. There is also an implicit assumption that incremental solutions can lead to significant overall progress, adaptability, and sustainability.

**The vulnerabilities** these load-bearing assumptions face are those facing most of the five strategic concepts: Lack of leadership and political will, divergent stakeholder interests, disruption to priorities brought by the political cycle and the differences among municipal governments and the other levels of government, and a generalized resistance to change by both officials and citizens. Participants were also concerned about technology reliance: availability, cost, training, security, and a resistance to digitization.

**Signposts** to monitor for possible dangers to this strategy would include the number and degree of uncoordinated efforts or actions not aligned with the general agreement, failures to comply with incentives and visions, control by partisan groups, and the lack of development.

**But hedging and shaping actions can have the effect of framing a more conducive environment for this approach.**

These would include measures for strengthening organizations, observers, and citizen participation such as holding recurring review meetings, conducting audits on technology spending and deployment while also establishing an entity for redistributing digital information to municipalities, and creating strategic points for realigning the original plan. The essence of these measures would be to enhance flexibility, social participation, and creating counterweights balanced against potential capture by interests or introduction of measures detracting from the ability to build systemic efficiency.

**“Well-financed Monterrey” relies upon more effective gathering, administration, and application of financial resources toward housing needs.** It requires clarity about the regional vision with expenditure priorities enforced through long-term technical bodies, rule of law, and certainty of investments and public-private decisions taken within a clear regulatory framework that increases the powers of municipalities individually or on a regional basis.

Sustained economic growth would be desirable, but there would be need to update cadastres with changing times and efficiently collect property tax including collect outstanding property taxes and applying penalties. INFONAVIT lending practices would need to change. The reliance on measures to enhance development potential – preferential relaxation of height, density, land use, and other regulations in exchange for contributions from the private sector to finance public infrastructure required by the increase in housing or to mitigate the collective impacts generated by development -- or envisioned land banks, making land reserved for housing easier to acquire by builders to create more housing construction would require political will and resources.

With money at the center, **vulnerabilities** are many. Perverse incentives could lead to economic informality, corruption, and insufficient separation from politics. Lack of infrastructure and technological tools to update cadastres could limit the effectiveness of property tax collection. Limited capacity of public servants is another vulnerability as are insufficient infrastructure and technological support. There might be disparities in what citizens, the private sector, and cities view as efficient financial administration and the actual practice: stricter property tax collection could

create economic pressure on low-income property owners leading to social and political criticism. Reliance on novel mechanisms such as land banks and public-private partnerships (PPPs) might be frustrated by lack of authorization, ineffective operation, insufficient budgets, or lack of interest by potential participants. The market for the enhanced potential approach might fail if the private sector does not perceive clear benefits or encounters bureaucratic barriers.

Clearly, there must be **monitoring of the actual economic and social outcomes** such as population shifts, housing supply and demand, under-employment, supply of services, and degree of social isolation. But there also must be close monitoring of public complaints or resistance, low levels of collaboration, inconsistencies and misappropriated responsibilities, underspending, failure to achieve intended goals within set timelines, and other administrative performance measurements. The biggest test will be that of the market and the degree to which there is collaboration and interest in the PPP and land bank mechanisms.

**Some management practices to address these issues** would include countercyclical budgeting and creation of reserves to sustain appropriate development while also setting transparent debt ceilings. Tax incentives

could assist in meeting goals as would speeding processing times and clarifying regulations. Citizen participation should be encouraged along with creation of observer bodies and ensuring that contributions and participations are conditioned on wide agreement. Fostering good public-private relationships are a requirement for creating the trust that will encourage use of new financial facilities.

**“Planned Monterrey” relies upon an ability to conduct effective planning at the metropolitan level.** Participants were uncertain about whether this requires a new autonomous entity or only a venue for collaborative consultation. Clearly, the assumptions required for the former would be stricter – and more vulnerable -- than those for the latter. For example, a central entity may require legislation, cities that contributing funding, and binding conditions for project approval. The more deliberative approach would still require coordination among stakeholders and agreements aligned with a common vision with the intent to achieve balance in housing supply and demand. The institutional approach would require a formal metropolitan master plan, but the more collaborative would still need an informal set of guidelines and agreed common actions and objectives with mechanisms to monitor compliance. Both would rely on data and information regarding

infrastructure, governance, as well as interoperability between databases and harmonization of methodologies and planning outputs so that decisions are data-driven and coherent across institutions. And effective collaboration among mayors requires that they work together, overcoming political differences and prioritizing metropolitan development.

The divisiveness of Mexico’s politics at all levels poses a formidable **vulnerability**. The historical pattern of growth and business-oriented culture of Monterrey, while economic drivers heretofore, also carry the potential for limiting efforts to ensure future growth through more effective coordination. These concerns are bookended on the other side by the danger of falling into rote bureaucratic processes which could hinder progress and possible lack of interest from technical experts to enter into or be part of this higher-level process. Over-standardization might not account for the heterogeneity of different municipalities. The small working groups were divided on whether Planned Monterrey could operate through non-binding collaboration or required a formal central decision council. In either case, they foresaw political resistance to metropolitan coordination; some mayors might resist ceding autonomy or resources, undermining collaboration agreements.

The political cycle could also allow the initiative to be exploited for personal gain further compromising adherence to the master plan. Even changes in local administrations could result in unintended lack of continuity in collaboration.

Similar vulnerabilities arise from the need for and availability of up-to-date information. Potential lag or mismatch between available information and real-world conditions, such as information on abandoned or intestate housing and informal settlements, could hinder effective planning and decision-making. There were the consistent vulnerabilities of private-sector resistance, insufficient political will, and budget constraints. Insufficiently active citizen participation or monitoring mechanisms that fail to encourage effective participation would reduce the opportunity to oversee and legitimize projects and so present further vulnerability.

That the list of vulnerabilities is so daunting should not be a surprise. The concept of **creating a venue for consultation**, to say nothing of coordinated master planning, would be a considerable departure from current practice. Failure to meet administrative deadlines would certainly be a leading indicator of stress as would failure to address some of the concerns, enumerated in the discussion of other

strategies, that raise the suggestion of taking this unprecedented approach. Several actions could mitigate some of these vulnerabilities.

**Focusing on information collection and generating centralized databases** would be important steps, as would creating a transparent platform for permits and procedures. These technical fixes would need to be accompanied by incentives for transparency of information and open data availability, creating alliances to generate and manage information, and socializing and communicating the metropolitan vision with citizens. Similarly, proactively developing success parameters and measures for implementing the metropolitan vision would need to be accompanied by accountability mechanisms that include co-responsibility and formal or informal sanctions for non-compliance, and processes for participation to ensure successful planning. As before, establishing a citizen organization as an active participant in evaluation and monitoring may help surmount some of the human factor and political vulnerabilities by establishing a broad constituency for regional planning. Similarly, the process issue of actively establishing a conciliation and negotiation capacity among the municipalities, communities, and stakeholder both public and private would be essential.

Actions

Signposts



**“Proximate Monterrey”** applies a very specific approach, that of making most neighborhoods’ access to jobs, services, businesses, or to efficient transportation no more than a walk or relatively short travel span away. It implicitly assumes creating multiple centralities from the current core/periphery model with balanced land use to ensure diversity of access to jobs and services. It would appear to require well-defined a regulatory framework in place to impose taxes on externalities, regulatory changes to allow for higher density through minimum density requirements and mixed land uses --especially targeting strategic districts, and that service and infrastructure companies, such as CFE and Water and Drainage, be actively involved in planning growth to ensure profitable expansion. Urban development and housing thus become inseparable and no longer considered in isolation. Effective urban planning must integrate housing to ensure cohesive and sustainable growth. Achieving an equilibrium in terms of a balanced space necessitates a diversity of land uses and functions supporting a mix of activities, including residential, commercial, educational, and recreational, to meet the varied needs of its inhabitants. Accessibility and safety issues are critical especially with regard to active and safe mobility. Political and social will are imperative, as without the commitment of key stakeholders the concept could neither be implemented nor sustained.



The farther one moves from current conditions the greater the number of **vulnerabilities**. In this case, participants foresaw difficulties with unbalanced land use leading to a lack of diversity and new urban centers, resistance to change from stakeholders potentially hindering necessary updates and adaptations, social resistance to this new urban vision, the challenge of balancing between the availability of services and employment opportunities, shortage of data and financing for both informed decision-making and effective implementation of urban projects, and lack of coordination among stakeholders leading to fragmented efforts and suboptimal outcomes. There is a question of whether such a new direction could even resist the forces currently pushing towards more centrifugal development; if expansion is curbed, it could disrupt the balance between urban development and housing leading to challenges in meeting housing demands within the existing urban boundaries.



Institutional concerns once again came to the fore. The current justice system, with mechanisms that favor private interests, poses potential risks as could federal interventions as well. The problem of policy persistence is also present stemming from changes in public administration as new authorities with different priorities could divert focus and dismantle key projects.

The resulting poor implementation and lack of sustained maintenance could reduce the project's effectiveness and public trust. And as before, increasing insecurity could deteriorate urban safety conditions, limit active mobility, and discourage proximity.

One may quarrel with the fundamental values implicitly assumed in the Proximate Monterrey strategic concept. What becomes clear, however, is that as with the prior strategic concepts the direction for fundamentally changing the trajectory of providing adequate housing to metropolitan Monterrey is blocked by a familiar set of obstacles. Similarly, though, consideration of hedging and shaping actions brings out elements of what increasingly appears to be a prescription for addressing affordable housing in Monterrey more generally.

**Proactive measures would be to ensure that technical capacities were present and appropriate methodologies applied.** Beyond the technical aspects, consolidating inter-governmental coordination processes from design to post-management of projects, establishing cross-cutting agreements, involving key actors and stakeholders, strengthening community organization, and actively communicating prospective and achieved benefits would be key. These could be moved forward through generating security

strategies based on data and situational prevention, promoting information and transparency, implementing a citizen listening processes, fostering co-creation of solutions, and socializing the project's benefits through a bottom-up approach.

Some of the envisioned vulnerabilities could be hedged against from the onset by implementing accountability mechanisms, securing projects through legal and financial frameworks, establishing maintenance funds, continuously monitoring infrastructure coupled with applying and enforcing urban regulations to ensure sustained safety and accessibility, and properly ensuring strategic works against disasters. Again, consolidating citizen participation and consultation processes within formal regulations would be not only a hedge leading to project inclusion and sustainability, it would also foster social appropriation of the individual development efforts and the strategic direction as a whole.

**"Reconceived Monterrey"** goes beyond the instrumentalities of Efficient, Planned, and Well-financed Monterrey as well as the mandated direction of development outlined in Proximate Monterrey. It instead calls for a fundamental re-examination of many of the fundamentals that the other strategic concepts to one extent or another take for granted.



While the first four strategic concepts emerged clearly from the VSCARP process and the discussions among participants, Reconceived Monterrey was also present but more implicitly and tacitly than the other four. Bringing it out explicitly for consideration generated a range of new inputs to planning for metropolitan Monterrey.

Central to the discussion was the value of exploring a culture of sharing public spaces in the geographical, economic, and social dimensions. This might involve re-examining priorities between the community and the individual in the regional culture. Piloting and implementing highly attractive public spaces are crucial as these provide tangible support to a new narrative making any conceptual shift more desirable and engaging. There may need to be a campaign aimed at promoting and convincing the population with a new, compelling narrative that reshapes the city's vision, but this needs to be based on a balance between incentives and sanctions. This balance is crucial for facilitating transitions or changes in paradigms, ensuring that both encouragement and deterrence are used effectively to channel actions and decision-making. The balance needs to be applied across all sectors. This implies that the approach should be comprehensive and inclusive, engaging multiple stakeholders and sectors to create a cohesive and effective urban strategy.

Several long-standing fundamentals would require change. If there is to be more mixed-use, higher density, and rent-based housing, then there is need to support the necessary cultural shift by valuing the use of such housing services as a viable alternative to ownership. This means providing new options for intergenerational savings to ensure long-term family wealth, allaying ingrained perceptions about property and security, and the provision of effective, affordable housing instruments the lack of which limits municipalities' ability to address housing issues. Beyond the housing supply, there is a need for efficient and accessible public transportation system; if public transportation fails to provide coverage, efficiency, and security, it would break the essential connection to the concept. Therefore, transit subsidies to ensure accessibility and enhance usage would be part of the equation.

Many of the familiar **vulnerabilities** arise in exploring and reaching a reconceptualization of metropolitan Monterrey: lack of social cohesion resulting in perceptions of insecurity could deter people from using public transportation and visiting public spaces, distrust and lack of transparency in decision-making and resource allocation, and social resistance with a lack of citizen participation or collaboration could



Vulnerabilities

impede the adoption of a civic and environmental culture. Again, lack of political continuity; administrative changes or divergent political agendas could limit the sustained implementation of key policies. And corruption in the administration of subsidies to public transportation especially (because changes in the conception of the use of transportation and public spaces could possibly affect utilization rates and reduced public support) could lead to inefficiencies, misallocation of funds, and diminished public trust undermining the system's reliability and sustainability.

There are vulnerabilities to any new conception of housing. If companies began offering housing as a job perk, it could undermine the cultural shift towards valuing housing use over ownership; employer-provided housing might reinforce the traditional ownership model complicating efforts to promote alternative housing schemes. Uncertainty surrounding the fate of housing after death presents a significant vulnerability. Without clear legal and financial mechanisms in place, the future of properties under usufruct or other use schemes could create confusion and deter people from embracing these models. Misuse of housing under use schemes, such as renting them out on sharing platforms also presents a challenge. If the initial experiences with new housing schemes are negative, it could significantly discourage adoption.



Signposts

Several of the previously discussed **“signpost”** early-warning indicators would also be of value here. Monitoring housing market demand and supply shifts, along with citizen surveys and monitoring of quality-of-life indicators would be necessary. In addition, unresolved neighbor issues, modal shifts in transportation, deteriorating housing quality, infrastructure failures, and financial monitoring of the instruments for mediating home transfer, usage, and ownership would be key.



Actions

**Positive actions to accompany changes to types of housing alternatives** being offered would involve defining viable housing options and clarifying eligibility criteria, guidelines, and protections for next-generation beneficiaries; offering change options and alternatives for housing, implementing a support program exclusively for adequate rental housing, and developing a communication strategy to inform about viable housing options under an exploitation scheme. It would be essential to establish strict regulations and control mechanisms to prevent temporary rentals and speculation which could reduce housing accessibility and counteract the intended benefits of the strategic concept.



But the fact that a fundamental reconceptualization of the role of housing in the region was perceived as having so many obstacles suggest a set of actions that should be seriously considered for any determined approach to shift from business as usual:

- Continuous monitoring and evaluation of the implementations.
- Making processes less bureaucratic and more transparent.
- Strengthening citizen service institutions providing financial education.
- Providing financial education.
- Creating simulations and other avenues to visualize possible futures based on current conditions.
- Developing necessary infrastructure and services.

## ➤ Moving Forward: Toward Robust Action Plans

These findings from the December 5–6, 2024 workshop constitute not so much conclusions as a beginning. They provide a common basis for conducting more detailed elaborations, planning, and implementation. This section will conclude with several options for continuing the process of collaborative engagement moving towards action plans for metropolitan Monterrey. We begin by describing the discussion during the final plenary session of the workshop.

The final session began to explore what a robust pathway towards achieving many of the elements of vision for 2040 might look like. A robust plan is one that is designed to achieve defined, measurable levels of successful outcomes across a range of possible future conditions and states of the world.

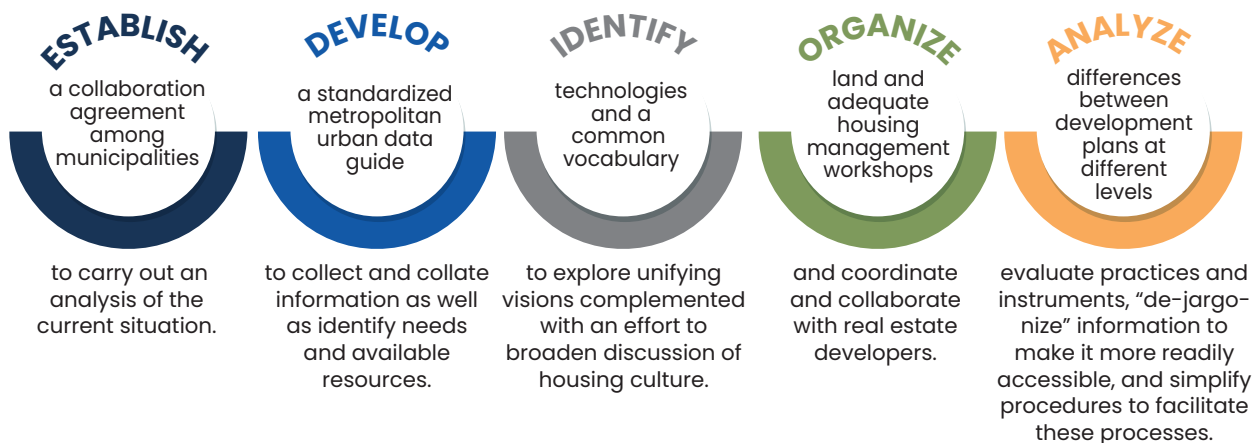
One of the principal means for achieving robustness is to lay out plans designed to adapt to future trends and surprising turns in a manner that will have been previously agreed upon by the parties to a decision. A robust plan in these terms will generally comprise three parts:

- 1) **an agreed set** of short-term, low-regret<sup>7</sup> actions,
- 2) **a set of optional actions** that may or may not be employed in the medium term, and
- 3) **criteria** by which the need and appropriateness of each medium term action may be judged.



<sup>7</sup> 'Regret' is a concept for comparing alternative actions. Low regret does not mean a guarantee of successful outcomes; it is possible that none of the available alternatives will lead to overall success if the conditions militate against it. Rather, it is a measure of how much we would lose by choosing a particular action compared to its alternatives. By definition, among a set of alternatives at least one would be the zero-regret alternative in the sense that none of the others would allow us to achieve more (or lose less) under a particular set of future conditions. If we could predict the future, we could optimize to minimize regret to zero. When we cannot and the task is instead to consider which alternative to choose, it is useful to turn to simulations to assess the regret values among a set of alternatives.

Although it was not possible in the available time to assess regret for various short-term actions, the participants advanced several possibilities that seemed to capture much of the prior discussion on strategic vulnerabilities:



Considering medium term actions that might be actions that could be taken depending both on both elements of a future vision and the roll out of events, several alternatives were mentioned, such as:



All these actions will need to be complemented by the exchange of experiences and success stories to enrich processes.

Of course, these are possible policy levers that would need to fit within a larger strategy – almost surely to incorporate many elements appearing in one or more of the simple strategic concepts developed during the workshop. But that elaboration would require considerably more detailed effort.

## ➤ Next Steps for a Metropolitan Process of Deliberation with Analysis

The workshop was planned as neither an end nor as a one-off event. It was intended as a possible beginning. It established the foundation for an effort whose ultimate purpose would be to provide support to the policy deliberations that will be required to address the wicked policy problem of

housing adequacy in Metropolitan Monterrey. This final section outlines some of the directions that may be taken. They are not mutually exclusive, and the actual course followed will be shaped by the engagement of and perceived value to stakeholders within the region.

- **Ongoing Contact.** A first step will be to use this report to re-convene the initial participants as well as a wider circle to discuss this report's findings. This in itself can be an occasion for seeking common ground, deriving further collaborative insights, and considering appropriate further steps. This could include forming a working group consisting of an ever-widening circle of participants to carry out the next logical steps implicit in the initial work. Among other efforts, this could include but not be limited to:
- **Convening** on a regular basis a contact group of representatives from municipal authorities, housing developers, the business community, neighborhoods and communities, topical experts, etc.) to continue deliberations in an informal manner.
- The concept of a **shadow planning** process might evolve from such a convening. Clearly, each municipality will continue to be responsible for its own formal and legally required planning on topics concerning housing. But it is possible for the venue of the informal ongoing convening group to serve as an asset to municipal planning teams while they themselves are evaluating options and weighting priorities. Such consultation would be a supplement to and in support of the formal effort.



- ▶ **Deliberation with Analysis** has been found to be a useful means for addressing wicked problems of public policy. That is, rounds of discussion among stakeholders are integrated with raising questions to be addressed by analysts. The analysts then report back and their findings form the basis for further elaboration and evaluation by stakeholders. The TdM team that conducted the initial workshop would work with those interested in ongoing contact to bring methods and tools to facilitate further deliberations. But the concept of deliberation with analysis suggests an additional possibility based on the capacity of the TdM team.
- ▶ The TdM partners has the capacity to create a **model-based computer infrastructure** to conduct analyses of the conditions for and effects of various policies. It would take too long to construct an identical model for Metropolitan Monterrey. Considerably less effort would be required to construct a representative model, an infrastructure for policy testing and analysis, that could take deliberations beyond the telling of stories. It would allow explicit specification of policy alternatives, sharing them for discussion, and testing the conditions under which they succeed or fail.  
Such a modeling effort would not be designed to provide answers. Its purpose would neither be to forecast nor to turn decisions over to a computer algorithm. Rather, it would be a style of analysis on the same principles that informed the workshop: what conditions would be necessary to prefer one course of actions over another? How robust is one course of action compared to another. Recent work on future water supply to Monterrey provides a good example of how deliberation with analysis works.<sup>8</sup>
- ▶ The convening process could identify **important sub-topics** for greater examination by the TdM team to provide analytical support. The existence of a modeling infrastructure could greatly facilitate this effort.

<sup>8</sup> See: Molina-Perez, Edmundo, David G. Groves, Steven W. Popper, Aldo I. Ramirez, and Rodrigo Crespo-Elizondo, Developing a Robust Water Strategy for Monterrey, Mexico: Diversification and Adaptation for Coping with Climate, Economic, and Technological Uncertainties. Santa Monica, CA: RAND Corporation, 2019. [https://www.rand.org/pubs/research\\_reports/RR3017.html](https://www.rand.org/pubs/research_reports/RR3017.html)



The dimensions of the housing issues in Metropolitan Monterrey appear overwhelming. There are no culprits, no one source of problems. Rather, they stem from many, many actors each taking appropriate action, within the limits available to them, in pursuit of completely rational objectives. It is a wicked problem. Wicked problems by definition are not solved. But they can be managed.

Any long-term solutions emerge from that very act of management. The process of engagement begun at the December 2024 workshop can be sustained in several ways and take different forms. But each would be an important step on the road to creating a Metropolitan Monterrey of the future that more closely meets the needs of all its inhabitants.

"If we begin with certainties, we shall end in doubt. But if we begin with doubts -- and are patient in them, we shall end in certainties."

Sir Francis Bacon, *Novum Organum*, 1620



## Appendix A: Structure and Flow of VSCARP Method

The Vision, Strategic Concept, Assumptions, Robust Pathways (VSCARP) structure blends four foresight methods: Backcasting, Three Horizon Foresight (3HF), Assumption-Based Planning (ABP), and scenario planning.<sup>9</sup>

These are used in a combination of small group and plenary sessions.

The arrows indicate how the process flows between the two scales.

| STEP                                                   | OUTPUT                                                                                                                                                                                                                                                    | SMALL GROUPS | PLENARY | METHOD            |
|--------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|---------|-------------------|
| 1. Describe worlds of 2040 prompted by provided cues   | <ul style="list-style-type: none"> <li>Elements of vision for desirable future state</li> <li>Disruption and exploration of current worldviews</li> </ul>                                                                                                 | ↓            |         | Backcasting       |
| 2. Compare the described 2040 future state to present  | <ul style="list-style-type: none"> <li>Reveal present/prospective tradeoffs and costs</li> <li>Illuminate obstacles, barriers, and opportunities</li> </ul>                                                                                               | →            | ↓       | 3HF               |
| 3. Sketch out an initial agreed draft vision for 2040  | <ul style="list-style-type: none"> <li>Assess several visions for commonalities</li> <li>Formulate an agreed, common future vision</li> </ul>                                                                                                             |              | ↙       | 3HF               |
| 4. Strategies and pathways to Vision 2040              | <ul style="list-style-type: none"> <li>Alternative strategic concept (SC) "Big Ideas"</li> <li>Agreed set of alternative candidate strategies for forging pathways toward the future vision</li> </ul>                                                    | →            | ↙       | ABP               |
| 5. Identify key assumptions                            | <ul style="list-style-type: none"> <li>Flesh out characteristics of each SC</li> <li>Elicit explicit/implicit assumptions for each SC</li> <li>Determine 'key' assumptions for each SC</li> </ul>                                                         | ↓            |         | ABP               |
| 6. Vulnerability, signposts, hedging & shaping         | <ul style="list-style-type: none"> <li>Events/trends that break key SC assumptions</li> <li>Early warning signals of stressful trends/events</li> <li>Hedging actions to limit damage</li> <li>Shaping actions to create more conducive states</li> </ul> | →            | ↓       | ABP               |
| 7. Scenario pathways and future states                 | <ul style="list-style-type: none"> <li>Frame scenarios of outcomes as tools to elicit discussion of pathways and switch points</li> </ul>                                                                                                                 |              | ↓       | Scenario planning |
| 8. Guidelines for robust pathway(s) toward Vision 2040 | <ul style="list-style-type: none"> <li>Agreed pathway(s), signposts, hedging and shaping actions, with potential switch points</li> </ul>                                                                                                                 |              | ↓       | ABP               |

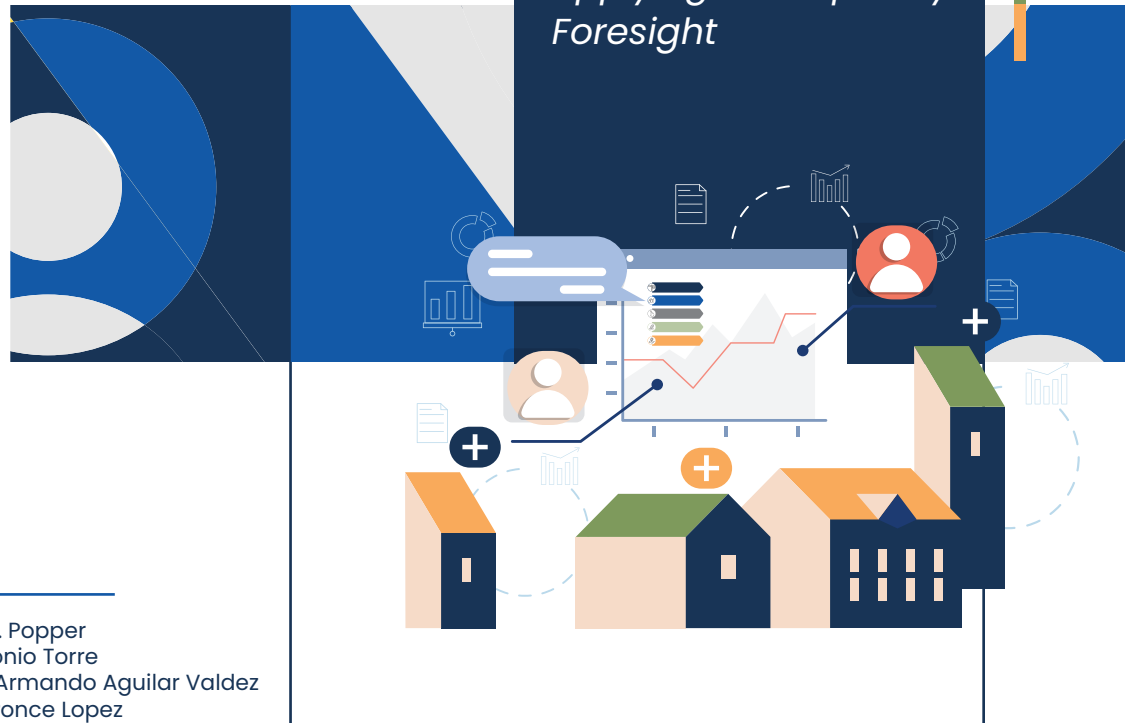
<sup>9</sup>Backcasting: Luke Georgiou, Jennifer Cassingena Harper, Michael Keenan, Ian Miles, and Rafael Popper, eds., *The Handbook of Technology Foresight: Concepts and Practice*, Edward Elgar, 2008. 3HF: Andrew Curry and Anthony Hodgson, "Seeing in Multiple Horizons: Connecting Futures to Strategy," *Journal of Futures Studies*, Vol. 13, No. 1, August 2008, pp. 1–20. ABP: James A. Dewar, *Assumption-Based Planning: A Tool for Reducing Avoidable Surprises*, Cambridge University Press, 2002. Scenarios: Jerome C. Glenn and The Futures Group International, "Scenarios," in Jerome C. Glenn and Theodore J. Gordon, eds., *Futures Research Methodology – Version 3.0*, The Millennium Project, 2009, and Theodore J. Gordon, "Interactive Scenarios," in Jerome C. Glenn and Theodore J. Gordon, eds., *Futures Research Methodology – Version 3.0*, The Millennium Project, 2009.



Tecnológico  
de Monterrey

Centro para el  
Futuro de las Ciudades

# Adequate and Affordable Housing for 2040 Metropolitan Monterrey: *Applying Participatory Foresight*



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Escuela de Gobierno y  
Transformación Pública  
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