

The local view: a discussion about Santiago, Chile

Interviewer: [Gareth Byatt](#) – Principal Consultant, [Risk Insight Consulting](#)
Interviewee: [Norm Gridley](#) – Associate, [Satarla](#) & Independent Project Manager

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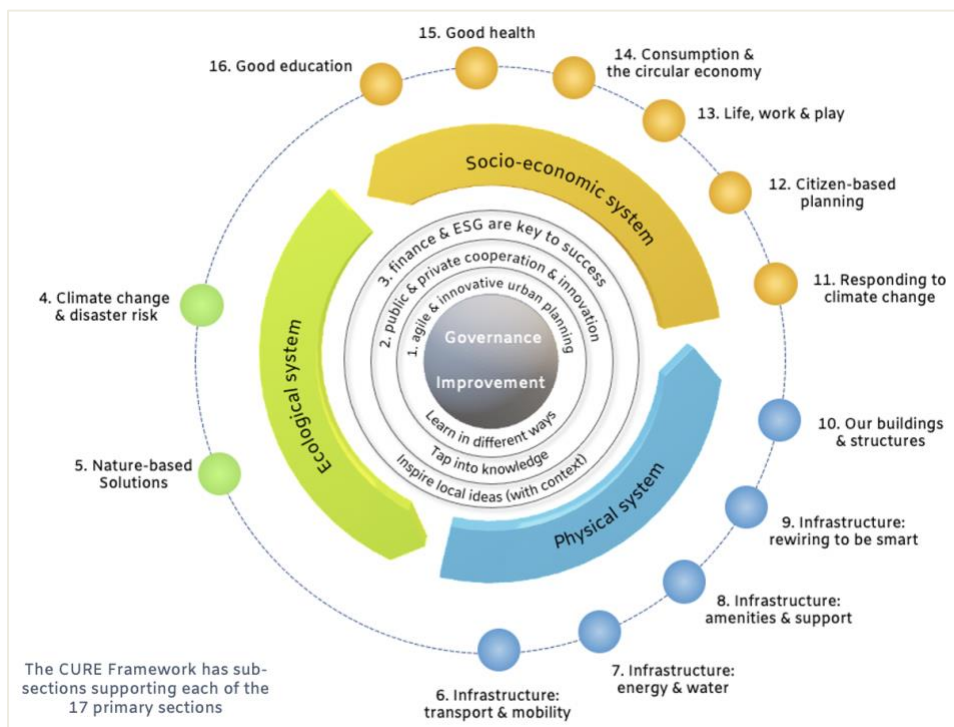
The centre of Santiago. Photo by author.

Norm,

It is a pleasure to chat with you about the [City of Santiago in Chile](#), the capital city of Chile (and one of the largest cities in South America). I'm looking forward to hearing your thoughts on the challenges the city faces with sustainability and urban resilience and the measures and tangible actions that you see taking shape. Can we start by summarising your background, and your connection to Santiago.

Norm: Thanks for inviting me to talk about my adopted home city. I am a Civil Engineer by training, and I have worked in environmental matters for the past 20 years, especially in the mining industry for over 15 years. After being based in the US, Canada and briefly Argentina, I have been living permanently in Chile since 2006. For my first five years in the country I was based in the 11th Region, called Aysen, where I worked at an underground mine. In 2011, I moved permanently to Santiago, where I was employed for eight years by a multinational mining company as a Sustainability Manager. Since 2019 I have been working as an independent consultant as well as an Associate with the Risk & ESG Consulting business, Satarla. In terms of my experience of Santiago, during the period 2006 to 2011 I had frequent trips to this city, and since 2011 I have lived permanently there. I have therefore had over 15 years of experience in Chile’s capital city.

Gareth: Thanks for this outline of your background and your long connection to the major South American metropolis of Santiago, Norm. I imagine that you have seen many changes to Santiago over the past 16 years. I found it very interesting to visit it in the autumn (southern hemisphere) of 2022. As you know, an aspect of my activities relating to the world’s urban environments is to shine a spotlight on what they **are** doing, and what they **should be** doing, to be more sustainable and resilient – and to do this from various viewpoints (including citizens, municipal authorities, businesses, academics and support organisations). I’m particularly interested in drilling down to look at local examples and ideas, including those that might be useful for other cities and towns around the world. I’d like to structure our discussion about Santiago around my urban resilience framework, which uses a systems approach and links to the UN Sustainable Development Goals (the [SDGs](#)). Through this, I hope we can cover aspects of governance, the ecological environment, the physical environment and the socio-economic environment.



Urban framework image by author

Gareth: Can we start with some general observations about the City of Santiago, including how you see the municipal authorities liaise with their citizens. If I understand correctly, the city operates in a zonal type of system of local governance.

Norm: For general background, the administrative divisions in Chile are split into 16 Regions, 54 Provinces, and 346 Comunas. Santiago falls within the Metropolitan Region (RM) as a Province. Within Santiago, there are 32 Comunas. The estimated 2023 population of the Santiago RM is over 8 million, and the city itself is home to over 6 million people. Santiago therefore constitutes a significant proportion of the overall population of Chile – the country’s population is about 19 million.

I think it’s worth starting with how the city is organised. I mentioned just now that there are 32 comunas (or communes) which form the Province of Santiago. I live in the Providencia commune, which as you can see in the map below is one of the central city zones. Providencia has a population of about 150,000.

Each commune has its own plan of how it is supporting its citizens plus overarching city-wide plans are managed by the city team. I can imagine that ensuring these plans all link together can be quite a bit of coordination work (as it would be for any major metropolis).



The communes of Santiago
Image from Wikipedia

Gareth: How does the **physical system** of Santiago function in your view as a citizen? By the physical system, I mean the way that transport, the built environment, and utility services including energy, water and waste management function.

***Norm:** I'd like to start with transport. To give you some initial context, Santiago has continued to expand – and it is still doing so – in my years of living in Chile. One thing that has been notable that is linked to this expansion is the increase in road vehicle traffic, which has gone up markedly.*

It's worth stepping back a few decades to consider how Santiago evolved, including the development of its roads as part of the country's economic policy. The economics approach of [The Chicago Boys](#) on government and economic policy that was adopted in Chile in the 1970s, 1980s and 1990s continues to influence how things are run today.

As a brief overview, the term "Chicago Boys" has been used since the 1980s to describe [Latin American economists](#) who studied or identified with the liberal economic theories that were taught at the University of Chicago (and elsewhere). These theories advocated widespread deregulation, privatisation, and other free market policies for closely controlled economies, which Chile was at the time.

I was in Santiago for work in the 1990s (before moving to Chile to live later on), and I remember the city being on the cusp of replacing some old residential housing areas with a metro (subway) system and underground roads.

These major infrastructure projects were developed and built as concessions owned and run by private sector companies (in line with the economics theories of The Chicago Boys). The resulting infrastructure has been well maintained, yet it's worth remembering that it is in private hands, which means that the way it runs and evolves, and the finances and income receipts are in the hands of private organisations, not municipal authorities.

As a result of these infrastructure projects, today you can cross the city easily by car using the many large highways and tunnels that exist. Whilst on the one hand this provides people with good options for using a car as a form of transport, it lessens the appeal of using public transport. Plus, remember that I mentioned that the city is continuing to grow. This is leading to more and more congestion on the roads. The city's air pollution feels like it is worse than it was 16 years ago –though I haven't consulted scientific evidence about this.

Gareth: It's an interesting point, about private sector ownership of road transport infrastructure based on the country's economic development approach. On the subject of public transport, what's it like in Santiago nowadays? Is it also owned and run by concessions – that is, by the private sector? You mentioned that a new metro system began to be implemented a few decades ago.

***Norm:** Public transport works well, in my view. Let's start with mass transit.*

The [Santiago metro](#) is state-owned, by the Empresa de Transporte de Pasajeros Metro S.A. (Metro) set up in 1989. The metro first opened to the public in 1975 – so it is almost 50 years since it started providing a transportation service. It currently covers about 140km and is used by over 2 million people a day. It is efficient and kept very clean – in short, it is a public transport success. A new metro line 6 recently opened, and there are [plans to build new lines](#). It's a single fare system with the usual range of cards that can be purchased. I think it represents good value, as a citizen (I use it a lot).

Gareth: It's good to hear about an efficient and valued mass transit system, Norm. It sounds like the city is continuing to invest in it for the future. I wonder if they will be looking at different forms of mass transit, such as mini-shuttle options.

What about buses? Are they “green”? I've read reports ([for example, from C40](#)) stating that the drive to operate clean buses in Santiago is strong. Are the taxi fleets “green” as well?



Photo of Santiago buses by author

Norm: Buses are an interesting case. The bus system has a history of change. Back in 2007, the city launched a new way for the bus system to operate. A new [Transantiago system](#) replaced a fleet of microbuses (small buses that served a variety of different routes). Transantiago implemented new buses on new routes and was implemented virtually overnight. (Gareth, it is maybe more correct to say that it was implemented concurrently in all parts of the city.

As well, to say it was not an immediate success but over time it has become fully accepted.) Initially it wasn't a success. Part of the idea was to reduce pollution, but I remember that daily news coverage featured people who were angry at the loss of bus services close to where they live. However, over time they seem to have overcome problems and challenges.

Transantiago became [Red Metropolitana de Movilidad](#) (in English: Metropolitan Mobility Network) in 2019.

I know that activities are progressing to implement electric buses in Santiago. I recently contacted Red Metropolitana, who kindly informed me that since 2019, electric and environmentally friendly buses have been gradually incorporated into public transport in the Metropolitan Region, which has allowed them to renew the city bus fleet and deliver a better travel experience. During 2023, 1,600 more buses will be incorporated, completing 4,300 high standard buses, which is equivalent to 65% of the total fleet.

It's worth pointing out that the Santiago bus system shares the same roads as the cars – that is, it doesn't have its own bus lanes, so it isn't as efficient as it could be if it did have its own lanes (I think this is another example of the dominance of cars as the primary mode of transport in the city). Microbuses still exist in the outer parts of the city, but they don't come into the centre. They are usually at the end of the Red bus network lines.

We have a large taxi fleet which is generally well managed. Uber and private taxi services exist also. I don't see much evidence of a concerted push to ensure these vehicles are electric, although I have noticed [the introduction of electric taxis](#), which are recognisable by a unique colour scheme.

Gareth: It's interesting to hear that the buses don't use dedicated bus lanes in Santiago. This is different to many cities I know of in Australia, Europe and North America. Given how the large roads are operated, I wonder if revenue from private road operators would be less if dedicated bus lanes were in place? There's [an interesting paper about the "fall and rise" of the Transantiago bus system](#) and how the bus system would link to the metro, which is available on ResearchGate, published in July 2022 – I gathered some interesting learnings from reading it.

What about "active mobility" in the city? By this, I mean the popularity of active forms of getting around, including walking, cycling and maybe e-scooters (for those who are physically able). I know from walking and running around Santiago quite a bit when I visited in autumn 2022 that it is a large city. It makes me wonder if the "15-minute city" concept works for most people – to be within 15 minutes of anything you need, through active mobility (not a car).

Norm: *I see more and more bicycles on the roads, which is encouraging. Our mild year-round climate is very friendly to cycling. Every year I see are more bike lanes in place. They are often directional, to go with the vehicle traffic flow. For certain hours on Sundays, some major roads in the city are converted into bicycle lanes.*

Maybe this is an approach that other cities and towns can take, to gradually introduce a change. I know that a lot of people want to cycle – but there are still a lot of cars on the roads, which I suspect makes people hesitant to do so.

Perhaps it's worth considering the communes, or principalities, again. There are bikeways in many principalities, but they are not quite fully joined up yet, from what I see. I think there is more potential to expand bike lanes, and to link them all together.



Photo of residential area road bike lanes by author

As I understand it, newly constructed residential apartment buildings that are built must have cycle lock-up space and amenities provided. For existing buildings, it's not always easy to find space for bike storage.

Gareth: I remember seeing a lot of e-bikes for delivery purposes during my last visit to Santiago (such as food deliveries and commercial retailing deliveries). I recall seeing some imaginative petrol-powered bikes as well, with very small engines fitted to the downtube.

Photos of delivery bikes in Santiago by author



Gareth: As you mentioned earlier, it seems that the transport & mobility hierarchy in Santiago is still weighted towards cars, and that most of them are still fossil fuel-powered rather than EVs. I appreciate that changing a transport & mobility hierarchy takes time and it's not easy. I can imagine that the city is taking on board experiences from other cities that have changed their transport & mobility hierarchy, such as cities and towns in the Netherlands, and other cities in Europe.

Norm: I'd have to do some research to be able to comment here. I have noted an effort to incorporate bicycles in the Metro system. I have also noted a much greater frequency of installation of bike lockups at commercial establishments such as grocery stores and malls. These actions indicate to me a recognition that bicycle transport is gaining in popularity each year.

Gareth: Let's talk about the **built environment** part of the physical system of Santiago now. By the built environment, I mean the city that we, as people, have built with materials such as bricks, concrete and steel, and the utilities in place to service everything.

From what I saw on my last visit, residential buildings and inner city living seem to be well integrated into the city's urban fabric and commercial activities. Are there good measures in place to ensure that buildings are built in a sustainable way, with consideration given to materials in construction and operating efficiency? Plus, perhaps inevitably, how well linked up is the city's physical system to its management of water?

Norm: My neighbourhood of Providencia has a concentration of apartments and local stores and amenities to service residents / citizens. I can get what I need for regular living quite close by, with no need for a car. I appreciate that other people find themselves using a car to travel to work locations or schools that require them to traverse the city.

I notice across Santiago buildings that have achieved [LEED accreditation](#) have advertised it as a selling point.

One thing I notice is that office buildings are still being built, but I wonder if we really need as many as there are, given the changes to how and where people work that are taking shape after the COVID-19 pandemic (in Chile and around the world). Of course, many of these newly constructed office buildings were started before the pandemic, and I can imagine that terminating/cancelling such projects is not practical in many cases. However, I see examples at the moment of new commercial premises which have been completed and they are empty. Could they be repurposed in some way rather than be "ghost commercial buildings"?

I also see empty lots around the city that have been left for some time. Such empty spaces can look rather untidy and unkempt, and they are literally a waste of valuable space. It requires creative thinking to change these lots, not to leave them as empty spaces – appreciating that land ownership doesn't change hands overnight.

On the positive side of things, there are some great local spaces close to where I live, which are popular places for citizens to use.



Photo of a local park in Santiago by the interviewee

Perhaps it links back to the communes and the degree of control the authorities in these communes have (and their staffing levels to oversee governance), and the budgets which these individual communes manage each year.

In terms of energy, I do wonder how we can be more efficient with our power and water services. Electricity is expensive. It is mostly sourced from hydro and also natural gas supplied from Argentina. There is a general awareness of energy and its costs across the population because we see it in our energy bills – but I do not see much in the way of advice or advertising campaigns by municipal authorities on what citizens can do to reduce them.

Gareth: Your comment about changing the purpose of unused commercial buildings and disused / unused lots makes me think about an initiative in Chicago, where the city is focusing on [reducing the number of vacant lots](#) in that city. I also think about a discussion and interview I have held with a charity in the London Borough of Camden that is leading a project called [The Camden Highline](#), which works with other charities and collectives to make use of disused space, for example for entrepreneurs and start-ups. I wonder if there are opportunities for cross-city learnings here.

Just as another point, do you see anything linked to the International Passive House Association ([iPHA](#)), for environmentally friendly housing in Santiago?

Norm: I have not seen any references to iPHA in Santiago, but maybe I've missed it.

Gareth: Looking at **overall city governance and citizen engagement**, what would you say are engagements that work well in Santiago, and aspects that need more focus / improvement?

Norm: I would say that awareness raising within the city of efforts that are being made, and ideas to move forward, is key. I know that lots of plans by the authorities exist and are published online, but I wonder how people find out about them. I suspect that most of us citizens do not know about them. Do we know about the various credits and incentives that are available for changing and improving how we live? How to educate and motivate people is vital. Can the city and commune authorities do more to promote what's happening and show people the changes being implemented, and what we all need to do to play our part, I wonder?

As a positive example of seeing things, next to one of our major city highways, a major private water authority is building a new potable water storage facility. In front of the in-progress construction site are some high-quality, large aerial photos taken from between 1990 and 2020 which vividly illustrate the difference in water availability during this time. It's a stark and visual message to us of how we have less water today than we did 30 years ago. It's a good way of "getting the message across", because anyone passing by will see it.

I wonder about the opportunity to use posters and billboards in the metro. There could be some good opportunities here (remember that some 2 million people use the Santiago metro every day).

Continuing the theme of water management, my water bill does not provide me information about where the water comes from, nor does it show me any incentives to improve my water efficiency. Perhaps there's an opportunity to improve this in some way, and also in our energy bills (whether they are delivered via paper or electronically)? For energy efficiency, I've never seen an advert about the advantages of heat pumps.

Gareth: Some great points about engaging with citizens, Norm. I do wonder about the potential of apps to help with this. It's challenging to get communications right – whether it's a city team, a business or any other organisation. I've written about this in other parts of my urban body of work.

I'll switch track now. One of the things I noticed during my last visit to Santiago is the splendid mountain scenery and natural environment that surrounds the city. What opportunities relating to **the ecological system** do you think exist for Santiago, and are there good examples in this city that other cities and towns can learn from? For example, I appreciated during my visit some great city centre parks, but I also noticed the impact that [the long-running drought across much of the country](#) is having on the city, which must make water management a challenge.

I often talk with people about the importance of green and blue infrastructure to cities and towns. I wonder how green and blue infrastructure can best exist in a city like Santiago, noting for example that water needs to be carefully managed due to the national drought.

***Norm:** One of the many aspects to enjoy about Santiago is that it is surrounded by a fantastic and diverse natural environment. I get out for walks in and outside the city all the time (as do many other citizens, and visitors). The city is at a reasonable level of altitude (500-650m above sea level), which is relevant to my next point. In the wintertime we can see snow in the surrounding mountains (snow falling in the city is very rare). In the distance, we can see glaciers too, yet in my 16 years of living in Chile to date, I've noticed the glaciers overlooking the city are diminishing in size. They are not disappearing, but you can intuitively see they are smaller than they used to be.*

In terms of green infrastructure, in my municipality (the Providencia commune) I see a concerted effort to change the type of greenery that exists to reduce irrigation needs, which is great to see. Some information about this is provided in [the local Providencia water plan](#).

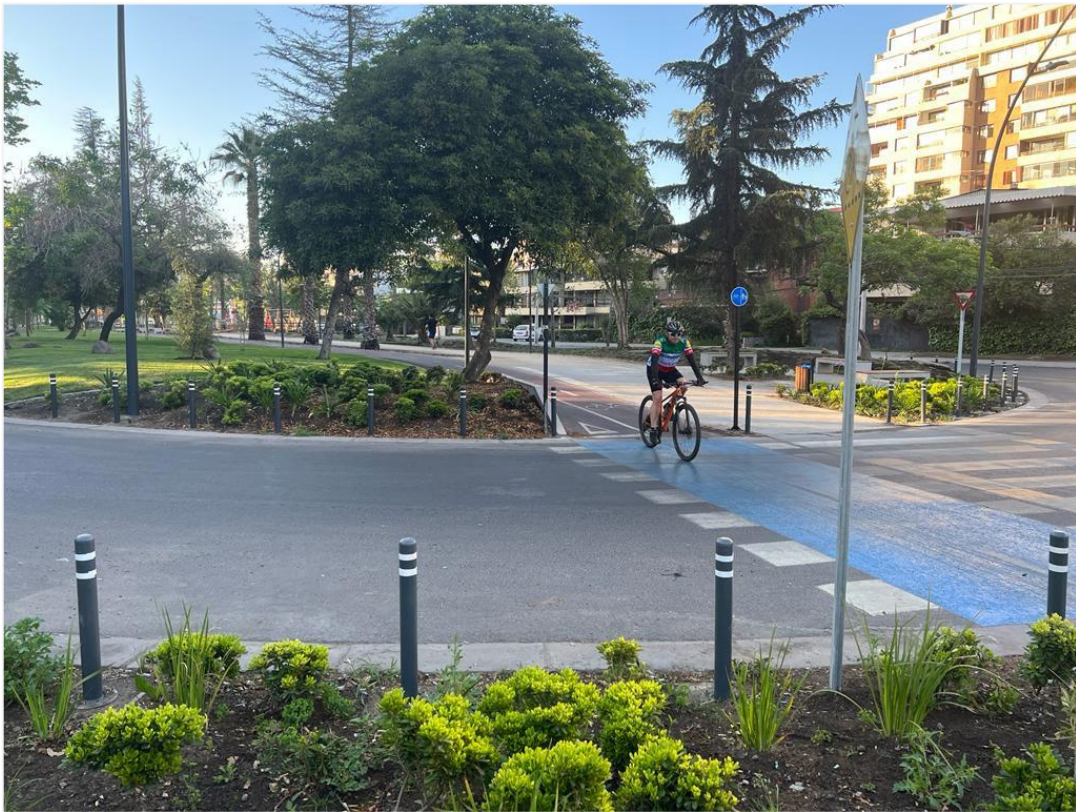
In terms of blue (water) infrastructure, my first thought is that it is challenging for a city like Santiago to have water features, given the general shortage of water that the city, and the country, has been enduring for many years. Remember also that water management is owned and operated by private water companies. The added challenge to implementing surface-level water features is the high average annual evaporation, which is many times greater than the average annual precipitation in Santiago.

Gareth: I guess the private ownership of roads also makes it hard for the big wide roads to be changed to provide more dedicated lanes for bikes, and to add greenery to them – because these changes will not provide income, unlike cars that pay to use the roads? However, I mentioned [The Camden Highline](#) earlier, and I know of conversions of highways into walking routes, such as the one in Seoul, called [the Seoul Skygarden](#). I'm a big fan of these types of initiatives.

Norm: *I agree about the challenges of private road ownership, yet there are some good examples of changes taking place. In the area of Vespucio, a major North-South highway has been recently modified from overground to underground – above it now are greenery, walkways and bikeways. This change has been undertaken by the private sector, and maybe there are further opportunities for this type of approach, but it may not solve the car being at the top of the transport hierarchy. The major East-West Road is all highway at the moment – I wonder if it can be changed. Is there a business case for it?*

In terms of greenery, there are some good “pocket parks” in the city. Plaza Peru, for example, is small but well used by people.





Photos of Avenida Vespucio, Las Condes by the interviewee

I also wonder about the development of land across the city. Would it be feasible to work with developers so that there is a business case to “buy one more lot next to the intended development area”, to make a communal park for everyone? Take, for example, buildings close to where I live. Currently, a developer is building an 11-storey apartment block and there are empty lots opposite this site – could someone work out how to make it a communal (access to all, not just private residents) park?

In the city, new apartment blocks tend to be close to lots of amenities, which is good.

Outside of the city and the inner communes, outer perimeter suburban areas like Chicureo and Chamisero to the north are home to large housing developments with single family homes, cookie cutter homes, shopping centres, and the like. I suspect that most people who live here commute into the city, and the single most convenient form of transport for commuting is the car.

Gareth: It’s a really good point about land use. I do wonder whether land use can be valued as much for a park as for a building development (this is something I have written about in my urban body of work). I think it is linked to how a city sees and derives value. Something to review, I think.

Onto my next point. How does **the socio-economic system** in Santiago – including aspects such as education, healthcare, social activities, consumerism and the circular economy – work? It’s a broad question, I know, so I’ll understand if you find it best to hone into some specific examples.

On a “city scale”, I have seen that [resilience features on the website of the Gobierno Regional Metropolitano de Santiago](#) (the City of Santiago’s regional government), and [the Santiago Humano y Resiliente website](#) describes a vision and [a strategy](#) for Santiago's development model to focused on people, where people’s needs come before the physical system (e.g. the car or the building), and economic interests., including a plan to 2041. As a citizen of the city, what measures and actions do you see taking place to improve urban resilience?

***Norm:** In Chile, think we are still largely embedded in the consumer economy. In our large retail stores, there are rows and rows of white goods to purchase. People have resources and credit to do so.*

In terms of personal transport, cars, both used and new, are widely available, and credit for purchasing them is easy to obtain. It is relatively easy for a family on a modest income to have one or two cars.

With regard to food, we see an increasing number of organic food stores that sell produce in bulk. Some provide incentives so that when you buy a reusable bag you pay a bit less for shopping afterwards in subsequent visits. A local store in my area focuses on organics, so things are changing. You have to explore to find out about it – I haven’t seen any particular city promotions or advertising about things like this.

I think that many restaurants can do more with food reuse and food waste management.

From an individual citizen’s point of view, I recently heard about a system in the US called Lomi, which is a kitchen counter product that you can “feed” kitchen scraps, and within a day or two it produces soil. It sounds like a great idea in principle. I appreciate that it’s not something everyone can afford, but I wonder if there might be some sort of collaborative effort to improve how we deal with food waste and make better use of it collectively?

Gareth: Your example of Lomi is a great example of how private sector innovation can help a broader societal need. I know that many cities and regions around the world have food recycling and composting programmes.

Let’s focus on health for a moment. The COVID-19 pandemic must have been a challenging time for the city’s residents (I know you were in the city during this time, including during lockdown periods). I’d be interested to hear your thoughts about lessons from the pandemic that should continue to be heeded moving forwards.

***Norm:** The COVID-19 lockdowns in Chile including in Santiago led to some important developments. One significant example has been the flourishing of home delivery services. I have not seen a life-cycle analysis of this, but the delivery of goods on bicycles, mopeds and motorbikes is probably more environmentally friendly than the movement of consumers by car from their home to the points of purchase and back again. Another development has been the increase in the importance of small local shops, which I think is very positive. In my communa of Providencia there*

has been a flourishing of such small shops. As people have less desire to go to large, crowded grocery stores and malls, local small shops have increased in value to them. My comments are only based on my own observations, they are not based on any survey information, nonetheless I think it is happening across the city.

Gareth: Is there anything else that comes to your mind about Santiago as a “learning point”, Norm?

Norm: *There is one more dynamic that I’d like to mention, which relates to a key topic we’ve covered, about transport and cars.*

A lot of people who live in the city depart for long weekends (for example, when there are national holidays). When this happens, the traffic out and back at the end of the long weekend can be very heavy. The city is in fact better to get around on a long weekend, because it is quieter. Highway authorities have worked hard to make the roads safer, too.

Viña del Mar close to Santiago is an important weekend break destination for many, for example. Could a train line be built to connect it to Santiago? It has been discussed down the years. It is about 100km away, and could reduce car traffic a great deal.

We have to manage road traffic and car use better than we do today. Can we give different safe options for kids to get to school, can we do something about the number of cars on the roads, can we change public transport and keep improving the use of bicycles. That’s a key thing I’d like to see debated.

Gareth: Interesting point about trains, Norm. Thanks. I can think of a lot of cities where, in theory, train lines would add value. And, I agree that it would be great to have a broad discussion about the future of the car, and alternative forms of transport that can provide us with different choices.

Thank you very much for your thoughts and perspectives about Santiago. As someone who has had the opportunity to visit this city, I am keenly looking forward to seeing how it continues to evolve.